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# “Investigating the use and perceived effectiveness of social media for Informatics Programs in the Malaysian Higher Education Context.”

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# “Investigating the use and perceived effectiveness of social media for Informatics Programs in the Malaysian Higher Education Context.”

A thesis submitted in fulfilment of the

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# DECLARATION

I, Jane See Yin Lim, declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Faculty of Engineering and Information Sciences, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Jane See Yin, Lim

12 March 2015

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# ABSTRACT

The trend in the use of digital technologies in learning in higher education has been driven by a number of underlying assumptions about the affordances of technology in learning. This trend has not only been advocated by educationalists, who argue for digital technologies as a catalyst for pedagogical change, but also by students themselves as they adopt new ways of collaborating and communicating with their worlds.

A significant amount of literature is now appearing arguing that technology is changing learners with terms like 'digital natives' (Prensky 2001) gaining prominence and authors such as Coates (2007) arguing that these ‘millennial learners’ learn in different ways to their predecessors. Most young people in modern societies, both Western and Eastern, make routine use of the Internet and email, text messaging and social software and we are seeing evidence that Web 2.0 is allowing student participation in online communities that define and share information in educational contexts.

This study seeks to investigate the learning settings being used in Malaysia to teach the Millennium generation, what is the digital status of these learners and how this generation is responding to the learning settings both being offered and being generated by them. The study specifically investigates the use of social media technologies by institutions to engage with their students and facilitate effective technology supported learning environments.

The findings based on survey, interview, observational and policy analysis data show that the use of social media technologies are heavily embedded in the students own learning processes, and individual academics are leveraging from these practices to engage and motivate students in their learning. The study also found that the institutions themselves

are poorly prepared for these changes to pedagogical processes and are not, as a matter of strategy or policy, taking advantage of the opportunities offered by social media technologies.

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# RATIONALE FOR THIS STUDY

## 1.1 INTRODUCTION

The trend in the use of digital technologies in learning in higher education has been driven by a number of underlying assumptions about the affordances of technology in learning. This trend has not only been advocated by administrators who argue for digital technologies as a catalyst for pedagogical change, but also by students themselves as they adopt new ways of collaborating and communicating with their worlds.

A significant amount of literature is now appearing arguing that technology is changing learners with terms like 'digital natives' (Prensky 2001) gaining prominence, and authors such as Coates (2007) arguing that these 'millennial learners' learn in different ways to their predecessors. Most young people in modern societies, both Western and Eastern, make routine use of the Internet and email, text messaging and social software and we are seeing evidence that their familiarity with these forms of communication are being carried over into their learning. Personal web pages, blogs, podcasts, instant messaging, chat spaces, twitter and wikis are changing the creation of information; social software, facilitated by Web 2.0 is allowing participation in online communities that define and share the information they need for themselves. Personal mobile and wireless devices are increasingly integrated with the global computer network to provide seamless, location-independent access to information services.

However, despite claims by researchers such as Frand (2000) that immersion in these technologies is so complete that young people do not even consider computers as 'technology' any more, recent studies have also shown that access to these technologies is not universal and that more recent mobile technology use for learning by young people at university level is quite limited (Bennett, Maton and Kervin 2008, Kvavik, Caruso and Morgan, 2004, Kennedy, Krause, Judd, Churchward and Gray, 2006) and not necessarily productive (Hrastinski and Aghaee, 2011). It would be a mistake, in any technology policy implementation context to not recognise the variation in technology skills of learners and staff, and it cannot simply be assumed all learners are skilled 'digital natives' and all academics are skilled technology users or that institutions are supporting these trends.

This study seeks to investigate the learning settings being used in Malaysia to teach the Millennium generation, the digital status of these learners and how this generation is responding to the learning settings both being offered and being generated by them.

## 1.2 BACKGROUND

The continuous growth and expansion of the World Wide Web, the move towards a Knowledge Economy and Information Society, the trend for globalization and the advancement of new technologies are some factors that led to the need to relook at the current pedagogies adopted for teaching and learning in higher education. Additionally, the introduction of Web 2.0 and its applications, smartphones, mobile devices, and broadband/wireless services at lower and affordable prices have greatly impacted the teaching and learning environment in the digital era.

Corrin, Bennett, and Lockyer (2010) have argued that students in higher education institutions now have grown up surrounded by technology and are characterized by their ability to multitask, their dependence on technology to maintain social contact, their openness to share content, and their ability to rapidly understand and adopt new technologies. Students in this generation are exposed to all sorts of modern technologies and the Internet from a young age. Thus, their learning interactions and communications are very much different to earlier generations. They build their knowledge through both direct and indirect learning such as collaboration work and activities with their peers outside the class rather than being dependent on classroom experiences only.

According to Mcloughlin and Lee (2008), students or learners today are 'prosumers', which they are both the producer and consumer of knowledge, ideas and artefacts. They also added that there are a few important skills sets which are required in the new knowledge economy; creation, inquiry, critique and networking. Students are no longer passive consumers of information. They have more control of the online content, becoming active contributors or producers of knowledge (Klamma, Cao and Spaniol, 2007). Paaovla and Hakkarainen (2005, p.535) have further supported this argument stating that *"learning is an intensely social activity, where ideas are generated in contact with others in the community through mutual exchange, contribution and sharing of ideas".*

Diana and James Oblinger (2005, p. 25) described students in this generation as follows:

> *As long as they've been alive, the world has been a connected place, and more than any preceding generation they have seized on the potential of networked media.*

This focus on pervasion of technology into our lives is now being characterised, for students, in terms of technology contexts. According to Prensky (2001), Digital Natives are

students who are born after 1980. Other popular terms include Net Generation (Tapscott, 1998), Millennial (Oblinger and Oblinger, 2005), Homo Zappiens (Veen and Vrakking, 2007), Generation M (Ziegler, 2007), Clickerati (Harel-Caperton, 2003), Screenagers (Rushkof, 2006) and Generation-Y (Weiler, 2005). They are Technology-Savvy and have access to computers, the Internet and other modern technologies from a young age. These students have sophisticated skills in using these technologies and have developed new cognitive capacities and learning styles (Prensky, 2001). Dede (2005, p.46) described the neomillenial learning styles for this generation of students as follow:

> *Fluency in multiple media, valuing each for the types of communication, activities, experiences, and expressions it empowers; learning based on collectively seeking, sieving, and synthesizing experiences rather than individually locating and absorbing information from a single best source; active learning based on experience that includes frequent opportunities for reflection; expression through non-linear associational webs of representations rather than linear stories; and co-design of learning experiences personalized to individual needs and preferences.*

The three traditional learning theories (Behaviourism, Cognitivism, and Constructivism) were developed well before the advancement of technologies. Even Constructivism learning theory which has been popularly adopted by higher education institutions across the globe might not be sufficient to explain the learning process of this generation of students. It is being argued that there needs to be an expansion of educational theory to support the learning approach of Digital Natives. Thus, a new learning theory known as Connectivism , proposed by Siemen (2005) has been argued to attempt to explain the teaching and learning needs for the digital era.

Connectivism (Siemen, 2005) is a learning theory based on the concept that learners form their own network and connections. They actively participate in knowledge generation by

constant feedback into the network, which forms the cycle of knowledge development. Siemens (2005, p.7) lists eight major principles of connectivism:

i. Learning and knowledge rests in diversity of opinions;

ii. Learning is a process of connecting specialized nodes or information sources;

iii. Learning may reside in non-human appliances;

iv. The capacity to know more is more critical than what is currently known;

v. Nurturing and maintaining connections is needed to facilitate continual learning;

vi. The ability to see connections between fields, ideas and concepts is a core skill;

vii. Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities;

viii. Decision making is in itself a learning process.

It is now becoming clear that higher education institutions need to examine how the current emerging technologies and social media applications could be integrated with the appropriate teaching pedagogies adopted by higher education institutions to provide students with learning experiences that take advantage of these new affordances and theories. Due to the continuous and pervasive exposure to all of the emerging technologies, it is being claimed that students in this generation tend to behave and learn differently from the previous generations. The technologies used to support their learning must be able to help them to find the right content for their learning, connect them with the right people, and to motivate or incentivize them to learn (Vassileva, 2008).

Social media is no longer just another buzzword or hype used commonly by Digital Natives or students from the Millennium Generation in the 21st Century. The social media phenomenon has evolved from a platform used to connect with people socially into a platform that provides highly effective resources for both business and education. With the advancement of Internet broadband services, mobile devices, smart phones and web-based technologies, increased usage and employment of social media applications in both the personal as well as for business or education purposes is inevitable. Andreas Kaplan and Michael Haenlein (Kaplan and Haenlein, 2010, p.61) defined social media as *"a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content".*

Social media provides an interactive platform for individuals and communities to share, create, discuss and modify user-generated content (Kietzmann et al., 2011). Some of the popularly used social media applications are Facebook, Wikis, Blogs, Twitter, Delicious, Digg, et cetera. There are growing numbers of social media applications and the literature is showing that the great potential of these applications is not being used or tapped by academics in higher education institutions. There is very little literature on the adoption of social media applications for academic purposes broadly and especially in Malaysia and for Informatics related courses. Most of the literature available reports on work with universities and colleges in United States. The courses involved have tended to be in the social sciences in areas such as law, history, communications and media and journalism. Informatics courses require constant review or updates in curriculum and content, depending on the advancement of new technologies. Thus, life-long learning has become a fundamental requirement for students and academics in Informatics Programs.

## 1.3 ISSUES THAT REQUIRE INVESTIGATION

Social Media applications have great potential to create learner-centred environments which fit the learning approaches of the digital natives in this 21st Century. Since many students in this digital era have the luxury to own digital devices and have access to digital content, the question then is how students could make full use of these advantages to support their learning. The current challenge facing higher education institution is how social media could be effectively integrated into the current teaching and learning pedagogies to give students a more effective learning experience.

A range of research has been reported on students' perception and usage of social media and digital technologies to support their learning. For example, Hrastinski and Aghaee (2011) have looked at how campus students are using social media to support their studies, while Margaryan, et al. (2010) have examined the question of whether digital natives are a myth or reality. On a similar theme Bennett and Maton (2010) have raised similar concerns about the concept and have proposed moving toward a "more nuanced understanding of students' technology experiences", while Corrin, Bennett and Lockyer (2010) have added to the discussion with an investigation of the difference between student everyday life uses versus academic study.

Much of this work has focused on quantitative research with students from universities in United States and Australia and with an emphasis mainly on student's perception and acceptance. Very little work has been reported in the literature from an academic perspective and more research to examine how social media is perceived and accepted by academics for teaching and learning purposes is now being called for. However, some research in Malaysia is starting to emerge. According to Shittu, Madarsha and Tunku Ahmad (2011), who investigated students' attitude and intention to use social software in higher institution of learning in Malaysia, further research is required on the benefits

students will gain through the use of social software, faculty perceptions in integrating social software into the curriculum, student's demographic factors and usage hours of social software that affect their general performance, and effective methods of using social software to support student learning. Additionally, Zakaria, Watson and Edwards (2010), who investigated the use of Web 2.0 technology by Malaysian Students, stated that Malaysian students generally have positive acceptance towards the use of Web 2.0, which is the main platform that drives social media applications. However, to achieve the intended outcome from the integration of the technologies into curriculum, dedicated teaching strategy will be needed.

This reported research points to a significant gap in the literature that requires investigation of the broad context of social media, and the benefits that it could bring to higher education. This gap includes not only the lack of data argued by Shittu et al. (2011), but also a lack of understanding of the appropriate policies that should be in place to support student, academic and institutional use of SMTs.

## 1.4 PURPOSE STATEMENT AND RESEARCH QUESTIONS

The purpose of this study is to examine the engagement of Informatics students and faculty members in the use of social media for teaching and learning purposes. This research will focus on the perceptions, uses, and access to social media in higher education in the Malaysian context.

Informatics programs are very technical and technological-oriented. The fields of programs under Informatics including Computer Science, Information Technology, Information

Systems and Computer Engineering. Students who undertake these programs are trained and developed to thrive in the challenging, and advanced technical environments demanded in the fast-paced world of Information Technology. Students must be able to think logically and learn "how to learn" as "knowledge on demand" is one of the expected capabilities of Informatics graduates. This rapid change in knowledge and skill sets requires learners to not only be lifelong learners, but to be constantly connected to the field of computing science. Social media has the potential to be the conduit that supports these needs.

McLoughlin and Lee (2007) support this view and have argued that in the higher education arena, there is a growing emphasis on the need to enable and support not only the acquisition of knowledge and information, but also to develop the skills and resources necessary to engage with social and technological change and to continue learning throughout life.

According to Bass and Eynon (2009), social media enabled three components of learning: adaptive learning, embodied learning, and socially situated learning. Adaptive learning provides opportunities for students to apply skills, and knowledge in flexible and creative ways while embodied learning provides students with the affective and motivational elements that influence the learning process. Lastly, the socially situated learning provides students with the opportunity to learn through peer-to-peer engagement in collaborative environments.

From a review of the literature, three questions emerged to guide this investigation:

1. How are Higher Education students in Malaysia engaging with SMTs within their university experience?

2. How are academics in Higher Education Institution in Malaysia using SMTs in teaching and learning, administration, governance and in their interaction with students?

3. How are higher education institutions in Malaysia using SMTs?

## 1.5 RESEARCH STRATEGY AND RATIONALE

This study focused on an area where there has been limited research, because of the recency of the issues being investigated, and then seeks to examine specific issues for Malaysia and Informatics where even smaller numbers of studies have been reported. In this context a clearer understanding of the issues is being sought and an exploratory study would be most suited as the outcomes will give a broad picture of the perceptions, usage and access to social media by both the students and academics broadly as well as specifically for Malaysia in the area of Informatics teaching. The findings of this exploratory research would also support the development of a framework for the effective use of social media in Informatics curriculum and assessment.

This study adopted a mixed methods research approach (Creswell, 2003) with an emphasis on qualitative research because of the exploratory nature of the research purpose. The details of the mixed methods research approach are fully discussed in Chapter 3. Johnson and Onwuegbuzie (2004, p.17) argue that researchers can put together insights and procedures from both approaches to produce a superior product. Burns (1997, p. 295) stated that, *"the strength of qualitative studies lies in research that is descriptive or exploratory and that stresses the importance of context and the subject's frame of reference."*

Laurillard (1993, p.8) supported this research approach to inform pedagogical practice in the use of educational technology:

> *Implementation of a new method cannot be expected to work perfectly, but probably provides some benefits along with its disadvantages. We need to learn the lessons of each implementation, and then use those lessons learned. In this way we slowly build a body of knowledge of how best to use educational media, and a teaching profession that knows what it is doing and why.*

Lastly, this study focused on a survey of the social media technologies used in Malaysia to teach the digital native students in higher education institutions, their digital status and their responds to these emerging technologies. With this mixed methods approach, students, academic staff and administrative staff will be surveyed and interviewed to ascertain their usage, preferences, and access to social media technologies. The use of social media by students and academic staff will also be observed in the teaching context and policy implementation will be examined to complete the data set necessary to address the research questions.

## 1.6 THE CONTEXT OF THIS STUDY

This study focused on the use of social media in teaching in Informatics in higher education in Malaysia. Despite being an ICT hub and having advanced ICT Infrastructure nationally, the use of social media beyond young people via mainly mobile phones is relatively low, but it is developing rapidly in business and education.

Harper, Lockyer, Bennett, Agostinho, and Jones (2011) have argued, "Governments worldwide have started to implement policies within which learning has been explicitly identified as the main catalyst for economic competitiveness and growth". They added that many countries have also moved towards supporting academics in incorporating digital technologies as part of the teaching and learning tools. The Malaysian government sees education as a major plank in the development of the country and has aspirations to become an education hub in South East Asia. This will require that the education system move toward modern pedagogies with the use of technology to support and supplement leaning settings. Malaysia is a multi-racial and multi-ethnic country with the population of 30 million as of February 2014 (The Star, 2014). In the 10th Malaysia Plan (10MP), which covers the period from 2011 to 2015, Malaysia aimed to become a developed nation by 2020, and to achieve that, high emphasis has been given to developing world-class human capital that will drive Malaysia to this vision. Development of the world-class talent pool is essential as Malaysia moves towards a knowledge and innovation driven economy, and this can only be achieved with an effective education system. The movement towards transforming Malaysian education has also been well illustrated by the Deputy Prime Minister of Malaysia at the 16th Malaysian Education Submit (Muyiddin Yassin, 2012), noting that education providers need to review their education systems to ensure students, who eventually will be part of the human capital, are equipped with the necessary skills and knowledge to adapt or confront the challenging global economy.

To support these aspirations, the Malaysian government have set up the Government Transformation Programme (GTP) and the Economic Transformation Programme (ETP) that aims to develop a high-income nation. To achieve this, GTP especially, is focusing on addressing the educational gaps currently present in the current education system by creating a better education platform that promotes lifelong learning (GTP Annual Report, 2013).

Dato' Sri Idris Jusoh, the Minister of Education II, in the GTP Annual Report, also stressed the following:

> *A high-income developed nation will necessarily require a highly-skilled workforce, and if we do not address the issues that are compromising the domestic supply of talent, then we will be forced to hire talent from outside. While we are prepared to accept this as a short-term solution, our long-term strategy must address the shortfall of talented workers, and a good education continues to be the best guarantee of success in later life. (GTP Annual Report, 2013, p.90)*

Tan Sri Muhyiddin Yassin, the Deputy Prime Minister and Minister of Education promised that the government will make every effort in improving student outcomes by focusing on the foundations that will equip them with the tools and skills necessary to become top-achievers in their respective fields *(GTP Annual Report, 2013, p. 89)*

In a nutshell, the outcomes from this study aim to give insights to Malaysian higher education institutions in their quest to support these government policies and also to influence government initiatives to improve the quality of the Malaysian education system.

## 1.7 SIGNIFICANCE OF THE STUDY

This research study is significant in that it is attempting to not only address the gap in the literature on the use of social media in higher education, but it is expected that it will also contribute to the advancement of teaching and learning in the area of Informatics in

particular as well as improve the quality of teaching in higher education in Malaysia. This gap in the literature manifest as:

i. Limited information available on the use of Social Media Technologies (SMTs) by students and staff.

ii. Limited research available on the Malaysian context on the use of SMTs in Higher Education Institutions, and no research published on the use of SMTs in the discipline of Informatics.

iii. Currently, Malaysian Higher Education Institution's social media presences are poorly understood.

Specifically, the study will:

a) Make a contribution to the literature where minimal research is available on the perceptions, acceptance, usage and access to social media by students and academics in Informatics programs in Malaysia.

b) Contribute to the knowledge base of social media use in Malaysia Higher Education especially in the discipline of Informatics.

c) Contribute to the development of a framework for implementing social media as supporting tools for teaching and learning in higher education institutions in Malaysia.

d) Additionally, it is expected that the outcomes will be taken up by academics and higher education institutions throughout Malaysia.

## 1.8 LIMITATIONS OF THE STUDY

Given such a wide topic, there are many choices for the researcher to choose what and how the research can be conducted, as *"these are not choices between good or bad, but choices among alternatives, all of which have merit"* (Patton, 1990, p. 166). Whatever choice is made, there will be limitations to the application of the findings. The methodology used in this study is mixed mode with a significant component of qualitative work. Qualitative research has inherent limitations in that the data must be interpreted and is partly dependent on the lens used to analyse the data. Additionally, it is very difficult to generalise from qualitative studies, but it is well understood that this type of study has a strong exploratory element.

Beyond this, some specific limitations of this study are as follows:

a) This study is limited to diploma and degree students who study Informatics related programs in Malaysia. The specific findings might not be applicable to other programs and countries.

b) This research studies the level of proficiencies, knowledge of use, and the acceptability of social media applications by academics in Informatics Programs in Malaysia. The specific findings might not be applicable to other academics in other programs or countries.

## 1.9 THESIS STRUCTURE

This section discusses the structure and flow of the thesis. Chapter 1 discusses and explains the rationale for this study. The issues raised are further explored in more depth in the following chapters. Chapter 2 provides an overview of the literature that examined

the teaching and learning approaches practiced in higher education in Malaysia. It also examines the trends and implications of social media adoptions for teaching and learning purposes. In addition, the existing research on examples of social media adoption by higher education institutions such as Australia, United Kingdom and United States of America have been reviewed to further elaborate the maturity of the social media adoptions for academic purpose in countries outside of Malaysia.

Chapter 3 explains and justifies the research methodology employed. In the context of this study, mixed method research methodology (Creswell, 2003) was employed. This methodology focused on collecting and analysing qualitative and quantitative data to better understand the research problems. A conceptual model was developed to be used as a theoretical lens in helping to shape the research direction, research questions and research instruments for this study. This chapter also describes how the quantitative and qualitative data collection was conducted which involved the development of the research instruments, identifying the participants, dissemination and collection of the surveys, interviewing the participants, and observing sample social media activities.

Chapter 4 and 5 presented the analysis and findings from this research. Chapter 4 focuses on the discussion of the quantitative data collected through the anonymous online survey while Chapter 5 discusses the findings of the qualitative data collected through semi-structured interviews. A conventional content analysis approach (Hsieh and Shannon (2005) was used to analyse the data collected from the semi-structured interview. Using the content analysis approach, the findings of the data collected from all the three categories of participants (students, academics, and administrators) were analysed independently to reflect their overall views and experiences in using SMTs.

Chapter 6 discusses the outcomes of the observation on the use of Social Media by Informatics Academics in Informatics related subjects. Participant observation method (Schensul, Schensul, and LeCompte (1999) was used as the tool to observe and better understand the engagement, involvement and participation of students and lecturers in the use of SMTs for teaching and learning activities in class. The results of the observations are also discussed in this chapter.

Chapter 7 focuses on social media policy analysis. Prior to the analysis of multiple social media policy samples, the effects of SMTs misuse in higher education institution the importance and the need for social media policy have been discussed. Finally, the comparative study of different social media policies in various higher education institutions, and the guidelines for social media policy development will be further analysed and discussed.

Chapter 8 discusses the rationale of the research questions outlined in this study by pulling together all the findings of Chapter Four to Seven. Each research questions identified in Chapter 1 has been revisited to inform and justify whether all the sub-questions were addressed respectively. Lastly, Chapter 9 discusses the proposed framework for the Social Media Technologies implementation by Malaysian Higher Education Institutions. This framework can be used as a guide by faculties of Higher Education Institutions in Malaysia to integrate Social Media Technologies in teaching and learning activities. Existing literature on Social Media Frameworks were studied and the proposed framework is intended to address the limitations and gap in the existing literature. The final proposed framework is meant to guide the adoption of social media technologies by Higher Education Institutions in Malaysia. *Figure 1.1* below summarized the structure of the thesis.


*Figure 1.1: Summary of the Thesis Structure*

# CHAPTER 2

# LITERATURE REVIEW

Teaching and learning in the 21st Century is very different from the past. The advancement of emerging technologies such as Web 2.0, smart phones and portable mobile devices, high speed internet broadband, free Wi-Fi hotspots, et cetera. have had a great impact on the learning approaches of students and so should be impacting the teaching and learning approaches practiced by higher education institutions. For students, teaching and learning is no longer constrained to classroom environments. For example, many restaurants, fast-food chains, airports, shopping complexes and public infrastructures such as buses and trains are providing free Wi-Fi hotspots. In Malaysia, the federal government of Penang state has even made Penang a Wi-Fi free city in which people can connect to the World Wide Web anywhere, anyplace and anytime. Today, in many places that you go, it is common to see people engrossed on their smart phones and portable devices, browsing the Internet, reading their e-books, connected to social networking websites, or playing games. Students are using these technologies to communicate, socialize, discuss, share ideas, share knowledge, create knowledge, seek knowledge, and of course to be entertained. This phenomenon, known as Cyberculture, in which the cultural shift is driven by the use of emerging digital technologies or Information Communication Technologies (ICT), offers challenges and opportunities for higher education. In particular, social software has the potential to leverage many of these new modalities of learning to improve the process of teaching and learning and to keep up with these new student approaches to learning.

In this literature review, a basic introduction of social software applications is presented and then the factors that drive the trends in social software use, current teaching and learning approaches practiced by higher education institutions, examples of social software adoption by educators, as well as benefits, weaknesses and challenges of adopting social software applications in the context of higher education institutions will all be examined. Additionally, the current research on the use of social media in learning in specific institutions will be critically reviewed.

## 2.1 SOCIAL MEDIA

Paramewaran and Whinston (2007, p. 762) argue that social media can be defined as *"new applications and services that facilitate collective action and social interaction online with rich exchange of multimedia information an evolution of aggregate".*

Minocha, Schroeder, and Schneider (2011) stated that one of the main attributes of social media software that makes it different from other software or websites is that the content is user-generated. That is the content of websites is contributed or created by groups of users instead of the administrator of the websites. An example of this would be Wikipedia in which the content can be written, evaluated, changed or modified by anybody.

Andreas and Michael (2010, p. 61) defined social media as *"a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content."*

Kaplan and Haenlein (2010) categorized social media into six different types: collaborative projects, blogs and microblogs, content communities, social networking sites, virtual games worlds, and virtual social worlds.

Social media software is generally a portable web-enabled tool, which is accessible through platform independent web browsers. It enables the sharing of collaborative activities not only in the social but also in educational, and now increasingly in business contexts. It is believed that through these shared and networked activities, users will become creators of collaborative knowledge that forms a collective intelligence. Levy (1999) cited by Nielsen (2010) defined collective intelligence as *"a form of universally distributed intelligence, constantly enhanced, coordinated in real time, and resulting in the effective mobilization of skills...No one knows everything, everyone knows something..."* (p. 1).

Collective Intelligence is not something new but the capability of social media software to pull together all the knowledge harnessed through collaborative activities makes the process more accessible to learners. Some examples of social media tools that support collective intelligence include blogs, wikis, social tagging or bookmarking tools, et cetera. Wikipedia is one good example to demonstrate how users contribute their knowledge, coordinate the contents, and combine all the information to generate meaningful resources. Science Daily (2011) reported that educators from Carnegie Mellon University have developed a social networking application known as *Classroom Salon* which is being used by high school students to engage them in online learning communities that effectively tap the collective intelligence of the groups. These students use the *Classroom Salon* application to share ideas about texts, news articles and other reading materials or their critiques of each other's writings.

Social media technologies are evolving rapidly with new types of social media being introduced every couple of days. Based on the available social media on the web, the researcher has grouped the social media into seven categories. The seven categories are text-based applications, media sharing applications, social networking, mobile-based applications, virtual world and games, synchronous communications and conferencing applications, and Mashups. Each of these categories is described in detail in *Appendix A*.

## 2.2 FACTORS THAT DRIVE THE GROWTH OF SOCIAL MEDIA

There has been an explosion in the use of social media across all sorts of contexts. The main contributors to this phenomenon include the growth of the Internet, the portability of access devices such as smart phones and mobile devices, social media varieties and usages, the move towards creating a knowledge economy, take up by business as an advertising channel and the change in learning preferences of the digital age.

### 2.2.1. Growth of the Internet, mobile devices and the portability of access devices

According to the study conducted by the International Telecommunication Union (ITU, 2014), as of May 2014, mobile subscriptions in the world will hit 7 billion by the end of the year. Brahima Sanou, the Director of the ITU Telecommunication Development Bureau also commented in the following way (ITU, 2014, p.1):

> *By the end of 2014, there will be almost 3 billion Internet users, two-thirds of them coming from the developing world, and that the number of mobile-broadband subscriptions will reach 2.3 billion globally. Fifty-five per cent of these subscriptions are expected to be in the developing world.*

There are 2.3 billion mobile broadband subscriptions worldwide (Statista, 2014) and based on the latest statistics for active mobile broadband subscription, Japan and China are the top. CNNIC (2013) reported that there are 464 million mobile internet users in the country, while Japan reported 107.5 million mobile Internet subscribers out of 134.8 million mobile subscribers in the country (TCA, 2013). The drivers of the growth in mobile web and mobile media include the advancement of web-enabled handsets (smart phones) or portable devices, unlimited and affordable data plans offered by Mobile / Internet Service Providers, high-speed mobile networks, and free Wi-Fi hotspots in restaurants, fast-food chains, airports, shopping complexes and public infrastructures such as buses and trains. All of these changes have increased the availability and rapid access to the Internet from anywhere at any time.

International Data Corporation (IDC 2014) reported the total shipments for Smartphones at the end of 2013 was 1 billion units. There was an increase of 38.4% as compared to 2012. Gartner (2014), estimated tablet sales worldwide in 2014 will increase only by 11% from 2013 and will reach 229 million units compared to the year before in which the increase was 55%. An IDC Report in 2014 (IDC, 2014), also reports a drop in tablet shipment worldwide in which there is only an increase of 7% in the total shipment for tablets from 2013 to 2014, while 52% increase from 2012 to 2013. This trend is explainable as the shipment for Phablet (cross breed of smartphone and tablet) in 2014 increased by 210% as compared to 2013. It is forecasted that by 2015, there will be 318 million of Phablet shipments worldwide.

Overall, there has also been an increase in the ownership and penetration of smartphones, and mobile devices from Year 2013 to Year 2014 especially in Asia Pacific countries (Nielsen, 2014). In fact, the growth and penetration rate is surpassing United States and many European countries. For example, for Hong Kong and Singapore, the smartphone penetration rate is at 87%, followed by Malaysia (80%), Australia (75%) and China (71%). The trend in which consumers owned multiple mobile devices is also on the rise. Nielsen (2014) reported that Malaysia is in the top of the list with 47% of the consumers owning more than one mobile device, followed by Hong Kong at 31%, and Singapore and China at 29%. The increase in ownership of these emerging technologies is driving the increased access and use of the Internet and its applications.

In the Adobe 2013 Mobile Consumer Survey, it was reported that 71% of people use mobile to access Social media (Pun, 2013). Institutions of higher education can leverage on the growth of mobile devices (smartphones, phablets, and tablets) to support learning activities (mobile learning / m-learning) and to increase student engagement. Herrington, Herrington, Mantei, Olney, and Ferry (2009) claimed that the use of mobile technologies for learning activities (m-learning) can be a powerful learning tool in higher education. In terms of drawing the connection between social media and mobile learning, Herrington, Herrington, and Olney (2012, p.1) commented that *"Web 2.0 and social media now facilitate the ready implementation of mobile devices into higher education".*

Blackboard (2011), a global leader in education technology has also identified personalized learning as the learning in the 21st Century, and strongly believed it could be achieved through the use of mobile devices plus social media.

Mayra Villar (2013, p.1) who is a freelance eLearning / m-Learning consultant and instructional designer also commented:

> *Current social, active, and distributed ways of learning demand new approaches. Social interactions and uniquely mobile activities should be integrated into educational practices since they are part of learners' lives and because these activities can foster a better understanding of the world around the learners*.

### 2.2.2 Growth of social media varieties and potential uses in educational environment

In the article by Simon Kemp (2014), who focused on the trend of social, digital and mobile in Asia, has reported that the changes to the emerging technologies landscape are evolving every day, and therefore, keeping up with all these changes can be quite challenging. He highlighted that as of December 2013, social channels have been showing strong growth, with about 135 million new users adding to the top social networks. He also commented on the following:

> *It also appears that social media is now an engrained part of the lives of people across different demographic groups. This increased ubiquity may result in some changes to the specific demographic bases of individual platforms, but even if people's habits are changing, it appears that people are moving from one social platform to another, rather than deserting social media in its entirety.* (p. 2)

There has been a great deal of research reported that has shown the rapid increase of users of social media applications. Some statistics of popular social media platforms are as follow:

- Facebook reported that there are currently 890 million daily active users on average and 745 million mobile daily active users on average as for December 2014 (Facebook, 2015).

- Twitter reported there are currently 288 million monthly active users and 500 million Tweets are sent per day (Twitter, 2015).

Bennett (2014), reporting on statistics or social media use, as of June 2014 has stated.

- Google+ has more than 1.6 Billion users, and 540 million monthly active users.
- Instagram has 200 million monthly active users, and 20 Billion plus photos has been shared on Instagram.
- Pinterest has more than 70 Million users, and 40 million monthly active users.
- SnapChat has more than 60 million users, and 30 million monthly active users.
- LinkedIn has 300 million users and 187 million monthly active users.

Cara Pring, a social media specialist, created a blog known as The Social Skinny, in which she writes about the latest news about social media. In her article *"100 more social media statistics for 2012"* dated 13th Feb 2012, she included the general social media statistics as summarized below (Clara Pring, 2012a):

- On average in one year, we will share 415 pieces of content on Facebook, we'll spend an average of about 23 minutes a day on Twitter, tweeting a total of around 15,795 tweets, we'll check in 563 times on Foursquare, upload 196 hours of video on YouTube, and send countless emails.
- Social networking is still the fastest-growing active social media behaviour online, increasing from 36% of global Internet users to 59% managing their profile on a monthly basis by the end of 2011.
- This is followed by updating a microblog (example: Twitter), which increased from 13% to 24%, and uploading video which increased from 21% to 27%. Monthly 'forum' contribution declined significantly from 38% to 32%, while blog-writing stagnated at 27%.
- There are now over 2.8 billion social media profiles, representing around half of all internet users worldwide.
- There are 70 million WordPress blogs worldwide.
- There are 39 million Tumblr blogs worldwide.
- 4 out of 5 internet users visit social networks and blogs.

In one of her more recent articles entitled "100 Social Media, Mobile and Internet Statistics for 2012" dated 21st March 2012, she provided the statistics as summarised below (Clara Pring, 2012b, P.2):

- 66 percent of online adults are connected to one or more social media platforms
- 50 percent of social media users say they check in to their favorite networks first thing in the morning
- The number of smartphones shipments is expected to be almost one billion in 2015
- Smartphone sales (globally) are expected to increase by 25% from 472 million in 2011 to 630 million in 2012
- In one day on the Internet:
    - Enough information is consumed to fill 168 million DVDs

- 294 billion emails are sent
- 2 million blog posts are written (enough posts to fill TIME magazine for 770 million years)
- 172 million people visit Facebook
- 40 million visit Twitter
- 22 million visit LinkedIn
- 20 million visit Google+
- 17 million visit Pinterest
- 4.7 billion minutes are spent on Facebook
- 532 million statuses are updated
- 250 million photos are uploaded
- 22 million hours of TV and movies are watched on Netflix
- 864,000 hours of video are uploaded to YouTube
- More than 35 million apps are downloaded
- More iPhones are sold than people are born

This data shows that there is wide acceptance of the use of Social Media applications and this acceptance is increasing day by day. Institutions of higher education have the opportunity to take advantage of this phenomena by integrating these technologies into curriculum to not only give students a better learning experience but also to make use of these multimodal tools to support the learning process.

### 2.2.3. The need for Modern Educational Practice

Social media is not just popular among the younger generations. There is an increase in the use of social media for businesses such as the fashion industry, marketing and retailing, and others as they are tapping into the popularity of the use of social media applications to reach out to their customers. As cited in the article written by Clara Pring (2012b, 2012c), the statistics of social media use for businesses in 2012, as summarized below, indicated significant business opportunities being generated:

- 65% of the world's top companies have an active Twitter profile.
- 90% of marketers use social media channels for business, with 93% of these rating social tools as "important".
- 43% of marketers have noticed an improvement in sales due to social campaigns.
- 91% of experienced social marketers see improved website traffic due to social media campaigns and 79% are generating more quality leads.
- 58% of Fortune 500 companies have an active corporate Facebook account, 62% have an active corporate Twitter account.
- 50% of people follow brands in social media.
- 75% of companies now use Twitter as a marketing channel.
- 38% of CEOs label social media a high priority, and 57% of businesses plan to hike their social media spend in 2012.

In the 2014 Statistics and Trends for Businesses on Social Media, Marketing TechBlog (2014) also reported that both small and large businesses started realizing the impact and influence of social media on their businesses and many have already created an online presence in social media as part of their overall marketing strategy. Following are the summaries of the statistics of social media use for businesses in 2014 (Marketing TechBlog, 2014):

- Social Networking is the top online activity in the US, with the average American spending 37 minutes per day.
- 46% of web users look towards social media when making a purchase.
- 70% of business-to-consumer markets have acquired customers through Facebook.
- 67% of Twitter users are far more likely to buy from the brands they follow on Twitter, and 37% of them will purchase from the brand they follow.

- 90% of US online specialty retailers use Pinterest, up from 81% in 2012.

For all students in higher education this data supports the notion that having knowledge in social media or digital skills will add value to their credentials for employability. Higher education institutions have an opportunity to come out with creative and innovative teaching and learning strategies that expose students to the use of these tools not only in the context of learning, but also in the development of current curricula for industry ready graduates.

Many countries are also moving towards developing knowledge societies. In simple terms, a knowledge society is defined as a society of shared knowledge (UNESCO, 2005). In this knowledge era, the key strategic resource necessary for the prosperity of the country is the knowledge itself, which comes from the educated people and their ideas (Bloch, 1988). As such, higher education institutions will play increasingly important roles in educating the younger generation of students in terms of creating, transferring, and applying knowledge, as well as the need for lifelong learning. Higher education institutions generally play a pivotal role in shaping students skills and knowledge. Most students in higher education institutions are from the digital native generation in which their exposure to technologies is not a debate. This generation of students is the first to have access to such a broad range of new technologies developed in the market with the potential to make use of these technologies for almost unlimited information and knowledge generation. For example, most students in universities now own at least one of the following: a computer / laptop, smart phone, tablet, IPod, mp3 player, et cetera. With the combination of these technologies and the rapidly growing social media applications, the exposure of these students to the global information society compared to their previous generation is far more extensive. According to McLoughlin and Lee (2008), there are four important skill sets that help students to be successful in the knowledge economy. The four skill sets are creation, inquiry, critique, and networking. These four skills sets could be attained and empowered by the social media tools and applications.

In the study conducted by Johnston, Duff and Quinn (2009), they found that first year students who enter university can find that university is a complex and confusing place. *'They need encouragement to engage with the social, institutional and academic cogs which operate together to drive universities and teaching and learning'* (p.27). They cited the work reported by Kuh (2007, P.3) who argued that there are five key elements which are essential to determine student

persistence and success at university. They are academic challenge, active and collaborative learning, student faculty interaction, enriching educational experiences and supportive campus environment. Obviously, all these elements can be supported through the use of social media software in the university environment.

### 2.2.4. Change of learning preference for the Digital Natives

The continuous growth and expansion of the World Wide Web, the move internationally by many countries towards knowledge economies, the need for globalization and the advancement of new technologies are all factors that have led to the need to reconsider the current pedagogies adopted for teaching and learning in higher education. The introduction of Web 2.0 and its applications, smartphones, mobile devices, and broadband/wireless services at lower and affordable prices have greatly impacted the teaching and learning environment in the digital era. The traditional learning theories (Behaviorism, Cognitivism, Constructivism and Social Constructivism) which were heavily referred to for the past decades were developed well before the advancement of technologies. Even Social Constructivism learning theory, which has been popularly adopted by higher education institutions across the globe, might not be sufficient to explain the learning process of the students in this digital era. Because of their exposure to various emerging technologies and the vast amount of information which they could access from anywhere and anytime, the role of higher education institutions now should be to focus on helping students more to re-configure their knowledge rather than producing the knowledge. As such, there is a need to innovate current educational practices and explore new learning paradigms that could address the learning needs for the 21st Century (Brown, 2006). It has been argued that there needs to be an expansion of current theories to support the learning approaches of Generation-Y. A new learning theory, known as Connectivism by George Siemen (2005), has been proposed to suit the teaching and learning needs for the digital era.

Connectivism has been acknowledged as a learning paradigm for the digital age. This theory has evolved from the ideas on “deschooling” presented by Ivan Illich (1970). Illich (1970, p.1) argued that:

> *A good educational system should have three purposes: it should provide all who want to learn with access to available resources at any time in their lives; empower all who want to*

*share what they know to find those who want to learn it from them; and finally, furnish all who want to present an issue to the public with the opportunity to make their challenge known.*

Connectivism (Siemen, 2005) is a learning theory based on the concept that learners form their own network and connections. They actively participate in the knowledge generation by constant feedback into the network which forms the cycle of knowledge development. Siemens (2005, p.7) lists eight major principles of connectivism:

i. Learning and knowledge rests in diversity of opinions;

ii. Learning is a process of connecting specialized nodes or information sources;

iii. Learning may reside in non-human appliances;

iv. The capacity to know more is more critical than what is currently known;

v. Nurturing and maintaining connections is needed to facilitate continual learning;

vi. The ability to see connections between fields, ideas and concepts is a core skill;

vii. Currency (accurate, up-to-date knowledge) is the intent of all connectivisit learning activities;

viii. Decision making is in itself a learning process; choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality while there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

According to Siemens (2004, p. 6), *"connectivism presents a model of learning that acknowledges the tectonic shifts in society where learning is no longer an internal, individualistic activity. How people work and function is altered when new tools are utilized."*

Boitshwarelo (2011, p.2) in his paper *"Proposing an Integrated Research Framework for Connectivist: Utilising Theoretical Synergies"* has characterized connectivism in terms of its key pedagogical features from various literatures including Siemens (2005), Downes (2005), and Kop and Hill (2008). The key features are as follow:

1. The central idea in connectivism is that of learners connecting to a learning community and benefiting from it while also feeding in information. The learning community is a group of people learning together through continuous dialogue because of their similar interests.
2. The community is viewed as a node which is part of a wider network of nodes. The networks, which are diverse but connected, support autonomous, diverse, and creative knowledge development.
3. Knowledge is viewed as not only residing in the mind of an individual nor in one location but as being distributed across an information network or multiple individuals. Thus learning and knowledge creation are dependent on a diversity of views and opinions and on access to different information streams or hubs.
4. Information is constantly changing and there is a need to continuously evaluate the validity and accuracy of knowledge in light of the new information.
5. There is an inter-disciplinary connection in the knowledge creation processes particularly in the Internet environment with its dispersed nature of information.

In Connectivism, a network is formed through the interaction of nodes. A node is a connection point to a larger network and the connection of many nodes make up a learning community (Giesbrecht, 2007). Barabasi (2002) in Siemens (2004) states that nodes are always competing for connections as the links represent survival in an interconnected world. According to Siemens (2006), learning is a process of creating networks and it could be achieved through internal and external networks. Internal network is within an individual in which the internal structure helps an individual to create patterns of understanding. On the other hand, external network is aimed to connect new knowledge. It is formed by the connection of different nodes in the network, in which the nodes can comprise of people, organizations, systems, and many more. The external knowledge that they acquired will then be shared back on the network, and these information could be access by other nodes or learners which will then be used to generate new knowledge.

There are criticisms of Connectivism as a modern learning theory. Kerr (2006, para.5-7) has argued, Connectivism fails to qualify as a learning theory based on the three criteria as follow:

i. Connectivism does not contribute to a theory or learning reform, due to its use of “language and slogans that are sometimes ‘correct’ but are too generalized to guide new practice at the level of how learning actually happens”.
ii. Connectivism does “contribute to a general world outlook”.

iii. Connectivism “misrepresents the current state of established alternative learning theories such as constructivism, behaviorism and cognitivism, so this basis for a new theory is also dubious”.

Pløn Verhagen, Professor of Educational Design at the University of Twente commented that Connectivism might be relevant on a curricular level as it speaks to what people should learn and the skills they should develop, but it cannot be considered a learning theory as it does not explore the processes of how people learn (Verhagen, 2006).

Connectivism is still a relatively new theory that has not been rigorously tested or explored up to now. This study will attempt to explore the strength of the theory as one ‘lens’ to develop explanations of the finding.

Another learning theory which suits the teaching and learning needs of digital learners is the Community of Practice (COPs) proposed by Wenger (2002). Piktialis and Greenes (2008) define Gen-Y as a person who “values group and team learning, constructing understanding from many sources as opposed to a single authority” (p.10). Community of Practice (COPs) is hence a natural fit to motivate and enhance the learning of Gen-Y.

Communities of Practice (CoPs) is defined as “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (Wenger et al, 2002, p.4). Communities of Practice (CoPs) focus on collective learning in a shared domain of human endeavor. Wenger argues that the regular interactions in their respective communities will enable people to learn how to do something better.

In Communities of Practices: Learning, Meaning, and Identity, Wenger (1998, p. 3) define learning as a social phenomenon that is placed in the context of our lived experience and participation in the world. He attributed the ideas of Communities of Practices to Social Learning Theory in which learning is part of a more encompassing process which places individuals as active participants in the practice of social communities and constructing identities in relation to these communities. The four premises of social learning theory as defined by Wenger (1998, p.4) are:

1. We are social beings. Far from being trivially true, this fact is a central aspect of learning.
2. Knowledge is a matter of competence with respect to valued enterprises – such as singing in tune, discovering scientific facts, fixing machines, writing poetry, being convivial, and growing up as a boy or a girl, and so forth.
3. Knowing is a matter of participating in the pursuit of such enterprises, that is, of active engagement in the world.
4. Meaning – Our ability to experience the world and our engagement with it as meaningful – is ultimately what learning is to produce.

Wenger (1998) presented four important components of social learning theory. These were :

1. Meaning: a way of talking about our (changing) ability – individually and collectively – to experience our life and the world as meaningful.
2. Practice: a way of talking about the shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in action.
3. Community: a way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognizable as competence.
4. Identity: a way of talking about how learning changes who we are and creates person histories of becoming in the context of our communities (Wenger, 1998, p.5)

Wenger (1998) also added that these four components are deeply interconnected, mutually defining and need to be integrated to characterize social participation as a process of learning.

A theoretical position that is based on Connectivism and Communities of Practice (COPs) will be taken for this study to support the explanation of the research results.

This focus on pervasion of technology into our lives is now being characterised, for students, in terms of technology contexts. There are many terms and terminologies that are used to describe the younger generations who belong to this digital era. According to Prensky (2001a), Digital Natives are students who are born after 1980. Other popular terms include Net Generation (Tapscott, 1998), Millennial (Oblinger and Oblinger, 2005), Homo Zappiens (Veen and Vrakking, 2007), Generation M (Ziegler, 2007), Clickerati (Harel-

Caperton, 2003), Screenagers (Rushkof, 2006), and Generation-Y (Weiler, 2005). The latest edition to the term used to describe students in this digital generation is iGeneration by Larry Rosen (2010). The iGeneration is characterised by their exposure to the Internet, iPod, iTouch, iPhone, iPad, iMac, or generally, iEverything (any products related to Apple). Rosen (2010) identifies several distinct traits of the emerging iGeneration summarised below:

i. Introduction to technology, literally at birth
ii. Constants media diet
iii. Adeptness at multitasking
iv. Fervor for communication technologies
v. Love of virtual social worlds and anything internet-related
vi. Ability to use technology to create a vast array of "content" (for example web pages, videos, art, et cetera)
vii. Unique learning styles
viii. Unique personalities

Students belonging to this generation have been exposed to all sorts of modern technologies and the Internet since birth. Thus, their learning interactions and communications are very much different to earlier generations. They build their knowledge through direct and indirect / informal learning such as collaboration work and activities with their peers outside the class rather than being dependent on classroom experiences only. Because of their exposure to the emerging technologies and their easy access to vast amount of information, this generation of students will have different learning preferences.

> *Growing up with digital technologies has a profound effect on all young people. It is now clear that as a result of this ubiquitous environment and the sheer volume of their interaction with it, today's students think and process information fundamentally differently from their predecessors.* (Prensky, 2001a, p.1)

Tapscott (2008) stated that *"in education the net generations are forcing a change in the model of pedagogy, from a teacher-focused approach based on instruction to a student-focused model based on collaboration*" (p. 11).

Francesc Pedro (2009) added that the students in the millennium generation are not only accessing, managing, creating and sharing knowledge in dramatically different ways as their

teachers do, but they also have radically new expectations regarding what a quality learning experience should be. Thus, they are one of the important drivers for education change in higher education.

According to Mcloughlin and Lee (2008), learners today are 'prosumers', that is, they are both the producer and consumer of knowledge, ideas and artifacts. They also added that there are a number of important skills sets which are required in the new knowledge economy; creation, inquiry, critique and networking. Students are no longer passive consumers of information. They have a great deal of control of the online content and become active contributors or producers of knowledge (Klamma, Cao and Spaniol, 2007).

Johnston et al (2009) go on to argue that, there are changing needs and communication preferences of the students today due to the advancement of technologies in providing information and resources online.

Paaovla and Hakkarainen (2005) also claim that *"learning is an intensely social activity, where ideas are generated in contact with others in the community through mutual exchange, contribution and sharing of ideas"*.

Jukes, McCain, and Crocket (2010) have also identified eight learning preferences of digital learners. They say that digital learners prefer:

i. Receiving information quickly from multiple multimedia sources
ii. Parallel processing and multitasking
iii. Processing pictures, sounds, color, and video before text
iv. Random access to hyperlinked multimedia information
v. Network simultaneously with many others
vi. Learning "Just In Time"
vii. Instant gratification with immediate and deferred rewards
viii. Learning that is relevant, active, instantly useful, and fun.

Diana and James Oblinger described Generation-Y as follows: "*As long as they've been alive, the world has been a connected place, and more than any preceding generation they have seized on the potential of networked media" (Oblinger and Oblinger, 2005, p. 25).*

The construct of “digital natives”, despite the fact that it is repeated often in the popular press, is based on limited and perhaps flawed data. The digital native’s concept is not well supported by more recent research (Brown and Czerniewicz, 2010; Jones and Czerniewicz, 2010; Kirschner and Van Merrienboer, 2013; Oh and Reeves, 2014).

Higher education institutions need to recognize that students in this generation have their own unique characteristics and learning preferences. Academic staff and educators need to try to understand the learning needs of these students and make use of the available technologies and tools to create an exciting learning experience for them. Higher education institutions need to find new and creative ways to engage these students in their learning.

### 2.2.5. Increase use of Social Media for Education (Examples)

In the survey recorded and reported by Seaman and Tinti-Kane (2013) on the use of Social Media for teaching and learning by faculty in the United States, it was reported 41% of faculty members claimed they have used it social media for teaching in classes. A comparison by Pearson (2013) between 2012 and 2013 data showed an increase in the use of social media for teaching by faculty. We are now seeing a wide range of institutions making use of social media for education purposes. *Table 2.1* lists some examples of social media used in higher education contexts and indicates that most of the academics who shared their experiences in using social media for teaching and learning are from United States. Very few studies have been published about universities in the Asia-Pacific region (only 1 from Hong Kong, 1 from Singapore, and 1 from Malaysia as of July 2012). Based on *Table 2.1* below, generally in Asia Pacific countries, most academics are using social media as informal collaboration tools, mainly for social networking and communication purposes, rather than using them as part of the teaching and learning process. At this point of time, very few reports are available that explain the formal use of social media for higher education in Asia Pacific countries like Malaysia, Hong Kong, Singapore, Vietnam, and many more. In order to develop an understanding of where South East Asia, and in particular Malaysia is placed with taking advantage of the opportunities social media offer, it will be essential to understand the current use of social media and student and academic perception of this use . This study will collect data to address this lack of information in Malaysia.

*Table 2.1: Examples of Social Media Usage in Higher Education Context (As of July 2012)*

| No. | Professor / University | Subject / Module Taught | Types of Social Media | Purpose / Usage | Source |
|---|---|---|---|---|---|
| 1. | Professor Michael Netzely Singapore Management University | Internet Communication Subject | Blogger, WordPress, Twitter, Tumbler, Facebook | Help students learn through peer-learning, interview and web research | Russell (2011) |
| | | | | Students created "Digital Media Asia Wiki" | |
| 2.. | Dr. Sara C Davis, Associate Dean College of Charleston | N/A | Blog | Out of Class discussion and posting additional materials | Hart (2009) |
| | | | YouTube | To start classes and gain students attention. | |
| | | | VoiceThread | For students to do collaborative presentation (supports docs, videos, audio and photos) | |
| | | | Google Docs | For work submission, survey, brainstorming, and grade book simulation, class notes. | |
| | | | Ning | For announcement, project submission, contacting students, class chart / discussions | |
| | | | igoogle | Uses to keep track of RSS feeds, Gmail, and other teacher information. | |
| 3. | Professor Dr. Daniel Lemire University of Quebec, Montreal | N/A | YouTube | Integrate talk by top-notch researcher into his online course. | |
| 4. | Dr. David J Hardman, Principal Lecturer in the School of Psychology, London Metropolitan University, UK | Judgment and Decision Making | Blogger | Get each student to set-up blogs to record their thoughts about the material they cover in class. | |
| | | | | Record Research updates for his textbook | |

| No. | Professor / University | Subject / Module Taught | Types of Social Media | Purpose / Usage | Source |
|---|---|---|---|---|---|
| 5. | Associate Professor Leigh Zeitz, University of Northern Iowa | N/A | Wikispaces | To provide interactive site for students. Students can contribute to the site. | Hart (2009) |
| 6. | Dr. John Curry, Assistant Professor of Educational Technology, Oklahoma State University | N/A | Facebook | To stay in touch with his students. | |
| 7. | Professor Terry A Morris, Computer Information Systems, Harper College | Web Development | YouTube | To introduce / wrap-up a topic / discussions. Students watch video and comment on it. | |
| 8. | Dr. Alan Cann, Senior Lecturer, School of Biological Sciences, University of Leicester | Virology | Social Bookmarking (De.li.cious) | To engage with students and for students feedback | SpotOn (2012) |
| | | IT and Numeracy skills for Biologists. | Social citation (CiteULike) | | |
| | | | Wiki (Wet Paint and Wikispaces) | | |
| | | | Google+ | | |
| 9. | Associate Professor Kelli Burns, University of South Florida | Public Relations / Mass Communication Subjects | Twitter | Require each student to have a twitter account. | Miller (2011) |
| | | | | To understand student's interest, give mini-study session before exam, answering questions about assignments. | |
| 10. | Associate Professor Jeff Jarvis,City University of New York | Journalism | Twitter, FriendFeed, Scooper, and SearchMerge | Teaching students to use social media for newsgathering. | Bass (2009) |
| 11. | Kathleen Culver (kbculver@wis.edu) University of Wisconsin | Journalism | CoveritLive (tool that can be embedded into a blog / website) | Allow students to comment on proceedings, link to appropriate contents and ask questions. | |
| 12. | Riasat Amin Lecturer, International Islamic University, Malaysi | Macroeconomics | Facebook | To communicate with his students. | New Straits Times (2012) |

| No. | Professor / University | Subject / Module Taught | Types of Social Media | Purpose / Usage | Source |
|---|---|---|---|---|---|
| 13. | Professor Sugato Chakravarty, Purdue University | Personal Finance | Homegrown software for real-time collaboration (HotSeat) | Students submitted comments / questions using their mobile devices, which will then be sent to HotSeat to the Professor / Guest Speaker (Real time). | Evans (2009) |
| | | | HotSeat can be accessed on the Web or through Twitter, Facebook, and Mobile devices. | Grab students' attention, stimulate discussion and encourage silent / shy students to participate in class. | |
| 14. | Dr. Enza Antenos-Conforti Montclair State University | Italian | Twitter | Getting students to tweet in and out of classroom to improve in writing and speaking Italica. | Antenos-Conforti (2012) |
| 15. | Dr. Monica Rankin, University of Texas | U.S. History II | Twitter | Engage students in participation and discussion via Twitter backchannel. | Rankin (n.d.) |
| | | | | Facilitating discussions | |
| 16. | Associate Professor Norm Vaughan, Faculty of Teaching and Learning at Mount Royal University | N/A | Social Bookmarking | Encourages students to share, assess, and comment on one another's research. | Academic Impressions (2012) |
| | | | Googledocs | Collaborative work outside of class. | |
| | | | Wikis/Wikipedia | Collaborative writing tools, critical readers, active contributor to public knowledge. | |
| | | | YouTube | Publish and share online videos. | |
| 17. | Associate Professor Cindy Royal, School of Journalism and Mass Communication, Texas State University | Media Courses | Twitter, Facebook, Blog, Ning, Flickr, Linkedin | Integrated real-life social media examples and practices into her class. | Royal (2014) |
| .18. | Hong Kong University of Science and Technology | General | Video Mobile Social network | Open-up Social Media Laboratory, specializing in social media culture and technology. | HKUST (2012) |
| 19. | University of East London | General | Homegrown social networking platform | Developed ELGG (single platform) that include Blogs, wikis, videos, podcasts, RSS feeds, social networking tools, discussion forums, bookmarking. | Hart (2009) |
| | | | | Enable students to collaborate, share and communicate. | |

| No. | Professor / University | Subject / Module Taught | Types of Social Media | Purpose / Usage | Source |
|---|---|---|---|---|---|
| 20. | Stanford University | General | Facebook | Use Facebook to showcase Faculty and students projects. | Bass (2009) |
| | | | | Can be used to search for news and research done in Stanford. | |
| | | | | Has a Facebook office hour where faculty will be available to answer questions. | |
| 21. | University of Sheffield | General | Homegrown social networking platform | Uspace (BlueCloud) | Cope (2009) |
| | | | | University-wide social networking platform to support collaboration in learning, teaching, research and admin across the university | |

Refer to *Appendix B* for more examples of the social media initiatives covered in the JISC project conducted by Dr. Shailey Minocha and her research team from 2008 to 2009 (JISC, 2009), and examples of social media initiatives in Australia Universities by McLoughlin (2008c).

## 2.3 BENEFITS OF SOCIAL MEDIA

Adopting social media applications in higher education institutions has the potential to bring significant benefits to students, educators and institutions. A wide range of authors have proposed an extensive list of benefits in using social media as part of educational settings. For example, some of the benefits include the use of social media to help to develop and build relationships among students and educators. For example, educators teaching large groups of students in a class could make use of the social media applications such as twitter, discussion forum or social networking website to reach out to students whom they might not be able to pay attention to during the class time. They can also use social media applications to reach out to students who are too shy to ask questions in the class. For example, educators might notice some weak or shy students in the class, and probing these students to ask questions during the class time is definitely not going to work. Thus, educators can make use of twitter or discussion forums to post some questions related to the subject and guide students accordingly.

Informal learning has become an important element of new learning environment (Ebner, Lienhardt, Rohs and Meyer (2010). There are many recent literatures that discussed the benefits of informal learning and how social media technologies are associated to it (Yakin, 2013; Dabbagh and Kitsantas, 2012; Clough, 2010; Lucas and Moreira, 2009). Siemens (2004, p.1) described informal learning as one of the significant trend in learning.

> *Informal learning is a significant aspect of our learning experience. Formal education no longer comprises the majority of our learning. Learning now occurs in a variety of ways – through communities of practice, personal networks, and through completion of work-related tasks.*

Conford (1999), cited in Bartlett-Bragg (2006, p.2) defined informal learning as:

> *A core notion of adult learning principles can be viewed as a subset of the social learning concepts, where the recognition that learning occurs in a social context through interactions with others and subsequent learning is influenced by observing and modeling the patterns of behavior.*

Social media is informal by nature. It emphasizes building connections and interactions, information or resources sharing, collaborative activities and processes, participation and facilitation of creativity (Luca and Moreira, 2009; Clough, 2010). Social media technologies potentially help students to improve their learning by engaging them in informal learning activities and processes such as interaction with each other, sharing of learning experiences through social networking activities, participation in collaborative activities online, observation of peer's performances and contributions, and self-analysis and reflections.

Social media provides a platform for students to have many-to-many interactions, which enable new forms of community-based learning. It also provides a platform for students to engage, interact and collaborate with their peers to enhance their learning experiences. Cluett and Skene (2007) add that social software can be used to encourage critical thinking, team work, creativity and self-paced learning among students, and these skills in turn, help students to develop deep learning approaches. Bartlett-Brag (2006) argues that use of these emerging technologies can stimulate the capture of tacit knowledge from the informal learning situations.

There are many researchers who are focusing on the benefits of social media in learning settings (Minocha S, Schroeder A, Schneidert C, 2010, JISC, 2009b, and Minocha S, 2009c). In the study funded by JISC in 2008 to 2009, Dr. Shailey Minocha and her research team carried out an investigation of the effective use of social software by higher education institutions in the UK to support student learning and engagement (JISC, 2009). There were 26 universities in United Kingdom that voluntarily participated in this study. The benefits and challenges of implementing social media for higher education based on the experiences of these 26 universities in UK were recorded. Minocha (2009) also discussed the benefits of social media in three different aspects; to the students, the educators, and the organization or institutions.

**i. Students**

Collaborative activities supported by social media will help students to learn better as students are learning from each other through commenting on each other's work, obtaining constructive feedbacks from both the educators and peers, self-reflecting on their learning activities, and constantly staying connected with their peers and educators. Students are also able to post problems pertaining to their studies and receive support and advice from their peers and educators. By looking at the work done and published by their peers through social media tools, it also inspires a student to work harder and plan for their own contributions (if it involves group activities). For students who are facing communication problems and have difficulty communicating their needs in a face-to-face environment, social media tools might be useful for them to keep in touch and get help from the peers and educators. The use of social media tools enables students to continue with the learning inside and outside the classroom, at anytime and anyplace.

As discussed in Section 2.2.3, there is an increase in the use of social media for business and industry, and the need for modern educational practices that could support this trend. Exposing students to the various tools of social media in their studies will help prepare them to cope and use these technologies in their workplace upon completion of their studies. Apart from this, through the use of social media tools, students also will gain additional skills such as team-work, communication skills, independent skills, social skills, and collaboration skills, which will eventually transfer to the work environment. Students are also able to develop an e-portfolio of what they have done in their studies through the use of blogs and wikis for their future employment. Lastly, tools like social tagging and bookmarking help students to collate a pool of resources from different sources available that will eventually help them in completing their assignments or tasks.

### ii. Educators

Walking into a classroom today, educators could see more than 50% of the students are mingling with their smart-phones, tables, laptops and other digital devices. Getting students to put aside their gadgets and concentrate in the class is a real challenge to most educators. Therefore, many educators are now willing to embark on the use of social media software for their courses in order to enhance students' learning experiences. Like the old saying quoted, "If you can't beat them, join them". Using social media tools for teaching and learning enables educators to teach interactively instead of broadcasting the content to the students in class. For example, educators could use Twitter to encourage students to follow posts of topics related to the subject content. Twitter could also be used as a platform for students to raise questions pertaining to the subject content. Getting students involved in the social media environment enables educators to monitor their contributions to group work and activities, which helps to cut down on the number of free-riders for group work. Educators are also able to track students' academic performances from their participation and contribution in the social activities. Early intervention on improving their academic performance could be taken and this helps in improving the overall performance of the subject.

### iii. Organization or Institutions of higher education

In recent years, higher education institutions have become very competitive, fighting among each other for new student enrolments. This is especially true in the Malaysian context as there are growing numbers of private and public universities and colleges in Malaysia. As of 2011, there were 20 public universities, 53 private universities and university colleges, 6 foreign university branch campuses; 403 active private colleges, 30 polytechnics and 73 public community colleges in Malaysia that offer affordable tertiary qualification education. (Studymalaysia.com, 2014). Being able to adopt and integrate up-to-date technologies into the courses or programs will surely boost the interest and perception of students towards a particular university, as it is deemed to be following the trend of the market. Apart from that, based on the research by Minocha (2009c), it was noted that social media helps to increase student retention as weaker students were noticed and picked up through the formal and informal activities carried out with social media software. Educators can also use social media software as a tool to monitor and conduct early intervention of student academic performance. This will help to reduce the attrition rate especially for new students in year 1 of their studies. Universities that had

adopted social media also shared that they were more easily able to form alumni communities as students who had previously taken similar courses and worked collaboratively, continued to keep in touch with each other. Being able to retain the alumni network is a value-add to an institution as the alumni will continue to share their experiences and keep up to date with all the universities news and activities, which will help in indirect recruitment of new students.

## 2.4 CHANGES IN EDUCATOR'S ROLES

Minocha, Schroeder and Schneider (2011) have reported that educators play a vital role in determining the success of social media implementation in higher education institutions. Educators play a very important role in ensuring the efficient and sustainable usage of the social media applications but there is very little research that is focused on this area. Minocha et al. (2011) argued that most of the social media initiatives in higher education institutions are educator's own initiatives in integrating the tools into the curriculum instead of Institution wide initiatives. The moment the educators decided to integrate social media in their course, they themselves have to change to accommodate this initiative. The changes included the need to take on the facilitator's role to initiate and guide the knowledge construction process among their students (Choy and Ng, 2007), taking on the role of an evaluator to decide which technologies to select, set up and maintain the chosen applications for the students (McGee and Diaz, 2007), as a course designers who will carefully select and match the pedagogy and the tools (JISC, 2009a), and as an online role model for the students by demonstrating appropriate use of the tools to facilitate the interactions (Hurlburt, 2008).

Minocha et al (2011) grouped educators' roles into 4 aspects: the pedagogical, social, managerial and technical. For the pedagogical aspect, educators need to design interactive activities that will facilitate learning. Educators are also required to monitor student participation in those interactive activities, performing critical reflections on the learning, getting students to do self-reflection on their learning outcomes, and to provide constructive feedback to the students. As for the social aspect, educators need to facilitate the creation and growth of the social community and networks by setting clear expectations for students' participations and interactions. For the managerial aspect, the educators are required to co-ordinate and manage the social media communities by

making sure that all the procedural, organizational and administrative tasks to set up the learning communities are in place. Lastly, for the technical aspect, educators need to oversee and provide technical support to students.

It is therefore critical for higher education institutions to bear in mind that the initiative to integrate social media into teaching and learning should not be forced on educators but should be considered as an institution-wide initiative as it doesn't only involve the vast number of social media applications available that could be easily tapped, but also needs to accommodate the changing role of educators' in a broader context. In the end, educators will still be the driving force for determining the success of implementation.

## 2.5 CHALLENGES OF IMPLEMENTING SOCIAL MEDIA IN HIGHER EDUCATION INSTITUTIONS

The decision to integrate social media into higher education courses or programs is not straight forward. There are many uncertainties and challenges that need to be considered in all aspects of the educators, students and the institutions actions (Lim, Agostinho, Harper and Chicharo, 2013; Lim, Harper and Chicharo, 2014; Patrut, Patrut and Cmeciu, 2013; Selwyn, 2012; Minocha, Schroeder and Schneider, 2010; Hung and Yuen, 2010).

### 2.5.1. Educators Perspectives

**Range and choices of social media software:** There are growing numbers of social media applications and there are many choices available for educators to consider. The challenge faced by educators is to identify which tool is suitable to be used that could map the learning outcomes for the courses or programs perfectly. The decision on a particular choice of social software is not easy as educators need to review whether the chosen tools will be able to enhance students' learning experiences.

**Technological issues:** There are several technical and technological issues that need to be taken into consideration when embarking on social media initiatives. These include the institutional control of its network, the network speed, the accessibility to specific web applications, the reliability and availability of the web applications, and the restrictions on uploading or downloading of certain type of files. There are many universities or higher education institutions that have set-up firewalls that limit the access of students and staff to a particular websites or online applications. The rationale behind this is to ensure that both students and staff do not abuse the network traffic by logging in to restricted websites for non-academic purposes. For example, some universities might block students from accessing YouTube, or even social networking websites such as Facebook. In addition, certain universities also restrict the sharing (uploading / downloading) of multimedia content such as video, photos, audio, et cetera. within the university boundaries. All these will limit the flexibility and choice of social media application selection. The reliability and availability of social media applications is also highly dependent on the stability of the network and websites. The unavailability of the network and websites will deter successful participation for the collaborative activities.

**Workload Issues:** As discussed in Section 2.3, educators need to be prepared for a change in their roles when they decide to embark on social media initiatives. Pearson (2013) reported that faculty members felt the used of social media had increased their level of stress, and number of hours worked. This is mainly because students are now able to reach out to their lecturers outside of regular classes and after office hours, and also expect their lecturers to respond to them immediately. Preparing for the use of social media technologies actually requires time and additional effort as educators need to make sure that they have chosen the right tools to be used, set up the courses, map planned activities against the learning outcomes, and monitor student needs, in participation, performance and contribution in collaborative activities. Educators also need to spend time in exploring the functionality of social media applications and learn how they can be used effectively before deciding on any specific tools. These are all the additional workload issues for educators on top of their current preparation and teaching duties for the course. As most social media initiatives depend on individual educators, they might not get much support from their higher education institution in terms of resources and technologies required to run the course.

**Nature of the social media applications:** Social media applications are not owned by any of the higher education institutions. They are hosted in the public domain in which the control of the tool is beyond an educator or institution's capability. For example, if a student's account is suspended by the social media software's administrator due to some violation of policy and rules in the usage of the software, or students are unable to recall their log-in details there is little an institution can do. Educators are also not able to assist in any technical related issue such as students having difficulty in uploading their collaborative works, or the content uploaded by students is missing. Since all social media tools are hosted in the Internet, educators might also be facing some issues pertaining to the reliability of the services provided. For example, if the Internet is down or the social media tools are undergoing maintenance service, student's collaborative activities will be disrupted. In addition, most of the existing social media applications are also not able to be integrated into the Institution's existing Learning Management System (LMS).

### 2.5.2 Student's Perspectives

**Lack of students' engagement and participations:** Not all students are comfortable with communicating and collaborating in an on-line environment. Some students might feel uncomfortable to comment about their peers' work as they do not want to offend them. In addition, sometimes there is also unequal participation in group activities in which some students participate actively while some contribute very little. Social media initiatives will not be successful without the full participation and engagement from all students as the main purpose is to get them to collaboratively work with one another in an informal learning context.

**Non constructive feedback:** The use of social media will only be successful if students get constructive feedback from their peers and educators. Sometimes, in the collaborative context, students choose to only comment on selected peers' work. This leads to some students getting more than a great deal of feedback while some receive none at all. In addition, for those passive students, they might feel that they are being forced to provide feedback or comments on their peer's work and they might just do it for the sake of getting contribution marks. This might lead to non-constructive feedback given to their peers. Because of this, students might be reserved and not trust their peer's feedback entirely.

**Reluctant to share:** Some students are not comfortable sharing their work in the public domain for their peers to comment on it. There are many reasons for this, for example, students are not confident in the work that they have done and therefore they worry that their peers will see it and give bad remarks for that. Apart from that, some bright students might also be reluctant to share as they worry that their hard work in getting the work done will be copied by their peers. The ownership of the piece of work contributed by more than one student might also be another barrier. Since the content is shared and contributed by more than one student, thus, the issue of who should own the work and how the final grade will be distributed is contentious.

**Invading their privacy**: Not all students are comfortable to befriend their educators in an online environment. They want their personal life to be separated from the academic life and do not wish to let their educators know what they are doing outside the classroom. They might feel that the educators are watching their every step and activities, and this could be seen as an invasion of their privacy.

**Learning of new tools:** Usually students are taking 4-5 subjects in a session. If all educators use different tools, students might have to learn about these tools and be familiar with their features and functions before they could start using it for their collaborative activities. Some tools might have steep learning curves and students find that it is an added burden to their current academic workload.

### 2.5.3 Institutions' Perspectives

**Organization's Image**: Some institutions are concerned with the use of social media tools for education as misbehavior of one student in the online environment might jeopardize the image of the organization. For example, if one disgruntled student posted negative remarks about the course, educators, programs or institution, the impact of this might be great as the content is viewable by other students or even the public (if the social media tools are publicly shared).

**Technology Support**: Institutions need to consider upgrading their networks and bandwidth as more students and educators will be sharing or transferring content through the network. Some institutions do not allow students to upload or download multimedia content such as video, audio, and many more. This will actually deter the collaborative activities. Institutions also need to make sure that technical staff are available to assist educators and students in case there are any issues pertaining to the networks that arise. Apart from that, institutions also need to consider the removal of firewalls for certain websites so that access is not blocked for the use of social media applications within the institution's environment.

## 2.6 CONCLUSION

Higher education in the 21st-Century is in the process of change. Students in this generation are heavily exposed to digital technologies and the Internet. The extensive use of the Internet and social media has the potential to offer new types of educational settings. The use of social media in higher education is essential as the use of these tools and technologies is part and parcel of student's lifestyles. Higher education institutions should take this opportunity to harness these technologies that are already integrated into students' daily lives, to design an innovative and creative education environment that will enhance and improve their learning experiences. Siemens (2007, para. 6) states:

> … our institutions need to change because of the increasing complexity of society and globalization. Schools and universities play a dual role: accommodating learner's method and mode of learning and transforming learners and preparing them to function in the world that is unfolding.

Research is showing that social media can be supportive of student learning, but there is limited knowledge about how it is being used and the outcomes of using it within educational settings. Most reported research about the use of social media initiatives and the benefits of use tend to be descriptive. They cover only the general overview, what tools are being used and what students feel about it. Most popularly used social media tools include Twitter, Blogs, Wikis, Flickr, Facebook and YouTube. Some of the potential benefits of using social media in higher education include enabling students to build social relationships, enhancing the communication between students

and educators outside the classroom, improved students' learning through collaborative activities, improving student's retention, et cetera. However, there are also some challenges that potentially will inhibit the social media initiatives. For example, an increase in the workload of the educators, suitability of the chosen tools for the course, lack of control over social media tools in the public domain, technological issues, student's active participation and engagement in collaborative activities, student's resistance to sharing, and many more. Additionally these types of social media initiatives will also have a great impact on the educator's roles in higher education.

Generally, social media offers some exciting new educational opportunities to higher education institutions. There is a wide range of social media use in educational settings now being reported, but many issues are still unexamined. For example, most researchers have focused on how a specific tool is being adopted for a specific subject and the responses from students. However, limited studies have focused on the educators' readiness, acceptance or refusal in integrating social media into their courses, the effectiveness of the tools and student outcomes for their learning.

This study will research the perceptions, acceptance, usage and access to social media by both students and academics in Informatics programs in Malaysia. The outcomes of this study will be used to develop a framework for implementing social media as supporting tools for teaching and learning and student engagement in higher education institutions in Malaysia.

# CHAPTER 3

# RESEARCH METHODOLOGY

This chapter provides an overview of the research purpose, research questions and the context of the study. It also covers the methodology used to conduct the study which includes the research design, data collection methods and data analysis that will be used to address the research questions.

## 3.1 OVERVIEW OF RESEARCH PURPOSE AND RESEARCH QUESTIONS

As set out in Chapter one, the general aim of this thesis is to examine the engagement of Informatics students and faculty members in the use of social media with their institution and for teaching and learning purposes. This research will focus on the perceptions, uses, and access to social media in higher education in the Malaysian context. To accomplish this aim, the thesis addresses the central research question of how Higher Education students, academics and institutions in Malaysia are engaging with Social Media Technologies (SMTs) within the context of Informatics Programs. This central research question is then addressed by focusing on each individual element, which included the student's aspects, the academic's aspects and the institution's aspects. This research will also explore the differences in the engagement of social media by Informatics and non-Informatics students and academics.

The following Specific Research Questions (SRQ) were developed based on the three focuses to address the central research question above. Sub-research questions were developed to further understand the engagement of each element.

SRQ 1. How are Higher Education students in Malaysia engaging with SMTs within their university experience?

SRQ 2. How are academics in Higher Education Institution in Malaysia using SMTs in teaching and learning, administration, governance and in their interaction with students?

SRQ 3. How are higher education institutions in Malaysia using SMTs?

The specific research questions are addressed through the descriptive statistical analysis from the questionnaires and interview data, as guided by the following sub-questions:

SRQ 1.1 How does this engagement manifest itself into students teaching and learning?

SRQ 1.2 How does this engagement manifest itself in the student's relationship with their institution?

SRQ 1.3 How do these students perceive these engagements?

SRQ 1.4 Does the engagement of Informatics students differ from other disciplines?

SRQ 2.1 What are academics belief about intentions and current use of SMTs?

SRQ 2.2 How does this align with students perceptions?

SRQ 2.3 Are there any differences with Informatics Academics?

SRQ 3.1 What are the current SMTs practices of HE Institutions?

SRQ 3.2 What are the initiatives, policies and infrastructures provided by the higher education institutions in Malaysia in supporting the use of social media in their institutions?

SRQ 3.3 How does this align with student and academic perceptions?

All the specific and sub research questions are used to guide the initial quantitative data collection which are comprised of multiple sets of anonymous online questionnaires for different categories of respondents: Informatics Students, Non Informatics Students, Informatics Academics, Non Informatics Academics, and Administrators of Higher Education Institutions in Malaysia. The aim of the quantitative data collection is to develop an understanding that represents a general overview of how Social Media Technologies (SMTs) are being used in Higher Education in Malaysia. The results of the analysis of this data are reported in Chapter 4. The initial data collection via questionnaires, further guided the qualitative data collection which includes interview sessions and observations of SMTs practices. The purpose of the qualitative data collection is to further understand the adoptions and practices of SMTs in Informatics Program in Malaysia Higher Education Institutions. The results of the analysis of qualitative data collected are reported in Chapter 5.

The subsequent sections of this chapter are organized in the following manner: Research Setting, Research Methodology, Research Design, and the Ethical Issues. The research setting discusses an overview of Malaysia education systems and the trends of Social Media Technologies in Malaysia. Next, the research methodology that guided this research is further discussed. The research design section provides detailed explanations on how the research questions are addressed, research phases, the data collection processes, identification of participants for both the quantitative and qualitative data collection, and the methods of data analysis. Lastly, this chapter will conclude by discussing how the ethical issues are addressed.

## 3.2 RESEARCH SETTING

### 3.2.1 Malaysia Higher Education

As of July 2014, Malaysia has a population of 30.07 million with a population growth rate of 1.47% annually (Index Mundi, 2014).

Malaysia Higher Education Institutions are governed by the Ministry of Higher Education (MOHE) which was set-up in 2004. MOHE oversees both the public and private higher education institutions (HEIs), community colleges, polytechnics and other government agencies involved in higher education activities such as the Malaysian Qualifications Agency, the National Higher Education Fund Corporation (Perbadanan Tabung Pendidikan Tinggi Nasional – PTPTN), the Tunku Abdul Rahman Foundation (Yayasan Tunku Abdul Rahman) and others. As of 2011, there were 20 public universities, 53 private universities and university colleges, 6 foreign university branch campuses; 403 active private colleges, 30 polytechnics and 73 public community colleges in Malaysia that offer affordable tertiary qualification education. (Studymalaysia.com, 2014)

> *The MOHE's mission is to create a higher education environment that will foster the development of academic and institutional excellence. It is in line with the vision of the government to make Malaysia a centre of educational excellence and to internationalize of Malaysian education.* (MOE, 2013, p. 1)

The Ministry of Higher Education also aims to

> *Build and create a higher education environment that is conducive for the development of a superior centre of knowledge and to generate individuals who are competent, innovative and of noble character to serve the needs of the nation and the world.* (MOE, 2013, p. 1)

In the preliminary report of the Malaysia Education Blueprint 2013-2025, Dato' Sri Mohd Najib bin Tun Haji Abdul Razak, the Prime Minister of Malaysia said that Education is a major contributor to the development of the social and economic capital. Thus, the government must ensure that the education system continues to progress in tandem so that Malaysia will continue to keep pace as a competitive global economy. He also added that Malaysia needs a transformation in its entire education system so that students develop skills needed for the 21st century. There is now a need to understand and improve the dynamics of the teaching and learning process (MOE, 2012).

## 3.2.2 Malaysia as an Education Hub

According to *Datuk Seri Idris Jusoh, the Malaysia's Second Education Minister, "*Malaysia is on track to becoming a regional education hub judging from the positive feedback in various countries which already have their students here" (The Star, 2014b). Malaysia has set up two education hubs that attract world-class international universities to set up their branch campuses in these two destinations. The two education hubs are located at Iskandar Educity in Johor State of Malaysia and the KL EduCity in Kuala Lumpur.

### 3.2.2.1 EduCity @ Iskandar

Iskandar Educity is part of the 243 hectar site of the Iskandar Malaysia, a new eco-city and trading zone with districts for tourism, health care and education. The EduCity itself encompasses an area of 305 acres and is expected to attract 16,000 students across various levels of education. Siti Hamsah, the deputy director general in the Ministry of Higher Education said "With EduCity, Malaysia will help produce a rich base of stimulating research, knowledge-led industry best practices and other cutting-edge skills for the new age and generation" (Jonathan Dyson, 2013). Foreign universities are operating on a long-term rental agreement for their teaching facilities, while the student accommodation and the sports complex will be centrally managed by the EduCity and these facilities will be shared by all the Institutions. The strategic location of Iskandar EduCity puts it in a strong position to become an education hub for the Asian region which is also aligned with one of the main objectives of the Ninth Malaysia Plan that is to promote Malaysia as a centre of educational excellence.

Three institutions have already begun full-time operations – Britain's Newcastle University, Medicine Malaysia (NUMed) and the University of Southampton's Malaysia Campus, which started in September 2012, as well as Marlborough College Malaysia, a branch of the British boarding school. Four other Institutions, which will be fully operating in Iskandar EduCity by 2015 are Netherlands Maritime Institute of Technology, Britain's University of Reading Malaysia Campus, and Raffles University Iskandar – a joint venture between Singapore's Raffles Education

Corporation Ltd and Education@Iskandar Sdn Bhd, and the new Raffles American School. It is expected that the EduCity will continue to attract more foreign Institutions especially from China and Japan to set up their branch campuses by the year 2017.

#### 3.2.2.2 Kuala Lumpur Education City (KLEC)

Kuala Lumpur Education City (KLEC) was launched in 2007 and will continue to develop over the next 15 to 20 years as Malaysia's international education hub. KLEC aims to house both international and local universities, as well as primary and secondary schools in its 500-acre KLEC Academic Park. The hub will offer education from University of Cambridge's Judge Business School, Epsom College, and Universiti Sains Malaysia Global Campus (and potentially other schools) to those in the region with an expected student population of nearly 30,000. KLEC developed a unique shared service model that promotes sharing of resources, expertise, knowledge and experience among institutions, while leveraging on the individual strengths of each individual institution. This model aims to develop the education hub as a showcase for globalizing education within the broader collaborative framework of an emerging, and dynamic global education network (etawau, 2014).

KLEC includes three main development projects – KLEC Academic Park (which includes the KLEC University Park, Medical Park and Research and Innovation Park), KLEC Incubation Campus and the KLEC City Campus. The 500-acre KLEC Academic Park development is designed to cater for an expected student population of about 30,000 based on an international community reflective of the global aspirations of KLEC and the Government (KLEC, 2011).

### 3.2.3 Informatics Programs

Fourman (2002, p.1) defined Informatics as follow:

> *Informatics is the science of information. It studies the representation, processing, and communication of information in natural and artificial systems. Since computers, individuals and organizations all process information, informatics has computational, cognitive and social aspects.*

He further elaborated the scope of Informatics which covers:

> *The interaction of information with individuals and organizations, as well as the fundamentals of computation and computability, and the hardware and software technologies used to store, process and communicate digitised information. It includes the study of communication as a process that links people together, to affect the behaviour of individuals and organizations. (Fourman, 2002, p.2)*

Over the years, the evolution of technologies, increase of computing power and user's expectations, might have slightly broadened the coverage of the original Informatics definition.

Groth and MacKie-Mason (2010, p. 27) defined Informatics as follow:

> *Informatics, in general, studies the intersection of people, information, and technology systems. It focuses on the ever-expanding, ubiquitous, and embedded relationship between information systems and the daily lives of people, from simple systems that support personal information management to massive distributed databases manipulated in real time. The field helps design new uses for information technology that reflect and enhance the way people create, find, and use information, and it takes into account the strategic, social, cultural, and organizational settings in which those solutions will be used.*

In the higher education context, Informatics programs generally include computer science, software engineering, information technology, information sciences, artificial intelligence, robotics, multimedia, information security, and many more. In 2012, the total number of students

enrolment in Malaysia Higher Education Institutions (HEIs) was 1,114,589 and the new student's populations was 412,891, an 11% growth compared to 2011. However, for Science, Mathematics and the Computing cluster in which the Informatics programs are parked in, the total new enrolment was only 26,075, a slight drop of 4% compared to 2011 (MOHE Web Statistics, 2012). Over the last few years, the enrolment of students in Computer Science and Information Technology related programs have been slow. This phenomenon is not only prominent in Malaysia, but also many other countries. (Ali, 2009; Benokraitis et al.,2009; Dean, 2007; Vesgo, 2008; Zweben, 2009).

Vice Chancellor of University of Computer Science and Engineering Malaysia (UniMy) quoted the following based on the study conducted by Malaysia's national ICT agency (Multimedia Development Corporation (MDec):

> *Malaysia's demand for IT graduates will experience an annual growth rate of 18.6 percent between 2010 and 2013 against a supply growth of only 2.7 percent. Data and projections show that computing technology will account for two-thirds of all job growth in all fields of science and technology in the future.* (AvantiKumar, 2013, p.1)

Informatics programs are interesting, exciting and challenging at the same time. Technologies rapidly evolved and computer applications are developed and discovered every day. As described in the definition of Informatics earlier, Informatics programs itself are technological-oriented in nature. Students undertaking Informatics programs are trained to thrive in challenging, advanced technical environments as manifestations of the fast-paced world of Information Technology. Students must be able to think logically and learn "how to learn" as "knowledge on demand" is one of the expected capabilities of Informatics graduates. This rapid change in knowledge and skill sets requires learners to not only be lifelong learners, but to be constantly connected to the field of computing. SMTs may be the conduit that supports these needs.

## 3.3 RESEARCH METHODOLOGY

This study employed a mixed-method research methodology with a significant survey research component. This methodology focused on collecting and analyzing qualitative and quantitative data to better understand the research problems. This type of methodology will help to answer questions that cannot be answered by qualitative or quantitative methods alone (Creswell, 2003). For this study, a Mixed Method Sequential Transformative Research Strategy based on QUAN → Qual model was used in the data collection process (see *Figure 3.3*). This strategy has two distinct data collection phases in which the main priority or emphasis is given to the quantitative phase, while the results from the quantitative data collection are used to further inform the secondary data collection (Creswell, 2003). The Transformative Research Strategy has a theoretical lens overlaying the sequential procedures to guide the study. The theoretical lens is introduced at the beginning of the study during the proposal development, and helps to shape the direction, research questions and research instruments. Refer to *Figure 3.1* for the graphical representation of the sequential transformative research strategy.

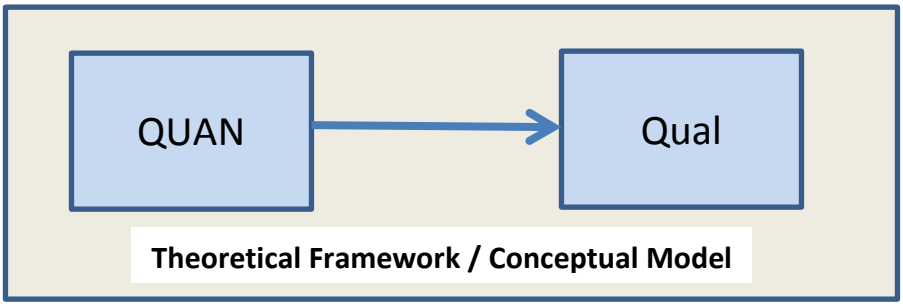



*Figure 3.1: Sequential Transformative Research Strategy*

In this QUAN → Qual model, quantitative data collection involved administrating anonymous online questionnaires to students, academics and administrators from both Informatics and non-informatics programs in Malaysia to investigate their exposure and use of social media technologies for engagement, teaching and learning. Subsequently, this data collection process was followed by the qualitative collection of data in which the voluntary Informatics academics, students and administrators of the institutions from the same cohort were interviewed to better understand their needs, usage and experiences in using social media technologies in their

engagement. Observations on the use of SMTs were also conducted based on the classes identified by the voluntary Informatics academics to better understand how social media technologies were being used for teaching and learning.

Mixed-method research methodology is considered to be most appropriate for this study as it allows the researcher to gather multiple forms of data from diverse audiences such as educators, administrators and students. The area of study is relatively new and both empirical and descriptive data will be needed to address the research questions because of the lack of underlying understanding of the use of SMTs in higher education.

## 3.4 RESEARCH DESIGN

Drawing on the Research Methodology discussed above, this study employed a four sequential phases of research design: Pre-data collection, data collection, data analysis, and proposal. This design combined complementary quantitative and qualitative techniques with the conceptual model devised from the theoretical positions of Connectivism and Community of Practice (CoPS) as the theoretical lens to address the research questions of this study. *Figure 3.2* depicts the phases of the research design of this study.

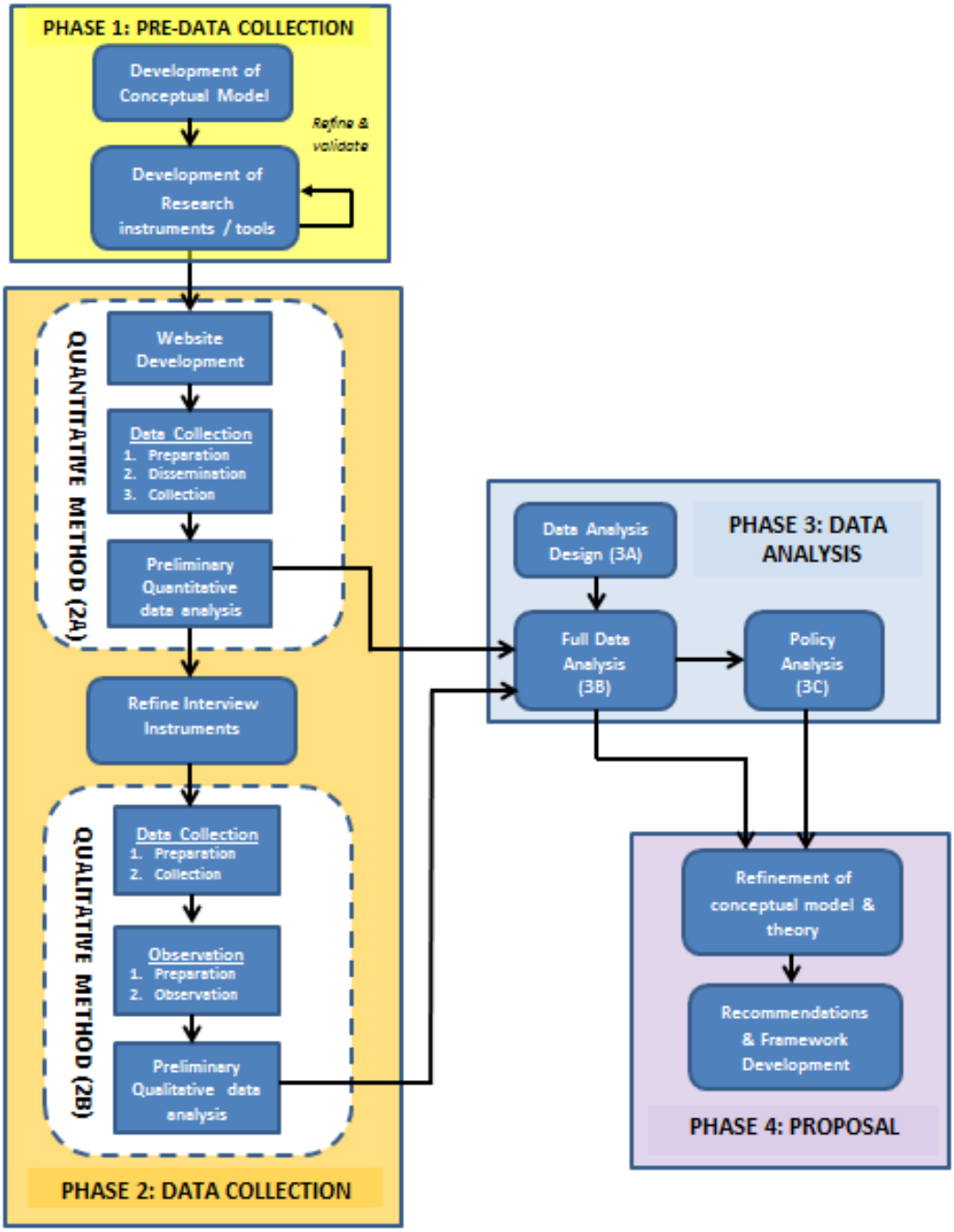



*Figure 3.2: Four Phases of the Research Design*

### 3.4.1 Phase 1 – Pre-Data Collection

Phase 1 is the pre-data collection phase in which the conceptual model was developed to provide a theoretical perspective to guide this study. With the conceptual model as the theoretical lens, the categories of participants for this study are identified and appropriate research instruments were designed and developed. The research instruments were checked, validated and refined to ensure that they covered the research questions and matched the conceptual model.

#### 3.4.1.1 Conceptual Model

The conceptual model for this study is based on the integration of Community of Practice Theory developed by Ettiene Wenger (1998), and Connectivism Learning Theory proposed by George Siemens (2004) with the support of Social Media Technologies (SMTs). These two theories have been discussed in Section 2.2.4 of Chapter 2.

Connectivism and Communities of Practice (CoPs) can be used to complement each other as both emphasize social learning and learning through collective intelligence. Jo Bloggs (2005, para. 6) in her blog (http://westonedes.blogspot.com/2005/12/connectivism-and-communities-of.html) writes *"Wenger states that the collective is necessary simply because 'domains' are too complex for one individual to master (Wenger cited by Por, 2001) while Siemens claims that the differing perspectives brought together by nodes in the same network are necessary for exploring ideas and attaining meaning from knowledge (Siemens, 2005)".* Both Connectivism and Communities of Practice (CoPS) theories promote informal learning and consider learning experiences among peers as equally valuable as learning in the formal setting (Giesbrecht, 2007). In Connectivism, nodes connected and participated in the network which makes up the learning community. These two theories are over-laying each other in the modern education context. For example, to form a learning community, students are required to interact and connect with each other actively so that the knowledge exchange process can be developed. On the other hand, to strengthen the learning community, students need to actively participate and contribute in the knowledge exchange process by connecting to each other within and possibly beyond the respective community.

Siemens (2006, p.3) defines learning as *"chaotic, continual, co-creation, complexity, connected specialization, continual certainty"*. He added that learning is a continual process which can occur in different settings including communities of practice, personal networks and work place task.

The intention of this proposed Conceptual Model is to help to guide the research process and interpret the data from within a theoretical context. The Conceptual Model proposed draws from Communities of Practice (CoPs) as the building blocks of the personal learning networks for Higher Education Institutions while Connectivism is the outer layer that binds the communities together. Social Media Technologies (SMTs) are the tools that provide the environment for students to stay connected, to facilitate the growth of the network and to strengthen the community.

According to Hoadley and Kilner (2005), communities are able to support the learning setting of modern learning theories such as Behaviorist Learning Theory, Developmental Learning Theory, Cognitive Learning Theory, and Socialcultural Learning Theory. Behaviorist Learning Theory generally explains learning as the result of conditioned responses. Interactions taken place in the community can be the feedback that conditioned responses to stimuli. As for developmental learning theory, it explains learning as a result of interaction with the world plus biologically mediated maturation processes. This could be achieved through the interaction of members in a community which may provide developmentally appropriate scaffolding. Cognitive learning theory generally explains learning as the result of active cognitive processes that yield new mental representations and predispositions. Participating with others in groups can provide an opportunity to generate explanations, which results in deeper individual cognitive processing, and hence better learning. The developmental learning model and the cognitive learning theory are often labeled "constructivism", emphasizing that learners must construct their own understanding of the world. Socialcultural learning theory views learning as a result of appropriation of social practices. The social processes in the communities help to provide a fertile ground for socialcultural appropriation (Hoadley and KilneP, 2005, p. 31-32).

Siemens (2006) cited by Pettenati and Cigognini (2007, p. 4) defined Connectivism as

*Research in traditional learning theories comes from an era when networking technologies were not yet prominent. How does learning change when knowledge growth is overwhelming and technology replaces many basic tasks we have previously performed? Knowing and learning are today defined by connections…. Connectivism is a theory describing how learning happens in a digital age. Connectivism is the assertion that learning is primarily a network forming process.*

Wenger (1998) states that Communities of Practice (CoPs) presents a theory of learning that starts with this assumption: engagement in social practice is the fundamental process by which we learn and so become who we are. He identified three modes of belonging which are important to capture the different forms of participation and position learning in the Communities of Practice (CoPs). These modes of belonging have been termed **Engagement**, **Imagination**, and **Alignment** (Wenger, 2010). Engagement is the willingness of the members to participate, commit, or involve in the activities that take place in the community that they belong to or across the boundary with other communities that they may have access to. Imagination helps members to construct an image of the world and makes them understand how they belong to the community. This is important as the images constructed enable members to make assumptions about each other, locate and orient themselves, seeing themselves from different perspectives, reflecting on their situation, and to explore new possibilities. Lastly, alignment is the process of coordinating the perspectives, activities, actions, and the context, complying with the laws, and communicating intentions which will results in better community outcomes and the achievement of the goal set.

For a successful Community of Practice to function, Wenger (1998) suggested 3 dimensions to co-exist and work together, namely **the enterprise**, **mutuality**, and **shared repertoire**. Members in the community need to understand their community and hold each other accountable for this sense of joint enterprise. By understanding their own community, they will be able to contribute and keep the learning at the center of its enterprise. Mutuality refers to the mutual engagement of the members in the community. For a community to be productive, members need to have a sense of belonging, willingness to engage and interact with one another, build their relationships and trusts, feel comfortable in their own community and contribute to the learning process. Lastly,

shared repertoire refers to the communal resources produced by the community such as the language, routines, sensibilities, artifacts, tools, stories, styles, etc. The community needs to be self-conscious, have self-awareness and be able to reflect on the repertoire that it develops so that the community could understand its own state of development and to move forward.

Lave and Wenger (1991, p.100) stated that *"because the place of knowledge is within a community of practice, questions of learning must be addressed within the developmental cycles of that community".*

Wenger, McDermontt, and Snyder (2002) have revised the three characteristics of Communities of Practice (CoPs) and name them **Domain**, **Community**, and **Practice**. Domain refers to the shared area of interest in which members build their relationships, interact and share their knowledge. On the other hand, community is a network or group, in which members who share the common interest, interact, share and build relationship together. Lastly, practice is the shared repertoire of resources or specific knowledge that the community develops, shares, and maintains. These include the ideas, experiences, documents, information, stories and tools that form the shared practices (Wenger et al, 2002). Members will have access to these resources and must be able to use them appropriately for knowledge sharing and development. Wenger (2006, p.1) stated that *"Communities develop their practice through a variety of methods, including: problem solving, requests for information, seeking the experiences of others, reusing assets, coordination and synergy, discussing developments, visiting other members, mapping knowledge and identifying gaps".*

*Figure 3.3* is a graphical representation of the conceptual model that will be used for this study drawing on the arguments above to represent the detail of the learner interactions.

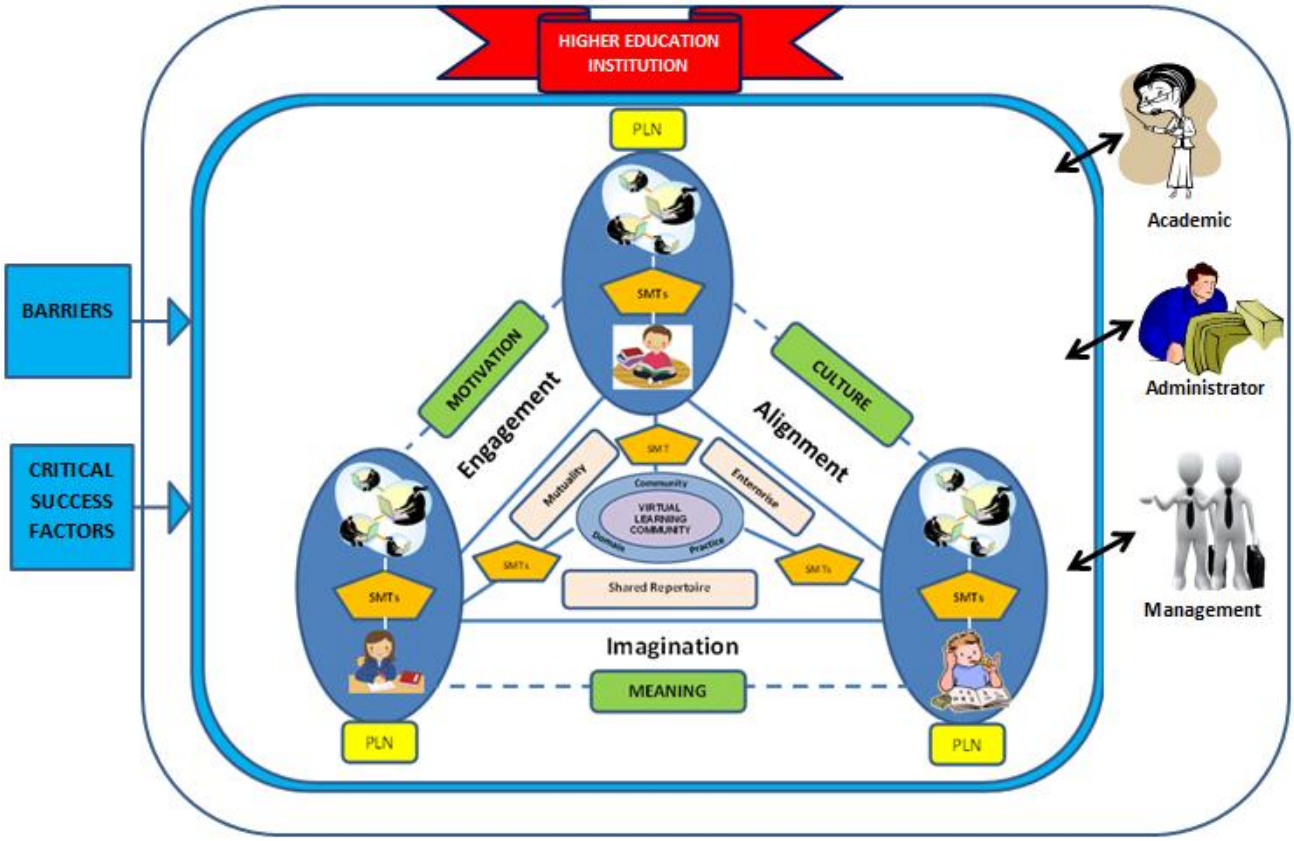



*Figure 3.3: Conceptual Model*

The outer layer of the conceptual model is based on the Connectivism paradigm. Each student has their own Personal Learning Network (PLN). This Personal Learning Network is an informal learning platform for students in which they connect, interact and communicate with people, their peers, professionals, etc. in their own personal learning environment. The learning process started when they connected and contributed to the network. Students in their Personal Learning Network might be a member of more than one community. Each community that they are connected to has more than one member and each member again has their own personal learning network. The interconnectivity of this environment is what Connectivism is all about. The actual learning community is not limited to the information and contents contributed by the actual members of the community but also indirect contents or knowledge generated by these members through the

connections of other communities within and beyond their personal learning network. This is what distributed learning and collective knowledge means. The learning is distributed to the members in the community and beyond the communities, and knowledge is generated via the collection and contribution from members within and beyond the community. In this setting, students are not only acquiring knowledge within a subject domain, but also diverse knowledge from different subject matter areas via the connections in the network. The acquired knowledge from multiple disciplines and the wide network connections, give students better learning opportunities as students are able to keep abreast with latest development, and the information obtained from multiple disciplines enable students to learn more and help them to make better decisions. The effective sharing and sourcing of information in the entire network could be achieved through the connections supported and established via the use of Social Media Technologies (SMTs). For example, Bob needs to do a report on Animal Abuse. He posted on his Facebook in the hope of getting his friends' opinions. His friends might suggest some useful information or webpage links that could help him in collecting more information. As the nature of Facebook is on social networking, friends of Bob's friends in the network might also see the post that they tagged Bob and they might also comments or suggest something useful even though they might not know Bob in person. Connectivism learning theory is best suited for disciplines or subjects that involve complex learning, rapid changing core, and diverse knowledge sources (Siemens, 2008). Hence, Connectivism is suitable for the context of this research as Informatics Programs are complex and technology-based in nature and matches the types of learning best explained by Connectivism.

Keeping the network active and ensuring students are interacting with each other requires participation and commitment from the members in the community. There are three enabling conditions that make members commit and stay on in the community: Motivation, Meaning and Sociability (Pettenati and Cigognini, 2007). Students need to be motivated to stay on and participated in the network in which they are involved in. The motivation is usually induced by fun and pleasure of the activities that take place within the network. When students are motivated, positive interactions will take place and the learning outcomes will be desirable. Students need to understand the meaning and objectives of the network and the activities that take place in the network. Understanding the connections, interactions, activities and the collaborations are important as it helps to create interest among students and encourage them to become a useful

contributors or members in the network. Lastly, sociability is the ability or tendency of students to be sociable in the community or network. Students need to feel comfortable to interact, communicate, sharing their interests on a topic, trusting and respecting the community in which they belong. The ability of being social fosters the interactions and motivation of students in the group and keeping the community lively and active. The central oval represents the activity within this particular community of practice, one of many that a student may belong.

Social Media Technologies (SMTs) provides a platform for students to have many-to-many interactions, which enable new forms of community-based learning. It also provides a platform for students to engage, interact and collaborate with their peers to enhance their learning experiences.

Within each community, there is a boundary that differentiates one community from the other. In modern society, members are not only engaging themselves within their own community but also with other communities that they have access to. This helps to expand their knowledge sharing activities across multiple interrelated domains to make the learning process more effective.

If a learning community within a higher education subject is considered, each community will be facilitated by their respective lecturer or teaching staff who act as a facilitator for the community. Starkey (2010) in Tinmaz (2012, p.237) states that "Connectivist teachers assist their learners to alter their existing knowledge while facilitating the learners to move beyond their knowledge by establishing connections to other people". Instead of dispensing information and knowledge to students, the academic staff should redesign the delivery of the course, creating an environment in which students could create their knowledge, explore the contents, and connect to each other. The role of the facilitator is to deliver the traditional lectures of the subject areas and at the same time let the students explore, create and share the knowledge on their own in the learning community created. Instead of focusing on "know what" and "know how" about a subject matter, the facilitator should encourage students to "know where" to find relevant and useful information that will help them in their learning journey. The facilitator needs to ensure that members

contribute and participate in the community actively and the shared resources are being used effectively in the community. The Facilitator also will monitor the learning process and the achievement of the learning outcomes of the community.

The virtual learning communities will not be successful without support from the administrator and top management of the Higher Education Institution. Administrators are responsible to provide technical support such as network speeds, accessibility to specific social media applications, restrictions on uploading or downloading shared resources, technical inquiries and assistance, etc. Top management support in terms of infrastructure resources, necessary funds, trainings, technologies, vision setting or sharing, etc. are also crucial for the effective implementation of the Virtual Communities of Practice in the respective Institution. As represented by the diagram in *Figure 3.3*, the arrows showing the relationships between the administrators and the top management with the virtual communities are two ways in which support from the top management and the administrators is extended or dependent on the feedback and input given by the virtual communities.

Lastly, for a successful and effective implementation of this conceptual model, it is important to understand the barriers and the critical success factors that might constrain and affect the formation of the virtual community. These barriers and critical success factors will be collected, identified, analyzed and tabulated through the surveys and interviews conducted on the stakeholders.

Boitshwarelo (2011) concluded that online communities of practice are necessarily a manifestation of connectivism and the formation and functioning of the communities of practice allows connectivism to take its course. The social characteristic of Connectivism and Communities of Practice (CoPs) with the support of Social Media Technologies (SMTs) makes life-long learning possible. With the clear identification and understanding of the barriers and critical success factors, the implementation of the proposed virtual learning communities has the potential to be effective and the outcomes desirable. This conceptual model will be mapped against the students

reported interactions to help to understand their engagement process and to help to interpret the data collected.

#### 3.4.1.2 Research Participants

Based on the statistics provided by the Ministry of Higher Education Malaysia (www.mohe.gov.my), as of December 2011, there are 383 higher education institutions in Malaysia, and the total enrolments for students is 1,049,885. There were 122,517 students enrolled in the Science, Maths and Computing Cluster.

The different categories of research participants were identified to participate in the data collection process. For the quantitative data collection, five groups of participants from both private and public institutions in Malaysia are identified: Informatics students, Non-Informatics students, Informatics Academics, Non-Informatics Academics, and Administrators. The responses collected from these groups of participants provide an overview and trends of the use, engagement and support of Social Media Technologies (SMTs) in Malaysia Higher Education. For the qualitative data, three groups of participants are identified, drawn from those who participated in the quantitative data collection – Administrators, Informatics Academics, and Informatics Students. These groups of participants were interviewed to better understand their needs, usage and experiences in using social media technologies in their classes and institutions. Class observations were also conducted based on the classes identified by the voluntary Informatics academics to better understand how social media technologies are being used for student engagement and teaching and learning.

Generally, students undertaking Informatics Programs in Malaysia were surveyed and interviewed to identify and document their exposure and usage of social media technologies to support their learning. A sample of non-Informatics students were surveyed to understand the differences of social media usage compared to Informatics students. Academics teaching in Informatics and non-Informatics programs were also surveyed to articulate and document their adoption and

implementation of social media technologies for their classes. Lastly, a sample of administrators from higher institutions in Malaysia were surveyed and interviewed to understand how the institutions are adopting and supporting social media technologies and what policies are driving this process.

For this study, descriptive statistics will be used with the aim to summarize the samples, rather than use the data to learn about the population that the samples of data are thought to represent. Thus, the chosen sample size will not be based on any probability theory, but a comfortable and reasonable sample representation for each category.

Because of the large number of higher education institutions across Malaysia and the existence of public and private institutions, a representative sample of academic and student responses will require sampling from a range of institutions and the intentions is to maintain a reasonable sample size for each institution to ensure the data is representative.

#### 3.4.1.3 Research Instruments

A mixed methods methodology was planned to be used for this study and suitable research instruments to fit the quantitative and qualitative data collection process were developed by the author. For the quantitative data collection, data was collected from sample populations of students, academics and administrators in Malaysia Higher Education Institutions using questionnaires. Since data would be collected from five different groups of people: Informatics Students, Non-Informatics Students, Informatics Academics, and Non-Informatics Academics, five different sets of questionnaires were developed. For qualitative data collection, data was only collected from 3 groups of people: Informatics students, Informatics academics and Administrators. Interviews and observations were conducted with selected participants and thus, interview questions and observations criteria and checklists were developed. All the research instruments are developed were then trialed, refined and modified until all were deemed suitable

for distribution. Both quantitative, qualitative research instruments were in English Language. Refer to Appendix C to Appendix J for the research instruments.

## 3.4.2 Phase 2 – Data Collection

For Phase 2 the data collection was organized into two sequential data collection processes: Phase 2A covered the quantitative method, while Phase 2B covered the qualitative method (see *Figure 3.2*). Before the quantitative data collection could be started, a website was developed to provide participants with the links to the survey questions and the information about the research and to recruit the participants.

### 3.4.2.1 Website Development

The website was developed using Wordpress and is accessible via http://janesylim.wordpress.com/myedusmts/

Refer *to Figure 3.4* for the main page of the website. This page provided a brief introduction to the research and participants could accept the invitation of participation by clicking on the button provided at the bottom of the main web page if they were interested to participate in this study (see *Figure 3.5*).

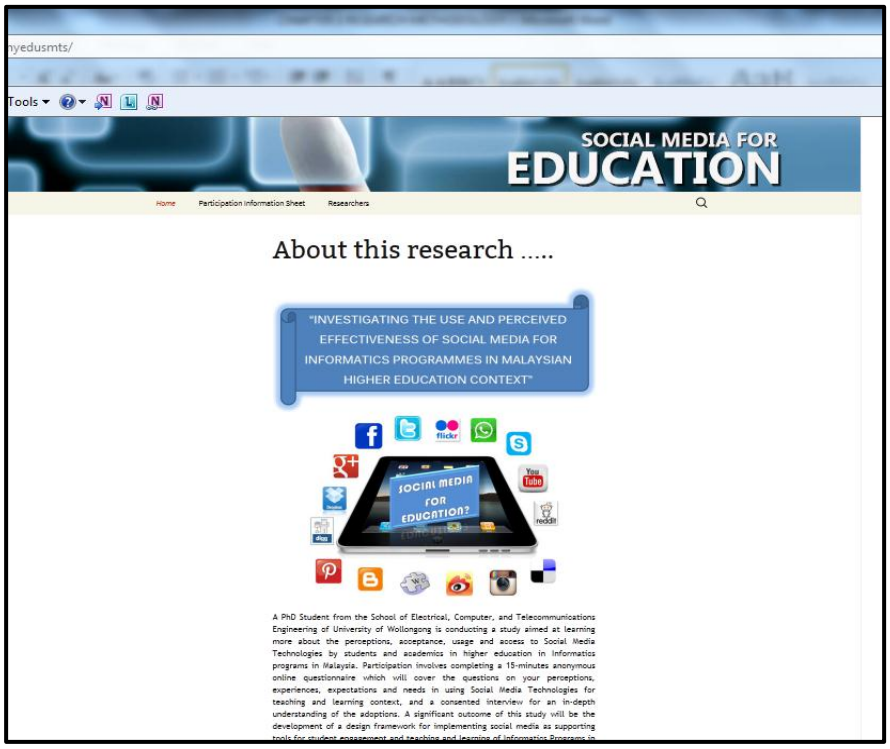



*Figure 3.4: Main Page*

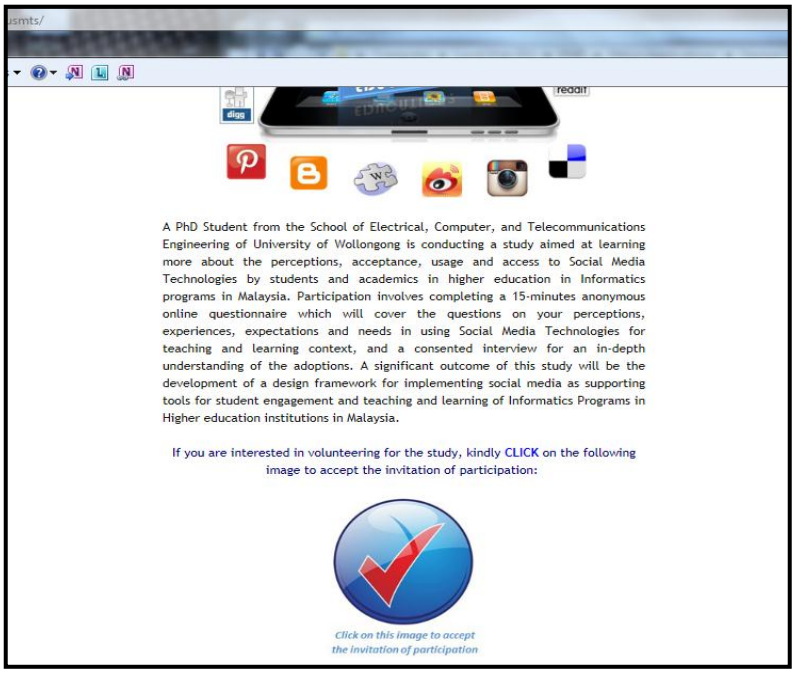



*Figure 3.5: Main Page – Participation acceptance*

This web page also provides participants with the information about the researchers involved in the study (see *Figure 3.6*).

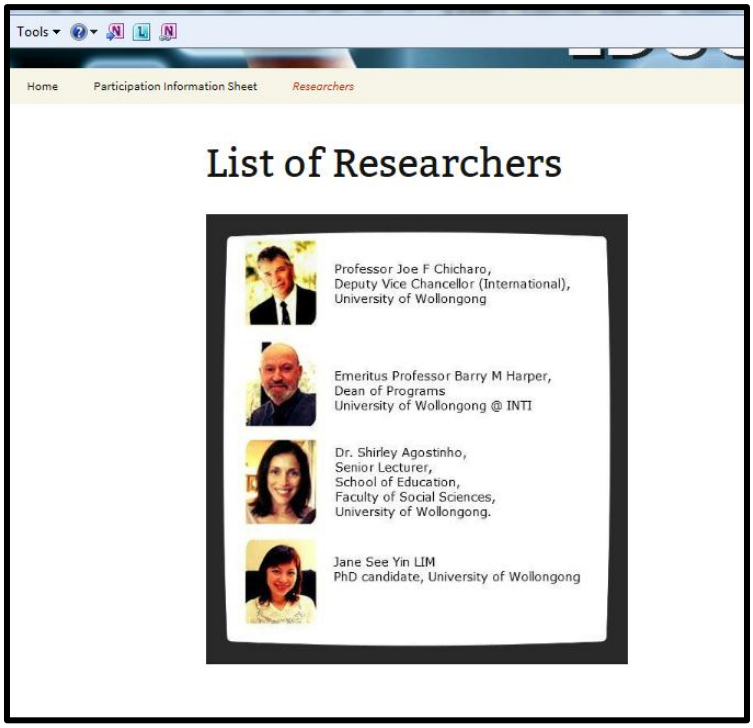



*Figure 3.6: Information about the Researchers*

For the quantitative data collection, as the target respondents were quite huge, distributing the questionnaires manually was not feasible. Thus, the researcher converted all the research instruments developed for quantitative data collection into online surveys using Survey Monkey, a popular online survey tool, so that the links could be sent out to participants to invite them to participate in the study. The links to the specific questionnaires to suit the different groups of participants were made available in the website. Refer to *Figure 3.7* for the screenshot of the survey links in the website and *Figure 3.8* and *Figure 3.9* for the sample screenshots of the online questionnaires in Survey Monkey.

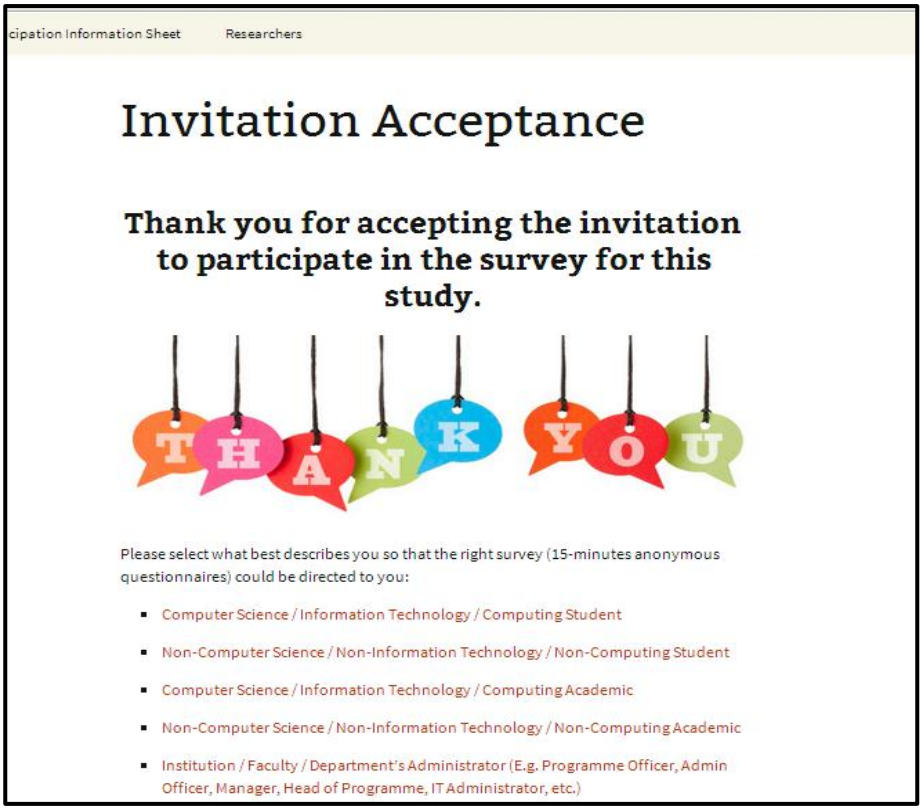



*Figure 3.7: Screenshot of the webpage displaying the links of the online questionnaires*

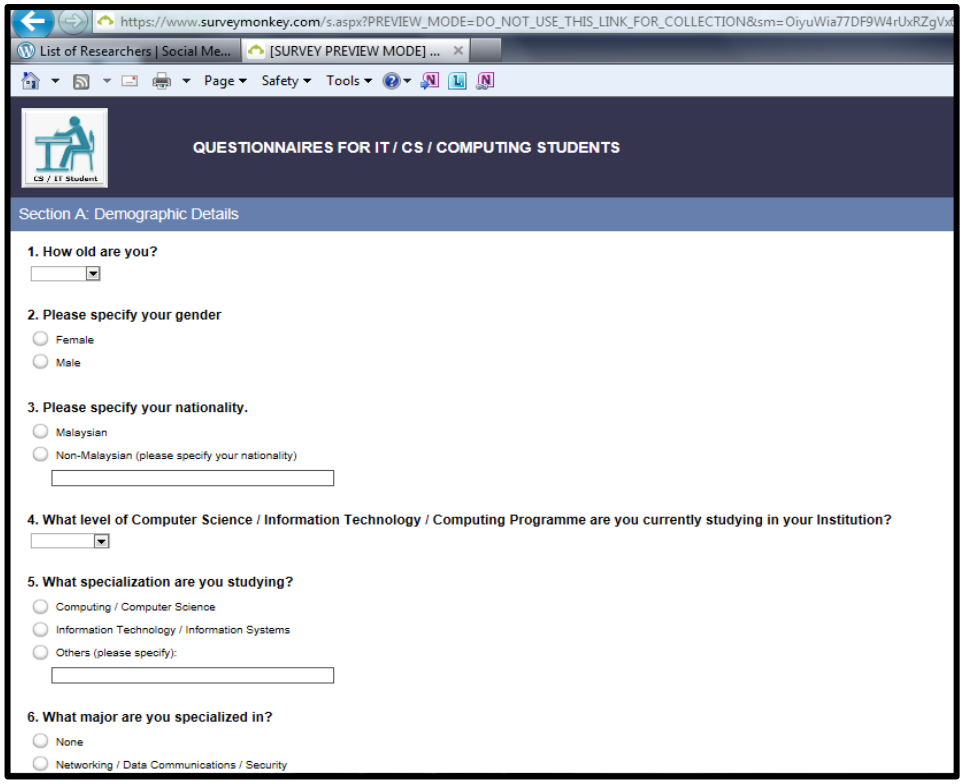



*Figure 3.8: Partial screenshots for online survey created with Survey Monkey (A)*

CS / IT Student

**27. How do you use Social Media Tools (SMTs) to support your studies? (You can select more than one)**

- [ ] Assignments / Project Collaboration / Discussions
- [ ] Sharing of documents
- [ ] Knowledge / Information sharing
- [ ] Activities / event updates
- [ ] Sourcing for information
- [ ] Communicating with Instructors, lecturers, professors, and peers
- [ ] None
- [ ] Others (please specify):

**28. Which of the following Social Media Tools (SMTs) do you use for academic purposes? (You can select more than one)**

- [ ] Social Networking Websites (e.g. Facebook, Ning, Google+, LinkedIn, etc)
- [ ] Media Sharing Tools (e.g. YouTube, Flickr, Dropbox, SlideShare, Instagram, Pinterest, etc)
- [ ] Blogs (e.g. Blogger, WordPress, eBlogger, LiverJournal, Elgg, etc)
- [ ] Wikis (e.g. Wikipedia, Wikias, Wikispaces, PBWikis, Wikiversity, etc)
- [ ] Micro-Blogging Tool (e.g. Twitter, Sina Weibo, Tumblr, Plurk, Qaiku, etc)
- [ ] Social Bookmarking Tool (e.g. Digg, Reddit, StumbleUpon, Delicious, Furl, etc)
- [ ] RSS Feeds (TweetDeck, Flock, FriendFeed, Netvibes, Radian6, etc)
- [ ] Mobile Messaging applications (e.g. WhatsApp, Line, eBuddy XMS, Meebo, WeChart, etc)
- [ ] Synchronous Communication & Conferencing (e.g. Messenger, Skype, DimDim, Tokbox, Google Talk, etc)
- [ ] Others (please specify)

*Figure 3.9: Partial screenshots for online survey created with Survey Monkey (B)*

### 3.4.2.2 Phase 2A – Quantitative Data Collection

Quantitative data collection was conducted with Informatics students, Non-Informatics students, Informatics academics, Non-Informatics academics and administrators of Malaysia Higher Education Institutions to investigate their support, exposure and use of social media technologies for engagement, teaching and learning. The initial target of respondents for the quantitative data collections were 120 Non-Informatics academics, 60 Informatics academics, 180 Non-Informatics students, 120 Informatics students and at least 18 administrators from both private and public universities or colleges.

In order to achieve the targeted participants for this study, the author invited academics from Informatics and Non-Informatics programs in Malaysia Higher Education Institutions to participate in the survey and to help recruit students. The author is currently working in one of the Private Higher Education Institutions in Malaysia. She has many contacts with academics from other private and public institutions and she has personally invited them to participate in the survey via email. The academic names and email address were obtained through the author's personal

contacts (some as colleagues, ex-colleagues, friends / acquaintances of current colleagues, ex-colleagues and friends, contacts obtained during conferences and seminars, voluntary contacts obtained through Facebook community, etc.). In addition, the author is a member of the Doctorate Studies Group in Facebook in which there are more than 17,000 members comprising mostly of professors, academics, post-PhD candidates, and on-going PhD students who are mostly academics in public and private institutions in Malaysia (see *Figure 3.10*). The author posted the webpage link in the Doctorate Support Group as well, hoping to get participation from some of the members there.

Students were also recruited in collaboration with academics in the participating institutions, by approaching students directly through email or Social Media Technologies such as Facebook. There is no privacy consideration or legislation which needs to be adhered to in Malaysia. The benefits of creating the website and putting the surveys online enabled it to be forwarded to many people at the same time. In addition, by posting the website and survey links on Facebook, it enabled it to be shared not only by the author but also the author's acquaintances (see *Figure 3.11*). The links for the online surveys were opened for 2 months before it was closed for analysis. Emails and Facebook reminders were sent out to remind participants to do the anonymous online surveys (see *Figure 3.12*).


*Figure 3.10: Screenshot from Facebook posting*


*Figure 3.11: Screenshot from Facebook posting - Reminder*

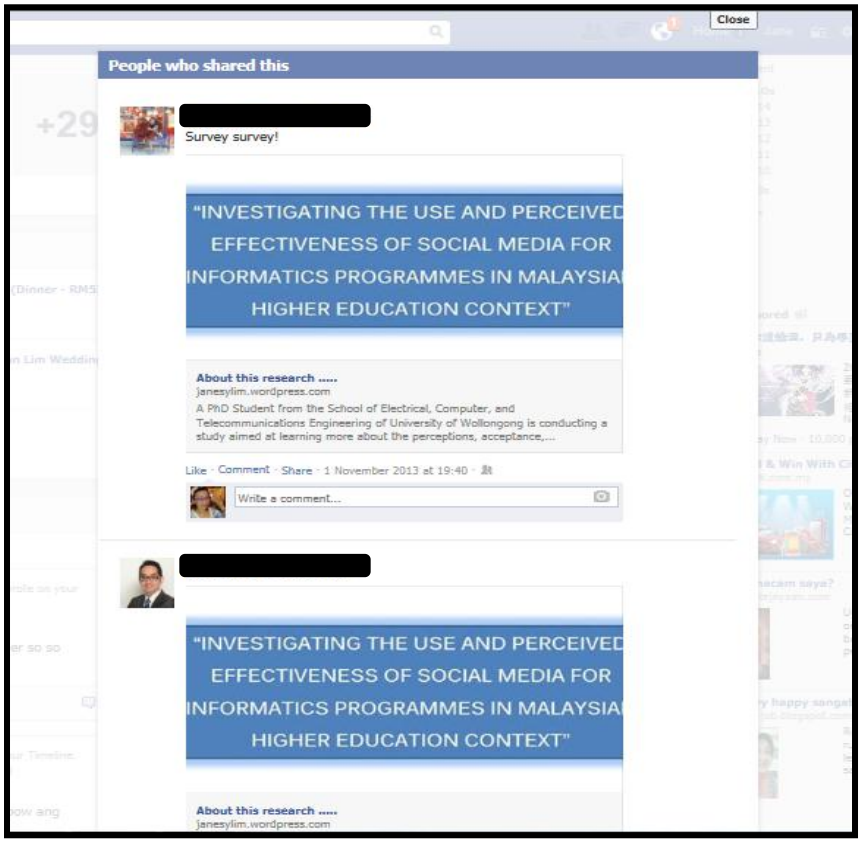



*Figure 3.12: Screenshot from Facebook posting – Posting was shared by friends*


*Figure 3.13: Screenshot from Facebook – Doctorate Support Group*

Apart from posting on Facebook, the website link was also sent out to the researcher's contacts via email. Emails were sent out to the administrators, students and academics of some private and public Higher Education Institutions in Malaysia such as Asia E-University, University of Malaya, Sunway University, Taylors University, INTI International University and Colleges, UCSI, Multimedia University, University Putra Malaysia, University Malaysia Pahang, University Kebangsaan Malaysia, TAR College, etc. Refer to *Figure 3.14*, *Figure 3.15* and *Figure 3.16* for the screen shots of emails.

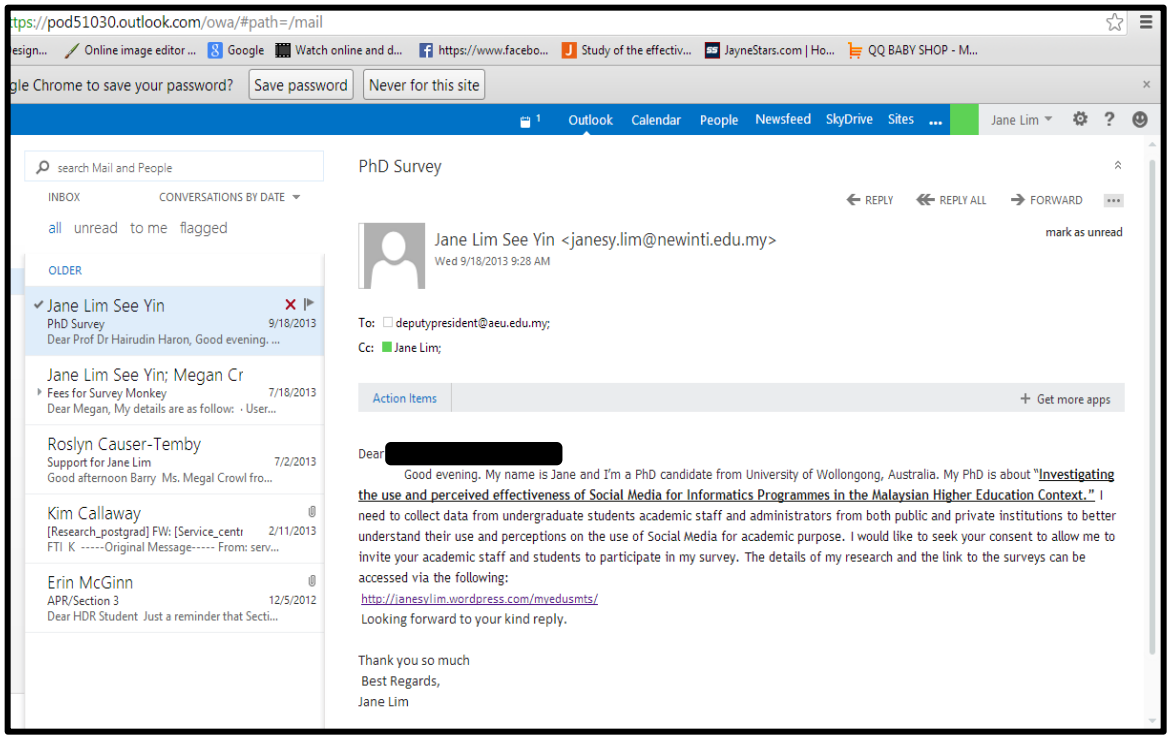



*Figure 3.14: Sample email sent to Higher Education Institutions*

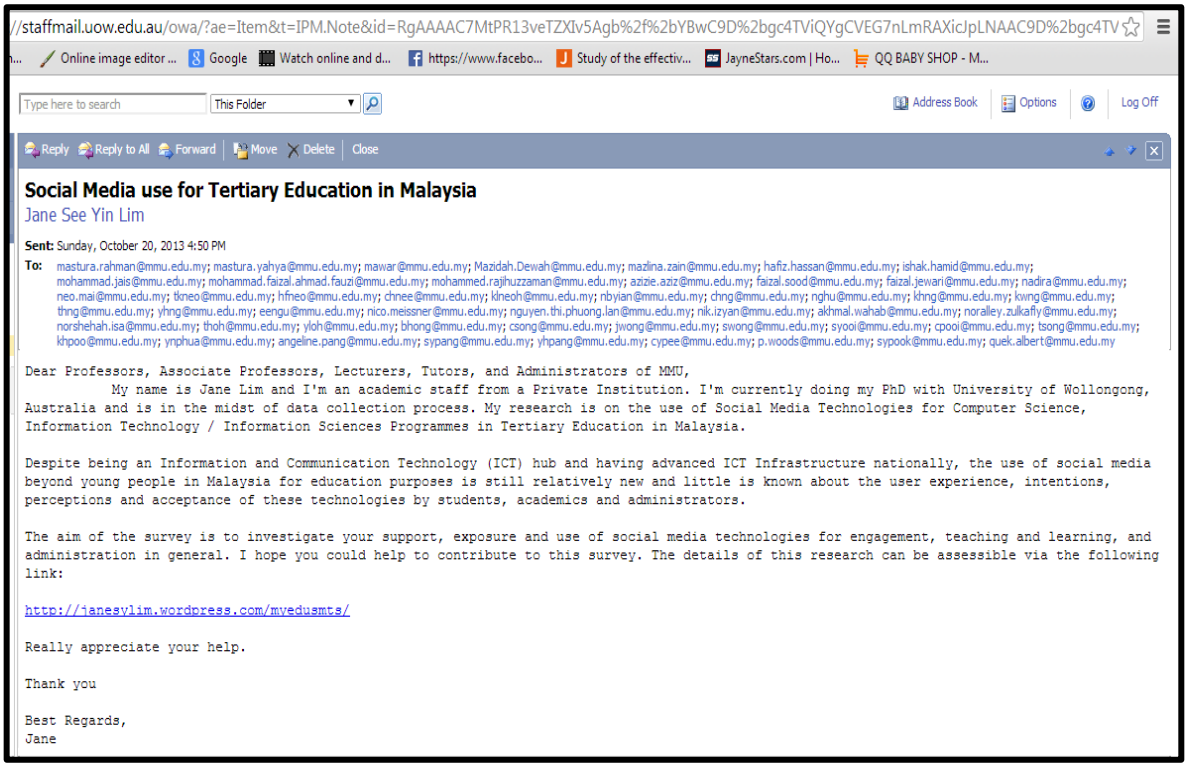
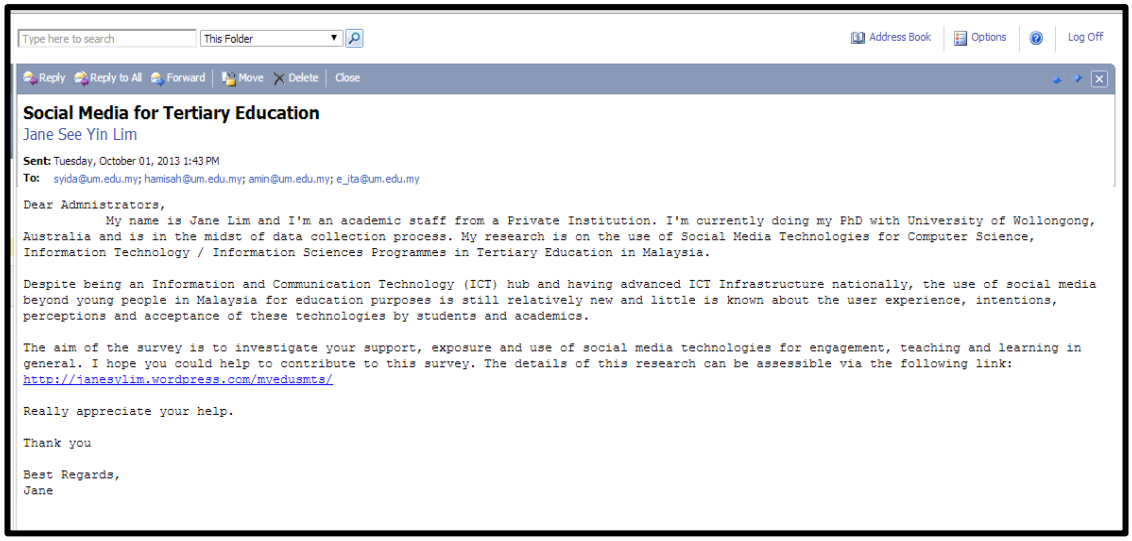



*Figure 3.15: Sample email sent to Academics from Multimedia University (MMU)*



Type here to search | This Folder | Address Book | Options | Log Off

Reply | Reply to All | Forward | Move | Delete | Close

**Social Media for Tertiary Education**

Jane See Yin Lim

**Sent:** Tuesday, October 01, 2013 1:43 PM

**To:** syida@um.edu.my; hamisah@um.edu.my; amin@um.edu.my; e_jta@um.edu.my

Dear Admnistrators,

My name is Jane Lim and I'm an academic staff from a Private Institution. I'm currently doing my PhD with University of Wollongong, Australia and is in the midst of data collection process. My research is on the use of Social Media Technologies for Computer Science, Information Technology / Information Sciences Programmes in Tertiary Education in Malaysia.

Despite being an Information and Communication Technology (ICT) hub and having advanced ICT Infrastructure nationally, the use of social media beyond young people in Malaysia for education purposes is still relatively new and little is known about the user experience, intentions, perceptions and acceptance of these technologies by students and academics.

The aim of the survey is to investigate your support, exposure and use of social media technologies for engagement, teaching and learning in general. I hope you could help to contribute to this survey. The details of this research can be assessible via the following link: http://janesylim.wordpress.com/myedusmts/

Really appreciate your help.

Thank you

Best Regards,
Jane

*Figure 3.16: Sample email sent to Administrator from University of Malaya (UM)*

At the end of the 2 months, data collected in Survey Monkey was briefly analyzed to give the researcher some ideas about the trends of the data. In preparation of the next phase, which is the qualitative data collection, the researcher reviewed and refined the interview questions (which had been previously developed) based on the preliminary data analysis of the quantitative data collected. Questions were refined to ensure that areas which were briefly covered in the quantitative data collection could be further elaborated, explained or supported in the qualitative data collection.

### 3.4.2.3 Phase 2B – Qualitative Data Collection

In qualitative data collection, the activities were broken into two sub-phases: Interviews and observations. Interviews were conducted with Informatics students, Informatics academics and administrators of the higher education institutions to further understand their engagement of SMTs in teaching and learning activities within their institutions. Participants were identified from the online survey collected during the quantitative data collection. At the end of the online surveys, participants were asked whether or not they would like to share and contribute further to the research. Refer to *Figure 3.17* and *3.18* for the sample screenshots of the online survey.

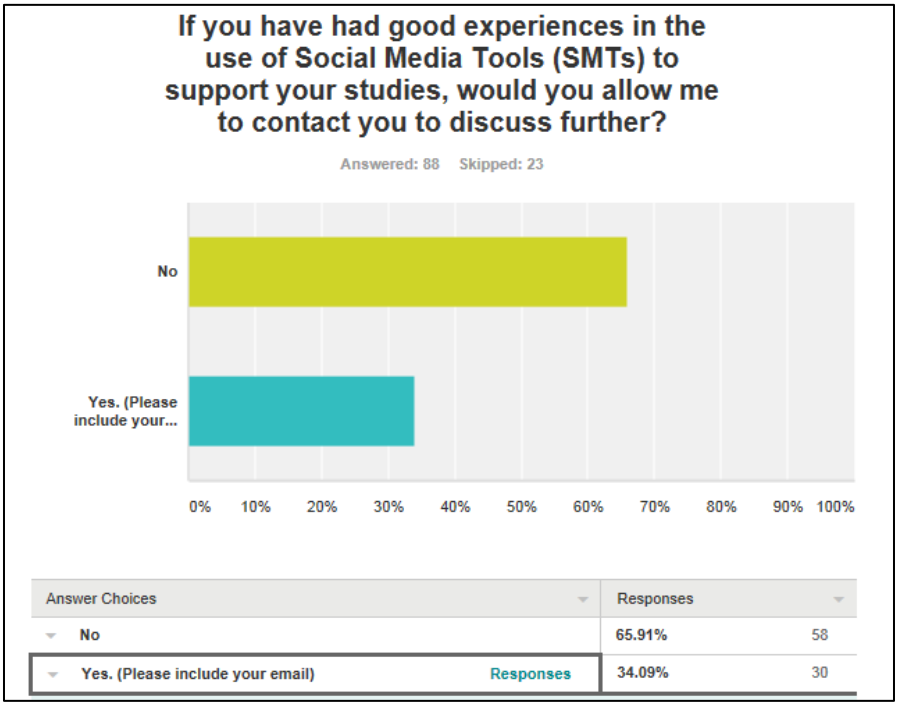



*Figure 3.17: Sample screenshots of participant's willingness to be contacted for further research (1)*

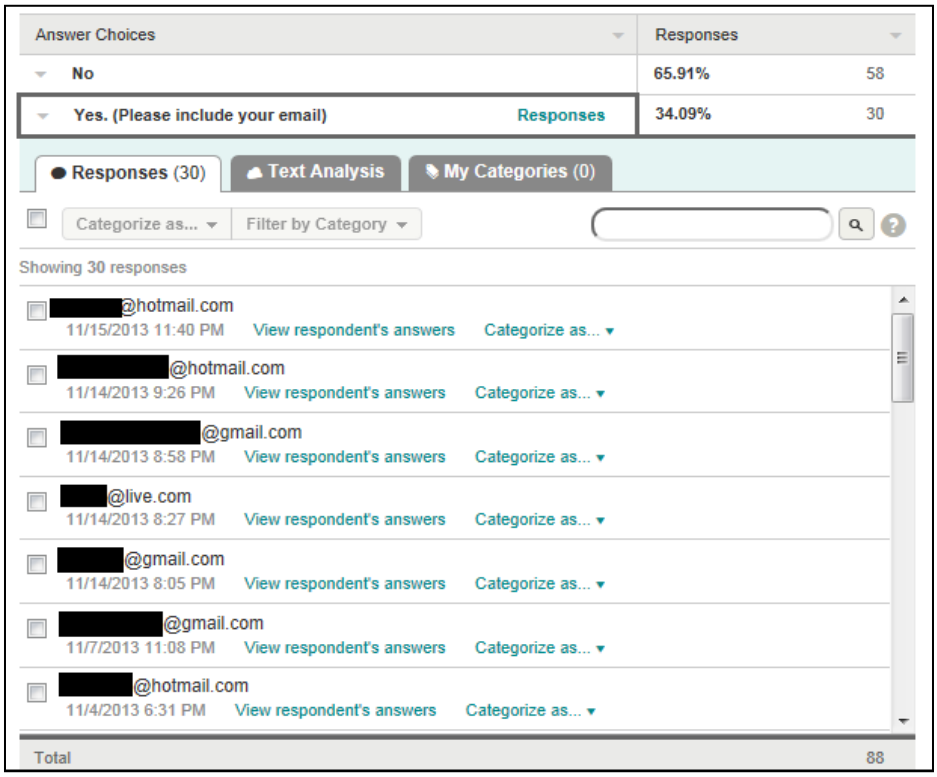



*Figure 3.18: Sample screenshots of participant's willingness to be contacted for further research (2)*

The researcher sent each identified participant a personal email thanking them for their willingness to further contribute to the research. Appointments were set for face-to-face interviews and phone interviews as some participants were not able to meet up. There were some participants who were not comfortable to meet up as well as doing the interview via phone. For those cases, the researcher sent them a copy of the interview questions, in which they answered the questions in a Microsoft Word document and sent the file back to the researcher for further action. Refer to *Figure 3.19* and *Figure 3.20* for the sample emails correspondence.

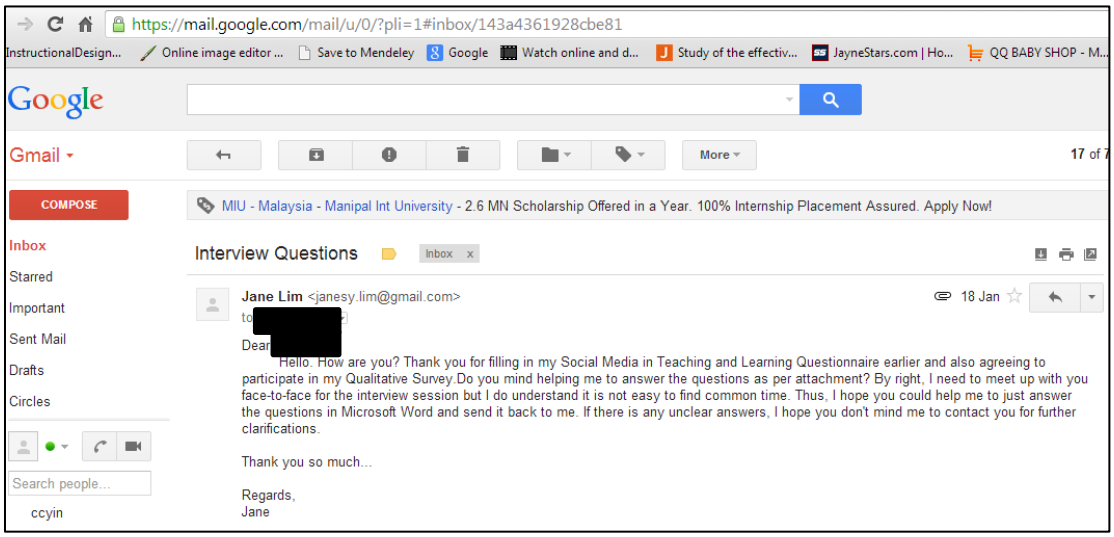



*Figure 3.19: Sample screenshots of email to participant (1)*

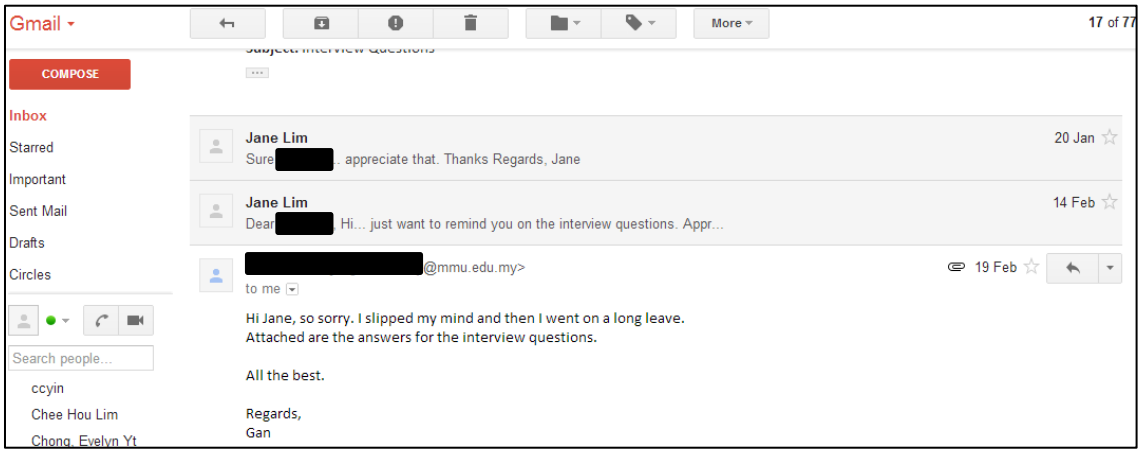



*Figure 3.20: Sample screenshots of email to participant (2)*

Semi-structured interviews (Cohen and Crabtree, 2006) were conducted with all three categories of participants, focusing on the Informatics background: Informatics students, Informatics academics and administrators of the higher education institutions. In total, 10 Informatics academics, 15 Informatics students and 5 administrators participated in the interview sessions. Open ended questions were prepared prior to the interview as a guide and they were asked in sequence and in the same manner for each respective category of participant so that the results could be compared. Even though the questions might be identical for each respective category, the participants were asked to further explain or elaborate on their answers. The questions asked during the interview are listed in Appendix H, I and J. During the interview sessions, the researcher sought consent from Informatics academics on their willingness to participate in observation activities involving the use of SMTs in their classes. Participant observations (Schensul, Schensul, and LeCompte (1999) were carried out on three identified academics and their classes over the period of two months to better understand their engagement, involvement and participation of students and the academics in the use of SMTs for teaching and learning activities in the classes. *Figure 3.21* and *3.22* below shows the sample screenshots of the Facebook page in which the researcher was added by the academics as an observer for the class.


*Figure 3.21: Sample screenshots Facebook observation (1)*

*Figure 3.22: Sample screenshots Facebook observation (2)*

## 3.4.3 Phase 3 – Data Analysis

The data analysis phase is structured into 3 sub phases: data analysis design, full analysis, and policy analysis.

### 3.4.3.1 Data Analysis Design

In data analysis design, the researcher developed the analysis plan for the data collected. For quantitative data, the researcher used descriptive statistics analysis to analyze the data collected from the online survey. Gay and Airasian (2003) suggested that descriptive statistics is suitably used to describe large amounts of data in a way that is understandable, useful and if need be, convincing. In this case, descriptive statistics analysis was used on the online survey data for the sample size of the population, demographic of the people involved, and their use and exposure on the use of social media technologies in general, and for teaching and learning activities. In the Malaysian context, the knowledge of the use of social media technologies (SMTs) for academic

purposes is still limited, and so not a great deal is known about how people are using it. The area that this research investigated was also new. In this project, the researcher was conducting a preliminary investigation to determine the nature of the problem, what the parameters are and what variables come into play. With a new problem of this type, descriptive statistics is the approach that should be taken so the full nature of the problem can be described. The summaries obtained from this analysis provided the researcher with a "big picture" of the use of Social Media Technologies (SMTS) in Malaysian higher education institutions. This formed the basis of the initial descriptions of the data which can be used as part of a more extensive statistical analysis for future research.

In qualitative analysis, the researcher decided to use content analysis methods to analyze the findings collected in the interview. Hsieh and Shannon (2005, p.1278) define qualitative content analysis as *"a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns"*. Qualitative content analysis is suitably used for classifying large amounts of text data into numerous codes or categories (Weber, 1990). Downe-Wamboldt (1992, p.314) defined the goal of content analysis *"is to provide knowledge and understanding of the phenomenon under study"*. For this research, the researcher used a conventional approach to content analysis in which it is deemed to be suitable for research that has very limited literature available on the research problems (Hsieh and Shannon, 2005).

For the purpose of this study, participant observation was also used as another tool for the qualitative data collection to better understand the engagement, involvement and participation of students and lecturers in the use of SMTs for teaching and learning activities in class. Schensul, Schensul, and LeCompte (1999) cited by Kawulich and Barbara (2005), defined participant observation as *"the process of learning through exposure to or involvement in the day-to-day or routine activities of participants in the researcher setting"* (p.91). Through the observation process, the researcher gets to understand and learn about the social media activities of the students and academic staff in the natural setting of their closed online community. Some benefits of observation listed by Schmuck (1997) include the ability for the researcher to check for nonverbal

expression of feelings, interaction and communication patterns of the participants and ability to find out the time spent on various activities by the participants.

#### 3.4.3.2 Full Data Analysis

Once a clear analysis plan was put in place, the author carried out the actual data analysis on the findings collected from the anonymous online survey, interviews and observation on the social media. The analysis started with the quantitative data collected from the online survey. A descriptive analysis method was used to analyze and tabulate all the findings collected from Informatics students, Non Informatics students, Informatics Academics, Non-Informatics academics and administrators of higher education institution into tables and graphs. The results tabulated were then compared between Informatics students and Non-Informatics students, and Informatics academics and Non-Informatics Academics to check whether there are any discrepancies or differences in terms of their ownership of digital devices, exposures to Social Media Technologies (SMTs), and their engagement on Social Media Technologies (SMTs) for teaching and learning activities. The descriptive analysis method gave the researcher a big picture of the usage and engagement of SMTs by students, academics and administrators in their institutions, willingness or acceptance in the use of SMTs for teaching and learning activities, the barriers or challenges that they faced, and the supports provided by the Institutions. The results of the quantitative analysis are discussed in Chapter 4.

For qualitative analysis, all the interview results were transcribed verbatim with no data reduction and transformed into digital format, which is Microsoft Excel document. The text data were then subjected to multiple rounds of reading to give the researcher an idea about the findings. All the text data were then plotted into Microsoft OneNote and then read word by word to derive codes to analyze the data (Miles and Huberman, 1994; Morgan, 1993; Morse and Field, 1995). The researcher tagged each derived codes with symbols available in OneNote. Next, all the codes were revisited, filtered, categorized and retagged to form meaningful themes. The themes were then transformed into a relationship diagram to represent how each theme is interconnected or related to one another. It was then used to compare against the conceptual model developed in the early

part of the study to see whether the findings matched the conceptual model. The results of the qualitative analysis are discussed in Chapter 5.

Observation was carried out in four teaching modules with three academic staff over a period of 2 months. The researcher observed the posts posted by students and academic staff on Facebook pages for each respective subject. The number of posts posted were counted and analyzed to see how useful it is to the subject concerned. The contributions by the members of the Facebook group were also analyzed to see whether more are active contributors to the Facebook group or mostly an observer in the group who do not contributed much or at all. The results of the observation activities are discussed in Chapter 6.

Social Media policies are crucial for every institutions of higher education especially when the use of Social Media Technologies (SMTs) on campus is on the rise regardless of whether or not SMTs are used for academic purpose. Junco (2011, p.60) commented, social media policies *"give the campus community guidance in behaviors that are expected online in the same way that campuses have honored codes to delineate expectations about academic honestly."* However, the implementation of Social Media policies in Malaysia is still not very common or popular. So far, there is only one university in Malaysia (University Teknologi Malaysia) that has a clear social media policy published on their website. For the purpose of this study, the researcher obtained some social media policies of renowned universities in United States, United Kingdom and Australia for analysis and comparison. Three social media policies from each of these countries will be compared in terms of their coverage, guidelines, and penalty or punishment that follows in the event that the Social Media policies are breached by students. This data will then be compared to the Malaysian situation. The results of the social media policies analysis were discussed further in Chapter 7.

### 3.4.4 Phase 4 - Proposal

This phase was separated into 2 sub-phases: the refinement of conceptual model and theory which was developed earlier (prior to data collection), and recommendations and development of the framework for Social Media Technologies (SMTs) implementation in Higher Education Institutions in Malaysia. The outcomes from the full analysis and policy analysis were used to inform the validity of the conceptual model developed and the necessity to refine the model based on the results collected from online survey, interviews and observations. The purpose of this sub-phase was to understand whether the fundamental theory behind the conceptual model developed at the beginning of this research which was used to inform the overall research activities, matched the actual engagements of SMTs in teaching and learning environment. The refined conceptual model was then used to inform the development of the framework that can be used as a fundamental guide in social media technologies implementation in higher education institutions in Malaysia.

## 3.5 ETHICAL ISSUES

As part of the requirement set by University of Wollongong and the South Eastern Sydney and Illawarra Area Health Service, appropriate ethics application forms were submitted to UOW Human Research Ethics Committee (HREC) for review and approval. The researcher sought guidance on the ethical conduct of this research from the ethics officer representing the university's Human Research Ethics Committee. The ethics approval was received in August 2013. The research instruments (questionnaires and interview questions) employed in this study were also approved for use.

According to the requirements stipulated by the UOW HREC, all data collection procedures and instruments need to be accompanied by a Participant Information Sheet and Consent Form. As the targeted number of participants was about 600 in total, it was not possible to hand-deliver the

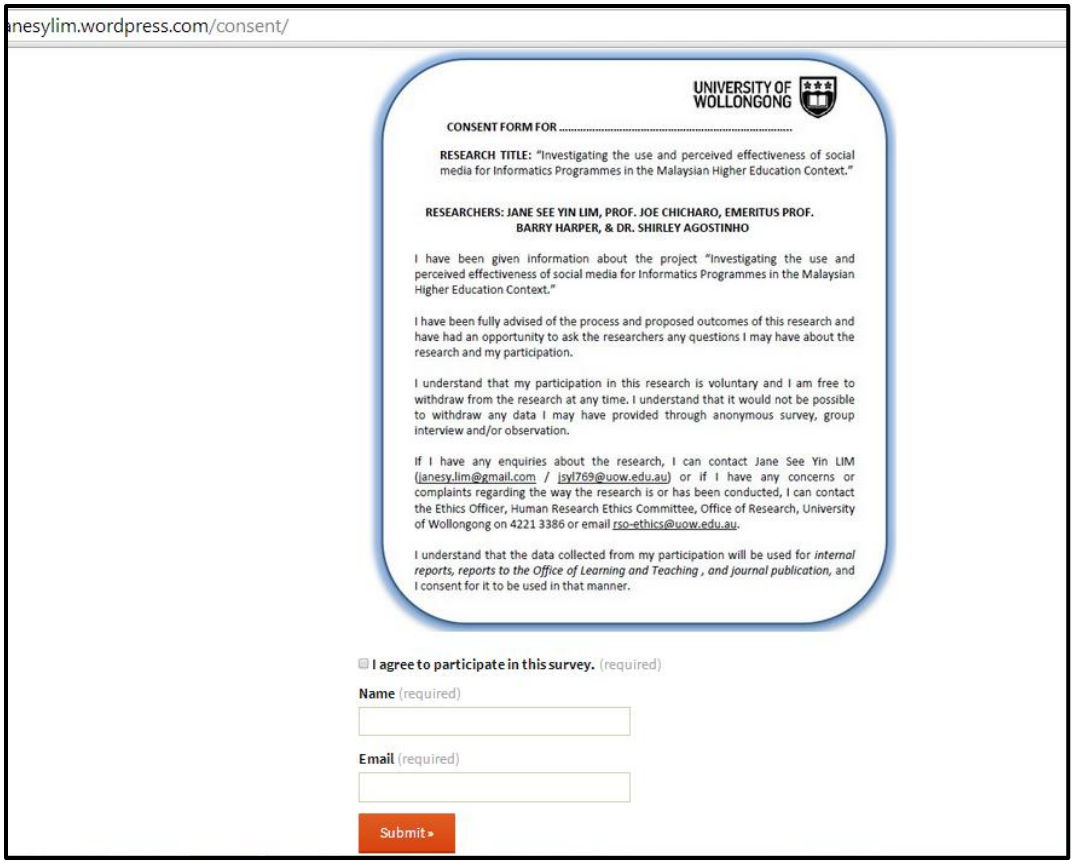
Participant Information Sheet, Consent form and survey questions to individual participants. Hence, the researcher created a website using WordPress that displayed the information about the study, and the Participant Information Sheets for each respective group of participants (Students, Academics, and Administrator). The contents of the Participation Information Sheets for each group and the Consent form were extracted from the hardcopy version (*Appendix K, L, M and N*) approved by UOW HREC. Refer to *Figure 3.2*3 and *Figure 3.2*4 below for the screenshot of the website.


*Figure 3.23*: *Screenshot for Participation Information Sheet (1)*


*Figure 3.24*: *Screenshot for Participation Information Sheet (2)*

In the Participants Information Sheet, it was made clear to the participants that their participation was voluntary and they could choose to withdraw from the study at any stage without penalty. However, it would not be possible to withdraw any data they may have provided through the anonymous survey that they had attempted as it would not be possible to identify the data.

As it was not possible to get the participants to sign and return the consent form manually, the researcher created a page in the website in which the participants are required to read the statements in the consent form, agree on their participation by filling in their name and email address and click on the submit button. The contents of the Consent Form were extracted from the approved copy by the HREC. Refer to *Figure 3.25*. The researcher received email notification on the confirmation of each participation. Refer to *Figure 3.*26 for the sample of email notification.


anesylim.wordpress.com/consent/

UNIVERSITY OF WOLLONGONG

CONSENT FORM FOR .....

RESEARCH TITLE: "Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context."

RESEARCHERS: JANE SEE YIN LIM, PROF. JOE CHICHARO, EMERITUS PROF. BARRY HARPER, & DR. SHIRLEY AGOSTINHO

I have been given information about the project "Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context."

I have been fully advised of the process and proposed outcomes of this research and have had an opportunity to ask the researchers any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary and I am free to withdraw from the research at any time. I understand that it would not be possible to withdraw any data I may have provided through anonymous survey, group interview and/or observation.

If I have any enquiries about the research, I can contact Jane See Yin LIM (janesy.lim@gmail.com / jsyl769@uow.edu.au) or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4221 3386 or email rso-ethics@uow.edu.au.

I understand that the data collected from my participation will be used for *internal reports, reports to the Office of Learning and Teaching , and journal publication,* and I consent for it to be used in that manner.

I agree to participate in this survey. (required)

Name (required)

Email (required)

Submit »

*Figure 3.25: Partial screenshot for Consent Form (1)*

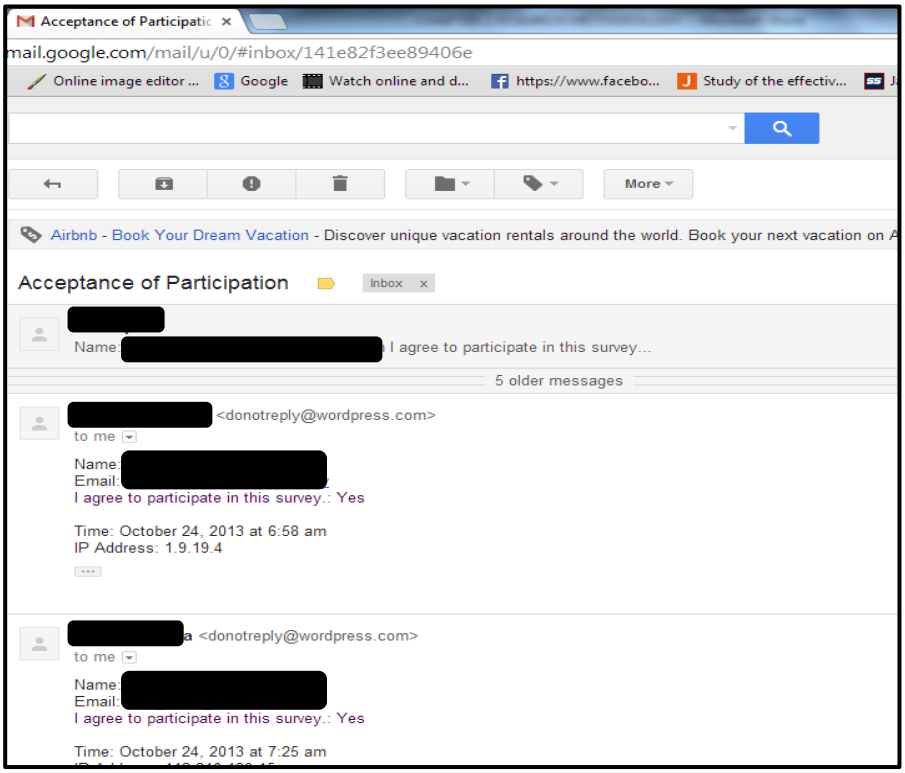



*Figure 3.26: Sample of email notifications*

After participants clicked on the Submit button, they were directed to the page where the survey links were available. In this page, participants can click on the survey link that best described their status (Informatics Students, Non-Informatics Students, Informatics Academics, Non-Informatics Academics, and Administrator). Refer to *Figure 3.27* for the screen shot.

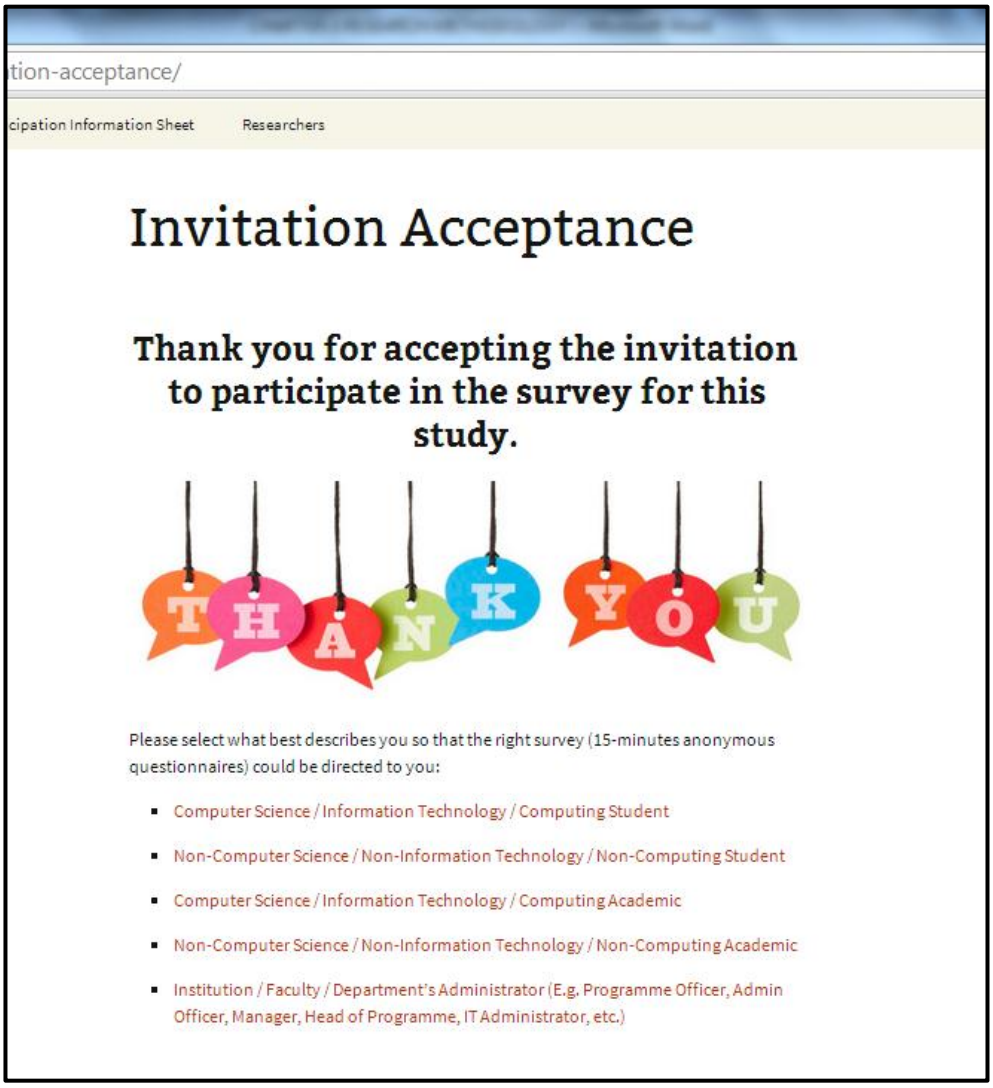



*Figure 3.27: Screenshot for Survey links*

Information collected from participants will remain confidential and be presented in the form of aggregated data or anonymous quotations with any potentially identifying details removed. The contact details of the researcher, as well as the Office of Research Ethics Officer were clearly stated on the Participant Information Sheet should the participants have any questions, concerns or complaints about the conduct of the research. Copies of the ethics approval from UOW HREC (*Appendix O*) and the research instruments are provided in *Appendix C, D, E, F, G, H, I* and *J*. The Participant information Sheets and the Consent Form are also included in *Appendix K, L, M and N.*

## 3.5 CONCLUSION

In conclusion, this chapter provides an overview of the research questions that this study addresses. It outlines the research methodology used to address the research questions and to guide the entire conduct of the study. The ethical procedures and concerns were also considered and addressed. The findings of the data analysis will further be discussed in Chapter 4 (Quantitative analysis), Chapter 5 (Qualitative Analysis), Chapter 6 (Observation), and Chapter 7 (Policy analysis).

# CHAPTER 4

# QUANTITATIVE DATA ANALYSIS

The aim of this chapter is to summarize and analyze the data collected from the quantitative surveys conducted with students, academics and administrators in higher education institutions in Malaysia to investigate their exposure, engagement and use of Social Media Technologies in their institutions. Descriptive statistics analysis was used to analyze the data collected from the quantitative survey. Descriptive statistics provides the summaries of the samples and describe what is and what the data shows (Trochim and William, 2006).

There are four parts to this chapter:

1) The data collection process used to collect the quantitative data is described.
2) The results of data collected from Informatics and non-Informatics students are discussed.
3) The results of data collected from Informatics and non-Informatics academics are discussed.
4) The results of data collected from Institution's administrators are discussed.

## 4.1 DATA COLLECTION

Quantitative data collection involved anonymous online questionnaires, which were collected from students, academics and administrators from both Informatics, and non-Informatics programs in Malaysian higher education institutions. As the number of targeted respondents was expected to be large, the author created online questionnaires which were accessible via the created website which was then distributed and shared via social media and emails (see Section 3.4.2 for more details).

The anonymous online questionnaires were opened for 1 month but due to the low initial response, it was extended for another month. At the closing of the online questionnaires, 111 Informatics students, 106 non-Informatics students, 38 Informatics Academics, 33 Non Informatics Academics, and 43 administrators had completed the online survey. *Figure 4.1* shows the distribution of respondents and the total number of respondents.

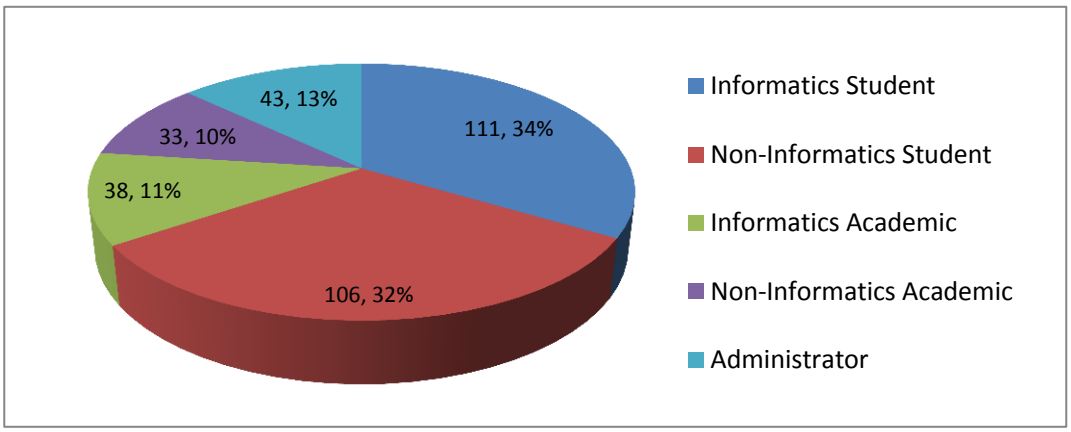



*Figure 4.1: Total number and percentage of respondents*

## 4.2 STUDENTS

Both Informatics and non-Informatics students were surveyed to understand the pattern of usage of Social Media Technologies between the two groups of students, especially since there is a

common assumption that informatics students would have more exposure to technologies compared to the latter. In total, there were 111 Informatics students and 106 non-Informatics students who participated in the online survey.

### 4.2.1 Demographic Data

The age group of both the Informatics and non-Informatics students is shown in *Figure 4.2* as follow. The majority of the students were from the age group of 21 to 22 (34.91% for Informatics and 44.23% for non-Informatics).

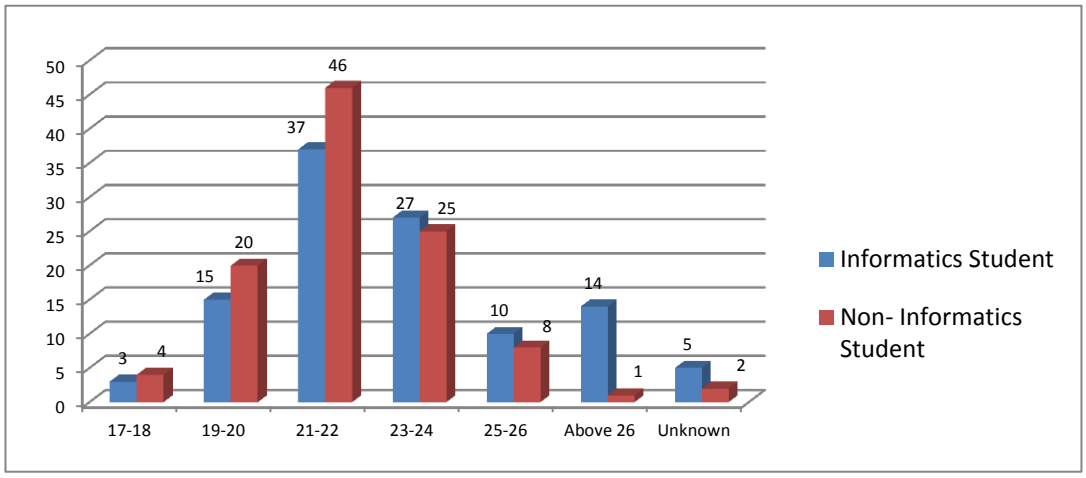



*Figure 4.2: Student – Age of the respondents*

The gender of the participants between Informatics and non-Informatics is closely matched. There were 80 Informatics male students and 31 Informatics female students, compared to 78 non-Informatics male students and 28 non-Informatics female students. Out of the 111 Informatics students, 81.9% were Malaysian while for non-Informatics, 95.2% of the respondents were Malaysian. Non Malaysian students were mainly from Indonesia, China, India, Iraq, Mauritius, Botswana, and Nepal. About 75% of the respondents were currently studying in private universities or private university colleges in Malaysia (Refer to *Figure 4.3: Institution of study*). Examples of the institutions of study of the respondents include INTI International University, INTI International College Subang, Sunway University, Taylors University, Universiti Putra Malaysia, Management and Science University, Asia Pacific

University, University of Malaya, KBU International University, Universiti Kebangsaan Malaysia, Multimedia University, Universiti Teknologi Mara, University Malaysia Pahang, KDU College and UCSI University.

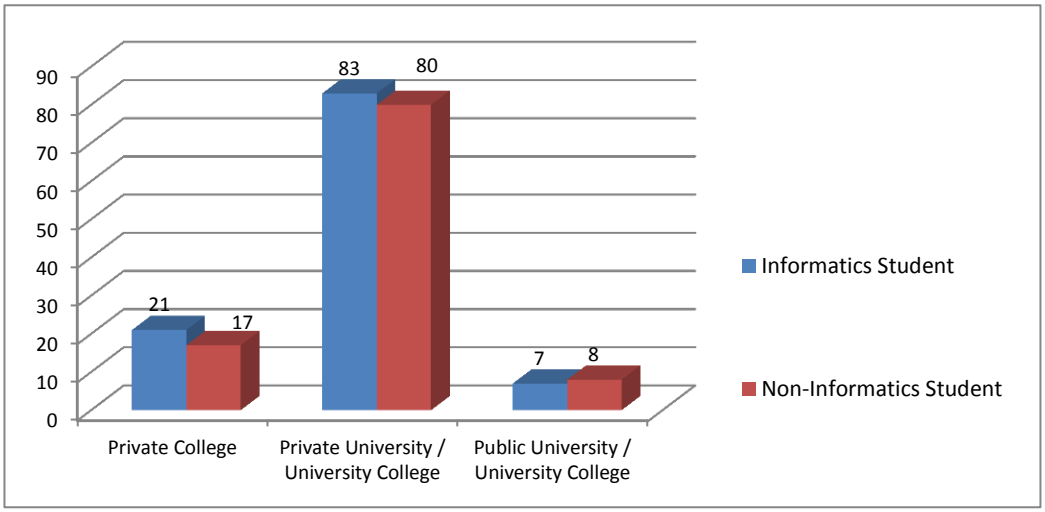



*Figure 4.3: Student – Institution of Study*

For the level of study, about 85% of the respondents are currently undertaking a Degree program in their Institution. *Figure 4.4* depicts the breakdown of the level of study of the respondents.

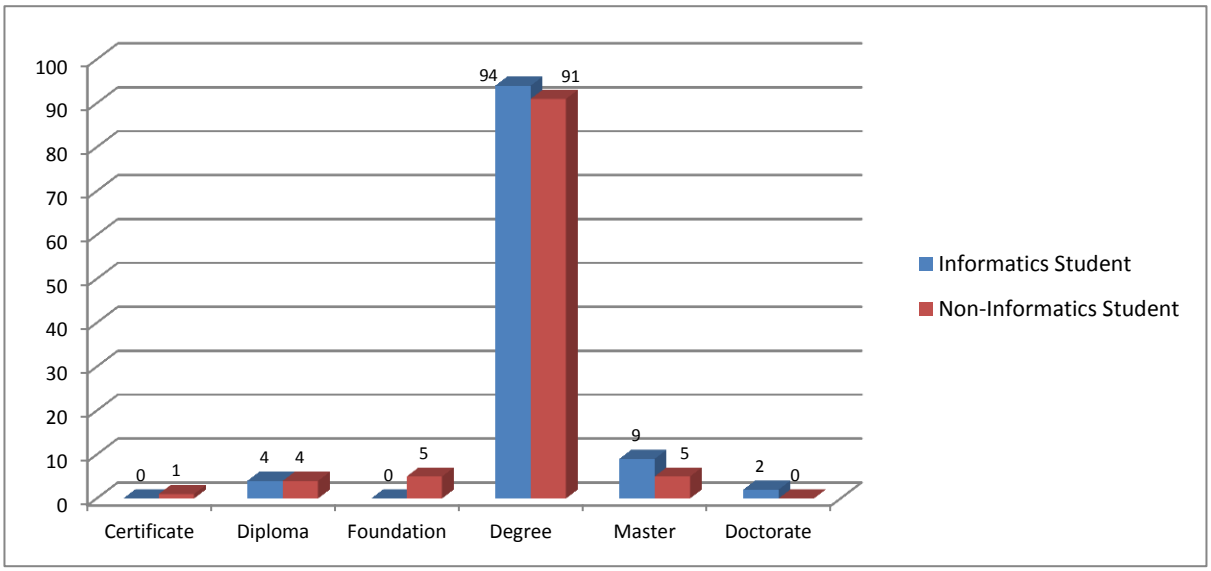



*Figure 4.4: Student – Level of Study*

### 4.2.2 Social Media Exposure

This section compares the digital devices ownership and social media exposures and experiences between Informatics and non-Informatics students. The purpose of the comparative studies is to understand whether there is a difference between the two groups of students in terms of their exposure and experiences in using Social Media Technologies in the course of their study. From *Figure 4.5* below, 97.3% of the Informatics students and 94% of the non-Informatics students owned a laptop or notebook, with about 90% of them owning smartphones. The ownership of digital tablets is surprisingly not that high, that is below 38%.

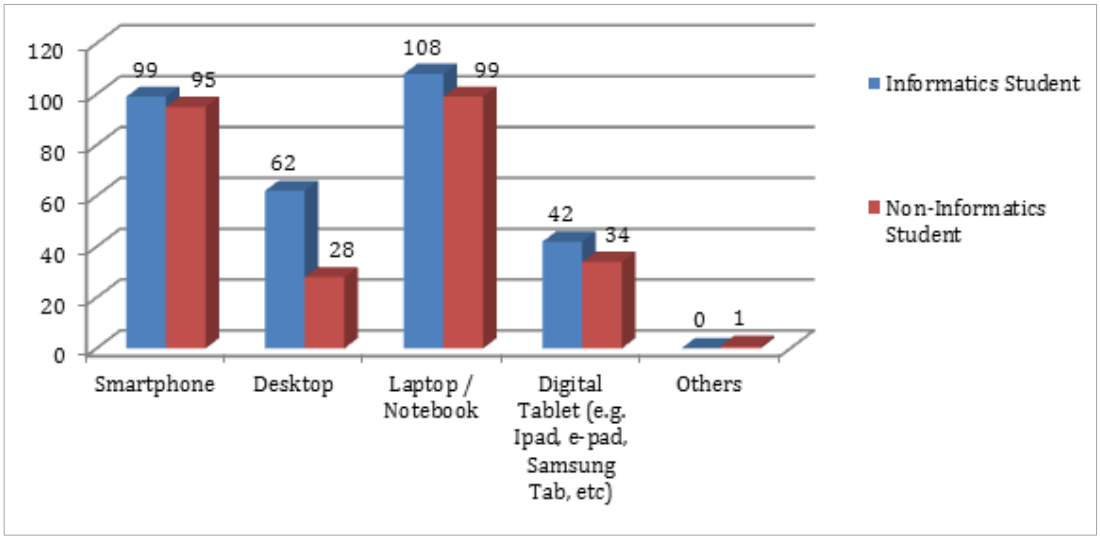



*Figure 4.5: Student – Ownership of digital devices*

The data collected shows that the majority of the students, irrespective of discipline of study, spent more than 6 hours daily online (*Table 4.1*). When asked about the use of SMTs, less than 10% of the respondents *(Table 4.2)* claimed that they were not using SMTs.

*Table 4.1: Student – Hours spent online daily*

| Hours | Informatics Students | | Non-Informatics Students | |
|---|---|---|---|---|
| | **No. of Responses** | **Percentage of Responses** | **No. of Responses** | **Percentage of Responses** |
| < 1 hour | 1 | 0.91% | 2 | 1.90% |
| 1-2 hours | 6 | 5.45% | 8 | 7.62% |
| 3-4 hours | 22 | 20% | 18 | 17.14% |
| 5-6 hours | 26 | 23.64% | 38 | 36.19% |
| > 6 hours | 55 | 50% | 40 | 38.1% |

*Table 4.2: Student – General use of Social Media Technologies (SMTs)*

| Do you use SMTs? | Informatics Students | | Non-Informatics Students | |
|---|---|---|---|---|
| | **No. of Responses** | **Percentage of Responses** | **No. of Responses** | **Percentage of Responses** |
| Yes | 100 | 90.09% | 100 | 94.34% |
| No | 11 | 9.91% | 6 | 5.66% |

The top three popular Social Media Technologies (SMTs) used by the respondents were Social Networking Websites (about 99%) followed by Media Sharing tools (about 92%) and Mobile Messaging applications (about 85.3% for Informatics and 92% for non-Informatics). The detailed breakdown is shown in *Table 4.3: Social Media Technologies exposures.*

*Table 4.3: Student – Social Media Technologies exposures*

| Social Media Technologies | Informatics Students (95 Respondents) | Non-Informatics Students (95 Respondents) |
|---|---|---|
| Social Networking Websites (e.g. Facebook, Ning, Google+, LinkedIn, etc) | (98.95%) 94 | (98.95) 94 |
| Media Sharing Tools (e.g. YouTube, Flickr, Dropbox, SlideShare, Instagram, Pinterest, etc) | (91.58%) 87 | (91.58%) 87 |
| Blogs (e.g. Blogger, Wordpress, eBlogger, LiveJournal, Elgg, etc) | (35.79%) 34 | (35.79%) 34 |
| Wikis (e.g. Wikipedia, Wikias, Wikispaces, PBWikis Wikiversity, etc) | (69.47%) 66 | (62.11%) 59 |
| Micro-Blogging (e.g. Twitter, Sina Weibo, Tumbler, Plurk, Qaiku, etc) | (36.84%) 35 | (41.05%) 39 |

| Social Media Technologies | Informatics Students (95 Respondents) | Non-Informatics Students (95 Respondents) |
|---|---|---|
| Social Bookmarking (e.g. Digg, Reddit, StumbleUpon, Delicious, Furl, etc) | (6.32%) 6 | (4.21%) 4 |
| RSS Feeds (e.g. TweetDeck, Flock, FriendFeed, Netvibes, Radian6, etc) | (13.68%) 13 | (1.05%) 1 |
| Mobile Messaging Apps (e.g. Whatsapp, Line, eBuddy XMS, Skype, DimDim, GoogleTalk, Tokbox, etc) | (85.26%) 81 | (91.58%) 87 |
| Synchronous Communication & Conferencing (e.g. Messenger, Skype, DimDim, Tokbox, Google Talk, etc) | (76.84%) 73 | (70.53%) 67 |
| Others | (1.09%) 1 | 0 |

### 4.2.3 Social Media Technologies Use for Academic purposes by Informatics Students

This section covers the use of SMTs by Informatics students for academic purposes. About 90% of the Informatics students claimed that they had started to use SMTs for academic purposes (Refer to *Table 4.4*) and the main purpose for using SMTs was for assignments or project collaboration (about 98%), and for sharing of documents (90-92%). *Table 4.5* depicts the use of SMTs in supporting students' academic activities. There is little difference in usage between Informatics and non-Informatics students. The top three SMTs they used to support their studies were Social Networking Websites such as Facebook (96.39%), followed by Wikis such as Wikipedia (73.49%), and Media Sharing Tools such as YouTube and Dropbox (69.88%). *Table 4.6* shows the type of SMTs used for academic purposes.

*Table 4.4: Student – Use of SMTs for Academic Purpose*

| Do you use SMTs for Academic purpose | Informatics Students (91 Respondents) | | Non-Informatics Students (97 Respondents) | |
|---|---|---|---|---|
| | No. of Responses | Percentage of Responses | No. of Responses | Percentage of Responses |
| Yes | 85 | 90.43% | 87 | 89.69% |
| No | 9 | 9.57% | 10 | 10.31% |

*Table 4.5: Student – Use of SMTs in supporting the academic activities*

| How do you use SMTs to support your studies? | Informatics Students (80 Respondents) | | Non-Informatics Students (82 Respondents) | |
|---|---|---|---|---|
| | No. of Responses | Percentage of Responses | No. of Responses | Percentage of Responses |
| Assignments / Project Collaboration Discussions | 81 | 97.59% | 80 | 97.56% |
| Sharing of documents | 76 | 91.57% | 74 | 90.24% |
| Knowledge / Information Sharing | 69 | 83.13% | 70 | 85.37% |
| Activities / Event updates | 67 | 80.72% | 69 | 84.15% |
| Sourcing for information | 60 | 72.29% | 67 | 81.71% |
| Communicating with Instructors, lecturers, professors, and peers | 73 | 87.95% | 70 | 85.37% |

*Table 4.6: Student – Type of SMTs used for academic purposes*

| Social Media Technologies For Academic Purpose | Informatics Students (83 Respondents) | Percentage of Responses |
|---|---|---|
| Social Networking Websites (e.g. Facebook, Ning, Google+, LinkedIn, etc) | 80 | 96.39% |
| Media Sharing Tools (e.g. YouTube, Flickr, Dropbox, SlideShare, Instagram, Pinterest, etc) | 58 | 69.88% |
| Blogs (e.g. Blogger, WordPress, eBlogger, LiverJournal, Elgg, etc) | 17 | 20.48% |
| Wikis (e.g. Wikipedia, Wikias, Wikispaces, PBWikis, Wikiversity, etc) | 61 | 73.49% |
| Micro-Blogging Tool (e.g. Twitter, Sina Weibo, Tumblr, Plurk, Qaiku, etc) | 8 | 9.64% |
| Social Bookmarking Tool (e.g. Digg, Reddit, StumbleUpon, Delicious, Furl, etc) | 5 | 6.02% |
| RSS Feeds (TweetDeck, Flock, FriendFeed, Netvibes, Radian6, etc) | 4 | 4.82% |
| Mobile Messaging applications (e.g. WhatsApp, Line, eBuddy XMS, Meebo, WeChart, etc) | 44 | 53.01% |
| Synchronous Communication & Conferencing (e.g. Messenger, Skype, DimDim, Tokbox, Google Talk, etc) | 37 | 44.58% |
| Others | 1 | 1.20% |

Based on the data collected, the top five most popular SMTs used by students for academic purposes were Facebook, followed by Dropbox, Wikipedia, YouTube and WhatsApp. Some other less common SMTs were also listed by students are such as Tumblr, Flock, Reddit, and QQ.

Students were asked how they used SMTs to support their studies and 98% of the students said they used it for assignments, project collaboration, and discussions, followed by 91.5% used it to

share documents. Students were also asked how their instructors or lecturers used the Social Media Technologies in their classes, and 80.5% said that their instructors were using SMTs as a communication tool to communicate with the students, followed by 79.3% said it was used for assignment collaboration and discussion, and 78% said it was used for sharing of documents. *Table 4.7* illustrates the differences between student's academic use of SMTs versus their instructor's use of SMTs to support teaching and learning activities. In addition to this, 54% of the students commented that only some of their instructors were using SMTs for teaching and learning activities while 34% said most of their instructors were using SMTs in class (refer to *Figure 4.6*).

*Table 4.7: Student – Students vs. Instructors Usage of SMTs in Teaching and Learning*

| How do you use SMTs to support your studies? | How students use SMTs | How instructors use SMTs |
|---|---|---|
| Assignments / Project Collaboration / Discussions | 81 (97.59%) | 79.27% (65) |
| Sharing of documents | 76 (91.57%) | 78.05% (64) |
| Knowledge / Information Sharing | 69 (83.13%) | 67.07% (55) |
| Activities / Event updates | 67 (80.72%) | 73.17% (60) |
| Sourcing for information | 60 (72.29%) | 42.68% (35) |
| Communication | 73(87.95%) | 80.49% (66) |

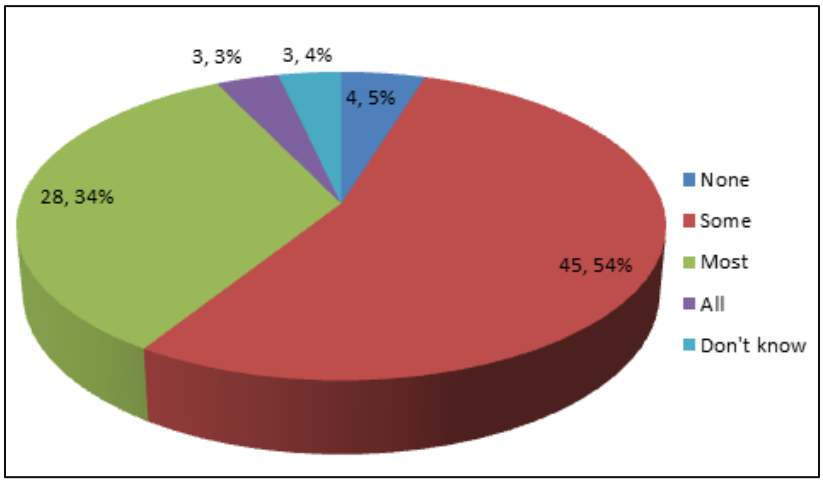



*Figure 4.6: Student – SMTs usage by Instructors*

When asked about the perceived benefits of using SMTs in supporting teaching and learning activities, students listed SMTs as an enabler for information / knowledge sharing (93.98%),

followed by supporting innovative teaching methods, and enabling cooperative and collaborative work (both 73.49%). *Table 4.8* lists the student's perceived benefits of using SMTs for academic purpose.

*Table 4.8: Student – Perceived benefits of using SMTs for academic purpose*

| Benefits of SMTs | Percentage of Responses |
|---|---|
| SMTs support innovative teaching methods | 73.49% |
| SMTs support peer-to-peer learning | 71.08% |
| SMTs enhance student motivation | 50.60% |
| SMTs improve student's participation | 67.47% |
| SMTs enable information / knowledge sharing | 93.98% |
| SMTs enable cooperative and collaborative work | 73.49% |
| SMTs support the creation of personal learning environment | 53.01% |
| SMTs strengthen lecturers and students rapport | 63.86% |

Aside from the benefits reported, students also listed SMTs as the main detractor that causes distraction and loss of focus in their studies (66.7%). Refer to *Table 4.9* for the list of barriers in using SMTs. They also attributed the blocking of some SMTs applications by the university or colleges (81.48%) as the main restrictions that hinder them from using SMTs to support their studies.

*Table 4.9: Student – Restrictions encountered in the use of SMTs in the Institution.*

| Benefits of SMTs | Percentage of Responses |
|---|---|
| Slow Internet connections / Low Bandwidth | 62.96% |
| Blocking of some applications by the university | 81.48% |
| All activities were being monitored | 38.27% |
| Social Media accounts being hacked | 22.22% |
| Privacy issues | 44.44% |
| Others | 1.23% |

As most Institutions of higher education in Malaysia have deployed their own Learning Management Systems (LMS) to support the teaching and learning activities, students were asked about their preference of using Social media over their institution's LMS. The results showed that 62.2% of the respondents prefer to use both the LMS and SMTs to support their studies, while 20.73% claimed that they prefer SMTs over LMS. The surprising fact is, only 4.88% of the

respondents said they prefer to use LMS over SMTs. This shows that student's acceptance of institution's LMSs is pretty low and not encouraging. *Table 4.10* represents the view of respondents on the use of LMS in their institution.

*Table 4.10: Student – Students' views on LMS*

| **LMS attributes** | **Agree** | **Disagree** | **Neutral** |
|---|---|---|---|
| LMS has limited capabilities and functionalities | 72.29% (60) | 6.02% (5) | 21.69% (18) |
| LMS is too formal. | 60.24% (50) | 14.46% (12) | 25.30% (21) |
| LMS is control by Institution. Thus, all activities will be monitored and control by the Institution. | 73.49% (61) | 6.02% (5) | 20.48% (17) |
| LMS is too generalized. It is not customizable or personable to suit student's learning style. | 60.24% (50) | 14.46% (12) | 25.30% (21) |
| LMS enables academics to organized and manage their teaching and learning resources. | 66.67% (54) | 6.17% (5) | 27.16% (22) |
| LMS enables students to download learning materials and upload their assessment works. | 86.75% (72) | 2.41% (2) | 10.84% (9) |
| LMS allows students to view their grades and monitor their academic progress. | 85.54% (71) | 3.61% (3) | 10.84% (9) |
| LMS allows students to communicate among peers and with the academics. | 33.73% (28) | 39.76% (33) | 26.51% (22) |
| LMS enables students to view calendar, activities, events and announcements posted by the Institution, faculty, academics and peers. | 59.04% (49) | 21.69% (18) | 19.28% (16) |

Almost 55% of the respondents claimed that they were not sure whether there was a Social Media Policy within their institution. Only 28% of them said that there was a Social Media Policy within their Institution and 17% said there was no Social Media Policy in their Institution. The author did a check in the websites of all the institutions of the respondents and found that all the institutions (for example University of Malaya, Sunway University, INTI International University, INTI International College, Taylors University, etc.) did not have a Social Media Policy published in their website except for University Kebangsaan Malaysia which had a brief Social Media Policy published in the website. More details about the Social Media Policy will be discussed in Chapter 7. Finally, students were asked whether they would actively participate and contribute to the learning communities in the event that their instructors decided to adopt Social Media Technologies as the tools to support teaching and learning activities in class and 50.6% of them said they would participate actively, while 48.19%% were still having some reservations. Only 1

respondent said he wouldn't actively participate in the learning community, not so much because of what tools are to be used but more about the people who use it.

At the end of the survey, students were asked to give their views and comments about the use of SMTs in higher education. All comments given are quite positive except one student commented that he still preferred to use the Learning Management System (LMS) over Social Media Technologies (SMTs). Following are some of the quotes extracted from the survey.

| |
|---|
| *"I think using SMTs will be more efficient than using LMS because students tend to spend more time on using SMTs rather than LMS. Usually we just use LMS to download notes and some teaching materials and there is no interaction between the lecturer and student." ~ Student 1* |
| *"It allows peer to peer discussion but it would be better if lecturers and students can communicate for consultation purpose directly on SMTs at a specific period. So that students do not need to purposely make appointment--> go to the office --> queue --> wait = time consuming, money consuming and sometimes lecturers are not able to meet up the students after they have been waiting for so long in the office due to lecturer's personal matter. Using Social Media Tool might help to solve this problem." ~ Student 2* |
| *"It may benefits the student in a class to be more interactive as most of student active in SMT" ~ Student 3* |
| *"It may help in terms of sharing knowledge throughout the entire institution. It can also give chance to those who are not well confident enough to participate during face-to-face events to do so through the usage of social media platforms." ~ Student 4* |
| *"There is great potential if put into good use". ~ Student 5* |

*"In the age of technology that we live in, I believe that SMTs being used in higher education may be a community's advantage. However, I would be reluctant to mix academic matters with the rest of my social life; which is why I would prefer a LMS over SMTs." ~ Student 6*

### 4.2.4 Informatics Students not using Social Media Technologies for academic purposes

Out of 111 respondents who completed the survey, only 10 students claimed that they had never used SMTs for academic related activities. However 3 out of the 10 students said they would consider the use of SMTs for academic purposes in future, while 5 of them were still not very sure whether or not they would be exploring the use of SMTs for academic activities. 2 students claimed that they would not consider SMTs at all for academic activities. When asked about the reasons for not considering the use of SMTs, 3 out of 10 said that SMTs were not suitable to support their studies. The other reasons for not using SMTs can be seen from *Table 4.11.*

*Table 4.11: Reasons for not using SMTs*

| Reasons for not using SMTs | No. of Responses | Percentage of Responses |
|---|---|---|
| Not interested | 2 | 25% |
| Do not see the need to use it | 1 | 12.5% |
| No suitable SMTs to support my studies | 3 | 37.5% |
| Not being used in classes by my peers / lecturers / faculty / institution | 2 | 25% |
| Concern about privacy issues | 2 | 25% |

For this group of students, 44.44% claimed that if their instructors were using SMTs for academic activities in class, they would actively participate and contribute to the learning community while the other 55.56% said they might consider that.

### 4.2.5 Summary

From the data collection and initial analysis, there does not appear to be a discernable difference in the use of SMTs by students from Informatics and non-Informatics background despite the heavy exposure to technologies by the Informatics students. The amount of hours spent online, the types of SMTs used and the pattern of usage are all quite closely matched. The perception that relates Informatics students to the high ownership of technology devices and high usage of online applications and Social Media Technologies might not be relevant. The data collected also shows that irrespective of the discipline of their study, more than 50% of the respondents are spending 5 hours and above online every day and about 90% of them do use Social Media Technologies (SMTs) for academic purposes. The students surveyed reported that they mainly SMTs for personal social activities, but from the data collected from the questionnaires, it does shows that many students and instructors have started to explore and accept the use of SMTs as a tool for engaging with their Institution and their peers as well as for teaching and learning purposes. Students and academic participants in this study believe SMTs do promote interactive learning and encourage active participations in academic activities. Certainly, the use of SMTs needs to be used purposefully and ethically in order to capture the full potential of SMTs in teaching and learning.

## 4.3 ACADEMIC STAFF

Both Informatics and non-Informatics Academics were surveyed to understand the pattern of usage of SMTs between the two groups of academics. In total, there were 38 Informatics Academics and 33 non-Informatics Academics who responded to the online questionnaire that were sent out via emails and Facebook.

### 4.3.1 Demographic Data

On average, the Informatics respondents were generally younger compared to the non-Informatics respondents. The majority of the Informatics Academics (63.2%) were from the age group of 31-40, while for non-Informatics Academics, the majority of them (39.4%) were from the age group of 41-50. For both categories, more than 70% were female respondents (Informatics – 76.3%, and Non-Informatics – 72.7%). All the respondents for non-Informatics Academics are Malaysian while for Informatics Academics, there was also 1 Singaporean and 1 Pilipino. *Figure 4.7* below shows the years of teaching experiences of the respondents, and *Figure 4.8* shows the gender of the respondents. There were more female respondents for both categories of respondents compared to male and this is representative of the Malaysian higher education academic workforce. Based on the 2012 National Education Statistics of Higher Education in Malaysia compiled by the Ministry of Higher Education, there are generally more female academics in tertiary education institutions compared to male. The total female academics nationally was 27,537 (15,551 from public institutions and 11,986 from private institutions), while male academics totaled up to 22,673 (14,168 in public institutions and 10,082 in private institutions) (MOHE, 2012).

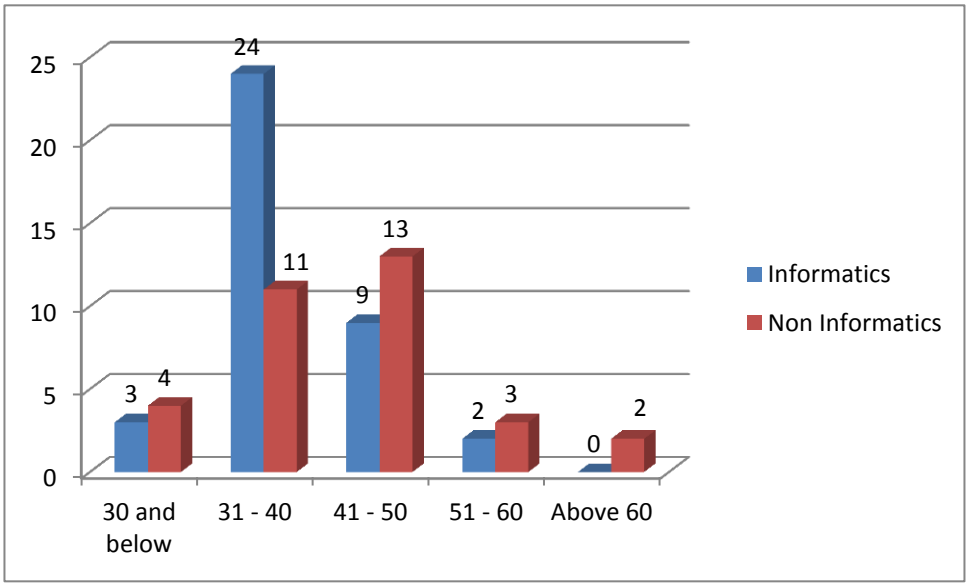



*Figure 4.7: Academic – Age group of the respondents*

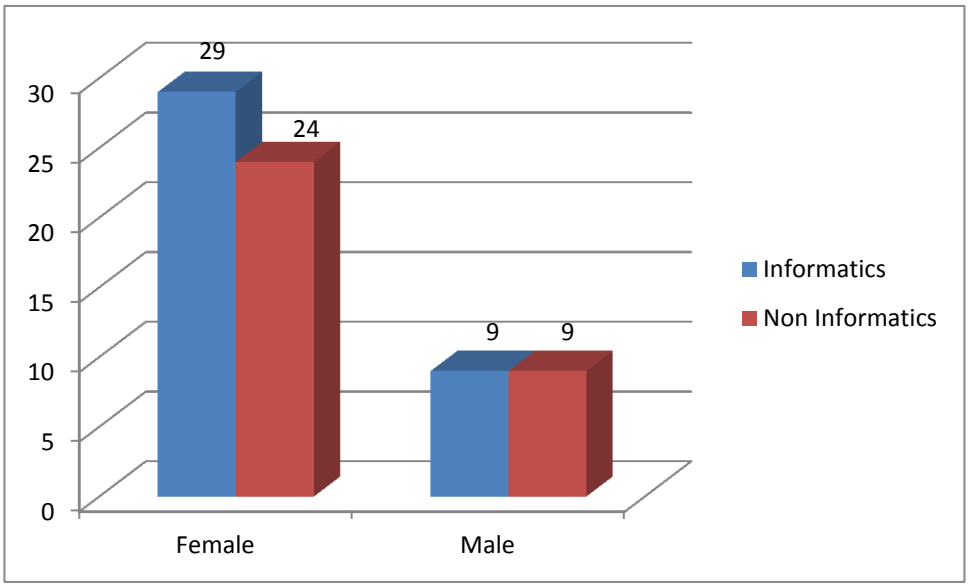



*Figure 4.8: Academic – Gender*

The highest academic qualification of the respondents can be seen in *Table 4.12*. More than 60% of the respondents have a Masters Degree while only very small numbers of respondents have a Bachelors Degree as their highest qualification. Most respondents (more than 60%) were teaching Bachelor Degree programs in their institutions. The level of study of the program that the respondents were currently teaching can be seen in *Table 4.13* below.

*Table 4.12: Academic – Highest Academic Qualification*

| Category | Bachelor | Master | Doctorate |
|---|---|---|---|
| **Informatics Academics** | 1 (2.63%) | 24 (63.15%) | 13 (34.21%) |
| **Non Informatics Academics** | 4 (15.6%) | 21 (65.6%) | 6 (18.8%) |

*Table 4.13: Academic – Level of study of the program*

| Level of Study | Informatics Academic | | Non-Informatics Academic | |
|---|---|---|---|---|
| | Percentage of responses | No. of responses | Percentage of responses | No. of responses |
| Certificate | 5.4% | 2 | 9.4% | 3 |
| Diploma | 32.4% | 12 | 34.4% | 11 |
| Foundation | 13.5% | 5 | 12.5% | 4 |
| Bachelor Degree | 67.6% | 25 | 71.9% | 23 |
| Master | 24.3% | 9 | 3.1% | 1 |
| PhD | 24.3% | 9 | 0.0% | 0 |

Most of the respondents from Informatics were senior academic staff with more than 5 years of teaching experiences while the non-Informatics academics were evenly spread across different numbers of years of experience. *Figure 4.9* depicts the number of years the academic staff have in the teaching profession and *Figure 4.10* depicts the job title of the academic staff.

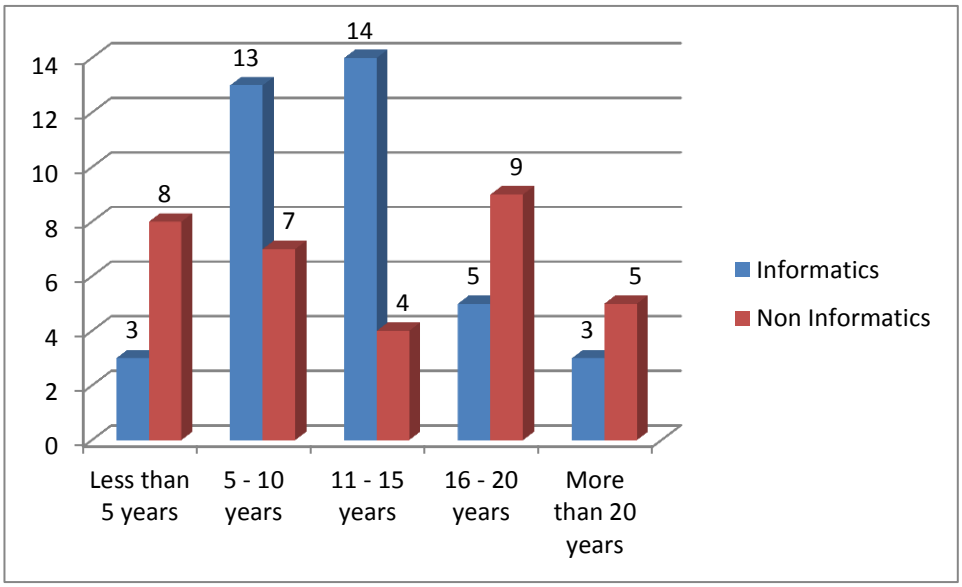



*Figure 4.9: Academic – Teaching experiences*

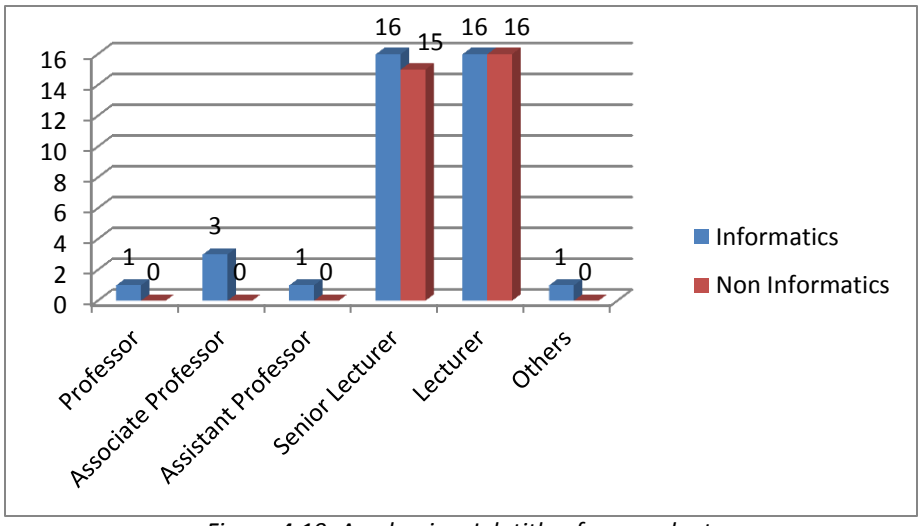



*Figure 4.10: Academic – Job title of respondents*

All the non-Informatics academic respondents were currently working with private colleges or private universities (for example Multimedia University, Monash University, Taylors University, INTI Subang, and INTI University), while 62% of the Informatics academics worked in private colleges or universities and 38% in public universities. The colleges or universities in which the Informatics academics worked in are Universiti Malaysia Pahang, INTI Laureate, Multimedia University, UTM, UPM, UKM, International Islamic University of Malaysia, Sunway University, University of Malaya, INTI International University, and INTI International College Subang. *Figure 4.11* shows the distribution of Institutions in which the respondents were currently attached.

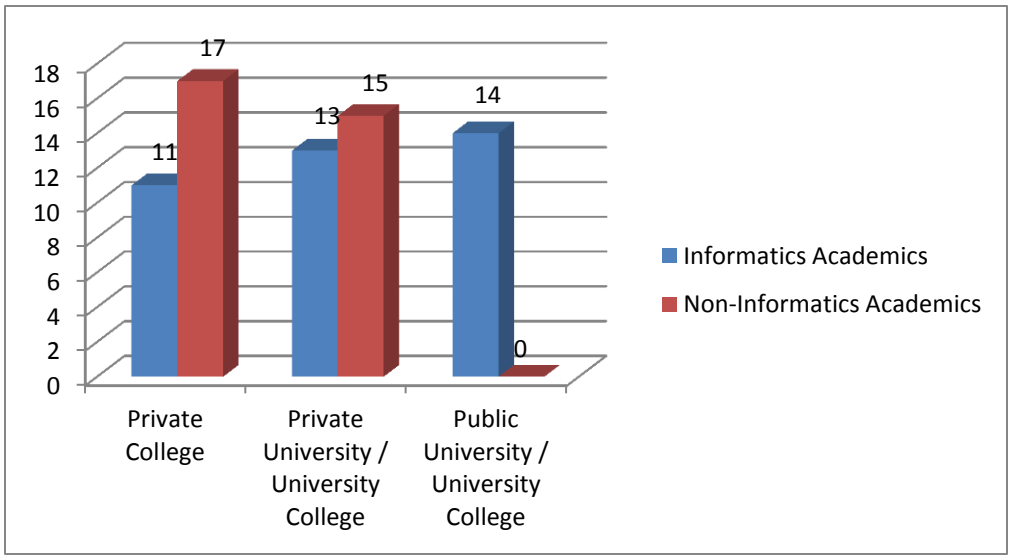



*Figure 4.11: Academic – Higher Education Institutions*

The respondents from Informatics background were mostly specializing in Information Systems or Information Technology (45.9%) and Programming (40.5%), while the non-Informatics academics were mostly specializing in Business Administration, Management, International Business, Marketing, Economics and Human Resources (38.7%). Other area of specialization of Informatics academics included Bioinformatics, Radar, Field Programmable Gate Array, Mathematics and Statistics for Computing, Graphics Programming, Human Computer Interactions, and Information Security, while for non-Informatics, it include English, Sciences, Engineering Maths, and Design. *Table 4.14* depicts the specialization area of Informatics academics, and *Table 4.15* depicts the specialization area of non-Informatics academics.

*Table 4.14: Academic – Area of Specialization (Informatics)*

| **Specialization Area** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Network / Data Communications | 4 | 10.8% |
| Database / Business Intelligence / Data Warehouse / Data Mining | 7 | 18.9% |
| Information System / Information Technology | 17 | 45.9% |
| Programming | 15 | 40.5% |
| Systems Development / Systems Analysis and Design / Project Management | 10 | 27.0% |
| Internet / Web / Mobile Applications | 7 | 18.9% |
| Multimedia / Game Development | 4 | 10.8% |
| Others | 6 | 16.2% |

*Table 4.15: Academic – Area of Specialization (non-Informatics)*

| **Answer Options** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Accounting / Finance | 7 | 22.6% |
| Art | 0 | 0.0% |
| Business Administration / Management / Marketing / International Business / Economic /HR | 12 | 38.7% |
| Engineering | 2 | 6.5% |
| Health Science | 0 | 0.0% |
| PR / Communications / Media Studies | 0 | 0.0% |
| Law / Politics | 1 | 3.2% |
| Humanities / Religions / Sociology | 3 | 9.7% |
| Others | 6 | 19.4% |

### 4.3.2 Social Media Exposure

This section compares the digital devices ownership and social media exposure and experiences between Informatics and non-Informatics academics. The purpose of the comparative studies is to understand whether there is any difference between the two groups of academics in terms of their exposures and experiences with using Social Media Technologies in teaching and learning activities in class. From *Table 4.16* below, it can be seen that almost all the academic staff from both Informatics and non-Informatics owned a laptop or notebook (97.4% for Informatics, and 93.9% for non-Informatics). This is not surprising as most Institutions of higher education now are focusing on mobility and classroom / office spaces for staff, providing a laptop to their academic staff might be a better solution. The ownership of smartphones and digital tablets was generally higher for Informatics academics compared to non-Informatics academics.

*Table 4.16: Academic – Ownership of digital devices*

| **Digital Devices** | **Informatics Academic** | | **Non-Informatics Academic** | |
|---|---|---|---|---|
| | **No. of responses** | **Percentage of responses** | **No. of responses** | **Percentage of responses** |
| None | 0 | 0.0% | 0 | 0.0% |
| Smartphone | 33 | 86.8% | 21 | 63.6% |
| Desktop | 22 | 57.9% | 18 | 54.5% |
| Laptop / Notebook | 37 | 97.4% | 31 | 93.9% |
| Digital Tablet (e.g. Ipad, e-pad, Samsung Tab, etc) | 21 | 55.3% | 12 | 36.4% |

The data collected showed that Informatics academics are spending more time on their digital devices daily compared to the non-Informatics academics. Most of the Informatics academics spent more than 6 hours daily (47.4%) while non-Informatics academics only spent 3 to 4 hours daily (33.3%). One explanation for the difference in the usage might be because Informatics academics need to prepare their teaching lessons which are technology based. The other possible reason is because the technology content that they need to share with their classes evolved in a fast pace, thus, they have to spend more time online to keep themselves updated with the latest trends of technologies. Refer to *Table 4.17*for the number of hours spent online.

*Table 4.17: Academic – No. of hours spent on digital devices to go online*

| Hours | Informatics | | Non-Informatics | |
|---|---|---|---|---|
| | No. of responses | Percentage of responses | No. of responses | Percentage of responses |
| None | 0 | 0.0% | 0 | 0.0% |
| < 1 hour | 2 | 5.3% | 1 | 3.0% |
| 1 - 2 hours | 1 | 2.6% | 5 | 15.2% |
| 3 - 4 hours | 8 | 21.1% | 11 | 33.3% |
| 5 - 6 hours | 9 | 23.7% | 9 | 27.3% |
| > 6 hours | 18 | 47.4% | 7 | 21.2% |

94.7% of Informatics academics use Social Media Technologies compared to 84.8% by the non-Informatics academics (*Figure 4.12*). The top three most popular categories of SMTs) used by the respondents are Social Networking Websites followed by Media Sharing tools and Mobile Messaging applications. The detailed breakdown is shown in *Table 4.18: Social Media Technologies exposures.*

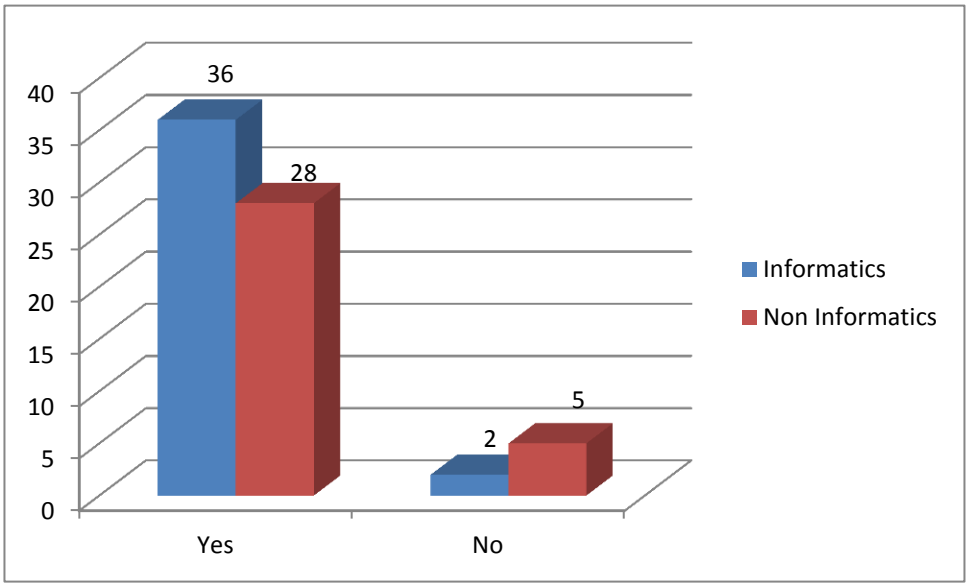



*Figure 4.12: Academic – General use of Social Media Technologies (SMTs)*

*Table 4.18: Academic – Social Media Technologies exposures*

| Types of SMTs | Informatics | | Non-Informatics | |
|---|---|---|---|---|
| | No. of responses | Percentage of responses | No. of responses | Percentage of responses |
| Social Networking Websites (e.g. Facebook, Ning, Google+, LinkedIn, etc) | 34 | 94.4% | 25 | 92.6% |
| Media Sharing Tools (e.g. YouTube, Flickr, Dropbox, SlideShare, Instagram, Pinterest, etc) | 27 | 75.0% | 22 | 81.5% |
| Blogs (e.g. Blogger, WordPress, eBlogger, LiverJournal, Elgg, etc) | 9 | 25.0% | 7 | 25.9% |
| Wikis (e.g. Wikipedia, Wikias, Wikispaces, PBWikis, Wikiversity, etc) | 17 | 47.2% | 14 | 51.9% |
| Micro-Blogging Tool (e.g. Twitter, Sina Weibo, Tumblr, Plurk, Qaiku, etc) | 8 | 22.2% | 1 | 3.7% |
| Social Bookmarking Tool (e.g. Digg, Reddit, StumbleUpon, Delicious, Furl, etc) | 3 | 8.3% | 0 | 0.0% |
| RSS Feeds (TweetDeck, Flock, FriendFeed, Netvibes, Radian6, etc) | 1 | 2.8% | 2 | 7.4% |
| Mobile Messaging applications (e.g. WhatsApp, Line, eBuddy XMS, Meebo, WeChart, etc) | 21 | 58.3% | 20 | 74.1% |
| Synchronous Communication & Conferencing (e.g. Messenger, Skype, DimDim, Tokbox, Google Talk, etc) | 21 | 58.3% | 12 | 44.4% |
| Others (please specify) | 2 | 5.6% | 1 | 3.7% |

### 4.3.3 Social Media Technologies Use for Academic purposes by Informatics Academics

This section covers the use of Social Media Technologies (SMTs) by Informatics academics for academic purposes. There was very little difference in the percentage of use of SMTs by academics between the Informatics and non-Informatics group (Refer to *Table 4.19*). The top two categories of SMTs used for academic purposes by both group of respondents were Social Networking Websites and Media Sharing Tools, while the least used SMTs were RSS Feed and Social Bookmarking Tools. Refer to *Table 4.20 for* categories of SMTs used for academic purposes. When respondents were asked to list the top 5 examples of SMTs frequently used for academic purposes, the results from both groups of respondents were quite different. For the Informatics academics, the most preferred examples of SMTs were Facebook, followed by Dropbox, YouTube, What's App and Skype, while for the non-Informatics academics, the most preferred examples of

SMTs were YouTube follow by Facebook, Wikis, Blogs and Dropbox. There were 3 similarities of preferred tools between the 2 groups. Refer to *Table 4.21* for the list of preferred SMTs.

*Table 4.19: Academic – Use of Social Media Technologies (SMTs) for Academic Purpose*

| **Use of SMTs for Academic** | **Informatics** | | **Non-Informatics** | |
|---|---|---|---|---|
| | **No. of responses** | **Percentage of responses** | **No. of responses** | **Percentage of responses** |
| Yes | 26 | 76.5% | 21 | 77.8% |
| No | 8 | 23.5% | 6 | 22.2% |

*Table 4.20: Academic – Categories of SMTs popularly used for Academic Purpose.*

| **Categories of SMTs** | **Informatics** | | **Non-Informatics** | |
|---|---|---|---|---|
| | **No. of responses** | **Percentage of responses** | **No. of responses** | **Percentage of responses** |
| Social Networking Websites (e.g. Facebook, Ning, Google+, LinkedIn, etc) | 19 | 86.4% | 19 | 86.4% |
| Media Sharing Tools (e.g. YouTube, Flickr, Dropbox, SlideShare, Instagram, Pinterest, etc) | 18 | 81.8% | 18 | 81.8% |
| Blogs (e.g. Blogger, WordPress, eBlogger, LiverJournal, Elgg, etc) | 4 | 18.2% | 4 | 18.2% |
| Wikis (e.g. Wikipedia, Wikias, Wikispaces, PBWikis, Wikiversity, etc) | 10 | 45.5% | 10 | 45.5% |
| Micro-Blogging Tool (e.g. Twitter, Sina Weibo, Tumblr, Plurk, Qaiku, etc) | 3 | 13.6% | 3 | 13.6% |
| Social Bookmarking Tool (e.g. Digg, Reddit, StumbleUpon, Delicious, Furl, etc) | 1 | 4.5% | 1 | 4.5% |
| RSS Feeds (TweetDeck, Flock, FriendFeed, Netvibes, Radian6, etc) | 0 | 0.0% | 0 | 0.0% |
| Mobile Messaging applications (e.g. WhatsApp, Line, eBuddy XMS, Meebo, WeChart, etc) | 8 | 36.4% | 4 | 20.0% |
| Synchronous Communication & Conferencing (e.g. Messenger, Skype, DimDim, Tokbox, Google Talk, etc) | 10 | 45.5% | 4 | 20.0% |
| Others | 2 | 9.1% | 1 | 5% |

*Table 4.21: Academic – Most Preferred SMTs for Academic use*

| Most Preferred SMTs | Informatics Academics | Non-Informatics Academics |
|---|---|---|
| 1 | Facebook | YouTube |
| 2 | Dropbox | Facebook |
| 3 | YouTube | Wikis |
| 4 | What's App | Blogs |
| 5 | Skype | Dropbox |

Academic staff were asked how they used SMTs in their classes. 81.8% of the Informatics respondents said they used SMTs for assignments or projects collaboration and sharing of documents, while the non-Informatics academics were using it for knowledge or information sharing (90%). *Table 4.22* below shows the differences in the use of SMTs for teaching and learning activities by Informatics and non-Informatics academics.

*Table 4.22: Academic – How SMTs being used for teaching and learning activities*

| How do you use SMTs for teaching and learning activities with your students? | Informatics | | Non-Informatics | |
|---|---|---|---|---|
| | No. of responses | Percentage of responses | No. of responses | Percentage of responses |
| Assignments / Project Collaboration / Discussions | 18 | 81.8% | 17 | 85.0% |
| Sharing of documents | 18 | 81.8% | 15 | 75.0% |
| Knowledge / Information Sharing | 16 | 72.7% | 18 | 90.0% |
| Activities / Event updates | 17 | 77.3% | 12 | 60.0% |
| Sourcing for information | 17 | 77.3% | 14 | 70.0% |
| Communication | 13 | 59.1% | 11 | 55.0% |

From the data collected, 62% of the respondents strongly agreed that SMTs can enhance students' learning process and none of them disagree with this. When asked about the perceived benefits of using SMTs in supporting teaching and learning activities, Informatics academics listed SMTs as an enabler for information / knowledge sharing (95.2%), followed by supporting innovative teaching methods (90.5%), and supporting peer-to-peer learning and improving students' participations

(both 85.7%). Similar to Informatics academics, the non-Informatics academics also listed SMTs as the enabler for information / knowledge sharing (90%) and SMTs for supporting innovative teaching (75%) as the main benefits of using SMTs. The only difference between the two categories of academics is the least selected benefit, where Informatics academics listed SMTs could enhance student motivation, and SMTs are able to support the creation of personal learning environments, while the non-Informatics academics listed SMTs enable cooperative and collaborative work. *Table 4.23* illustrates the benefits of SMTs reported by the Informatics and non-Informatics academics.

*Table 4.23: Academics – Perceived benefits by Informatics vs. non-Informatics Academics*

| | **Informatics** | | **Non-Informatics** | |
|---|---|---|---|---|
| **Perceived Benefits of SMTs** | **No. of responses** | **Percentage of responses** | **No. of responses** | **Percentage of responses** |
| SMTs support innovative teaching methods | 19 | 90.5% | 15 | 75% |
| SMTs support peer-to-peer learning | 18 | 85.7% | 13 | 65% |
| SMTs enhance student motivation | 15 | 71.4% | 13 | 65% |
| SMTs improve student's participation | 18 | 85.7% | 12 | 60% |
| SMTs enable information / knowledge sharing | 20 | 95.2% | 18 | 90% |
| SMTs enable cooperative and collaborative work | 17 | 81.0% | 9 | 45% |
| SMTs support the creation of personal learning environment | 15 | 71.4% | 13 | 65% |
| SMTs strengthen lecturers and students rapport | 16 | 76.2% | 13 | 65% |

Higher education Institutions have their own Learning Management Systems (LMS) in place to support the teaching and learning activities in their Institutions. For Informatics academics, more than 70% of the respondents agreed that LMSs have the following benefits: LMSs enable academics to organize, manage and upload their assessment work, students to download learning materials, students to view their grades and monitor their academic progress, students to communicate among peers and with the academics, and students to view calendar, activities events and announcements posted by the Institution, faculty, academics and peers. However, respondents also agreed that LMSs are too formal (81.8%), controlled by Institutions (57%) and are

not customizable to suit student's learning style (57%). Thus, they prefer to use both the LMS and SMTs to support their teaching and learning activities (72.7%) instead of just using LMS alone (13.6%) or just SMTs (9.1%). When asked about the barriers or problems encountered in the use of SMTs for academic purposes, Informatics academics listed the use SMTs as interfering with their personal time as the main issue (72.7%). Refer to *Table 4.24* for the list of barriers in using SMTs.

*Table 4.24: Academic – Barriers/Problems in using SMTs for academic purpose*

| **Barriers / Problems of using SMTs** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Privacy concerns | 15 | 68.2% |
| Interfering with personal time | 16 | 72.7% |
| Lack of confidence with Social Media Tools (SMTs) | 6 | 27.3% |
| Lack of support provided by the Institution | 6 | 27.3% |
| Students were distracted and loss focus in class | 11 | 50.0% |
| Take too much faculty time | 3 | 13.6% |
| Lack of integration with Institution's Learning Management System (LMS) | 14 | 63.6% |
| Inability to measure effectiveness | 8 | 36.4% |
| Complexity / integrity in grading and assessments | 8 | 36.4% |
| Others (please specify): | 2 | 9.1% |

Informatics academics also attributed privacy issues, slow internet connections, and blocking of some applications by the institutions as the main restrictions that hinder them from using SMTs to support teaching and learning activities in class. *Table 4.25* shows the respondents perceptions of restrictions of using SMTs in the Institution. 77.3% of the respondents said their Institutions does allow and support the use of SMTs for academic purposes (refer to *Figure 4.13*). However, one respondent commented that it is the Institution wide policy to use LMSs actively within the Institution, thus, using and managing two different tools (LMS and SMTs) would be too taxing for academics.

*Table 4.25: Academics – Restrictions encountered in the use of SMTs in the Institution*

| Restrictions / Limitations | No. of responses | Percentage of responses |
|---|---|---|
| Slow Internet connections / Low Bandwidth | 14 | 63.6% |
| Blocking of some applications by the university | 14 | 63.6% |
| All activities were being monitored | 8 | 36.4% |
| Social Media accounts being hacked | 2 | 9.1% |
| Privacy issues | 15 | 68.2% |
| Others | 1 | 4.5% |

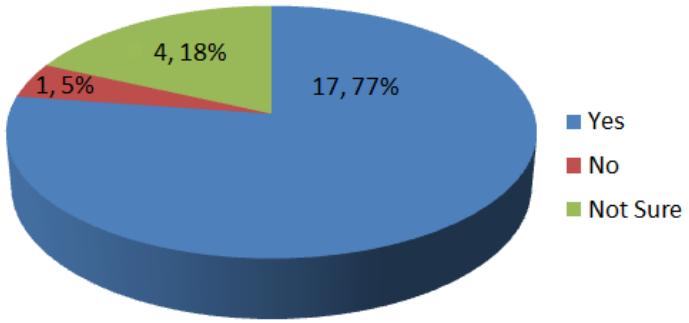



*Figure 4.13: Academics – Institution support on the use of SMTs*

Finally, the respondents were asked whether or not they were aware of the existence of Social media policy within their institution, and almost 55% of the respondents claimed that they were not sure whether there was a Social Media Policy within their institution. Only 18.2% of them said that there is a Social Media Policy within their Institution and 27.3% said there is no Social Media Policy in their Institution (*Figure 4.14*).

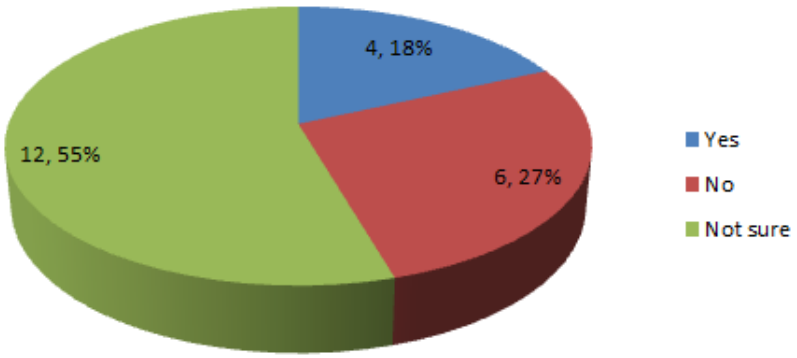



*Figure 4.14: Academic – Social Media Policy in Institution*

At the end of the survey, respondents were asked to give some comments or views about the use of SMTs in higher education institutions. One respondent commented that students are mostly in the advanced level of SMTs skills, and higher education systems could be changed to leverage the technologies for academic purposes. As students mostly log on to their social network such as Facebook account, perhaps, instructors could use it to disseminate information and to reach out to students easily and quickly. One respondent even suggested that there should be a collaborative effort among higher learning institutions in Malaysia to develop secure social media tools for education (teaching and learning) sharing. However, one respondent shared that even though SMTs are great communication tools that could be used to support academic activities, instructors need to be aware of the ethical issues involved and institutions need to address these issues before it should be used as an academic tool.

### 4.3.4 Informatics Academics not using Social Media Technologies for academic purpose

Out of 38 respondents who completed the survey, 8 respondents claimed that they have never used SMTs for teaching and learning activities in class while 4 respondents skipped the question. Reasons given for not using SMTs can be seen in *Table 4.26*. More than 50% of the respondents attributed it to the concern about privacy issues as many academics would prefer to separate work from their personal context and 25% claimed that they were not interested in the use of SMTs, and they perceived SMTs as an informal interaction tool, thus not suitable for academic purposes. Finally, the respondents were asked about the possibility of using SMTs for academic purposes in the near future, 87.5% of the respondents said may be, while only 12.5% said yes.

*Table 4.26: Academics – Reasons for not using SMTs*

| Reasons for not using SMTs | No. of responses | Percentage of responses |
|---|---|---|
| Not interested | 2 | 25.0% |
| Do not have the technologies / gadgets to support the use of Social Media Tools (SMTs). | 1 | 12.5% |
| Concern about privacy issues. | 5 | 62.5% |
| Restricted by parents / guardians. | 0 | 0.0% |
| Not sure how to use it. | 1 | 12.5% |
| Waste of time | 0 | 0.0% |
| Others | 2 | 25.0% |

### 4.3.5 Summary

From the analysis, there is a slight difference in terms of the ownership and use of SMTs by academic staff from Informatics and non-Informatics background. Informatics respondent's ownership of smartphone and digital tablets was slightly higher (about 20%) compared to non-Informatics respondents. In addition, the time spent to go on-line with the digital devices by the Informatics group is also 50% higher compared to the non-Informatics group. One explanation might be the age gap between the two groups of respondents, in which the younger academics might be more receptive towards the exploring new technologies. In addition, it might be due to the disciplines involved by the Informatics group in which they need lots of involvement with and exposure to technologies due to the nature of the evolving trend. Thus, the likelihood of Informatics academics spending longer hours (about 50% more) compared to the non-Informatics Academics is understandable since the preparation for teaching itself involves technologies and the Internet. Despite the differences in terms of the ownership and exposures, the percentage of respondents using SMTs for academic purpose and the categories of SMTs used are closely matched. The only difference is on the ranking of most preferred SMTs used and how SMTs are being used for teaching and learning activities with their students.

## 4.4 ADMINISTRATORS

Forty three administrators from both the private and public higher education institutions in Malaysia responded to the survey. Most of the respondents were faculty administrators who use SMTs as a medium of communication between the faculty and students.

### 4.4.1 Demographic Data

*Figure 4.15* depicts the type of Institutions in which the respondents were located. 53% of the respondents worked in private colleges (INTI International College Subang, ELS) 40% worked in private universities or university colleges (UNIMAS, Sunway, MMU, INTI University, New Era University College, and Monash University) and 7% were from a Public University (UM). *Table 4.27* shows the size of the institution while *Table 4.28* shows the year of establishment of the Institutions. 65.85% of the Institutions have more than 4000 students, while 17.07% have less than 1000 students. 83.72% of the Institutions have existed more than 10 years and only one Institution has been established for less than a year.

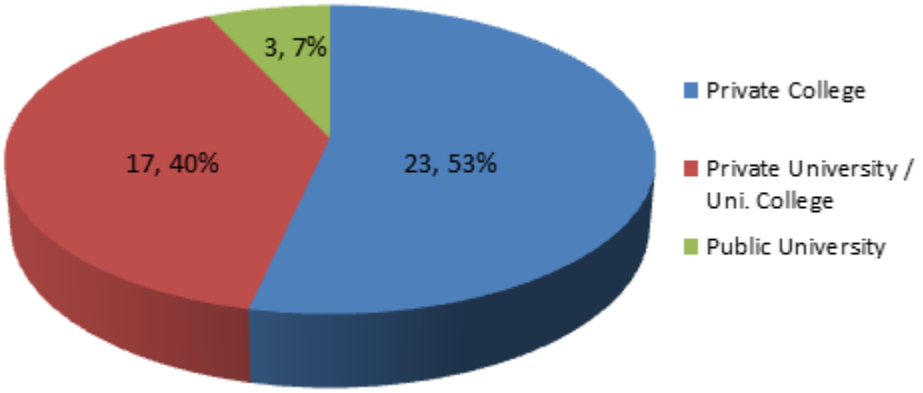



*Figure 4.15: Administrator – Types of Institutions*

*Table 4.27: Administrator – No. of students in the Institution*

| No. of Students | No. of Responses | Percentage of Responses |
|---|---|---|
| <1000 | 7 | 17.07% |
| 1001 – 1500 | 0 | 0 |
| 1501 – 2000 | 1 | 2.44% |
| 2001 – 2500 | 1 | 2.44% |
| 2501 – 3000 | 2 | 4.88% |
| 3001 – 3500 | 0 | 0 |
| 3501 – 4000 | 3 | 7.32% |
| >4000 | 27 | 65.85% |

*Table 4.28: Administrator – Years of Institution establishment*

| Years | No. of Responses | Percentage of Responses |
|---|---|---|
| < 1 year | 1 | 2.33% |
| 1 – 3 years | 4 | 9.30% |
| 3 – 5 years | 1 | 2.33% |
| 5 – 7 years | 1 | 2.33% |
| 7 – 10 years | 0 | 0 |
| > 10 years | 36 | 83.72% |

Most of the respondents were attached to school or faculty of the institutions (62.79%), while the others were evenly spread across ICT Departments, Sales / Marketing, Student Services, and others (for example Operations, training center, quality assurance, curriculum development). Refer to *Figure 4.16* shows the respondent's attachment while *Table 4.29* shows the respondent's position in the unit they are attached to. The majority of the respondents (27.9%) were heads of programs managing the respective program of studies, followed by program or administrative officers within the faculty or school (18.6%), and 13.95% were Deans / Directors, and Faculty Managers respectively.

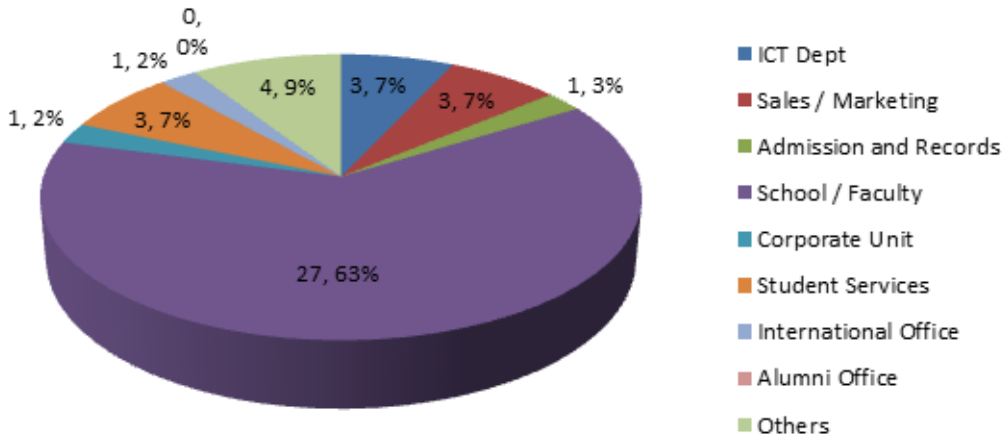



*Figure 4.16: Administrator – Administrator's attachment.*

*Table 4.29: Administrator – Administrator's position*

| Years | No. of Responses | Percentage of Responses |
|---|---|---|
| Dean / Director | 6 (13.95%) | 13.95% |
| Head of Programme | 12 (27.9%) | 27.9% |
| Program / Admin Officer | 8 (18.6%) | 18.6% |
| Executive (Sports / student services) | 4 (9.30%) | 9.30% |
| ICT Director | 1 (2.33%) | 2.33% |
| Faculty / School / Program / Course Manager | 6 (13.95%) | 13.95% |
| No responses | 5 (11.63%) | 11.63% |

## 4.4.2 Administrator's use of SMTs

When asked about the use of Social Media Technologies (SMTs) within the Institution and faculty, 88.37% of the respondents claimed that SMTs are being used. 100% of the respondents also claimed that their institution is allowing and not restricting the use of SMTs. But when asked about Social Media Policy, only 36.11% claimed that their institution has one to govern the use of SMTs within the institution, while 19.44% claimed that their institutions did not have a social media policy and 44.44% were not sure whether there was any within the institution.

Out of the 36 respondents who answered this section, the majority (72.22%) were school / faculty administrators dealing with SMTs matters in their institution while 11.43% were institution level administrators. *Table 4.30* shows the respondent's role in SMTs.

*Table 4.30: Administrator – Administrator's role in SMTs*

| **Role** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Institution's Administrator | 4 | 11.43% |
| School / Faculty's Administrator | 26 | 72.22% |
| Unit / Department's Administrator | 6 | 17.14% |

The top three most popular SMTs used by the Institutions or respective faculty were social networking websites (97.22%), followed by media sharing tools (55.56%) and synchronous communication and conferencing (33.33%). The least used SMTs were social bookmarking tools such as Digg, Reddit, Delicious, and many more. *Table 4.31* shows the types of SMTs used by institution or faculty.

*Table 4.31: Administrator - Types of SMTs used by institution or faculty.*

| **SMTs** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Social Networking Websites (e.g. Facebook, Ning, Google+, LinkedIn, etc) | 35 | 97.22% |
| Media Sharing Tools (e.g. YouTube, Flickr, Dropbox, SlideShare, Instagram, Pinterest, etc) | 20 | 55.56% |
| Blogs (e.g. Blogger, WordPress, eBlogger, LiverJournal, Elgg, etc) | 5 | 13.89% |
| Wikis (e.g. Wikipedia, Wikias, Wikispaces, PBWikis, WikiVersity, etc) | 9 | 25% |
| Micro-Blogging Tool (e.g. Twitter, Sina Weibo, Tumblr, Plurk, Qaiku, etc) | 5 | 13.89% |
| Social Bookmarking Tool (e.g. Digg, Reddit, StumbleUpon, Delicious, Furl, etc) | 1 | 2.78% |
| RSS Feeds (TweetDeck, Flock, FriendFee, Netvibes, Radian6, etC) | 2 | 2.56% |
| Mobile Messaging applications (e.g. WhatsApp, Line, eBuddy XMS, Meebo, WeChat, etc) | 7 | 19.44% |
| Synchronous Communication & Conferencing (e.g. Messenger, Skype, DimDim, Tokbox, Google Talk, etc) | 12 | 33.33% |

Respondents were asked to list five examples of SMTs most useful characteristics for academic purposes used in their institution. All 36 respondents think that the most useful tool is Facebook, followed by Dropbox, YouTube, Skype and Google+ and Twitter (*Table 4.32*).

*Table 4.32: Administrator – Examples of popularly used SMTs for Academic purpose*

| Role | No. of responses |
|---|---|
| YouTube | 14 |
| Facebook | 36 |
| Skype | 11 |
| Dropbox | 22 |
| Wikis | 9 |
| Blogs | 6 |
| Google+ | 10 |
| Twitter | 10 |
| Google Hangout | 2 |
| Instagram | 2 |
| SlideShare | 1 |
| LinkedIn | 6 |
| Line | 1 |
| Messenger | 1 |
| Pinterest | 1 |
| GoogleTalk | 1 |

When asked about the reasons respective Institutions establish their SMTs presence, more than half of the respondents chose leveraging on the affordance of technology while only 8.33% said that it was the directive from top management. *Table 4.33* below shows the reasons for SMTs presence.

*Table 4.33: Administrator – Reasons for SMTs presence*

| Reasons | No. of responses | Percentage of responses |
|---|---|---|
| Wanted to experiment with social media | 16 | 44.44% |
| Competitors were using social media | 11 | 30.56% |
| Leveraging on the affordance of technology | 20 | 55.56% |
| Institution-wide mission and vision | 5 | 13.89% |
| Directive from top management | 3 | 8.33% |
| Others (communications, easy way to connect to students, fastest communication channel, popular and widely used by students, trendy, engaging with the students | 10 | 27.78% |

Data collected shows that most Institutions were using SMTs to engage with their existing students (86.11%) and alumni (41.67%). *Table 4.34* shows the target audience of SMTs engagement. In terms of the usage of SMTs, the main intention was to provide updates of faculty or institution activities and events, followed by improving the communication with current students and their parents, increasing brand or product awareness of the Institution, improving customer service and to provide a better feedback mechanism to and from customers. *Table 4.35* shows the intended usage of SMTs by Institution.

*Table 4.34: Administrator – Target Audience*

| **Target Audience** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Potential Students | 13 | 36.11% |
| Potential Parents | 5 | 13.89% |
| Existing Students | 31 | 86.11% |
| Existing Parents | 4 | 11.11% |
| Staff | 11 | 30.56% |
| Alumni | 15 | 41.67% |
| Public | 12 | 33.33% |
| Others: (Classes & Academics at other institution) | 2 | 5.56% |

*Table 4.35: Administrator – Intended usage of SMTs*

| **Intention of SMTs usage** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Better communication with potential students and parents | 17 | 47.22% |
| Better communication with current students and their parents. | 27 | 75% |
| Updating institution / faculty / department's activities and events. | 28 | 77.78% |
| Increased customer satisfaction / Better customer service | 19 | 52.78% |
| Increase brand / product awareness | 23 | 63.89% |
| Reduced communication costs | 16 | 44.44% |
| Better feedback mechanism from customers | 18 | 50% |
| Better marketing of products / services | 12 | 33.33% |
| Better ability to showcase institution's expertise | 12 | 33.33% |
| Gain more business contacts | 4 | 11.11% |

Most institutions surveyed did not have a dedicated Social Media Manager role within the institution. However, the responsibilities of managing and monitoring SMTs usage in the

respective faculty, school and Institution tended to be assigned to a faculty administrator, such as head of program, program officer, Dean, Administrative staff, etc. As for the institution wide purpose, some institutions assigned the social media administration to their web administrator, Digital Marketer, IT Administrator and online interactive planner. *Figure 4.17* depicts the various roles of administrators in the institutions. About 36% of the respondents claimed that they were not sure whether there was any dedicated SMTs administrator within their institution and 22.2% said they didn't have a SMT administrator in their institution. When asked about the frequency of updating the social media content, 37.1% claimed that the content was updated on a daily basis, while 28.5% said the content was updated several days per week. In addition to that, 25.71% of the respondents said they did not know how frequently the content was being updated (refer to *Table 4.36*).

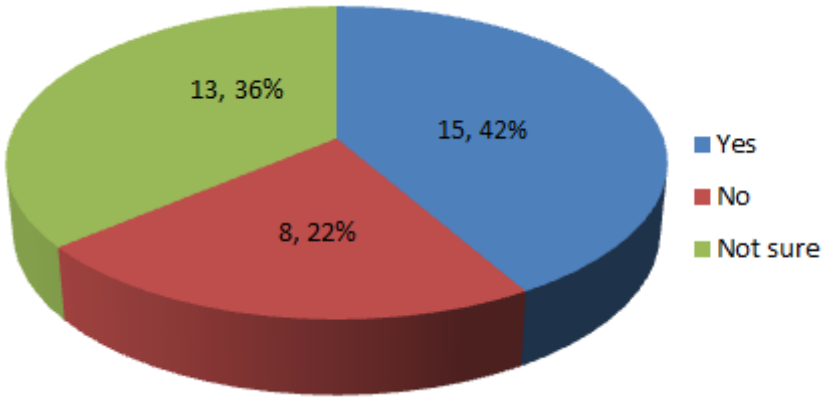



*Figure 4.17: Administrator – Social Media Administrator*

*Table 4.36: Administrator – Frequency of social media contents update*

| **Frequency of update** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Daily | 13 | 37.1% |
| Several Days per week | 10 | 28.5% |
| Monthly | 0 | 0 |
| Several times per month | 2 | 5.71% |
| Yearly | 1 | 2.85% |
| Several Times per year | 0 | 0 |
| Not sure | 9 | 25.71% |

In terms of the restrictions or limitations faced by the administrators in the use of SMTs in their institution, 58.33% noted slow internet connections and bandwidth in their institution. The other main concern that they had noted was privacy issues followed by blocking of some social media applications by the institution's firewall. The detail of the restrictions breakdown could be seen from *Table 4.37* below.

*Table 4.37: Administrator – Restrictions / limitations in the use of SMTs*

| **Restrictions / Limitations** | **No. of responses** | **Percentage of responses** |
|---|---|---|
| Slow Internet connections / low bandwidth. | 21 | 58.33% |
| Blocking of some applications by university / college's firewall. | 12 | 33.33% |
| Unfamiliar with the functionalities / features of the Social Media Tools (SMTs). | 10 | 27.78% |
| Social Media Accounts being hacked. | 3 | 8.33% |
| Privacy issues | 18 | 50% |
| Others: Nothing much | 1 | 2.78% |

At the end of the survey, respondents were asked to give comments about the use of Social Media Technologies for academic purpose and the responses collected were very positive. One respondent commented that SMTs should be used sparingly and the use should focus on achieving the mission or academic objectives, while avoiding irrelevant use. Another respondent commented that social media is absolutely necessary nowadays. However, they also noted that one has to be careful about what is being put up on social media, as sometimes postings can be taken out of context and create a whole new problem. Many respondents believed social media had become inevitable and is now a necessity. Since the majority of students are now connected via social media, especially Facebook, it has become apparent that it is a great tool to contact, communicate, share information and gather feedback from students. It is also a good platform to engage with students. Some even commented that social media is changing the education environment. The academic participants felt that they needed to be trained in the use of social media as a tool for teaching and learning in order to go beyond using it just for communication purposes.

Another respondent commented that SMT such as YouTube in fact are very useful tools to use in enriching the teaching and learning process. However, from an administrator point of view, this becomes a big challenge as YouTube requires high bandwidth and there is a tendency for over use of this tool within his institution. This will eventually affect or impact the overall customer satisfaction as bandwidth will never be sufficient. One respondent advised that students and staff need to understand both the pros and cons of SMTs, and not to misuse the tools. Proper policy need to be in place to govern the use of social media in the institution. If not used properly, it can tarnish the reputation of the institution.

### 4.4.4 Administrators who are not using SMTs in the Institution

Out of the 43 administrators surveyed, 5 respondents commented that they were not currently using SMTs within their institution, department, faculty or school. The main reasons for not using SMTs was because of their concern about privacy issues (60%) while 20% claimed they do not have the technologies or gadgets to support the use of SMTs. The other 20% respectively said they were

not sure why SMTs were not being used. When asked about the possibility of them considering the use of SMTs in the near future, 40% said yes, 40% said may be and 20% said no.

### 4.4.5 Summary

From the data collection and analysis, most Institution of Higher Education in Malaysia do not have a dedicated Social Media executive who is assigned to take care of all the social media activities that take place within the Institution. The responsibilities for maintaining and updating social media content tended to be dedicated to each respective faculty or department administrator, be it the program officer, Head of Program or Dean. The main objectives of using SMTs within the faculty, department or institution are to broadcast information about activities and events, as well as to better communicate with their existing students and alumni. On average, the content of social media was updated on a daily basis. Lastly, very few institutions in Malaysia were implementing social media policy to govern the use of social media within their institutions.

## 4.5 CONCLUSION

Higher education in the 21$^{st}$-Century is in the process of change. Students in this generation are heavily exposed to digital technologies and the Internet and many misconceptions about their ability and use are prevalent within higher education (Bennett, Maton and Kervin, 2008). The extensive use of the Internet and social media has the potential to offer new types of student engagement and educational settings. The use of social media in higher education is becoming critical as the use of these tools and technologies are becoming part and parcel of current student's lifestyles. Irrespective of the different demographic background of students, the ownership of digital devices and patterns of social media usages are very similar. The data collection and analysis also showed that students, academics and administrators have now started to use SMTs for teaching and learning activities. Higher education institutions need to take this opportunity to harness these technologies that are already integrated into students' daily lives to design an innovative and creative education environment that will enhance and improve their

learning experiences. With proper development and adoption of Social Media policy within the institution, training on the use of SMTs, selecting suitable SMTs for implementation, and proper planning and mapping of SMTs against the teaching and learning activities in the institution, there appears currently to be a real opportunity for them to contribute to the success of institutions.

# CHAPTER 5

# QUALITATIVE ANALYSIS

This chapter discusses the findings of the analysis conducted on qualitative data collected during the interview sessions with Informatics students, Informatics academics and administrators of higher education institutions in Malaysia. For the purpose of this study, a conventional approach to content analysis has been used to analyze the data collected from the interview sessions with the participants. Hsieh and Shannon (2005, p. 1278) defined qualitative content analysis as *"a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns".* Qualitative content analysis is suitably used for classifying large amount of text data into numerous codes or categories (Weber, 1990). The main objective of this study is to understand the engagement and experiences of the participants using SMTs in teaching and learning activities in Informatics programs. A content analysis approach is well suited for the purpose of this study since the goal of content analysis is "*to provide knowledge and understanding of the phenomenon under study"* Downe-Wamboldt (1992 p.314). The large amounts of text data collected and transcribed from the interview sessions can be analyzed by generating codes that represent the relationships of the phenomenon (Weber, 1990). This is supported by Zhang and Wildermuth (2009) who additionally argue that in some cases, qualitative content analysis is attempting to generate theory. Using the content analysis approach, the findings of the data collected from all the three categories of participants were analyzed independently to reflect their overall views and experiences in using SMTs. Subsequently, a cross analysis of all the three analysis results has been carried out to identify their relationship, similarities and differences.

## 5.1 OVERVIEW OF DATA COLLECTION

Semi-structured interviews (Cohen and Crabtree, 2006) were conducted on all three categories of participants: Informatics students, Informatics academics and administrators of higher education institutions. In total, 10 Informatics academics, 15 Informatics students and 5 administrators participated in the interview sessions. Open ended questions were prepared prior to the interview as a guide and the questions were asked in sequence and in the same manner for each respective category of participant so that the results could be compared. Even though the questions might be identical for each respective category, the participants were asked to further explain or elaborate on their answers. Interviews were conducted via social media and face to face sessions. All respondents volunteered for the interview sessions when they completed the anonymous online survey. Those volunteering supplied their contact details at the end of the questionnaire so that the researcher could contact them for further discussion. During the interview, respondents were asked between 18 and 21 questions (18 questions for students and administrators, and 21 questions for academics). The questions covered their experiences in using SMTs, the challenges, the factors that determine the success of SMTs in teaching and learning activities, their views on the use of SMTs for teaching and learning, and many more. The questions asked during the interview are listed in *Appendix H, I* and *J*.

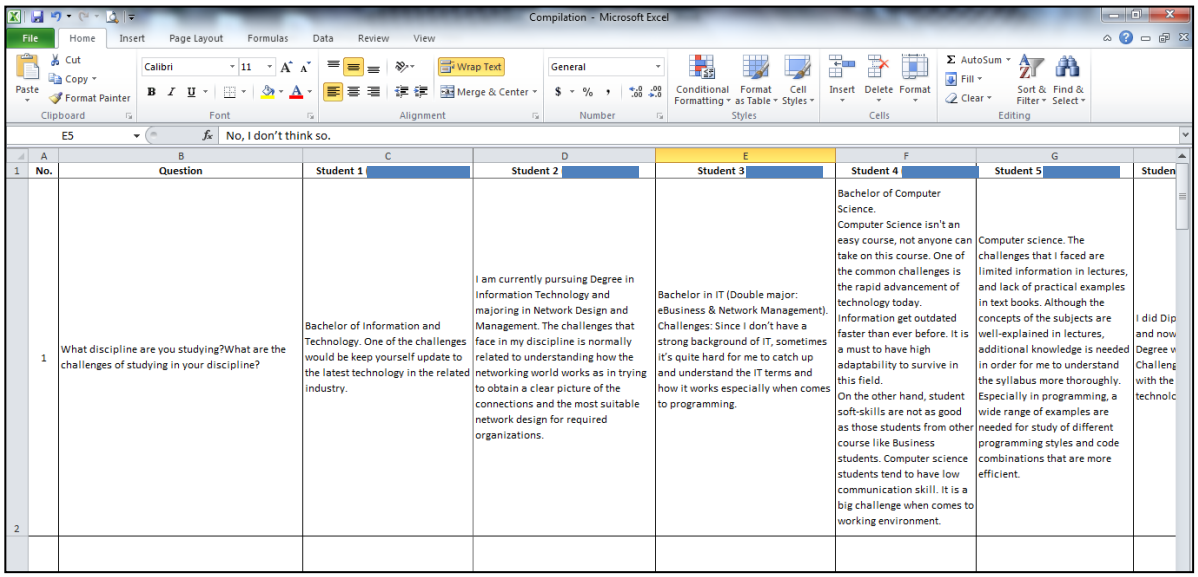
## 5.2 CONVENTIONAL CONTENT ANALYSIS

Hsieh and Shannon (2005) described the process of conventional content analysis as a data analysis that begins by repeatedly reading through all the text data from the data collection to achieve immersion and to get a big picture of the phenomenon (Tesch, 1990). Codes are derived by reading through the text data word by word (Miles and Huberman, 1994; Morgan, 1993; Morse & Field, 1995), highlighting the words that capture the key thoughts or concepts (Hsieh and Shannon, 2005). The codes are then filtered and sorted into categories in which the relationships among the categories can then be identified or established (Morse and Field, 1995). At the end of the analysis, the researcher can compare their findings obtained from this analysis with any established theory to look for similarities or differences. The outcomes of this analysis will

contribute to the knowledge in the area of interest and would be expected to help guide future research (Hsieh and Shannon, 2005).

### 5.2.1 Analysis Process

Individual responses collected from respondents were transcribed verbatim with no data reduction and transformed into digital format, i.e. Microsoft Word document and saved as individual files. The text data were later transferred to Microsoft Excel in a table format in which the columns and rows represented individual participant's responses by questions. *Figure 5.1* below depicts the sample compilation of responses in Excel document format.

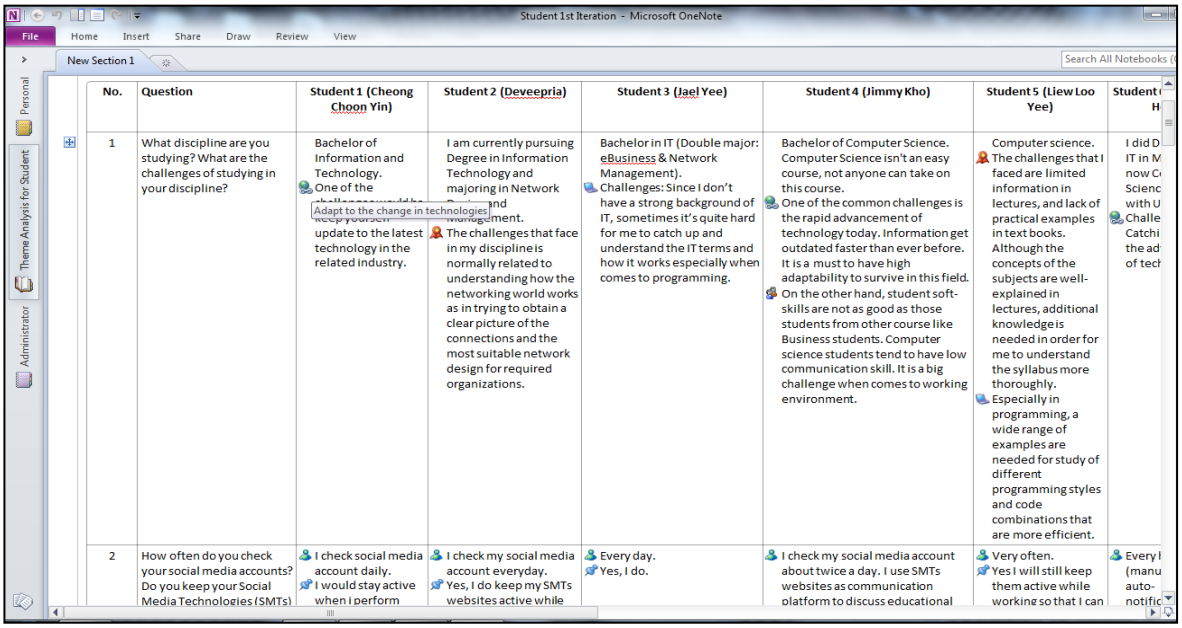


| No. | Question | Student 1 | Student 2 | Student 3 | Student 4 | Student 5 | Studen |
|---|---|---|---|---|---|---|---|
| 1 | What discipline are you studying?What are the challenges of studying in your discipline? | Bachelor of Information and Technology. One of the challenges would be keep yourself update to the latest technology in the related industry. | I am currently pursuing Degree in Information Technology and majoring in Network Design and Management. The challenges that face in my discipline is normally related to understanding how the networking world works as in trying to obtain a clear picture of the connections and the most suitable network design for required organizations. | Bachelor in IT (Double major: eBusiness & Network Management). Challenges: Since I don't have a strong background of IT, sometimes it's quite hard for me to catch up and understand the IT terms and how it works especially when comes to programming. | Bachelor of Computer Science. Computer Science isn't an easy course, not anyone can take on this course. One of the common challenges is the rapid advancement of technology today. Information get outdated faster than ever before. It is a must to have high adaptability to survive in this field. On the other hand, student soft-skills are not as good as those students from other course like Business students. Computer science students tend to have low communication skill. It is a big challenge when comes to working environment. | Computer science. The challenges that I faced are limited information in lectures, and lack of practical examples in text books. Although the concepts of the subjects are well-explained in lectures, additional knowledge is needed in order for me to understand the syllabus more thoroughly. Especially in programming, a wide range of examples are needed for study of different programming styles and code combinations that are more efficient. | I did Dip and now Degree w Challeng with the technolo |

*Figure 5.1: Compilation of responses in Microsoft Excel format*

As conventional content analysis methods were used to analyze the qualitative data, the text data was subjected to multiple rounds of reading to give the researcher an understanding of the data. To derive the codes or themes from the findings, the tables, by category (Informatics students, Informatics academics and administrators) were then plotted into Microsoft OneNote 2010 in which the text data were subjected to multiple rounds of reading, word by word to derive the codes. Microsoft OneNote 2010 is easy to use and yet a powerful note-taking software, which

allows users to take notes in digital format (including text, graphics, audios and videos), gather notes, organize it and even share it with other users. OneNote is compatible with other Microsoft products including Microsoft Word and Microsoft Excel in that these documents can be copy-pasted to OneNote for further use and vice versa. One of the powerful features of Microsoft OneNote 2010 is its ability to tag text data for grouping or categorization purposes. Users are also able to customize the label of the tags according to their preference. Users are able to create a summary page for all the tags in which a clear comparisons of the responses can be made. *Figure 5.2* shows a sample screenshot of responses with tags in Microsoft OneNote 2010, and *Figure 5.3* shows the summary page for the tags.




| No. | Question | Student 1 (Cheong Choon Yin) | Student 2 (Deveepria) | Student 3 (Jael Yee) | Student 4 (Jimmy Kho) | Student 5 (Liew Loo Yee) | Student 6 (H |
|---|---|---|---|---|---|---|---|
| 1 | What discipline are you studying? What are the challenges of studying in your discipline? | Bachelor of Information and Technology. One of the [illegible] update to the latest technology in the related industry. | I am currently pursuing Degree in Information Technology and majoring in Network [illegible] and [illegible]ment. The challenges that face in my discipline is normally related to understanding how the networking world works as in trying to obtain a clear picture of the connections and the most suitable network design for required organizations. | Bachelor in IT (Double major: eBusiness & Network Management). Challenges: Since I don't have a strong background of IT, sometimes it's quite hard for me to catch up and understand the IT terms and how it works especially when comes to programming. | Bachelor of Computer Science. Computer Science isn't an easy course, not anyone can take on this course. One of the common challenges is the rapid advancement of technology today. Information get outdated faster than ever before. It is a must to have high adaptability to survive in this field. On the other hand, student soft-skills are not as good as those students from other course like Business students. Computer science students tend to have low communication skill. It is a big challenge when comes to working environment. | Computer science. The challenges that I faced are limited information in lectures, and lack of practical examples in text books. Although the concepts of the subjects are well-explained in lectures, additional knowledge is needed in order for me to understand the syllabus more thoroughly. Especially in programming, a wide range of examples are needed for study of different programming styles and code combinations that are more efficient. | I did D IT in M now C Scienc with U Challe Catchi the ad of tech |
| 2 | How often do you check your social media accounts? Do you keep your Social Media Technologies (SMTs) | I check social media account daily. I would stay active when i perform | I check my social media account everyday. Yes, I do keep my SMTs websites active while | Every day. Yes, I do. | I check my social media account about twice a day. I use SMTs websites as communication platform to discuss educational | Very often. Yes I will still keep them active while working so that I can | Every (manu auto- notific |

*Figure 5.2: Sample screenshots in Microsoft OneNote*

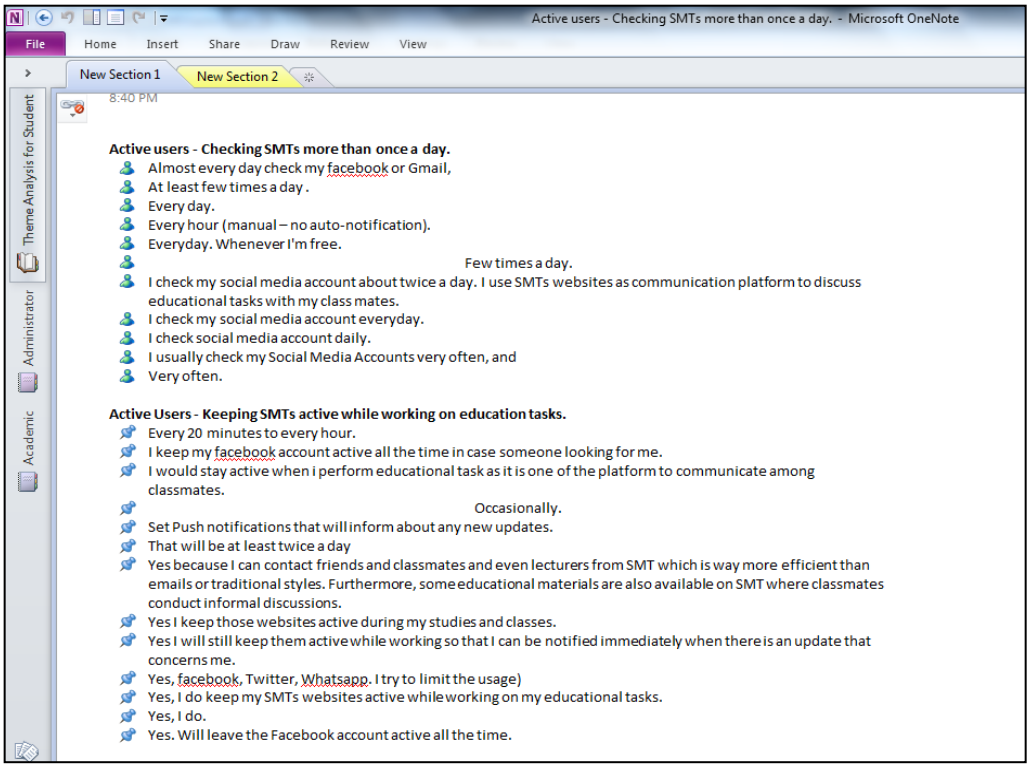



*Figure 5.3: Summary page for tags*

For this study, Microsoft OneNote was a suitable tool to perform the conventional content analysis on the responses collected. All the responses in the text format were subjected to multiple rounds or reading by the researcher to get a clearer picture about the findings before the actual analysis was conducted. For the actual analysis, the text data in Microsoft OneNote (responses) were subjected to two rounds of filtration. In the first round, the researcher read all the responses word by word to derive the codes or categories which were converted into customized tags with symbols and text. The researcher then re-read all the responses and tagged all the responses according to appropriate category or code (customized tags). Once all responses were tagged, the codes were revisited, regrouped, filtered, and re-categorized to form meaningful themes in the second round of filtration. In this round, the number of tags was reduced compared to the first round as many similar or related tags were combined after the second round of data reduction. The tags that represent the codes were then arranged to establish the connections and relationships among the themes which was presented in a diagrammatic manner. The whole process was repeated for all three categories of responses collected from Informatics students, Informatics academics and administrators of higher education institution. Finally, all the themes

from the three categories were combined together to see the interconnectivity among them and to draw a conclusion on the findings.

## 5.3 STUDENT

Fifteen (15) students participated in the qualitative data collection. As this research focuses on Informatics student's engagement with Social Media Technologies (SMTs), the qualitative data collection only included the respondents who were currently undertaking Informatics Programs in higher education institutions in Malaysia. Eighteen (18) questions were asked during the interview pertaining to their engagement, experiences and use of SMTs in their studies. The interview questions for students can be seen in *Appendix H*.

### 5.3.1 Round 1 of data reduction

The researcher reviewed the responses word by word in Microsoft OneNote 2010 and created customized tags to tag each individual response. The customized tags in the first round were mainly representing the summary of each response. Users of Microsoft OneNote are able to create meaningful tags with symbols to represent different categories of meaning of the responses. Refer to *Figure 5.4* for the customized tags in Microsoft OneNote and assignment of tags to the individual responses.

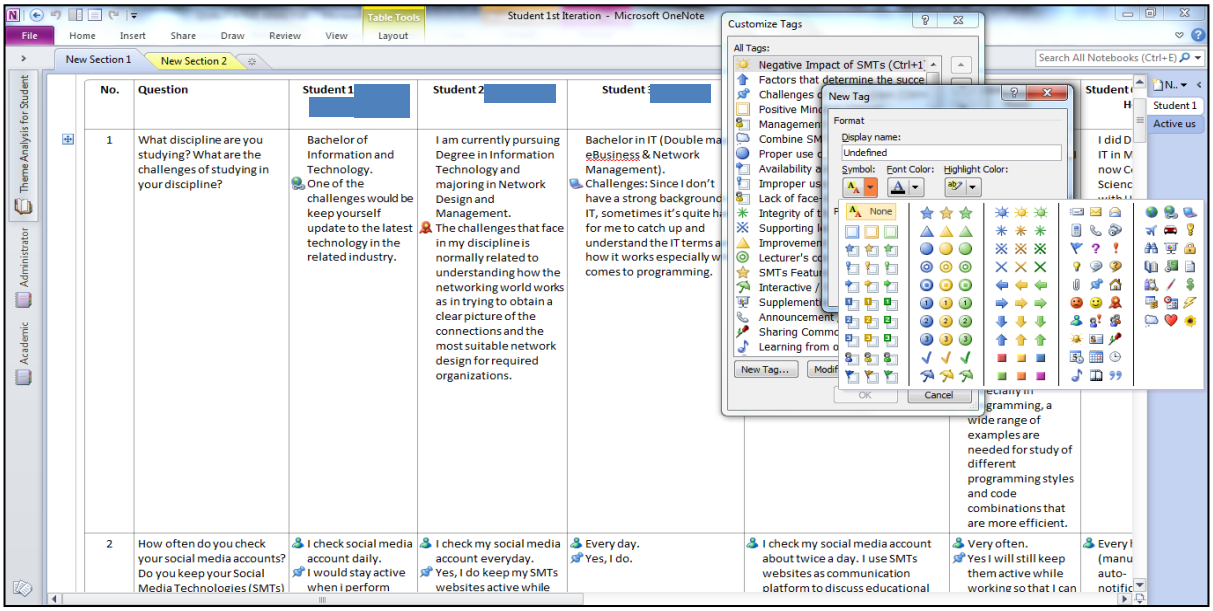



*Figure 5.4: Student – Customize Tags and tagging of responses in Microsoft OneNote 2010*

At the end of Round 1, a summary page of all the tags with responses were generated to provide an overview of all the responses by category or codes. *Figure 5.5* depicts the summary page for all the tags with responses. The tags or codes were then further summarized (without the responses) and it yielded 36 tags. *Figure 5.6* depicts the summary of all the tags without the responses.

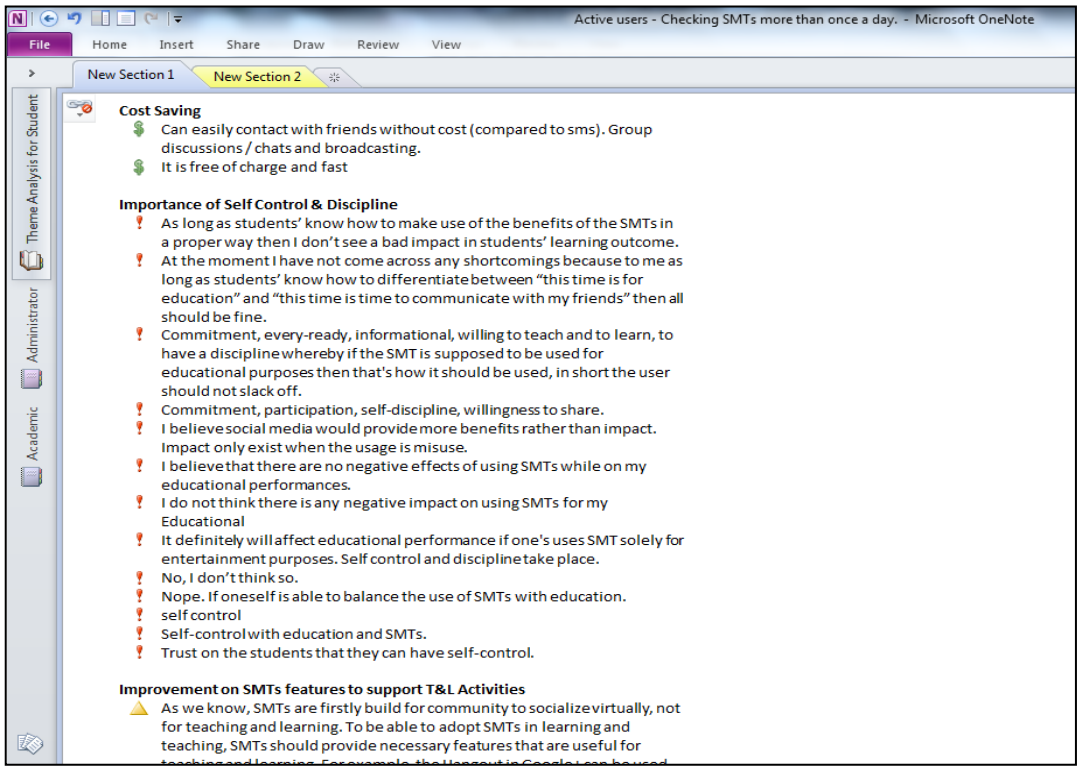



*Figure 5.5: Student – Summary of tags / codes with responses in Microsoft OneNote*

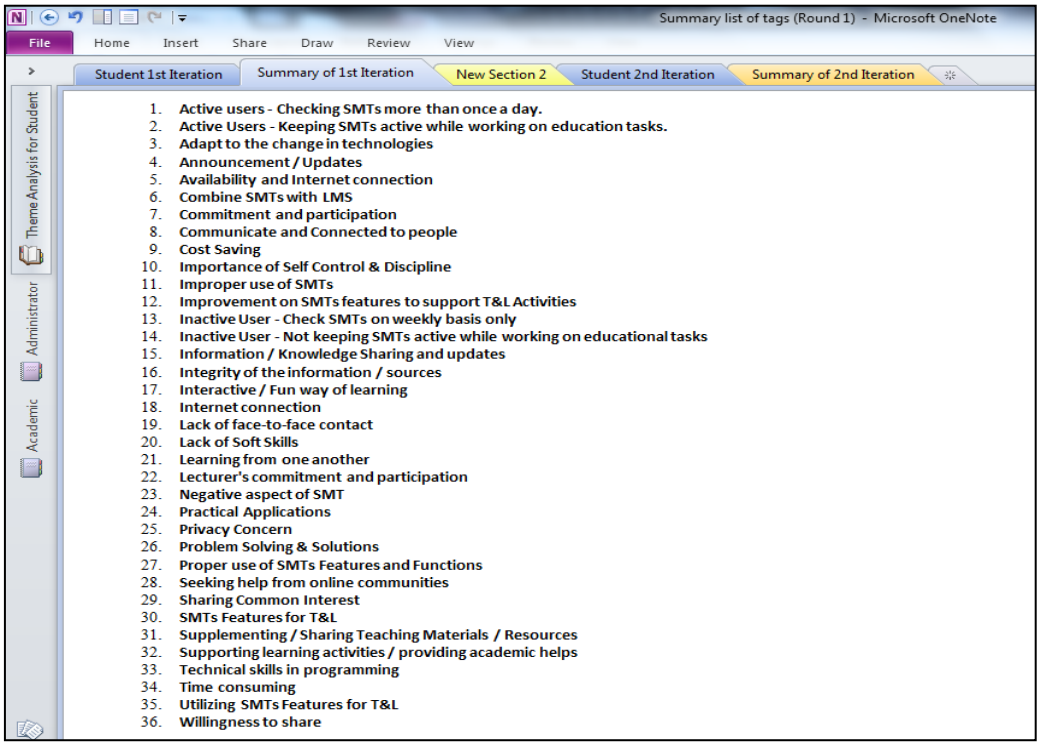



*Figure 5.6: Student – Summary of tags / codes (without responses)*

The researcher reviewed the list of tags and those which were similar or duplicated were removed, re-categorized or renamed. The original list of 36 tags, after the data reduction process, was reduced to 32. For example, the tag 'Utilizing SMTs Features for T&L', 'Combine SMTs with LMS' and 'SMTs Features for T&L' were removed and combined with an existing tag, 'Improvement of SMTs features to support T&L Activities', while the tag 'Time consuming' was removed and combined with 'Improper use of SMTs'. There were some other tags, which were also renamed, for example 'Negative aspect of SMT' was changed to 'Distraction and loss of concentration', and 'Seeking help from online communities' was changed to 'Turn to online communities for help'. *Figure 5.7* shows the filtering of the tags, and *Figure 5.8* shows the summary of the tags at the end of round 1.

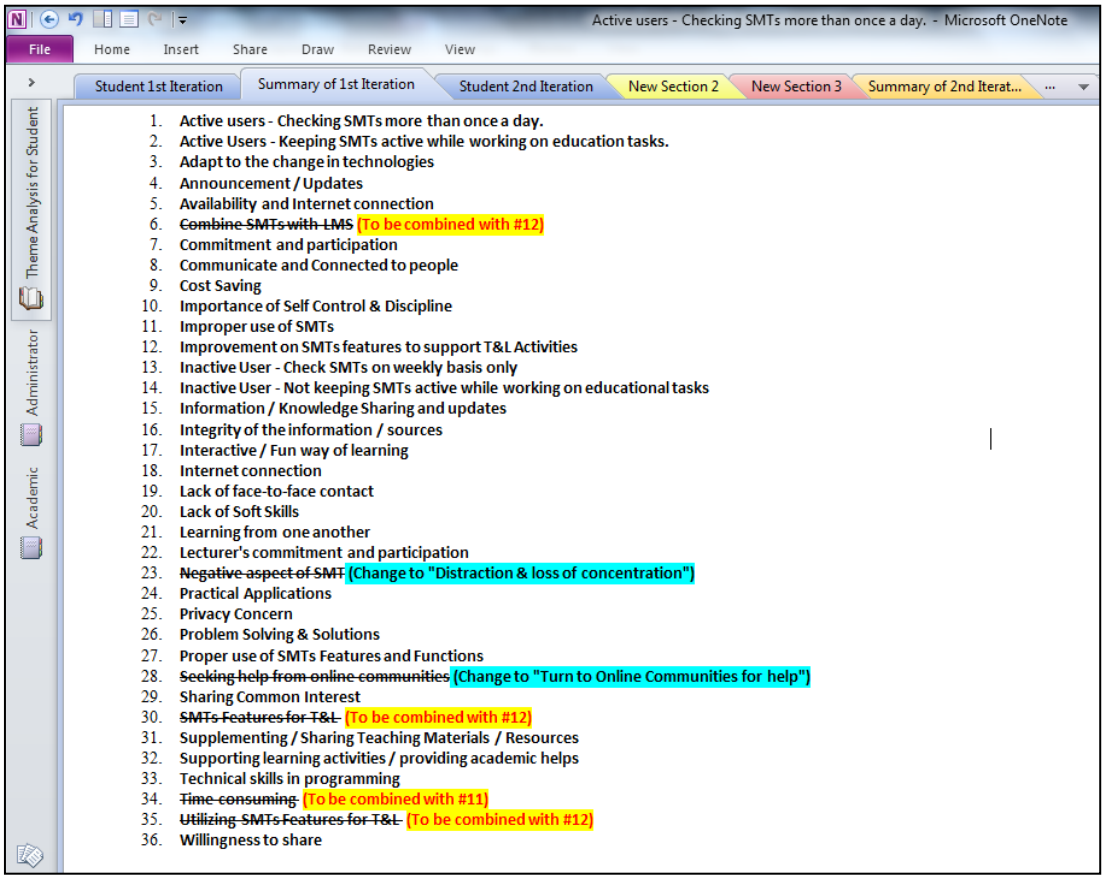



*Figure 5.7: Student – Filtering of Tags (Round 1)*

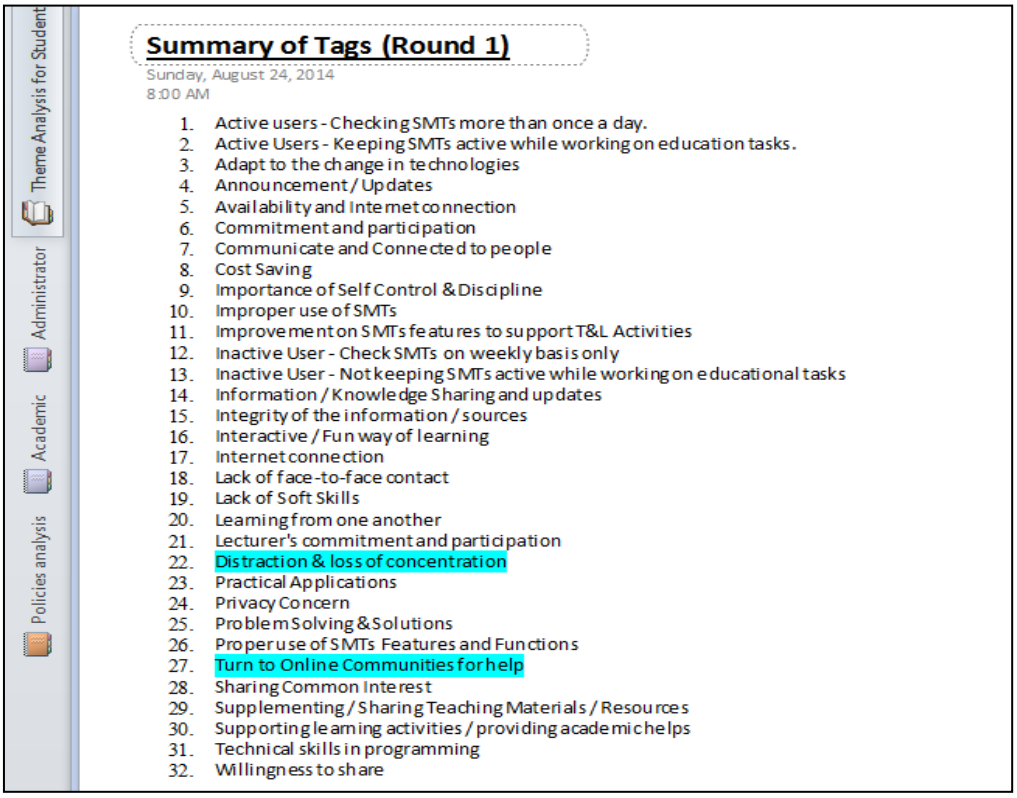



*Figure 5.8: Student – Summary of Tags (Round 1)*

## 5.3.2 Round 2 of data reduction

In round 2 of the data reduction process, the tables in Microsoft OneNote 2010 were re-read word-by-word and retagged according to the new tags generated at the end of round 1. Round 2 of the data reduction process ensured that responses were correctly tagged and responses were not overlooked in the tagging process. The researcher noticed that some of the tags that were filtered at the end of round 1 could be further broken down after all the responses were re-read again. New tags were created, for example: 'Borderless Access', 'Instructor not using SMTs', 'Instructor's unfamiliarity with SMTs', 'Shortcoming of current SMT', and 'Timely & Fast Response'. A total of 36 tags were generated at the end of the process. All the responses were read through again and retagged according to the new tags. Refer to *Figure 5.9* for the new summary of tags after Round 2. Tags shaded in yellow were newly added tags.

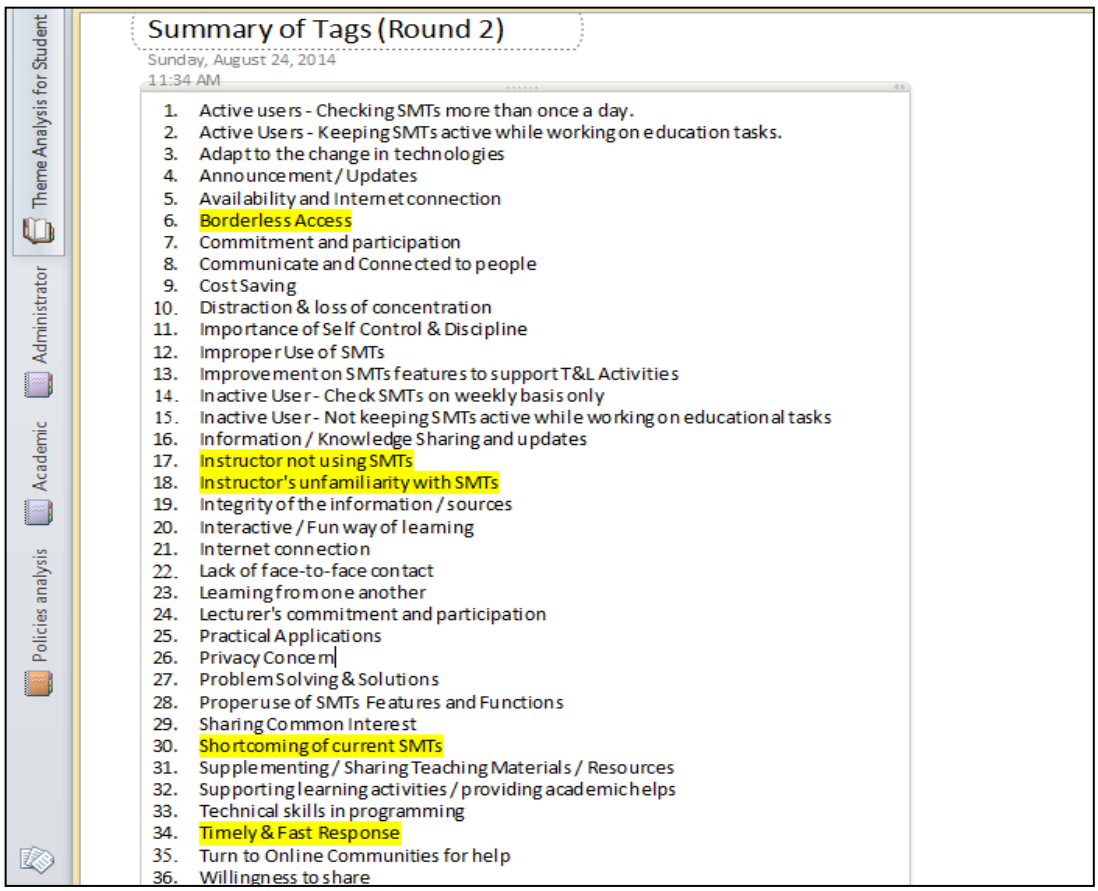



*Figure 5.9: Student – Summary of tags / codes (after Round 2)*

### 5.3.3 Categorization of tags or codes

After round 2 of the data reduction process, all the new tags or codes were revisited for the purpose of identifying the themes for the findings. The themes were generated by combining similar tags into related categories. For example, the tags “Adapt to the changes in technologies”, “Practical Applications”, and “Technical Skills in Programming” were categorized as “Challenges of the program”. The 36 tags or codes identified earlier were grouped into six categories or themes: ‘Type of users’, ‘Reasons for using SMTs’, ‘Negative impacts of SMTs’, Factors that determine the success of SMTs, ‘Challenges of the program’ and ‘Barriers of SMTs use for T&L. Refer to *Figure 5.10* for the categorization of themes, and *Figure 5.11* for the summary of the categories developed.

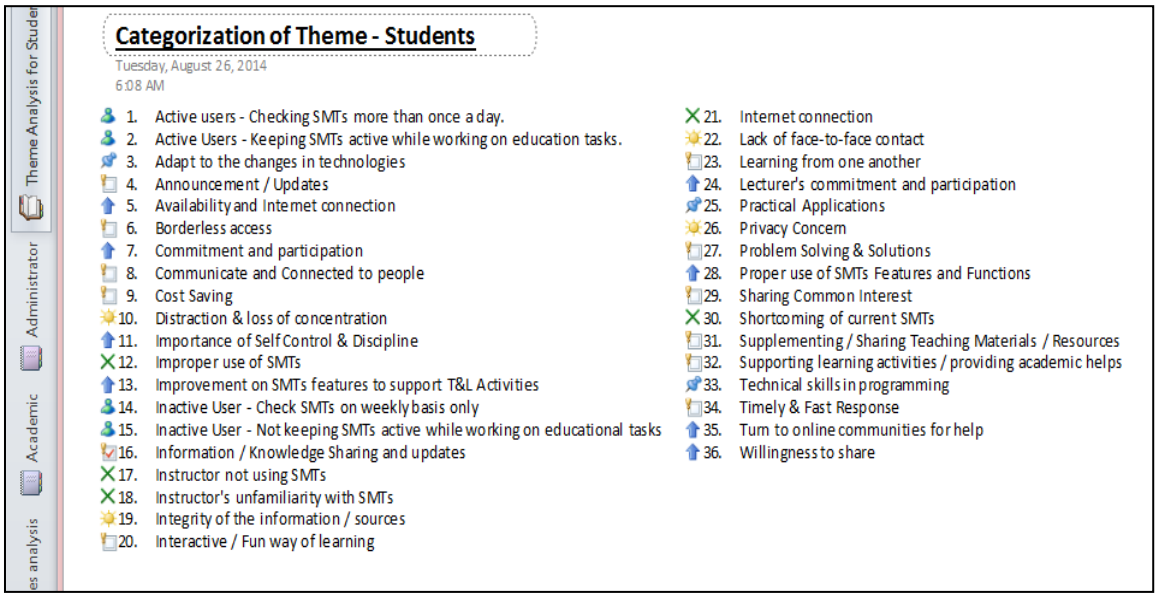



*Figure 5.10: Student – Categorization of Themes*

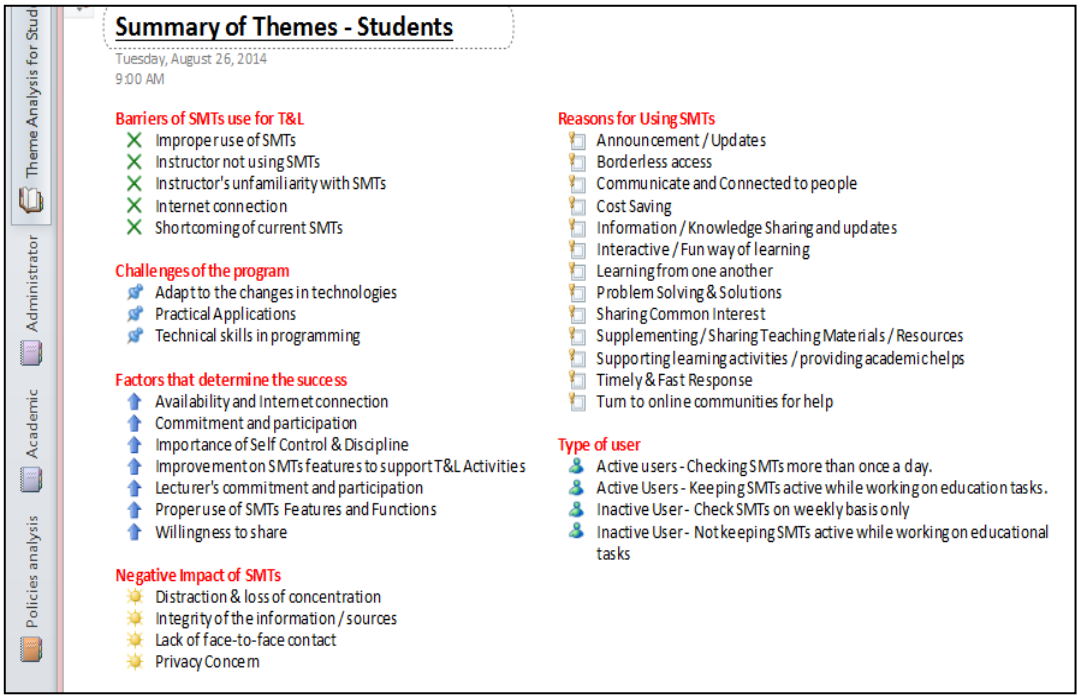



*Figure 5.11: Student – Summary of themes / categories*

Before the relationship diagram for all themes was established, the researcher revisited the themes once again to make sure that all the themes were in the right grouping. The researcher eventually decided to move the theme 'Negative Impact of SMTs' to be combined with the theme 'Barriers of SMTs use for T & L' as a sub-theme. Refer to *Figure 5.12* for the finalized list of themes.

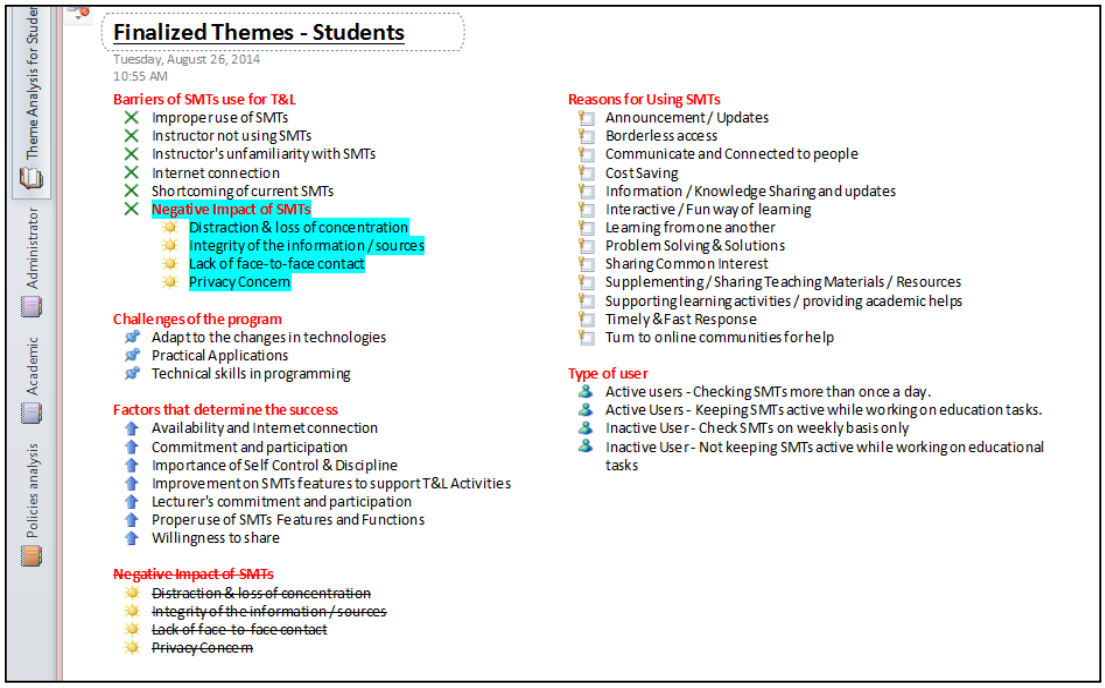



*Figure 5.12: Student – Summary of new themes*

A relationship diagram was prepared to connect all the themes together. Refer to *Figure 5.13* for the relationship diagram. The diagram showed the relationship between the users (who are mainly the students), the challenges that they faced during their course of study in the field of Informatics, reasons that encourage them to use of SMTs, barriers that discouraged or stopped them from using SMTs for teaching and learning activities and the factors that determine the success of the use of SMTs for teaching and learning activities. From *Figure 5.13*, it can be seen that users are constantly surrounded by challenges during the tenure of their studies and theses challenges appear to link to the reasons they use SMTs to support their studies. The arrow showing the reasons for using SMTs are in two ways as users have their own reasons for using SMTs and at the same time, the more the SMTs could assist or help them in their studies, the more they will use them. However, at the same time, there are also barriers or limitations of SMTs that deter users from using them. Some might be due to user's personal reasons, but some are generally due to the weaknesses of SMTs themselves as a supporting tool for academic purposes. That is the reason why the arrow is also two-ended. Finally, there are many success factors that will boost the use of SMTs for teaching and learning activities or that will determine the success of SMTs usage in the academic environment. The success factors of SMTs implementation will influence the usefulness and effectiveness of SMTs being used for academic purpose and this will in turn give users confidence in using it for their studies.

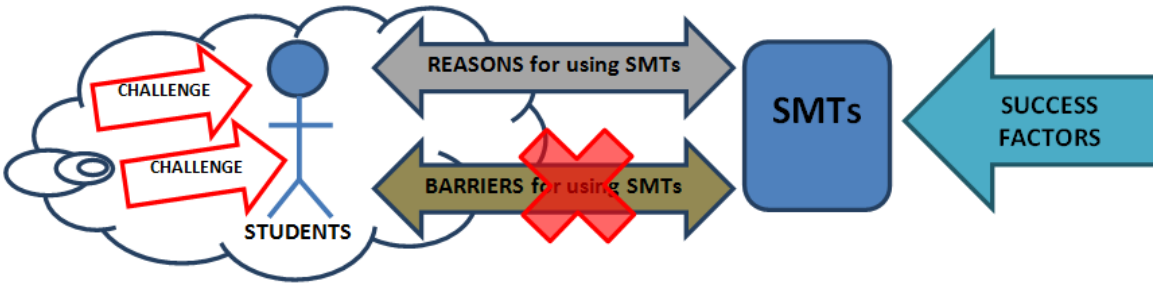



*Figure 5.13: Relationship Diagram for participants (Student)*

### 5.3.4 Analysis of the findings

Generally, there are two types of users: Active or Inactive. Active users refer to those people who frequently check or access their social media (i.e. at least once per day). The majority of the respondents who were active users (73%) kept their social media applications active while they worked on their educational tasks. On the other hand, inactive users refer to those who seldom checked or accessed their social media account. They might do it once in every few days. Whether they are active or inactive in the social media world, all Informatics students are surrounded by some challenges in their studies. For example, students felt that their program of studies required them to have technical skills in computing and it involved many practical applications. In addition, they believed they had to constantly adapt to changes in technologies which require them to keep up with the latest trends. Lastly, students said the main challenge that they faced was the need for technical skills in programming which many of them find tough to master. Thus, all of the participants said they turned to online learning communities for help. They felt that online learning communities were useful in their course of studies, especially in the Informatics field. Following are some sample reasons given by the students for their use of online learning communities.

| |
|---|
| *"Yes because we can learn from one another especially technical subjects that involved very complex solutions and ideas." ~ Student 1* |
| *"Can do discussion, share extra knowledge, update each other on new stuffs or something interesting" ~ Student 2* |
| *"Yes, I believe that will be of great help as we can share our different point of views in terms of our studies online." ~ Student 3* |
| *"Learning communities present an informal yet very useful tool for learning especially in the informatics program because it presents a platform where different people share learning outcomes as well as difficulty faced on a certain subject matter." ~ Student 4* |
| *"Yes. They can conduct online discussions from time to time and share information with one another easily which widens both parties' knowledge." ~ Student 5* |

*"I would say participation of professionals in the learning communities is really important. These professional will be able to provide more useful and reliable information / solutions to the communities. These professionals can be Lecturers, Professors, and People who are working in the field." ~ Student 6*

In terms of the reasons of using SMTs, the findings show that these could be grouped into two categories: students' perspective, and academics' perspective. From the student's perspectives, students felt that SMTs help them to stay in touch with their peers and lecturers, speed up the communication and response time, give easy access to problem solving and solutions discussion, and offer an interactive or fun way of learning, sharing of common interests, and enable them to learn from one another. On the other hand, from the academic perspectives, students used SMTs because their lecturers / Institutions were using them to make announcements or publish updated information about the programs of studies, give information updates or knowledge sharing, sharing of teaching and learning materials or resources, supporting learning activities and to provide academic help.

Students were asked to comment whether or not they believed SMTs would have negative effects on their educational performance and only 4 out of 15 students confidently said that it won't. They said they just need to have self-control and discipline, and know how to balance their time between entertainment and education. The other 11 students did agree that SMTs does have some negative effect on their educational performance. The majority of them said SMTs distracted their studies as they might spend too much time on it instead of concentrating in their studies. Some of the comments extracted from students are listed below:

*"I do spend a lot of time on it (i.e. Facebook) and it does tend to eat up my assignment/study time." ~ Student 1*

*"It is one of sources of distractions from focusing on completing my educational task." ~ Student 2*

| |
|---|
| *"I often get distracted when I try to concentrate on completing assignments or studying. Whenever I receive a notification from my social media account, I would get carried away and starts to go through all the updates available that might not even require my attention for about 10 minutes." ~ Student 3* |
| *"Possible distractions, which could cause delay or reduced concentration and memory in study." ~ Student 4* |
| *"Yes. Cannot concentrate. Keep checking on what is happening in the Facebook community." ~ Student 5* |

When students were asked how they felt about their instructors or lecturers using SMTs for teaching and learning activities in classes, 12 out of 15 students were very positive about it. They viewed it as an interactive way of learning, it offered fast response time, it was easier to communicate with their instructors, and it gave access to the teaching resources anytime, anywhere. However, 1 student did comment that he didn't like the idea of mixing entertainment tool with his studies. Another student add that he hadn't had much experience with instructors using SMTs for teaching and learning as all his lecturers are not using it so far. A student echoed that an instructor or lecturer who is unfamiliar with SMTs will result in unproductive teaching or unpleasant experiences in class.

Some of the improvements that students would like to see from their Instructors in terms of the use of SMTs in classes are listed below:

| |
|---|
| *"Utilize more features that are available in SMT, which will make studies interesting and effective." ~ Student 1* |
| *"It will be nice if more instructors can utilize the SMTs to communicate with the students. " ~ Student 2* |
| *"Many lecturers do not show much interest in using SMTs to engage with students." ~ Student 3* |

| |
|---|
| *"Lecturer's participation and commitment" ~ Student 4* |
| *"I hope to see that instructors will use SMTs more often during their lectures and tutorial classes." ~ Student 5* |
| *"Faster Response on query that we post to him/her." ~ Student 6* |
| *"I hope to see them conducting online discussions or live Q&A session on SMT." ~ Student 7* |
| *"Much more time spent on SMTs by instructors." ~ Student 8* |

During the interview, students were also asked what they deemed as the constraints or concerns that restraint their use of SMTs in their studies. The researcher categorized these as the barriers of SMTs use for teaching and learning (refer to *Figure 5.14*). The findings for this category could be summarized into the following points: the improper use of SMTs by students or lecturers can defeat the purpose of teaching and learning, Instructor's resistance to use SMTs, instructors' unfamiliarity with SMTs that can lead to unproductive or unpleasant teaching and learning experiences, the lack of participations and commitments from students and lecturers, poor internet connectivity that affect the performance and use of SMTs, shortcomings of current SMTs features that could support teaching and learning activities more specifically, and the negative aspects of SMTs (e.g. lack of privacy control in SMTs, integrity of the source of information, distractions, lack of face-to-face contact, time consuming, etc.). These barriers need to be tackled carefully for the successful implementation of SMTs in higher education institutions.


*Figure 5.14: Barriers of SMTs use for T&L*

From the data collected, the researcher also identified some success factors that the participants thought might contribute to the successful implementation of SMTs in higher education institutions (*Figure 5.15*). These include the institution support in terms of providing available access to SMTs, Internet connection and technical help, high commitment and participation from both students and lecturers, willingness to share by students and lecturers, effective use of SMTs features and functions by both students and lecturers, improvement and flexibility of SMTs features and functions to support teaching and learning activities (current features are not entirely conducive or suitable to support teaching and learning activities), and the importance of self-control and discipline of students.


*Figure 5.15: Success Factors for SMTs implementation*

Finally, students were asked about their view on the potential and future of social media for higher education and the statements listed in below illustrates the students' views.

| |
|---|
| *"Social media would act as one of the major channel to spread news and stays connect with each other." ~ Student 1* |
| *"I think it will continue to grow and be accepted by more people as time goes by." ~ Student 2* |
| *"Mainly use as a communication tool. Students still prefer LMS over social media tools as a formal learning platform and would appreciate it to separate academic from personal affairs." ~ Student 3* |
| *"Broader ideas can be spread among each other." ~ Student 4* |

| |
|---|
| *"The future for SMTs could be in terms that most institutions incorporating it as a major tool to how information is being shared amongst students." ~ Student 5* |
| *"Ease of collaboration, rapid sharing of ideas and information in study." ~ Student 6* |
| *"Providing a one-stop portal for students to socialize with one another and lecturers, conduct discussions (like a forum) and also file servers (backup files on SMT). By having all of these features in SMT, higher education can be conducted with higher efficiency and during flexible times." ~ Student 7* |

### 5.3.5 Social Media and the Institution

Based on the responses collected from the students, Facebook is the most popularly SMT, followed by YouTube and Skype which some of them will occasionally use. Not all the participants experienced use of SMTs in class as their instructors did not practice it. They personally used it to connect to their peers and online learning communities for discussion and academic support. Those who experienced the use of SMTs in their classes also claimed that not all their instructors were using SMTs for academic activities, and for those who did, they mainly used it for communication, academic support, and sharing of resources. So far, their Institution has not set any restriction on the use of SMTs. There is no support provided by their Institution apart from free connections to the Internet and access to social media applications. Their Institution also had yet to enforce any social media guidelines on the use of SMTs within the Institution.

## 5.4 ACADEMICS

Ten academics staff participated in the qualitative data collection. They were all currently teaching in the Informatics undergraduate programs in private or public Institutions in Malaysia. These institutions were Sunway University, INTI International University, INTI International College Subang, Universiti Kebangsaan Malaysia (UKM), and Multimedia University. The breakdown of their specializations is: four from Information Systems, two from Multimedia, one from Mathematics, and three from programming. All of them have more than five years of teaching experience in Informatics related programs. Thirteen questions were asked during the interview pertaining to their engagement, experiences and usage of SMTs in their studies. The interview questions for academics can be seen in Appendix I.

### 5.4.1 Round 1 of Data Reduction

The processes of analyzing the data collected from the interviews were similar to that described in Section 5.2. Tags or codes were created when the researcher read the responses by question and by participant. At the end of the tagging process, 40 tags were generated to provide an overview of all the responses by category or codes. *Figure 5.16* depicts the summary page for all the tags with responses while *Figure 5.17* depicts the summary of all the tags or codes without the responses.

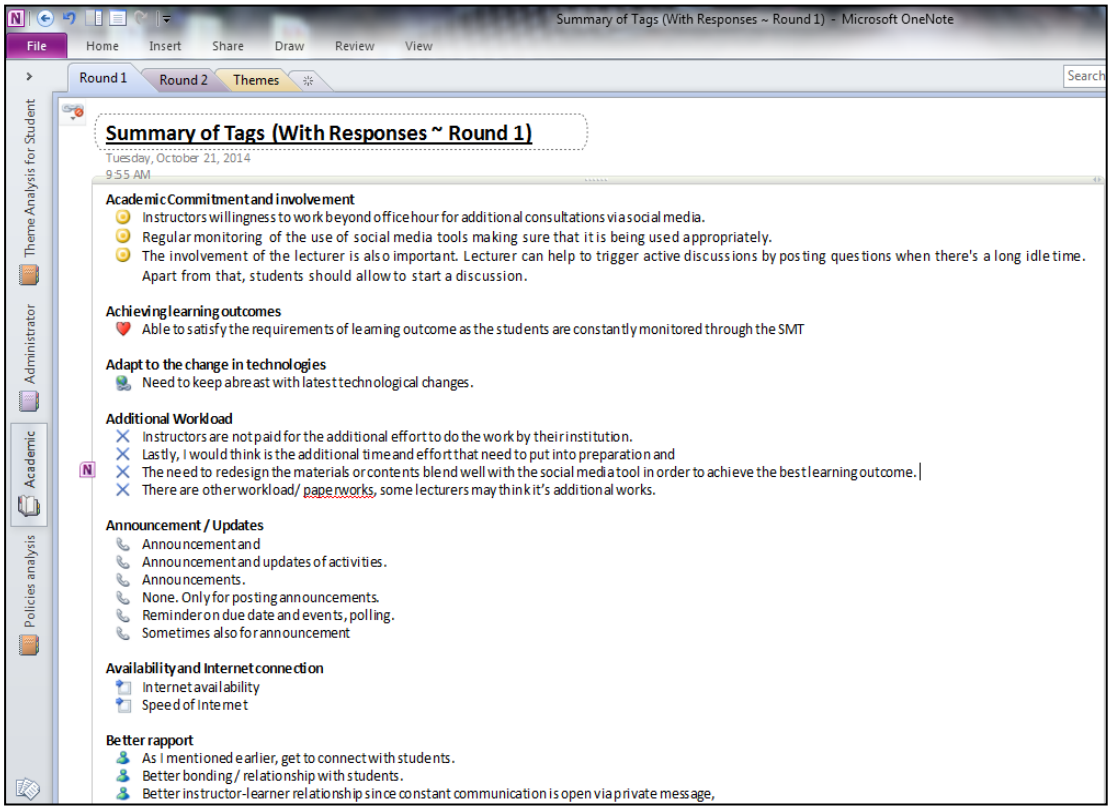



*Figure 5.16: Academic – Summary of Tags with responses (Round 1)*

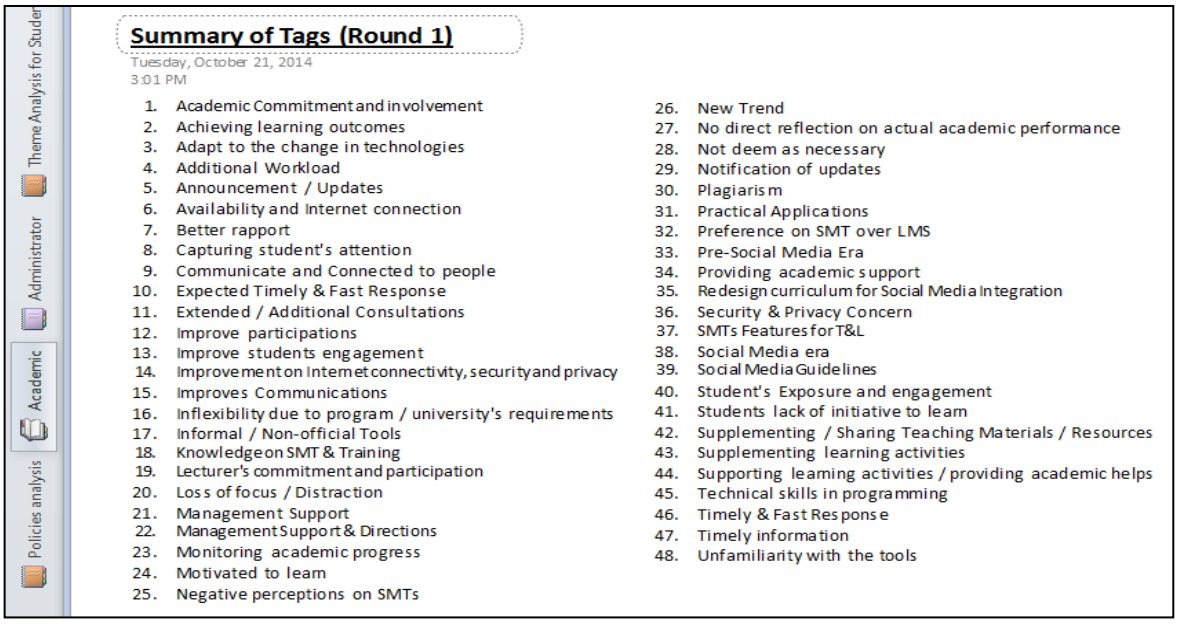



*Figure 5.17: Academic – Summary of Tags (Without responses)*

The researcher reviewed the list of tags, and tags which were similar or duplicated were removed, re-categorized or renamed. The original list of 48 tags, after the filtering process, was reduced to 44. For example, the tag 'Improve Participation' was removed and combined with an existing tag 'Improve students engagement' and renamed as 'Improve students engagement and participation', while the tag 'Timely Information' was removed and combined with 'Timely and Fast Responses', and renamed as Timely Information and Fast Responses'. Tags which were quite similar were combined, for example 'Management Support', and 'Management Support and Direction' were combined, and the tag 'Supplementing learning activities' and 'Supporting learning activities' were combined. Finally, the tag 'Not deem as necessary' was renamed as 'Academic Resistance' to better reflect the actual meaning of the responses. *Figure 5.18* shows the list of tags after final reviewed in Round 1.

Theme Analysis for Studen | Administrator | Academic | Policies analysis

**Final Summary of Tags (Round 1)**

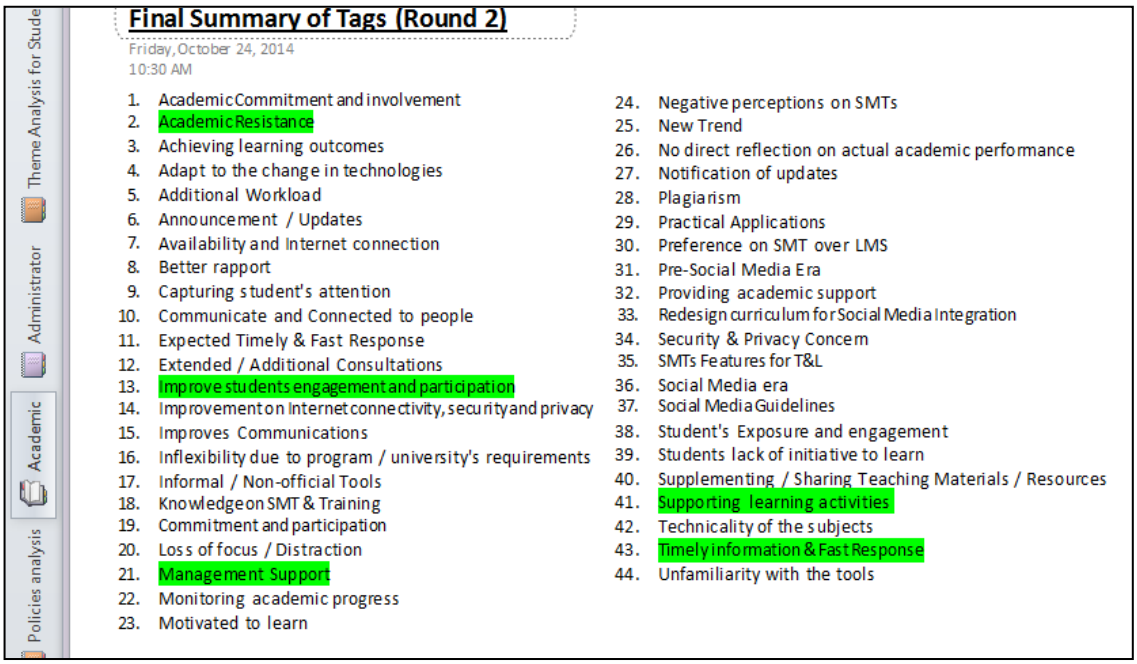
Wednesday, October 22, 2014
4:44 AM

1. Academic Commitment and involvement
2. Achieving learning outcomes
3. Adapt to the change in technologies
4. Additional Workload
5. Announcement / Updates
6. Availability and Internet connection
7. Better rapport
8. Capturing student's attention
9. Communicate and Connected to people
10. Expected Timely & Fast Response
11. Extended / Additional Consultations
12. Improve student participations & engagement
13. ~~Improve students engagement~~ *(To be combined with # 12)*
14. Improvement on Internet connectivity, security and privacy
15. Improves Communications
16. Inflexibility due to program / university's requirements
17. Informal / Non-official Tools
18. Knowledge on SMT & Training
19. ~~Lecturer's commitment and participation~~ *(Change to Commitment & Participation)*
20. Loss of focus / Distraction
21. Management Support
22. ~~Management Support & Directions~~ *(To be combined with #21)*
23. Monitoring academic progress
24. Motivated to learn
25. Negative perceptions on SMTs
26. New Trend
27. No direct reflection on actual academic performance
28. ~~Not deem as necessary~~ *(Change to Academic Resistance)*
29. Notification of updates
30. Plagiarism
31. Practical Applications
32. Preference on SMT over LMS
33. Pre-Social Media Era
34. Providing academic support
35. Redesign curriculum for Social Media Integration
36. Security & Privacy Concern
37. SMTs Features for T&L
38. Social Media era
39. Social Media Guidelines
40. Student's Exposure and engagement
41. Students lack of initiative to learn
42. Supplementing / Sharing Teaching Materials / Resources
43. ~~Supplementing learning activities~~ *(To be combined with #44)*
44. Supporting learning activities ~~/ providing academic helps~~
45. Technicality of the subjects
46. Timely & Fast Response
47. ~~Timely information~~ *(To be combined with #46)*
48. Unfamiliarity with the tools

*Figure 5.18: Academic – Final Summary of Tags in Round 1*

## 5.4.2 Round 2 of data reduction

In Round 2, the same processes was repeated, in which all the responses in Microsoft OneNote 2010 were re-read word-by-word and retagged according to the new tags generated at the end of round 1. In this round, the researcher ensured that all responses were correctly tagged, retagged (if necessary) and none of the responses were missed from tagging. At the end of Round 2 of data reduction, a total of 44 tags were generated. All the responses were read through again and retagging was done accordingly (if necessary). Refer to *Figure 5.19* for the new summary of tags after Round 2. Tags shaded in green are the updated tags at the end of Round 1 which were then used for retagging in Round 2.



Theme Analysis for Stude | Administrator | Academic | Policies analysis

**Final Summary of Tags (Round 2)**

Friday, October 24, 2014
10:30 AM

1. Academic Commitment and involvement
2. Academic Resistance
3. Achieving learning outcomes
4. Adapt to the change in technologies
5. Additional Workload
6. Announcement / Updates
7. Availability and Internet connection
8. Better rapport
9. Capturing student's attention
10. Communicate and Connected to people
11. Expected Timely & Fast Response
12. Extended / Additional Consultations
13. Improve students engagement and participation
14. Improvement on Internet connectivity, security and privacy
15. Improves Communications
16. Inflexibility due to program / university's requirements
17. Informal / Non-official Tools
18. Knowledge on SMT & Training
19. Commitment and participation
20. Loss of focus / Distraction
21. Management Support
22. Monitoring academic progress
23. Motivated to learn
24. Negative perceptions on SMTs
25. New Trend
26. No direct reflection on actual academic performance
27. Notification of updates
28. Plagiarism
29. Practical Applications
30. Preference on SMT over LMS
31. Pre-Social Media Era
32. Providing academic support
33. Redesign curriculum for Social Media Integration
34. Security & Privacy Concern
35. SMTs Features for T&L
36. Social Media era
37. Social Media Guidelines
38. Student's Exposure and engagement
39. Students lack of initiative to learn
40. Supplementing / Sharing Teaching Materials / Resources
41. Supporting learning activities
42. Technicality of the subjects
43. Timely information & Fast Response
44. Unfamiliarity with the tools

*Figure 5.19: Academic – Final Summary of Tags in Round 2*

## 5.4.3 Categorization of tags or codes

After round 2 of the data reduction process, all the new tags or codes were revisited for the purpose of identifying the theme for the findings. The themes were generated by combining similar tags into related categories. For example, the tags “Additional workload”, “Availability and Internet Connection”, “Loss of focus or distraction”, and many more were categorized as “Academic Concern”. The 44 tags or codes identified earlier were grouped into nine categories or themes: ‘Academic Concern’, ‘Benefits of using SMTs’, ‘Challenges of teaching in Informatics Field’, Factors that determine the success of SMTs, ‘Impact of SMTs’, ‘Reasons for not using SMTs for assessment’, ‘SMTs used for Academic activities’ and ‘Type of students’. Refer to *Figure 5.20* for the summary of the categories developed.

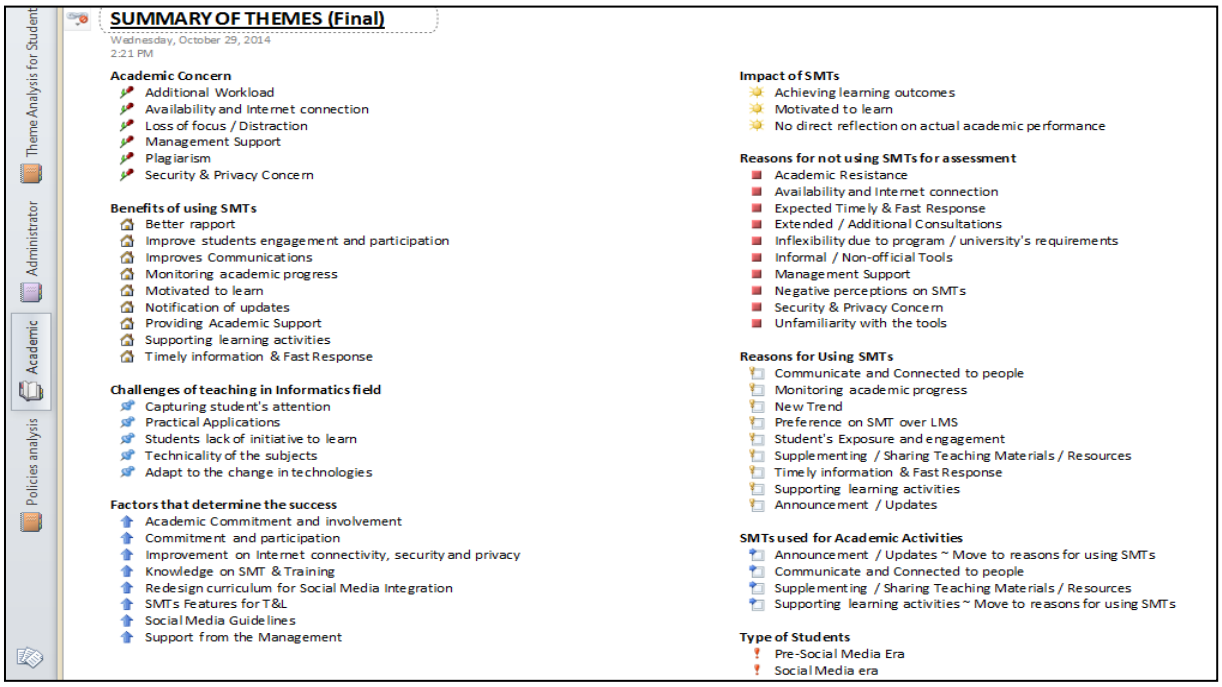



*Figure 5.20: Academic – Summary of themes / categories for academic*

The list of themes was subjected to another round of review before confirming the final list of themes for relationship analysis. During the evaluation process, the researcher found that some of the themes, eg 'Impact of SMTs', could be eliminated and the codes could be retagged to other themes, such as the code 'Achieving learning outcomes' and 'motivate to learn' could be tagged to the theme ' Benefits of SMTs', while the code 'No direct reflection on actual academic performance' could be tagged to 'Reasons for not using SMTs'. Additionally, the themes 'Academic Concern' and 'Reasons for not using SMTS for Assessment' could be combined into a new theme called 'Barriers to SMTs adoption'. As there are many overlapping tags in the content of the themes 'SMTs used for Academic Activities' and 'Reasons for Using SMTs', the theme 'SMTs used for Academic Activities' was removed and combined with 'Reasons for Using SMTs'. The researcher also felt that it would be more appropriate to move the theme 'Type of students' to the 'Challenges of teaching in Informatics field' as students contributed to 50% of the challenges in teaching faced by academics. Refer to *Figure 5.21* for the theme evaluation summary, and *Figure 5.22* for the Finalized Themes.

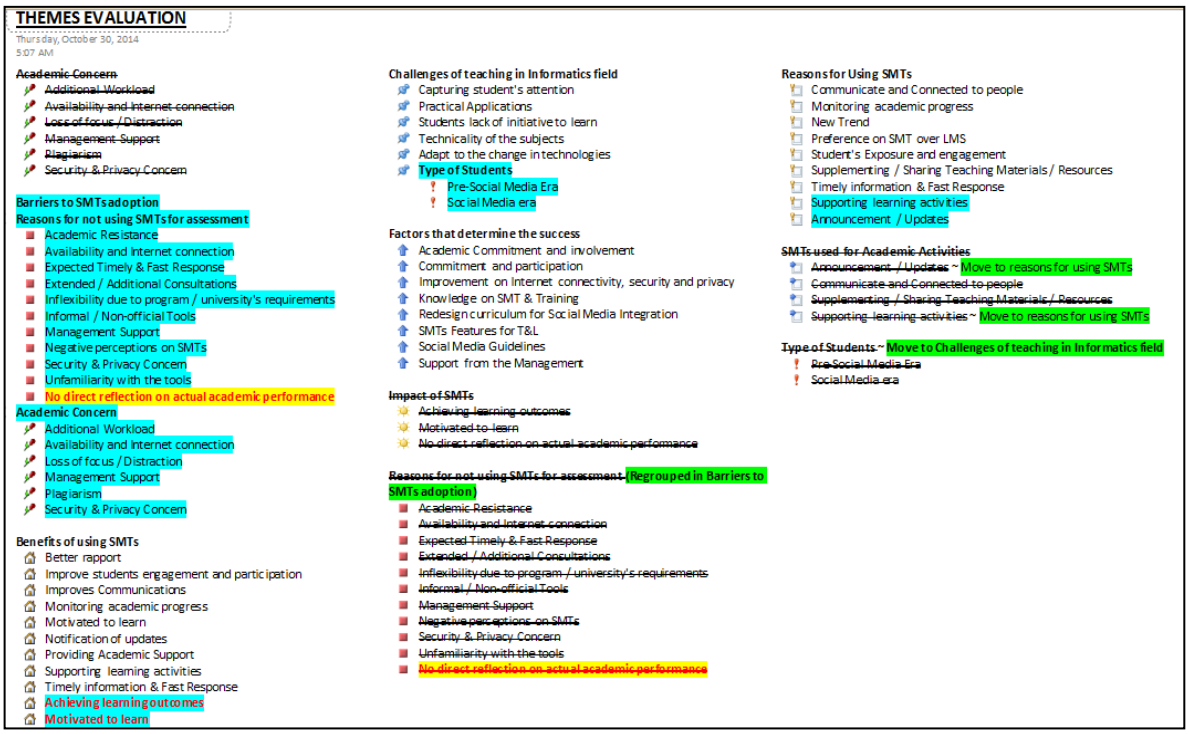



*Figure 5.21: Academic –Themes Evaluation*

**Finalized Themes for Academics**

Thursday, October 30, 2014
5:33 AM

**Barriers to SMTs adoption**

**Reasons for not using SMTs for assessment**
- Academic Resistance
- Availability and Internet connection
- Expected Timely & Fast Response
- Extended / Additional Consultations
- Inflexibility due to program / university's requirements
- Informal / Non-official Tools
- Management Support
- Negative perceptions on SMTs
- Security & Privacy Concern
- Unfamiliarity with the tools
- No direct reflection on actual academic performance

**Academic Concern**
- Additional Workload
- Availability and Internet connection
- Loss of focus / Distraction
- Management Support
- Plagiarism
- Security & Privacy Concern

**Benefits of using SMTs**
- Better rapport
- Improve students engagement and participation
- Improves Communications
- Monitoring academic progress
- Motivated to learn
- Notification of updates
- Providing Academic Support
- Supporting learning activities
- Timely information & Fast Response
- Achieving learning outcomes
- Motivated to learn

**Challenges of teaching in Informatics field**
- Capturing student's attention
- Practical Applications
- Students lack of initiative to learn
- Technicality of the subjects
- Adapt to the change in technologies
- **Type of Students**
  - Pre-Social Media Era
  - Social Media era

**Factors that determine the success**
- Academic Commitment and involvement
- Commitment and participation
- Improvement on Internet connectivity, security and privacy
- Knowledge on SMT & Training
- Redesign curriculum for Social Media Integration
- SMTs Features for T&L
- Social Media Guidelines
- Support from the Management

**Reasons for Using SMTs**
- Communicate and Connected to people
- Monitoring academic progress
- New Trend
- Preference on SMT over LMS
- Student's Exposure and engagement
- Supplementing / Sharing Teaching Materials / Resources
- Timely information & Fast Response
- Supporting learning activities
- Announcement / Updates

*Figure 5.22: Academic – Finalized Themes for Academics*

The finalized themes were analyzed to identify their inter-connections and a relationship diagram was produced as one of the outcomes of the analysis. Refer to *Figure 5.23* for the relationship diagram.

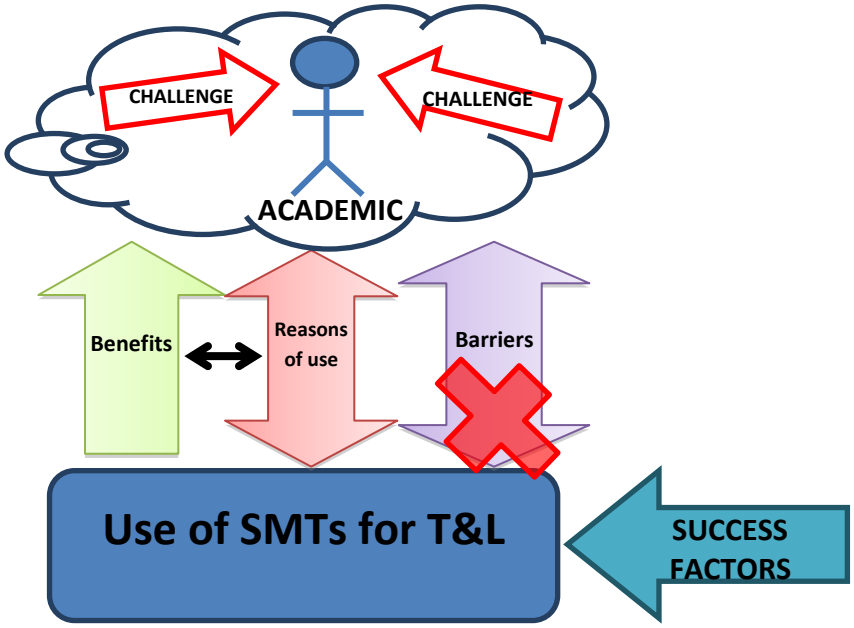



*Figure 5.23: Relationship Diagram for Academic*

The diagram shows the relationship between the academic staff and their use of SMTs for teaching and learning purposes, the challenges that academic staff faced when teaching in Informatics related programs, the reasons they were encouraged to use and explore SMTs in their classes, benefits that they gained from the use of SMTs in their classes, barriers that discouraged or deterred them from using SMTs for teaching and learning activities and the factors that determined the success of the use of SMTs for teaching and learning activities. Academic staff teaching in Informatics related programs are constantly surrounded by challenges in imparting knowledge to students who are heavily exposed to technologies and social media environments. These challenges potentially became one of the factors that pushed academic staff to consider exploring the use of SMTs for their teaching in classes. There are many reasons or purposes of using SMTs for teaching and learning activities in classes and the benefits associated with the use of the SMTs will further motivate them to use it. As described by Cha (2010), the perceived usefulness and ease of use of social networking websites will positively relate to the frequency and amount of social networking site use. At the same time, there are also some barriers or constraints that will deter the academic use of SMTs. Some of the barriers identified during the data collection included the privacy concerns, unfamiliarity with SMTs, lack of understanding in adopting SMTs for teaching and learning activities, and an increase in workloads. Effective management of these barriers by the institutions will possibly increase the likelihood of SMT usage in teaching and learning activities. From the data collected, respondents listed management supports (e.g. training, reduction of workload, and rewards and recognition) as the critical success factor of the SMT adoption within the Institution. They believed they would be more likely to explore and use SMTs if the management of the institution was supporting their use. Tinti-Kane (2013, p. 2), the AVP Marketing of Pearson also quoted that:

> *The more that faculty members understand the effective uses of social media for teaching and learning, and the better the industry gets at learning how to balance "privacy" within the social sphere, the faster these new practices will proliferate across higher-education faculty and support student engagement and success.*

Lastly, there are also many factors that will determine the successful integration of SMTs within the teaching and learning context. The detail explanations for each theme or component above will be further explained in the following section.

### 5.4.4 Analysis of the findings

Academic staff teaching in Informatics programs in this post social media environment are facing great challenges. Besides the technicality and practicality of the subject contents, academic staff also need to constantly keep up to date with the latest technologies. In addition to that, teaching students in the 'post social media era' in which students are heavily exposed to technologies and social media, add to the challenges of keeping students focused on their studies, engaging with them during lectures, helping them to understand and appreciate the technical content and motivating them to learn more. Academic staff were asked whether they observed any differences between students in pre-social era (when social media technologies were not popularly available) with students who are now heavily exposed to the technologies and some of the comments extracted are as follow:

| |
|---|
| *"Students in the pre-social media era have more self-initiative to learn new knowledge in which they were willing to learn without much guidance and they were more proactive to seek knowledge. They were also more concentrated during classes and fully focused when instructor was sharing knowledge. On the other hand, students in the social media era are lack of self-initiative to learn new knowledge. Their attentions during classes are very poor as they keep distracted by mobile and handheld devices that are connected to the Internet while sitting in a lecture." ~ Academic 1* |
| *'Perhaps they spend more time hanging around social media groups, easily distracted by social media junks.' ~ Academic 3* |
| *'Students in this era will need more interesting learning environment else they will feel boring. Students start to demand more from the lecturers and they would want to experience different learning platforms.' ~ Academic 5* |

The comments above represent the negative views of academic staff about students' exposure to social media and technologies. However, there are also some positive comments about the exposure to social media on students' learning. The positive comments are as follow:

| |
|---|
| *'Now, information is at the fingertip of the students. Most students no longer refer to textbooks and reference books in the library. They depend a lot on their online community and Internet to look for things that they want. With Social Media, students and lecturers bonding are not limited within the classroom only. It is also easier to get hold of students and to extend additional academic help to them after working hour.' ~ Academic 9* |
| *'During the pre-Social Media era, the students are communicating during class and face-to-face discussions only which is limited by time. When they encountered any problems, they have to wait for the next class or during consultation time to clarify their problems. This is not the case when Social Media is being used. The students can learn faster because they do not have to wait anymore to get new knowledge or get help or guidance when they face problem. They can easily share their problems on the social media group created and get multiple feedbacks from lecturers and fellow friends almost immediately. This really saves a lot of time and they can learn more and faster. On top of that, they are also able to share information in a variety of ways such as text, video, images, links to other sites, etc.' ~ Academic 2* |
| *'In post social media, students could share their academic problems on Facebook and hopefully they could find a solution to their project.' ~ Academic 10* |

Even though, there are positive views on the exposure of students to social media, these positive views can also pose challenges to academic staff. For example, the ability to extend help to students beyond class time will also mean that additional workload or extended consultation on academic staff would be expected. In addition, the easily accessible resources online might reduce student's initiative, as they turn to social media for academic help in assignments or projects. The tools might also increase the likelihood of plagiarism and reduce originality of work especially for Informatics subjects, where students can easily download or obtain programming codes online instead of writing their own codes. Academic staff also felt that it is hard to capture student's attention in class as students are distracted by their mobile devices and social media applications.

Other challenges listed by academic staff in teaching in the Informatics related programs specifically, included the technicality of the subjects which makes it hard to deliver and to help students understand, the involvement of practical applications such as the use of many different systems or technologies, and the constant need to keep abreast with new changes in the technologies that require investment in time. *Figure 5.24* depicts the summary of the challenges.


*Figure 5.24: Academic – Challenges in teaching Informatics*

The findings from the data collection show that none of the academic staff have used SMTs as part of their course assessment. They mainly used it for communication purposes, making announcements and updates, supplementing learning resources or materials, supporting their learning activities such as conducting discussions and polls, monitoring student academic progress, and providing academic help or support such as consultation to students. The main reason that motivated them to use it was the fact that the use of social media has become the trend of students in this generation, and thus leveraging on their engagement and exposure with SMTs might be a good option to engage them. SMTs have become a powerful communication tool used to communicate and connect to students due to their familiarity with the SMTs and their constant connection on SMTs. The real-time update features of SMTs enable timely information to be disseminated and quick responses to be collected. Academic staff also found that students

preferred and checked their SMTs more frequently compared to the official Learning Management System (LMS) provided by the Institution. *Figure 5.25* summarizes the reasons that make academic staff consider the use of SMTs for their classes.


*Figure 5.25: Academic – Reasons for exploring the use of SMTs for academic purposes*

The effective use of SMTs for teaching and learning activities has the potential to yield many benefits, and these benefits will further motivate academic staff to continue using the tools. The summarized benefits shared by the respondents can be seen in *Figure 5.26* below.

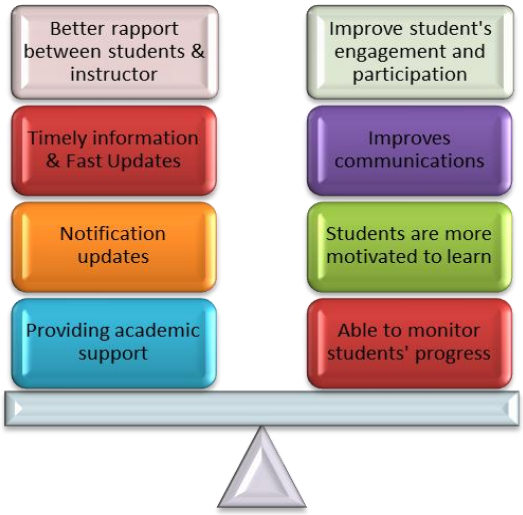



*Figure 5.26: Benefits of SMTs by academic staff*

If the barriers to SMTs adoption are to be addressed, they need to be identified. The participants shared that these barriers were also the possible reasons why their peers were not comfortable or willing to consider using SMTs for their classes. The barriers should be properly managed to reduce the fear and uncertainties in using SMTs for academic purpose. From the findings, the data collected can be grouped into two sub-themes that form the 'Barrier': Reasons for not using SMTs for assessment, and Academic concern. So far, all the respondents have not experienced using SMTs for assessment purposes. They mainly used it for announcement, communication, sharing of resources, and simple academic support. Some of these barriers are generated from the negative experiences while using SMTs. For example, unfamiliarity with the tools that results in unpleasant experiences, poor internet connections that affect the usage of SMTs in the Institution, extended consultation beyond working hours, SMTs as an informal tool which is not suitable to be used for academic purposes, expected immediate and fast response from students, etc. Some respondents also shared their inability to integrate SMTs for assessment due to the restriction set by the University or the Program taught and the inflexibility to change or modify the assessments without the University's consent to ensure standardization of curriculum. On the other hand, some barriers might also be the result of the misconceptions that the academic staff have about SMTs. For example, the negative perceptions on SMTs such as the likelihood of students losing focus in their studies and being distracted by non-academic activities, the high possibility of loss of security and privacy, the high chance of plagiarism of student's work, etc. The summary of the barriers to SMTs adoption can be seen in *Figure 5.27* below.

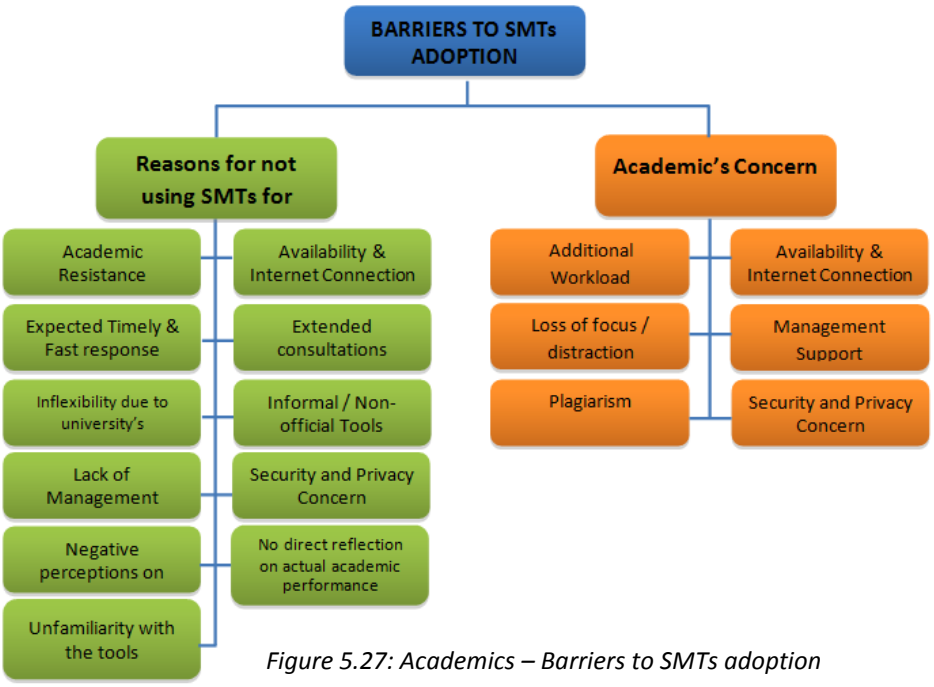



*Figure 5.27: Academics – Barriers to SMTs adoption*

Lastly, the participants were asked to give their views on the factors that they think will determine the success of SMTs adoption for academic purposes. Some of the comments extracted from the participant responses are listed as follow:

| |
|---|
| *"Firstly, recognition and support from the management in terms of workload reduction so instructors can spend time in exploring the tools. Next, would be the Instructors willingness to work beyond office hour for additional consultations via social media." ~ Academic 1* |
| *"Firstly, Well-informed participants - students need to be clear on the purpose of using the social media tools in relation to the subjects involved, the "dos and don'ts". There should be proper guideline given to them on the "things" they should post on the social media platform. Secondly, regular monitoring of the use of social media tools making sure that it is being used appropriately. Lastly, the involvement of the lecturer is also important. Lecturer can help to trigger active discussions by posting questions when there's a long idle time. Apart from that, students should allow to start a discussion." Academic 2* |
| *"Suitability of the social media tools for teaching and learning purpose." ~ Academic 3* |
| *"It depends on the management policy in relation to Teaching and Learning in the institution. Asian students are still very passive in learning, if there is no policy to support the use of social media tools, it could be difficult to implement. With the policy in place, lecturers can be encouraged to include that in the delivery method and also in the coursework. When there is marks allocation on the activities involved in the social media tools, students will be encouraged at the same time to use it for learning. This ensures the consistency in the teaching and learning methods in a learning institution. Besides the policy factor, trainings shall be given to the lecturers, as there are lecturers who are still not familiar with the use of social media tools." ~ Academic 5* |
| *"Training on how to use it effectively for classroom teaching." ~ Academic 6* |
| *"I would think the successful adoption depends on the level of commitment from the higher senior management. Social media has a huge penetration rate on the targeted user and the management must realize the full potential impact of the social media proliferation." ~ Academic 10* |

The summary of the success factors deemed important by the academic staff can be seen in *Figure 5.28* below. Institutions of higher education need to establish clear social media guidelines that clearly spell out the responsibilities of students and staff when using social media for professional or academic purpose. Academic staff commitment and involvement are also important in ensuring the success of implementation. They should be mentally prepared to take up additional responsibilities and workload when they decide to explore the use of SMTs for their classes. These additional responsibilities and initiatives should be applauded and supported by the management of the institution, possibly in the form of incentives, recognition or workload reduction. Academic staff also need to be trained on the features and functionalities of different SMTs before integrating them into their classes. There are many SMTs in the market, however, not all are suitable to support teaching and learning activities. Thus, academic staff need to be extra vigilant in the selection of the right tools to be adopted. Lastly, academic staff also need to redesign their curriculum, lessons or activities to ensure successful integration and effective use of SMTs since the existing curriculum or lessons might be suitable for face-to-face mode of delivery only. By placing emphasis on these success factors, and tackling all the issues associated with it, academics believe the chances of successful integration of SMTs to support academic activities would be high.

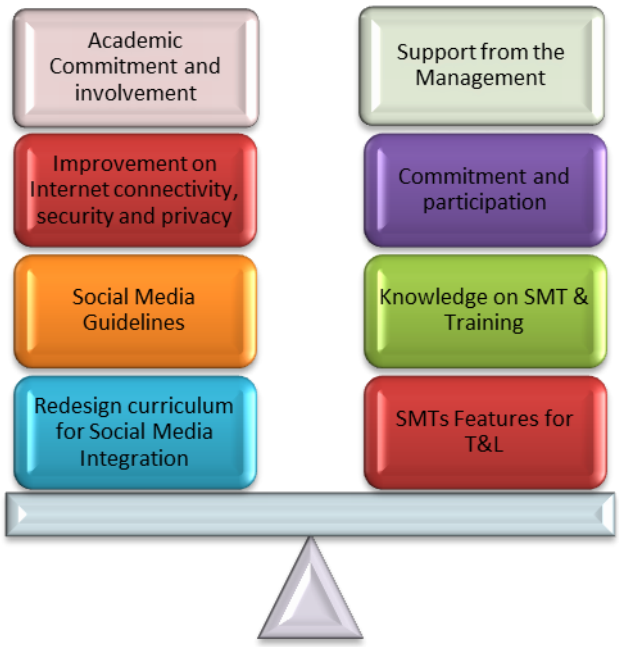



*Figure 5.28: Academic – Success Factors to SMTs adoption*

### 5.4.5 Social Media in the Institution

Based on the responses collected from the academic staff, Facebook was the most popularly used SMTs. A minority of them also used Whatsapp and Twitter with their students. The academic staff noted that their students responded very positively to their use of SMTs in classes for non-critical academic activities such as supplementing learning resources, providing academic support, and for communication purposes. The participants also confirmed that there was no restriction on the use of SMTs within their institution, whether or not for academic purposes. No respondents have reported enforcement by Malaysian institutions of use of SMTs for academic purposes, and respondents have noted that it is up to the individual academic staff to initiate the integration of SMTs into their classes. Finally, there was neither any technical support on SMTs, nor social media guidelines applied on the use of SMTs provided by their Institutions.

## 5.5 ADMINISTRATORS

In many institutions of higher education in Malaysia, there tends to be two types of administrators: administrators in academic related divisions, and administrators in non-academic related divisions. The former usually include staff who hold administrative roles within the Faculty or School (e.g. Program Officers, Faculty Manager, Faculty Administrative officer, Head of Programs, and Deans), while the latter includes staff who work in student support services divisions such as Student Services, ICT Departments, etc. For this research, five administrators who worked in private education institutions in Malaysia participated in the interview sessions. Two of them worked in a non-academic division, while three worked as academic administrators. The breakdown of their job roles are shown in *Figure 5.29* below. All five of them were from the same Institution, i.e. INTI International College Subang, but all from different departments or faculties.

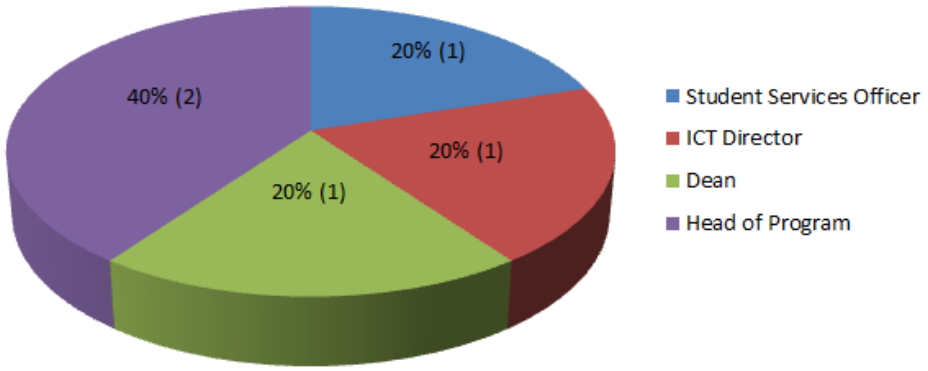


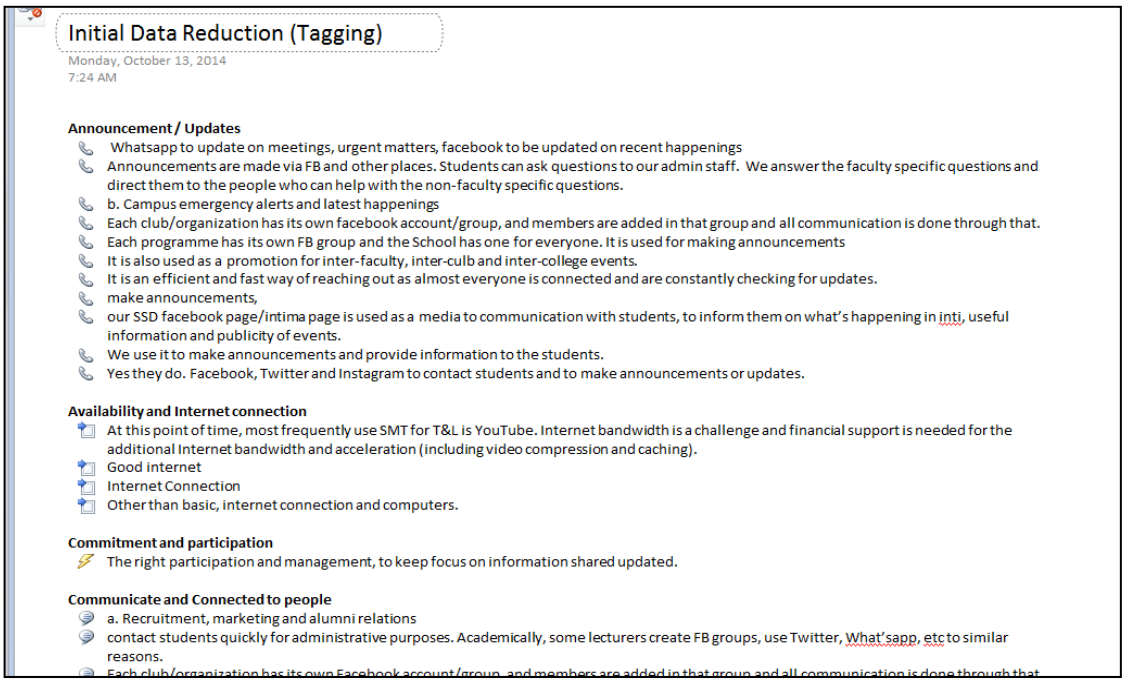

*Figure 5.29: Roles of the Administrators*

Generally, all the administrators had very positive views towards the use of social media in higher education institutions. Following is a summary of their views on the use of social media based on their personal experience in using and managing the social media channels within their institutions.

| |
|---|
| *"Social media has not and will not change the fundamentals of learning, but will rather complement and supplement its dynamics by creating new channels of communication." ~ Director, ICT Department.* |
| *"It is an efficient and fast way of reaching out as almost everyone is connected and are constantly checking for updates." ~ Head of Program* |
| *"It's a very useful supplementary tool for both us and the students', for academic and administrative purposes." ~ Dean* |
| *"It is an important platform in the growth of new media and its impact socially and economically." ~ Head of Program* |
| *"It's the main communication that is able to reach out to students nowadays." ~ Student Service Dept.* |

## 5.5.1 Data Reduction

As the numbers of administrator respondents involved was small, the data reduction process for analyzing the findings was much simpler. In the initial round of data reduction, the researcher read through the responses, question by question and tagged each of them with appropriate codes (*Figure 5.30*). The data was subjected to multiple rounds of data reduction to check whether the tagging was done appropriately. The initial coding identified 16 codes which can be seen as in *Figure 5.31* below.



Initial Data Reduction (Tagging)

Monday, October 13, 2014
7:24 AM

**Announcement / Updates**

- Whatsapp to update on meetings, urgent matters, facebook to be updated on recent happenings
- Announcements are made via FB and other places. Students can ask questions to our admin staff. We answer the faculty specific questions and direct them to the people who can help with the non-faculty specific questions.
- b. Campus emergency alerts and latest happenings
- Each club/organization has its own facebook account/group, and members are added in that group and all communication is done through that.
- Each programme has its own FB group and the School has one for everyone. It is used for making announcements
- It is also used as a promotion for inter-faculty, inter-culb and inter-college events.
- It is an efficient and fast way of reaching out as almost everyone is connected and are constantly checking for updates.
- make announcements,
- our SSD facebook page/intima page is used as a media to communication with students, to inform them on what's happening in inti, useful information and publicity of events.
- We use it to make announcements and provide information to the students.
- Yes they do. Facebook, Twitter and Instagram to contact students and to make announcements or updates.

**Availability and Internet connection**

- At this point of time, most frequently use SMT for T&L is YouTube. Internet bandwidth is a challenge and financial support is needed for the additional Internet bandwidth and acceleration (including video compression and caching).
- Good internet
- Internet Connection
- Other than basic, internet connection and computers.

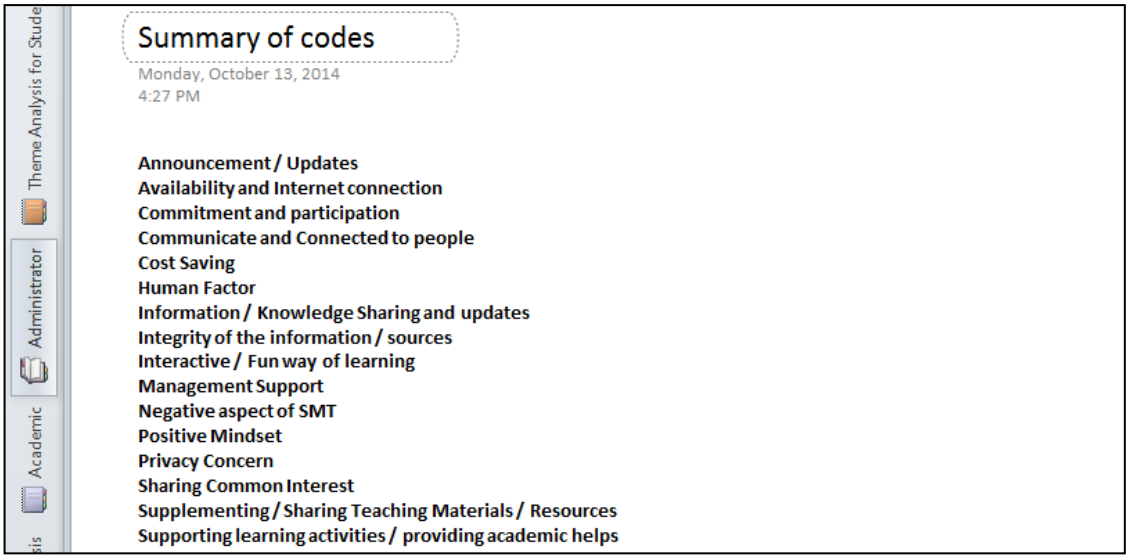
**Commitment and participation**

- The right participation and management, to keep focus on information shared updated.

**Communicate and Connected to people**

- a. Recruitment, marketing and alumni relations
- contact students quickly for administrative purposes. Academically, some lecturers create FB groups, use Twitter, What'sapp, etc to similar reasons.
- Each club/organization has its own Facebook account/group, and members are added in that group and all communication is done through that

*Figure 5.30: Administrator – Initial data reduction (tagging)*



Theme Analysis for Stude
Administrator
Academic

Summary of codes

Monday, October 13, 2014
4:27 PM

**Announcement / Updates**
**Availability and Internet connection**
**Commitment and participation**
**Communicate and Connected to people**
**Cost Saving**
**Human Factor**
**Information / Knowledge Sharing and updates**
**Integrity of the information / sources**
**Interactive / Fun way of learning**
**Management Support**
**Negative aspect of SMT**
**Positive Mindset**
**Privacy Concern**
**Sharing Common Interest**
**Supplementing / Sharing Teaching Materials / Resources**
**Supporting learning activities / providing academic helps**

*Figure 5.31: Administrator – Summary of Codes (Round 1)*

The researcher went through the data again to check whether all the data were tagged appropriately and whether there was anything missed from tagging. The researcher identified 2 additional codes from the second round of data reduction, making it a total of 18 codes. Refer to *Figure 5.32* below for the finalized codes.

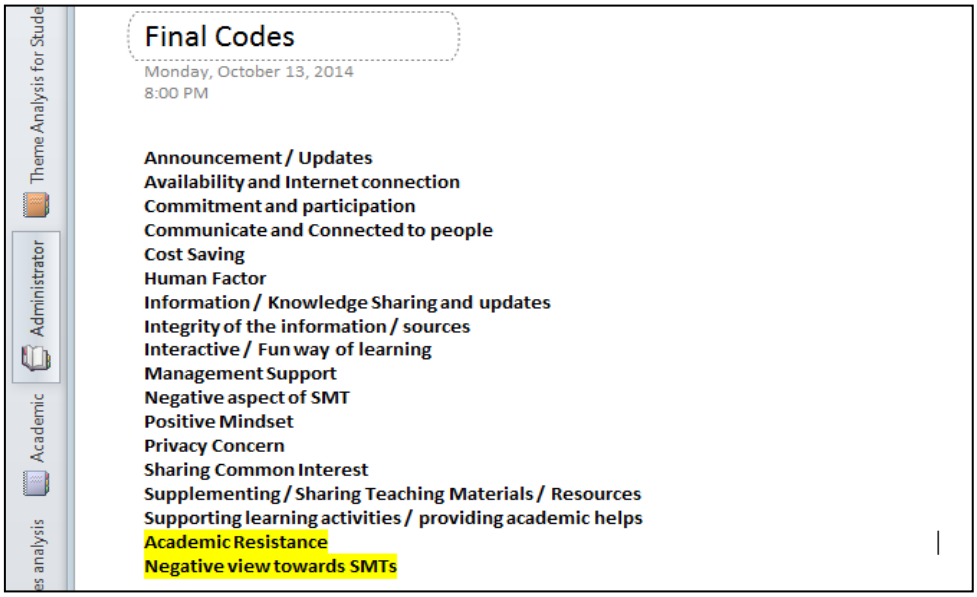



*Figure 5.32: Administrator – Summary of Codes (Final)*

## 5.5.2 Categorization of tags or codes

Once the researcher was satisfied with the list of codes generated, categorization of the codes was completed. Many of the codes were related to one another and thus, were grouped together to form categories or themes. The process of grouping yielded four themes: Barriers in the use of SMTs, Factors that determine the success, Negative impact of SMTs, and Reasons for Using SMTs. Refer to *Figure 5.33* below for the four themes derived from the 18 codes.

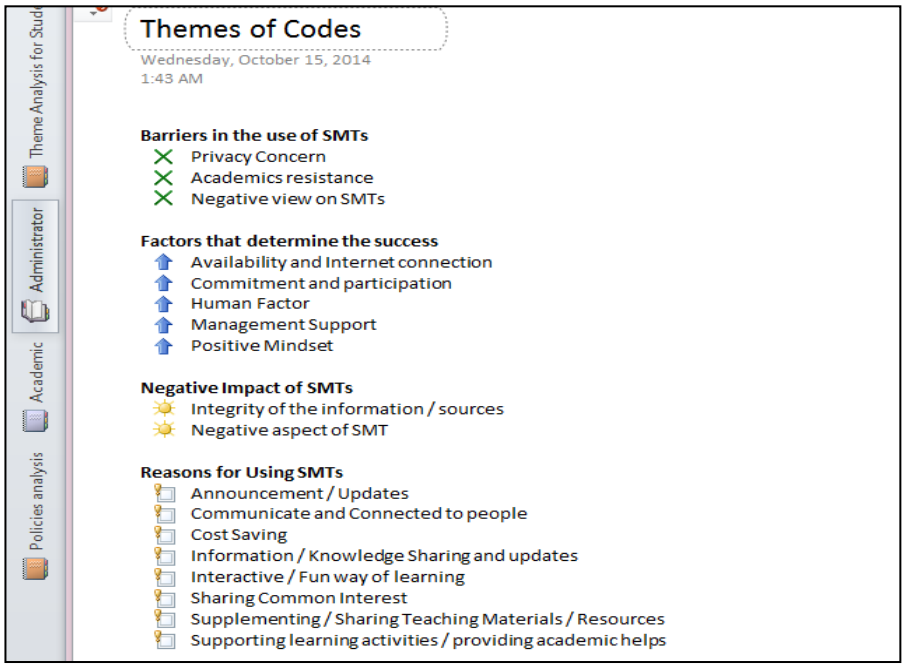



*Figure 5.33: Administrator – Themes of Codes*

All the themes and associated codes were re-read to ensure that the final themes were appropriate, and all the codes were properly categorized. The four themes: (1) Factors that determine the success, (2) Negative impacts of SMTs, (3) Barriers in the use of SMTs, and (4) Purpose of using SMTs, were then analyzed to establish their relationship.

*Figure 5.34* depicts the relationship diagrams for the generated themes. The arrows in the diagram representing the input and output that affect the use of SMTs in teaching and learning. For example, the factors that determine the successful adoption of SMTs in teaching and learning include academic commitments, student's participation, internet connection, positive mindset, and management support. The availability of these factors will motivate and drive the use of SMTs. On the other hand, barriers such as the privacy concern, academic resistance and negative views of the SMTs will deter the use of SMTs. Thus, it is important for institutions to develop strategy to minimize the barriers as much as they could. The use of SMTs in teaching and learning might yield two outcomes. If SMTs are used correctly and effectively by both students and academics, positive outcomes could be achieved and this will further motivate the use of SMTs in teaching and learning. The two-way arrow indicates that the more positive the outcome, the more

people will use it, and the more they use it correctly, the more positive outcomes they will get. In contrast, if the use of SMTs is not properly planned and controlled, it will possibly draw some negative impacts such as the trustworthiness of the information circulated in social media, viral dissemination of unverified information, distractions, and, privacy and confidentiality of data. These will in return affect the use of social media. The detail explanations of each theme were further elaborated in the subsequent sections.

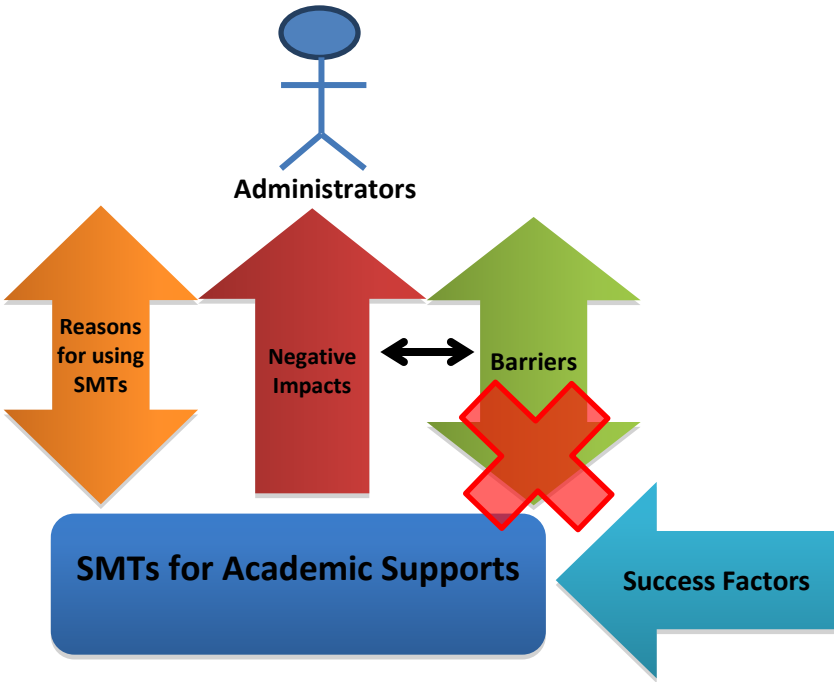



*Figure 5.34: Administrator – Relationship diagram for the Themes*

### 5.5.3 Analysis of the findings

There are many purposes or reasons for administrators within an Institution to use SMTs, and the reasons are credited to the features and functionalities of the SMTs. The more useful and appropriately the SMTs are used, the more it will influence and encourage the use of SMTs within an institution. In *Figure 5.35*, the orange arrow is actually pointing downward, meaning that the output quality of the SMTs usage will influence the reasons for using it. If the outcomes of using social media within the institution are positive, this will encourage staff to continue using it, and at the same time, attract more new comers to consider exploring it. Based on the findings, the

reasons given by administrators can be grouped into two areas: academics administration and non-academic administration (Refer to *Figure 5.35)*.

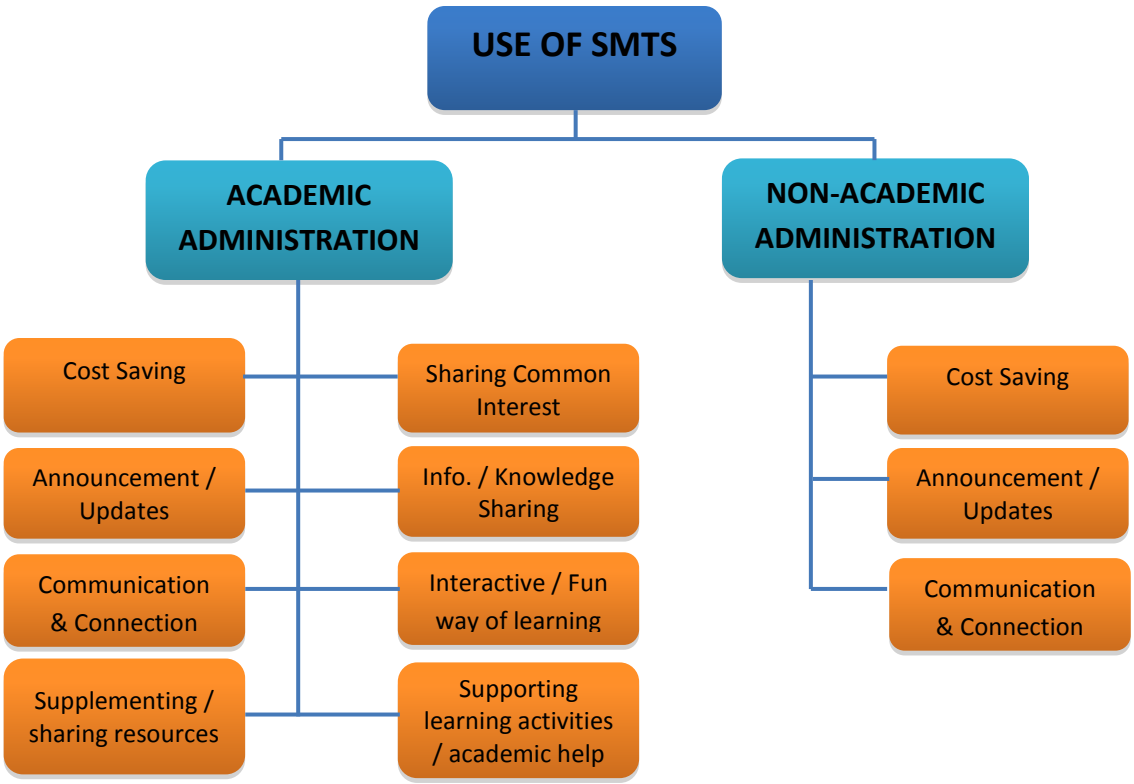



*Figure 5.35 Administrator – Purposes of using SMTs*

Generally, non-academic administrators (such as ICT Departments, Student Service Departments, Marketing Units, etc.) depend on SMTs as a communication tool to engage with students. For example, when asked about how each respective department uses social media, an officer from Student Service Department quoted the following:

> *"Our Student Service Department Facebook Page and Student Council Page are used as a medium to communication with students, to inform them on what's happening in the College, to convey useful information pertaining to the Institution, and for publicity of events. It is also used as a promotional tool for inter-faculty, inter-club and inter-college events. "*
>
> *~ Officer from Student Service Department*

As for academic administrators, they are the ones who handle all the students, programs and faculty's daily administrative matters within the Faculty. Similar to non-academic administrators, SMTs are frequently used for communicating with students, and to keep students updated with faculty or program information. Academic administrators also use SMTs to make announcements about upcoming events and activities, class cancellations, class replacement, notification of test or examination schedules, change of timetable, and enrolment. Following are sample reasons given by administrators.

| |
|---|
| *"Using Social media is an easier, faster and more effective way of communication among and with students, and at zero-cost." ~ Officer from Student Service Department* |
| *"It is an efficient and fast way of reaching out as almost everyone is connected and are constantly checking for updates". ~ Head of Program* |
| *"Students are already familiar with SMT and are more ready to read what we post via SMT. In addition, with the SHARE and LIKE features of SMT, students can also contribute immediately when they see something related to class and share with everyone. Lecturers and staff can better gauge student interest in any post being put up based on the share and likes." ~ Dean* |
| *"Easier to communicate with the new generation." ~ Head of Program* |

All administrators were also asked to share how social media was being used within their department, faculty or institutions. The brief descriptions of their best practices in social media adoption are listed below.

| |
|---|
| *"Each club or society has its own Facebook account/group. Members are then added to the group which is managed by the administrator of the club or society. All communications are done through that subsequently." ~ Student Service Department.* |
| *"Each program within the School has its own Facebook group which is managed by respective Head of Program and Program Officer. In addition, the School has a common* |

| |
|---|
| *Facebook group as well. It is used for making announcements." ~ Head of Program* |
| *"We use it as a supplementary platform to disseminate information, make announcements, contact students quickly for administrative purposes. Academically, some lecturers create FB groups; use Twitter, What'sapp, etc for similar reasons. As for Facebook, it allows lecturers to post files, videos, links which are relevant to their courses." ~ Dean* |
| *"The Institution uses it for student recruitment, marketing and alumni relations", and Campus emergency alerts and latest happenings". ~ Director, ICT Department* |
| *"We use Facebook, Twitter and Instagram to contact students and to make announcements or updates." ~ Head of Program* |

In contrast to the benefits of using SMTs in tertiary education institutions, the administrators also identified some barriers that constrain students, and staff use. The three barriers identified by the administrators were privacy concerns, negative views about SMTs, and academic resistance. Some students and staff might not be comfortable to mix their personal social activities with something formal, such as education or work. Students might not want their lecturers to know or see what they are doing outside academia. Similarly, academics and administrators also did not wish students to know what they are doing after working hours. There are also many negative views about the use of SMTs such as security issues, data protection, distractions to the work or study, extra time consumed in managing students on social media, lack of control over the contents post on social media, etc. Lastly, would be the possible resistance from the academic staff. Academic staff, especially those from older generations, might be slow in embracing social media. As technologies evolve rapidly, it would be a challenge for them to keep up with the younger ones. Due to their unfamiliarity with the tools, and the confidence in using them, they might not be willing to explore the possible use of SMTs in classes. All these barriers might possibly hinder the use of SMTs for teaching and learning in institutions.

The improper use of any kind of technologies will have an impact on individual use (refer to *Figure 5.36*). However, if proper control could be put in place to monitor the use of the technologies, it would help to minimize the impact. The negative impacts identified by the academic administrators included the possible distractions to work and study, the credibility and trustworthiness of the information circulated in social media, distorted information, uncontrolled distribution of information online, and anonymous postings which might be difficult to track. Students might not verify the source of the information shared on social media before sharing or distributing the content to their friends. The content or information which might not be screened prior to distribution, might go viral on social media, and it is not easy to control or retract these postings, and this might possibly bring a detrimental effect to the Institution.

On the other hand, non-academic administrators such as the Director of the Institution's ICT department who take care of all the technology infrastructures within the institution indicated that his concerns were more about the increased use of the Internet bandwidth, data security, intellectual property and possible misuse of SMTs which might be hard to trace. The use of social media tools especially YouTube for teaching and learning in classes requires higher internet bandwidth. This in return requires additional financial support from the institution for upgrading of the existing infrastructure to support the social media initiative. In addition, if the use of SMTs in the Institution is not restricted, it poses another possibility in which people might misuse it for non-academic reasons. For example, watching movies or series online or downloading for later consumption. These processes not only consume more Internet bandwidth but there is also a possibility of breaching copyright law. Content or materials posted or shared might also be subject to Intellectual Property infringement. As social media channels are not official in Malaysia, and not integrated with the learning management system within the institution, it is difficult to trace the social media activities especially when users are using an anonymous identity. Misuse of social media channels by students and staff could have a great impact to the Institution's reputation. Lastly, the use of social media will potentially pose a higher risk of security threats (e.g. data privacy, malware, spams, phishing, social engineering, etc.) that requires institutions to invest in more advanced security tools.

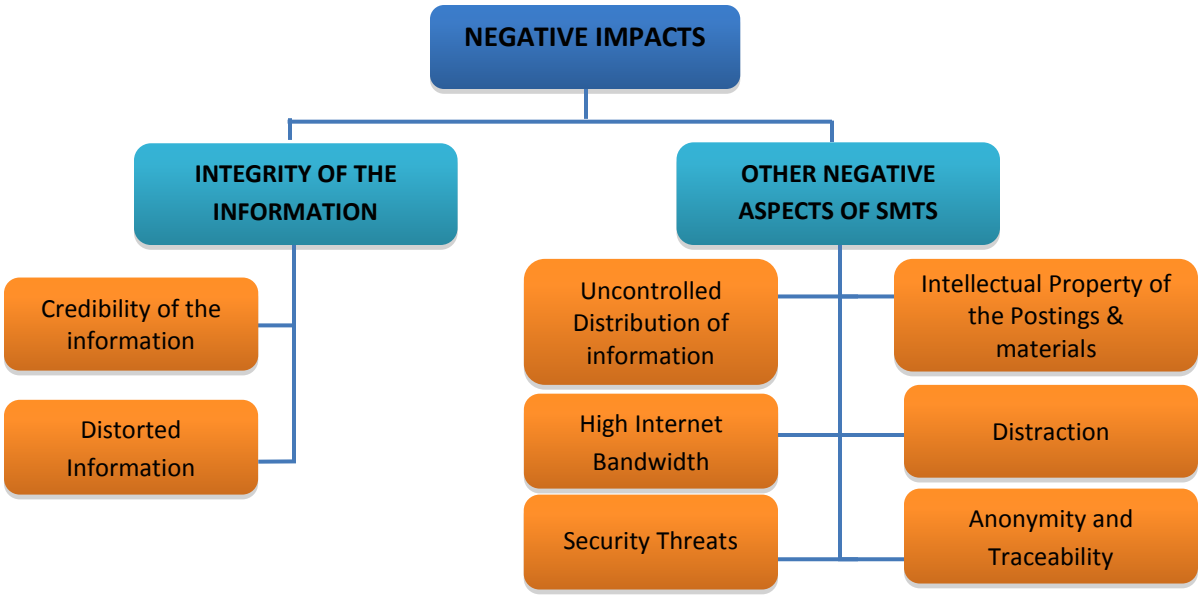



*Figure 5.36 Administrator – Negative impacts of SMTs*

The successful adoption of SMTs within an Institution is highly depending on the following factors: availability of the internet connections in the institution, commitment and participations from all stakeholders, top management support, positive mindset towards the use of SMTs in tertiary education, and human factors.

As mentioned earlier, the use of social media such as YouTube in classes tends to require additional Internet bandwidth to support the streaming of the videos; especially since many are in high definition format (HD). Unavailability or unstable internet connections will interrupt the conduct of the classes if social media tools are to be used as academic tools. Secondly, for a successful integration of SMTs in teaching and learning activities in class, commitments and participation from all parties, i.e. students and academic staff, are crucial. For example, it is meaningless for an academic staff member to set up a Facebook page or Twitter account for his/her classes, if students are not actively using it for discussions and support. Similarly, if an academic staff member is not willing to spend additional time replying to queries from students on Facebook or Twitter, or to spend time in designing appropriate activities that make good use of social media, the integration of social media in teaching and learning will also not be successful.

The third factor is support from the top management such as financial support in upgrading the internet bandwidth, allowing free access to all social media applications, developing a strategy to encourage the use of social media in teaching and learning, and providing avenues for sharing best practices among staff, and training on social media skills. A positive mindset towards the use of SMTs for academic purposes is also very important. Many academics, students, and administrators are reluctant to embrace social media for academic purposes as they have no confidence that the informal tools could be used for formal processes like education. Finally, human factors are concerned with issues pertaining to the users. For example, responsible users who use social media in an appropriate manner to achieve positive outcomes, and willingness of academic staff to learn and to explore how SMTs could be integrated into the classes. The resistance to SMTs by users in the institution determines the success of SMTs adoption. The higher the resistance level, the lower is the chance to success, and while the lower the resistance level, the higher is the chance to success. The summary of the success factors of SMTs adoption can be seen in *Figure 5.37.*


*Figure 5.37: Administrator –Success Factors of SMTs adoption*

### 5.5.2 Social Media and the Institution

Based on the responses collected from the administrators, Facebook, and What'sapp are the most popularly used SMTs by most faculties or departments. At the time of this study there had been no reported restrictions imposed on the use of Social Media within Malaysian Institutions. Each department and faculty were responsible for the administration, checking of posting or comments, and updates of social media content, and these are usually assigned to the officers, and the program management team. The content tended to be updated every day and whenever deemed necessary by the faculty or department. No participants reported the existence of an Institution-wide Social Media Administrator that takes care of the overall social media implementations. For digital content that was published on the Institution's official website, Corporate Marketing Offices tended to take responsibility. The administrators also confirmed that there was no Social Media Policy and penalty statement associated with a breach of social media usage in their Institution. Finally all the administrators were asked to give their views on the use of SMTs in Tertiary Education and some of the responses were extracted as follow:

| |
|---|
| *"It's the main communication that is able to reach out to students nowadays." ~ Students Service Dept.* |
| *"It plays a crucial role as it acts a platform for the school to reach out to the students." ~ Head of Program.* |
| *"It's a very useful supplementary tool for both us and the students', for academic and administrative purposes." ~ Dean* |
| *"It is an important platform in the growth of new media and its impact socially and economically." ~ Head of Program* |
| *"Social media has not and will not change the fundamentals of learning, but will rather complement and supplement its dynamics by creating new channels of communication. Older generations have been slower to embrace SMT, struggling somewhat to keep pace with younger cohorts. However, they have recently begun making a sharper turn in support of the technology." ~ Director, ICT Dept.* |

## 5.6 CROSS ANALYSIS

This section discussed the comparison of the analysis results of the three categories of participants: Informatics Students, Informatics academic staff, and administrators. *Figure 5.38* depicts the connections of all the components involved in the SMTs adoption. The arrow between students and academics shows their relationship within the faculty and institution. Academic administrators who resided in the faculty, were responsible for supporting all administrative matters pertaining to academic processes (for example, monitoring of study plan, enrolment, collection of assessment tasks, etc.) for both students and academic staff within the faculty, while non-academic administrators who resided at the Institution level were responsible for institution wide administrative support such as student activities, financing, Information Technology infrastructure, etc. The descriptions of the relationships of the other components are similar to the previous sections.

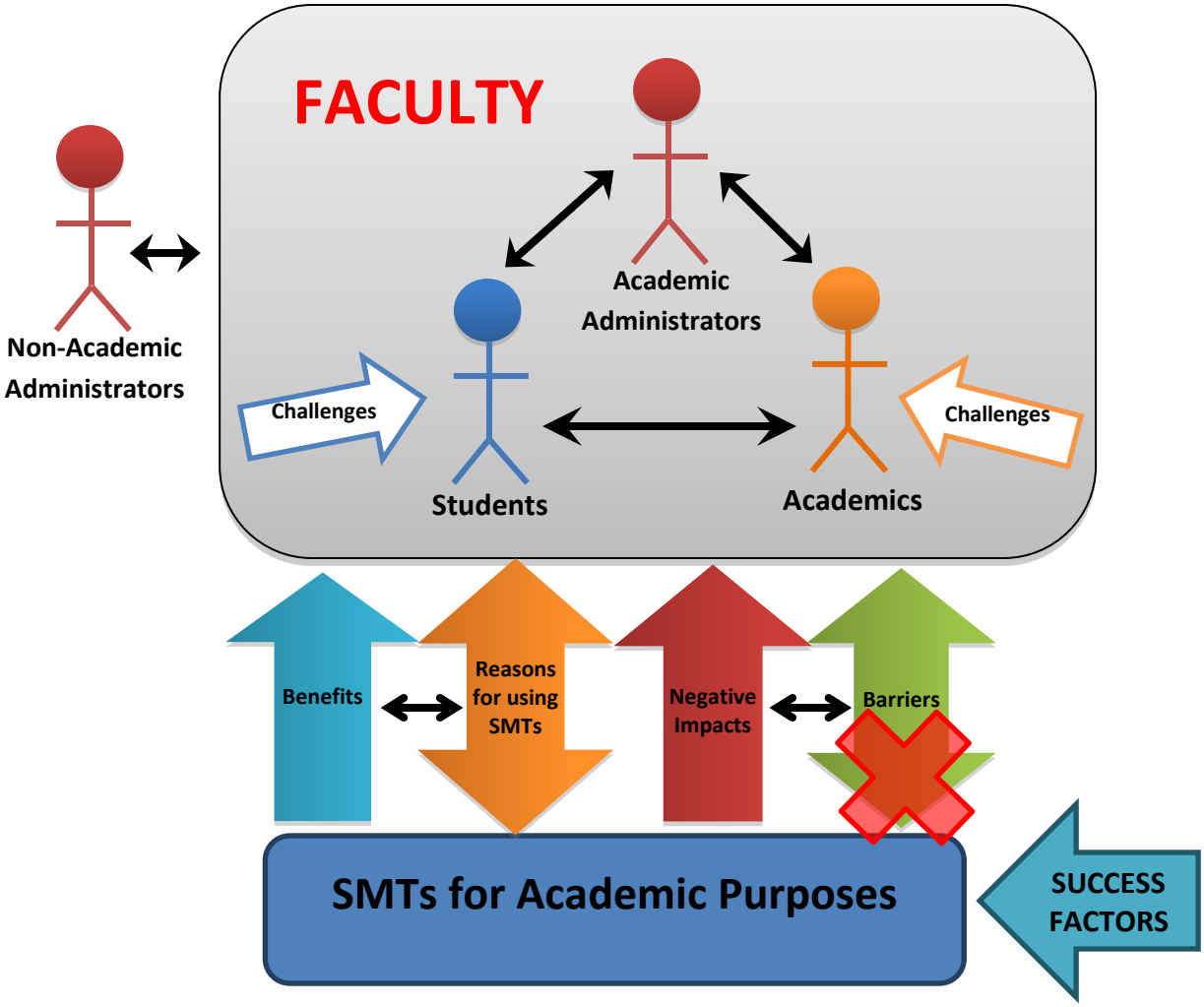



*Figure 5.38: Relationship diagram of the cross analysis*

### 5.6.1 Challenges of Informatics Programs

There were some commonalities and differences in the responses given by the participants. For this topic, it was not applicable to consider administrators responses since they were responsible for supporting the academic and non-academic activities only. The similarities listed by both students and academics were the technicality of the subjects, practical applications requirement and the constant changes in technologies that requires them to keep updating their knowledge of the latest information. There were additional challenges listed by academic staff, particularly in dealing with students. Refer to *Table 5.1* for the summary of challenges.

*Table 5.1: Summary of challenges of Informatics Programs*

| Components | Sub-Components | Students | Academics | Administrators |
|---|---|---|---|---|
| **Challenges of Informatics Programs** | Practical Applications | ✓ | ✓ | - |
| | Adapt to the changes in technologies | ✓ | ✓ | - |
| | Technical skills in programming / Technicality of the subjects | ✓ | ✓ | - |
| | Capturing student's attention | X | ✓ | - |
| | Students lack of initiative to learn | X | ✓ | - |

### 5.6.2 Reasons for using SMTs

There are many common reasons why the participants used SMTs for academic purposes. These include announcement / updates, communicating and connecting to people, supplementing or sharing teaching materials, and supporting learning activities. Most of the reasons were listed by at least two groups of participants except monitoring academic progress, new trends, preference on SMT over LMS, and student's exposure and engagement, which were listed by academic staff. Refer to *Table 5.2* for the summary.

*Table 5.2: Summary of reasons for using SMTs*

| Components | Sub-Components | Students | Academics | Administrators |
|---|---|---|---|---|
| **Reasons for Using SMTs** | • Announcement / Updates | ✓ | ✓ | ✓ |
| | • Borderless access | ✓ | X | X |
| | • Communicate and Connected to people | ✓ | ✓ | ✓ |
| | • Cost Saving | ✓ | X | ✓ |
| | • Information / Knowledge Sharing and updates | ✓ | X | ✓ |
| | • Interactive / Fun way of learning | ✓ | X | ✓ |
| | • Learning from one another | ✓ | X | X |
| | • Problem Solving & Solutions | ✓ | X | X |
| | • Sharing Common Interest | ✓ | X | ✓ |
| | • Supplementing / Sharing Teaching Materials / Resources | ✓ | ✓ | ✓ |
| | • Supporting learning activities / providing academic helps | ✓ | ✓ | ✓ |
| | • Timely & Fast Response | ✓ | ✓ | X |
| | • Turn to online communities for help | ✓ | X | X |
| | • Monitoring academic progress | X | ✓ | X |
| | • New Trend | X | ✓ | X |
| | • Preference on SMT over LMS | X | ✓ | X |
| | • Student's Exposure and Engagement | X | ✓ | X |

## 5.6.3 Barriers of SMTs use for T&L

*Table 5.3* provides a comparison of the barriers of SMTs adoption within institutions. The common barriers of SMTs agreed upon by all three categories of participants included 'Academic resistance', 'Distraction and loss of concentration' and 'Privacy and/or security concern'. Many barriers listed in *Table 5.3* below were only relevant to the academic staff (e.g. expected timely and fast response, extended consultation, informal tools, inflexibility due to program or university's requirements, lack of management support, no direct reflection on actual academic performance, additional workload, and academic concern such as plagiarism), and these were in fact the factors that led to academic's resistance or instructor's refusal to integrate SMTs into teaching and learning activities.

*Table 5.3: Summary of barriers of SMTs use for Teaching and Learning*

| Components | Sub-Components | Students | Academics | Administrators |
|---|---|---|---|---|
| **Barriers of SMTs use for T&L** | • Improper use of SMTs | ✓ | ✓ | X |
| | • Instructor not using SMTs / Academics resistance | ✓ | ✓ | ✓ |
| | • Instructor's unfamiliarity with SMTs | ✓ | ✓ | X |
| | • Internet connection | ✓ | ✓ | X |
| | • Shortcoming of current SMTs | ✓ | X | X |
| | • Negative Views of SMTs (Distractions & Loss of concentration) | ✓ | ✓ | ✓ |
| | • Negative Views of SMTs (Lack of Face-to-Face Contact) | ✓ | X | X |
| | • Privacy and / or Security Concern | ✓ | ✓ | ✓ |
| | • Expected Timely & Fast Response | X | ✓ | X |
| | • Extended / Additional Consultations | X | ✓ | X |
| | • Inflexibility due to program / university's requirements | X | ✓ | X |
| | • Informal / Non-official Tools | X | ✓ | X |
| | • Management Support | X | ✓ | X |
| | • No direct reflection on actual academic performance | X | ✓ | X |
| | • Additional Workload | X | ✓ | X |
| | • Academic Concern - Plagiarism | X | ✓ | X |

## 5.6.4 Negative Impacts of SMTs

The negative impacts of SMTs listed in Table 5.6d were more of the concern of administrators in the institution. The only commonality of negative impacts agreed upon by all three categories of participants was the integrity of the information distributed or shared on social media. Information could be distorted as there is no one who is responsible to verify the accuracy of the information. In addition, the powerful share feature of social media enables information to be distributed easily and uncontrollably. As SMTs are not part of institution's official platform, it is also harder for institutions to control the content that will be circulated on social media networks. Other negative impacts in *Table 5.4* are more concerned with the technical and implementation issues, and thus, were not brought up by students and academic staff.

*Table 5.4: Summary of negative impacts of SMTs*

| Components | Sub-Components | Students | Academics | Administrators |
|---|---|---|---|---|
| **Negative Impacts of SMTs** | • Integrity of the information / sources | ✓ | ✓ | ✓ |
| | • Uncontrolled distribution of information (Viral). | X | X | ✓ |
| | • Intellectual Property issues | X | X | ✓ |
| | • High internet bandwidth | X | X | ✓ |
| | • Security Threats | X | X | ✓ |
| | • Anonymity and traceability | X | X | ✓ |

## 5.6.5 Benefits of using SMTs

*Table 5.5* lists the benefits of using SMTs for teaching and learning activities. The common benefits agreed upon by all three categories of participants were 'Improves Communications', 'Notification of updates', 'Providing academic support', 'Supporting learning activities', and 'Timely information and fast response'. Other benefits were mostly the positive effects or outcomes of the use of SMTs observed by academic staff on their student's performances and engagement in classes.

*Table 5.5: Summary of benefits of SMTs*

| Components | Sub-Components | Students | Academics | Administrators |
|---|---|---|---|---|
| **Benefits of using SMTs** | • Better rapport | X | ✓ | X |
| | • Improve students engagement and participation | X | ✓ | X |
| | • Improves Communications | ✓ | ✓ | ✓ |
| | • Monitoring academic progress | X | ✓ | X |
| | • Student's motivated to learn | X | ✓ | X |
| | • Notification of updates | ✓ | ✓ | ✓ |
| | • Providing Academic Support | ✓ | ✓ | ✓ |
| | • Supporting learning activities | ✓ | ✓ | ✓ |
| | • Timely information & Fast Response | ✓ | ✓ | ✓ |
| | • Achieving learning outcomes | X | ✓ | X |
| | • Cost Saving | ✓ | X | ✓ |

### 5.6.6 Factors that determine the Success of SMTs adoption

The common success factors listed by all the categories of participants included the availability or the improvement on Internet connectivity, security, and privacy; and the commitment and participations from both students and staff. The support from the management of the institution, and the proper use of SMTs features or functions and its suitability for teaching and learning activities were also crucial in ensuring the achievement of positive outcomes. Refer to *Table 5.6* for the summary of success factors.

*Table 5.6: Summary of success factors*

| Components | Sub-Components | Students | Academics | Administrators |
|---|---|---|---|---|
| **Success Factors** | • Availability / Improvement on Internet connectivity, security and privacy | ✓ | ✓ | ✓ |
| | • Commitment and participation | ✓ | ✓ | ✓ |
| | • Importance of Self Control & Discipline | ✓ | X | X |
| | • Human Factors / Positive Mindset | X | X | ✓ |
| | • Improvement on SMTs features to support T&L Activities | ✓ | ✓ | X |
| | • Willingness to share | ✓ | X | X |
| | • Management Support & Proper implementation strategy | X | ✓ | ✓ |
| | • Proper use of SMTs Features and Functions | ✓ | ✓ | X |
| | • Knowledge on SMT & Training | X | ✓ | X |
| | • Redesign curriculum for Social Media Integration | X | ✓ | X |
| | • Social Media Guidelines | X | ✓ | X |

## 5.7 CONCLUSION

The high engagement and exposure to technologies and social media do not necessary guarantee the effective use of those technologies to support academic activities. This is especially the case in which Informatics students and academic staff, who are highly exposed to technologies due to the technical nature of the programs, are always perceived or expected to be the regular contributors in social media environments. However, from the data collected, what was found was not what was expected, for academic staff are still not too comfortable in exploring the use of Social Media

Technologies (SMTs) for teaching and learning activities. In fact, students were more receptive towards the idea of integrating SMTs to the curriculum, while many academic staff still had reservations about this idea. So far in Malaysian institutions, SMTs have only been used for basic communications, disseminating of academic resources, announcement and updates and basic academic support such as discussions and forums. There were many concerns raised by academic staff in the use of SMTs for teaching and learning activities and these will potentially hinder the adoption of SMTs within institutions. The management of the Institution plays a very crucial role in ensuring the success of SMTs adoption. By focusing on the barriers to SMTs adoption and possible success factors discussed earlier, it helps to minimize the potential risks associated with the implementation of SMTs. Lastly, institutions need to set a clear vision, and develop an effective strategy to promote and encourage the use of SMTs for teaching and learning, providing a platform for knowledge sharing and discussion, an avenue for training, and support on infrastructure and resources.

# CHAPTER 6

# OBSERVATION

The aim of this chapter is to report the findings of the observations conducted on the use of Social Media Technologies (SMTs) for teaching and learning activities in class. Four different classes in the University of Wollongong (UOW) Computer Science Program at INTI International College Subang were identified and consent was acquired from the respective lecturers to be involved in this observation process. Moodle is currently the official Learning Management System (LMS) used by the Institution to support all the teaching and learning activities in the programs. However, in the case of these four case studies, Social Media Technologies (SMTs) such as Facebook were also used to supplement the existing LMS.

For the purpose of this study, participant observation was used as one of the tools for qualitative data collection to better understand the engagement, involvements and participations of students and lecturers in the use of SMTs for teaching and learning activities in class. As defined by Schensul, Schensul, and LeCompte (1999) cited by Kawulich and Barbara (2005), participant observation is "the process of learning through exposure to or involvement in the day-to-day or routine activities of participants in the researcher setting" (p.91). Through the observation process, the researcher gets to understand and learn about the social media activities of the students and academic staff in the natural setting of their closed online community. Some benefits of observation listed by Schmuck (1997) include the ability for researcher to check for nonverbal expression of feelings, interaction and communication patterns of the participants and ability to find out about the time spent on various activities by the participants.

With the consent and permission from the lecturers and students involved, the researcher was added into the chosen Facebook Groups (CSCI124, CSCI204, and CSCI346) as a member so that observation could be conducted.

## 6.1 CSCI124 FACEBOOK GROUP

CSCI124 Applied Programming is a Year 1 module taken by semester 2 and 3 Computer Science students studying a University of Wollongong Program at INTI International College Subang in Feb 2014 Session. This Facebook group was created on 17th April 2014 by the class representative *(**Student A**)* of the subject. After she had created this Facebook group, she added her classmates as well as their lecturer, ***Teacher A*** into the group as an administrator so she could also add other members into the group. ***Teacher A*** is a senior lecturer at INTI International College Subang. She has been teaching this subject for the past 3.5 years. There were 24 members in this group including the lecturer and the researcher as an observer. Refer to *Figure 6.1* for the snapshot of the Facebook Group.


*Figure 6.1: Snapshot of CSCI124 Facebook Group (1)*

The observation of a sample of this Facebook Group was carried out from 21st April 2014 to 23rd June 2014. The researcher observed the posting of the members of the group to understand the pattern of usage (for example, the frequency of use, participant's involvement, relevance of the post and reply to the posts).

As the group was only created a few days prior to the observation activity, there were not many postings that were available before that. In total, there were only 32 postings from the day the Facebook group was created until the day the observation ended and 28 posts out of the 32 were recorded during the observation period.

*Table 6.1* shows the summary of the activity log in this Facebook Group during the observation period. All the postings in the group were relevant to the course of study. Students asked questions to clear their doubts about assignments and lab tasks. Some of their queries were answered by their classmates while most of the queries were handled by the lecturer. The lecturer also used this Facebook Group as a platform to make announcements, provide updates and share additional learning materials. From the summary below, it can be seen that students posted on the Facebook group quite regularly. However, the posts were usually posted by the same small group of students. There were 22 students in this group, and 8 students remained active in this online community while others were mainly just observing the posts. They could see the posts and acknowledgement of receipt could be seen on the Facebook page itself, but many chose to remain silent. From the timestamp on the posts and comments, it can be seen that students posted at odd hours and the lecturer did reply to them at off office hour times as well (8.20pm, 11.25pm, 7.52am, etc). *Figure 6.2* to *Figure 6.5* shows some snapshots captured from the Facebook group.

*Table 6.1: Summary of activity log for CSC124 Facebook Page*

| Dates | No. of Post | Posted by | | Dates | No. of Post | Posted by |
|---|---|---|---|---|---|---|
| 21/4/2014 | 2 | Student A2 | | 18/5/2014 | 1 | Teacher A |
| 23/4/2014 | 1 | Student A3 | | 19/5/2014 | 2 | Student A1 |
| 24/4/2014 | 1 | Student A2 | | | | Student A6 |
| 27/4/2014 | 1 | Student A3 | | 25/5/2015 | 1 | Student A3 |
| 28/4/2014 | 1 | Student A3 | | 28/5/2015 | 1 | Student A3 |
| 29/4/2014 | 2 | Student A4 | | 1/6/2014 | 1 | Student A2 |
| | | Student A3 | | | 3 | Teacher A |
| 30/4/2014 | 1 | Student A4 | | | 1 | Student A1 |
| 3/5/2014 | 5 | Student A5 | | 2/6/2014 | 1 | Student A6 |
| | | Student A3 | | 4/6/2014 | 1 | Student A8 |
| | | Student A4 | | 15/6/2014 | 2 | Student A8 |
| | | Student A7 | | | 1 | Teacher A |
| | | Teacher A | | 20/6/2014 | 1 | Student A3 |
| 5/5/2014 | 1 | Student A3 | | 23/6/2014 | 1 | Teacher A |
| 17/5/2014 | 2 | Student A3 | | | | |


*Figure 6.2: Snapshot of CSC124 Facebook Page (2)*


*Figure 6.3: Snapshot of CSC124 Facebook Page (3)*


*Figure 6.4: Snapshot of CSC124 Facebook Page (4)*


*Figure 6.5: Snapshot of CSC124 Facebook Page (5)*

## 6.2 CSCI204 FACEBOOK GROUP

CSCI204 Object and Generic Programming in C++ is a Year 2 Computer Science subject. This Facebook group was created by Student B1 (one of the students) on 26th June 2013. Compared to the other three Facebook groups which were chosen for observation, this group was a bit unusual as this online community was originally created a year before for the subject CSCI114 Procedural Programming, a Year 1 subject taken by the same group of students. This online community evolved from CSCI114 to CSCI124, and then CSCI204. These subjects are all run sequentially (CSCI114 is a pre-requisite to CSCI124 and CSCI124 is a pre-requisite for CSCI204) in which students have to complete CSCI114 before they could take CSCI124 and CSCI124 before they could do CSCI204. Coincidentally, the same lecturer ***(Teacher A)*** has been teaching this group of students for the past 1.5 years, started with CSCI114, then CSCI124 and at the time of data collection

CSCI204. For this online community, there were a total of 41 members (including the lecturer and the researcher). Some of the members started joining the group when it was first created but there were also some who just joined in the current session as they were not required to take CSCI114 and CSCI124. Figure 6.6 shows a snapshot of the Facebook group extracted from the website and *Figure 6.7* shows the evolvement of the Facebook group from CSCI114 to CSCI124 and from CSCI124 to CSCI204.


*Figure 6.6: Snapshot of CSC204 Facebook Page (1)*


*Figure 6.7: Evolvement of the Facebook Group*

The observation period for this group started from 21st April 2014 to 23rd June 2014. Comparing this group with the group from CSCI124 earlier, students in this group were livelier and more playful. This could be seen in the comments and postings on the Facebook group. Most probably the students were closer to each other and were more comfortable in the group since they had joined the group for more than a year earlier. From the date this Facebook group was created (26th June 2013) until the last day of the observation, (19th June 2014), there were a total of 63 postings posted on the Facebook group. 48 posts out of 63 were related to academic matters, while the others were more for entertainment purposes. Following is the summary of the activity logs (*Table 6.2*) compiled for the duration of the observation periods only.

*Table 6.2: Summary of activity log for CSCI204 Facebook Page*

| Dates | No. of Post | Posted by | | Dates | No. of Post | Posted by |
|---|---|---|---|---|---|---|
| 25/4/2014 | 1 | Student B2 | | 28/5/2014 | 1 | Student B7 |
| 30/4/2014 | 1 | Student B1 | | 6/6/2014 | 1 | Student B5 |
| 9/5/2014 | 1 | Student B1 | | 7/6/2014 | 1 | Student B2 |
| 14/5/2014 | 1 | Student B4 | | 18/6/2014 | 1 | Student B6 |
| 19/5/2014 | 1 | Student B5 | | 19/6/2014 | 1 | Student B2 |
| 20/5/2014 | 1 | Student B7 | | | | |

Analyzing the 11 posts on the Facebook Page, 8 were related to subject matter (including clarification of assignments or subject contents, announcements and updates, and information sharing). The remaining were more for entertainment reasons. *Figure 6.8*, *Figure 6.9*, and *Figure 6.10* shows some snapshots captured from the Facebook group. Similar to the previous Facebook group, the majority of the students in the community were observers instead of active participants. The same students tended to be posting on Facebook, seeking clarification of content that they were not very sure about.


*Figure 6.8: Snapshot of CSCI204 Facebook Page (2)*

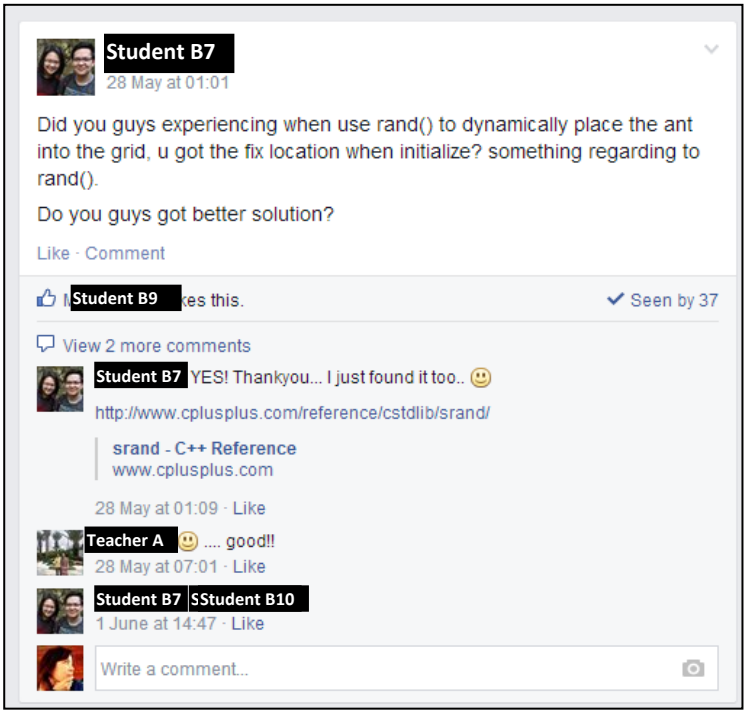



*Figure 6.9: Snapshot of CSCI204 Facebook Page (3)*


*Figure 6.10: Snapshot of CSCI204 Facebook Page (4)*

Surprised over the smaller number of postings posted on the Facebook group, the researcher browsed down to the earlier posts prior to the observation period in which students first started doing the basic programming subjects. It looked like prior to CSCI204, students were more active on the Facebook group, constantly posting to clarify their doubts. Perhaps, during that time, students were not very familiar with the subject contents. Thus, they tended to post more on Facebook to seek clarification and help. *Figure 6.11*, and *Figure 6.12*, show some snapshots captured from the Facebook group prior to the observation period.

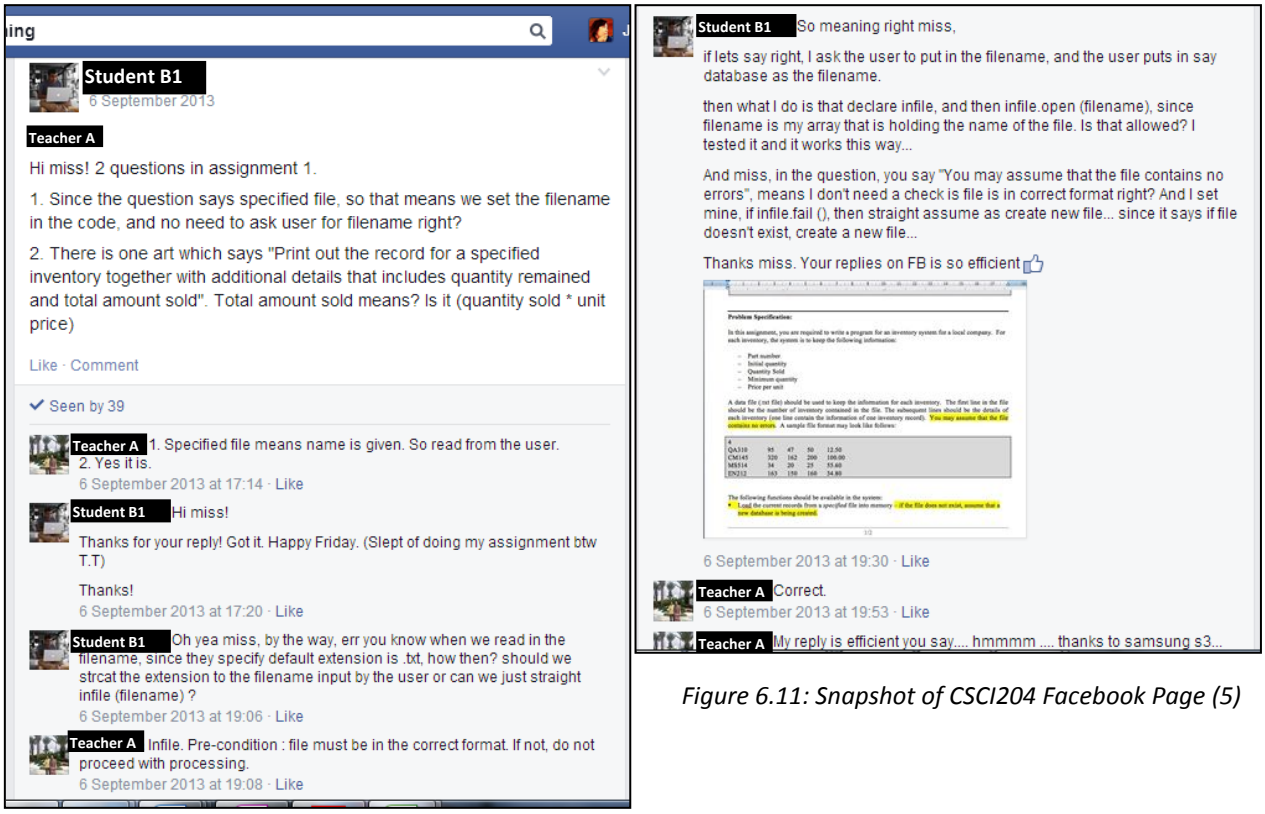



*Figure 6.11: Snapshot of CSCI204 Facebook Page (5)*


*Figure 6.12: Snapshot of CSCI204 Facebook Page (6)*

## 6.3 CSCI346 FACEBOOK GROUP

CSCI346 Game Development subject is a Final Year subject of the UOW Computer Science Program. This subject was offered in February 2014 session and the lecturer teaching this subject was ***Teacher C***. The Facebook Group was created by the lecturer and the students were added into the group by the lecturer. In total, there were 10 members (including the lecturer and the researcher). The researcher was added into the group on 11th April 2014 and the observation started from then to 23rd June 2014. In this Facebook group, the academic was mostly using it to post tutorial tasks and additional teaching resources. The academic believed the beauty of using Facebook to post teaching materials or resources is, the lecturer is able to see the acknowledgement of receipt from the students. Refer to *Figure 6.13* to *6.16* for the snapshots of CSCI346 Facebook group.

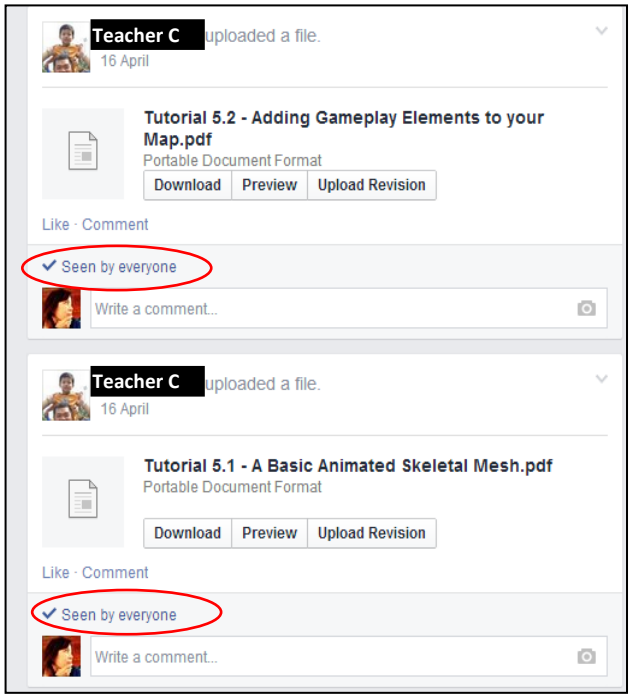



*Figure 6.13: Snapshot of CSCI346 Facebook Page (1)*


*Figure 6.14: Snapshot of CSCI346 Facebook Page (2)*

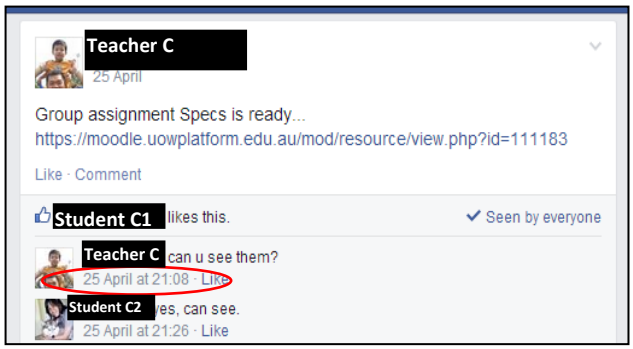



*Figure 6.15: Snapshot of CSCI346 Facebook Page (3)*

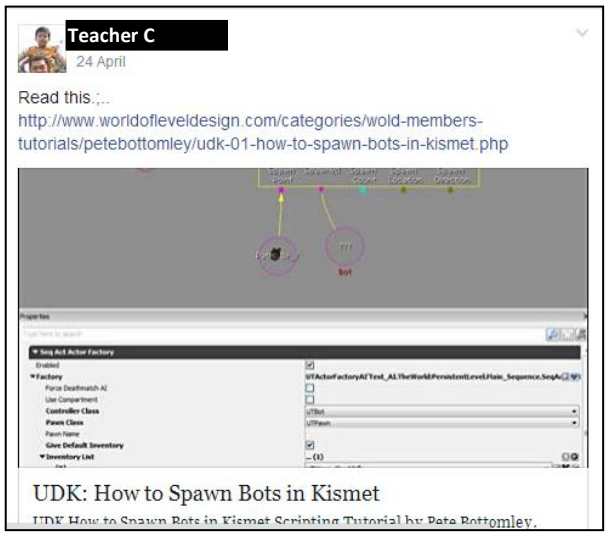



*Figure 6.16: Snapshot of CSCI346 Facebook Page (4)*

From the observations, students in this group were mainly passive participants compared to students from the previous Facebook groups (CSCI124 and CSCI204). From the day the Facebook group was created by the lecturer, there were a total of 53 posts in which (19 posts were made prior to the observation period and 34 posts were made during the 2 months observation). The

summary of the activity logs below (*Table 6.3*) showed that out of the 34 postings on the Facebook group during the observation period, 32 were posted by the lecturer. Only 2 posts were posted by students. Even then, the comments on the posts posted by the lecturer received very few replies. About 91% of the posts were relevant to the subject content. For example, announcements and updates and sharing of teaching materials or resources. Since all the students were in their final year of study, the faculty might also seek lecturer's help to post or share event notification like career development workshop for the students. Refer to *Figure 6.17* for the sharing of event notice.

*Table 6.3: Summary of activity logs for CSCI346 Facebook Page*

| Dates | No. of Post | Posted by | | Dates | No. of Post | Posted by |
|---|---|---|---|---|---|---|
| 16/4/2014 | 3 | Teacher C | | 8/5/2014 | 1 | Teacher C |
| 17/4/2014 | 1 | Teacher C | | 12/5/2014 | 1 | Teacher C |
| 19/4/2014 | 1 | Teacher C | | 19/5/2014 | 1 | Teacher C |
| 20/4/2014 | 1 | Teacher C | | 22/5/2014 | 1 | Teacher C |
| 21/4/2014 | 4 | Teacher C | | 26/5/2014 | 1 | Teacher C |
| 24/4/2014 | 1 | Teacher C | | 2/6/2014 | 1 | Teacher C |
| 25/4/2014 | 1 | Teacher C | | 3/6/2014 | 1 | Teacher C |
| 27/4/2014 | 1 | Teacher C | | 5/6/2014 | 2 | Teacher C |
| | | | | | | Student C4 |
| 28/4/2014 | 2 | Teacher C | | 10/6/2014 | 1 | Teacher C |
| | | Student C3 | | | | |
| 5/5/2014 | 4 | Teacher C | | 12/6/2014 | 2 | Teacher C |
| 6/5/2014 | 3 | Teacher C | | | | |

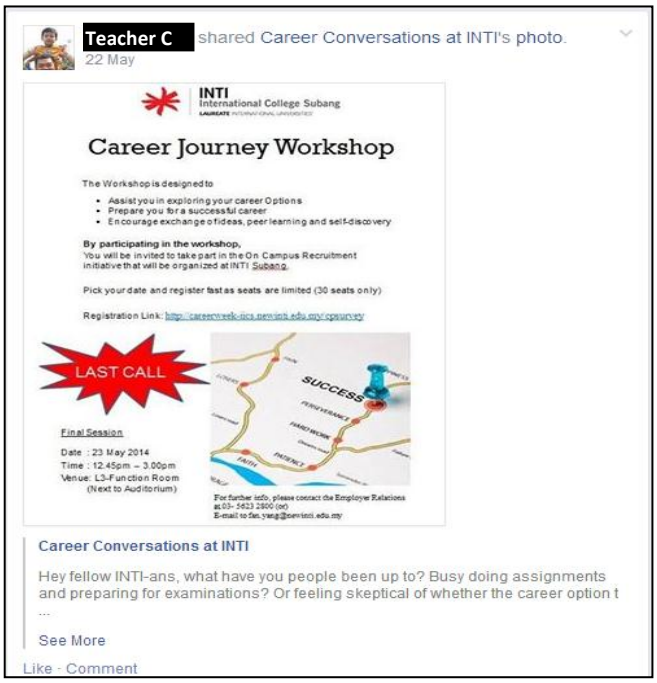



*Figure 6.17: Snapshot of CSCI346 Facebook Page (5)*

## 6.4 CSCI235 FACEBOOK GROUP

CSCI235 Databases is a Year 2 subject in the Computer Science Program of UOW. The researcher herself is the lecturer for this subject. This review has been written based on her own observations of her class participation in the Facebook Group. The CSCI235 Facebook group was created by the researcher on 24th March 2014. In total, there were 40 members (including the researcher). The researcher was using Moodle as the official Learning Management Platform to upload Lecture notes and distributing assessment tasks. Students were also required to submit their assessment tasks via Moodle. Facebook was generally used to support discussions, make announcements and for disseminating additional learning materials for the subject. The main reason the researcher used Facebook as a supplementary tool was because students were already on Facebook anyway. This would be the easiest and fastest way to get connected to them and to make them stay alert on the updates related to the subject. *Figure 6.18* shows the snapshot captured from the CSCI235 Facebook Page.


*Figure 6.18: Snapshot of CSCI235 Facebook Page (1)*

Following is the summary of the activity logs (*Table 6.4*) compiled for the duration of the observation periods. In total, there were 36 posts on the Facebook page and all posts were related to subject matters. Even though not many students were actively participating in the Facebook Group, there were many who liked the posts and some even commented on the posts. *Figure 6.19, Figure 6.20,* and *Figure* 6.21 portrayed the snapshot captured from the Facebook Page.

*Table 6.4: Summary of activity logs for CSCI235 Facebook Page*

| Dates | No. of Post | Posted by | | Dates | No. of Post | Posted by |
|---|---|---|---|---|---|---|
| 24/3/2014 | 3 | Jane Lim (Teacher) | | 18/5/2014 | 2 | Jane Lim |
| 26/3/2014 | 1 | Jane Lim | | 20/5/2014 | 1 | Jane Lim |
| 30/3/2014 | 2 | Jane Lim | | 21/5/2014 | 1 | Jane Lim |
| 31/3/2014 | 2 | Jane Lim | | 22/5/2014 | 1 | Jane Lim |
| 6/4/2014 | 2 | Jane Lim | | 29/5/2014 | 1 | Jane Lim |
| 10/4/2014 | 1 | Student D2 | | 4/6/2014 | 2 | Jane Lim |
| 12/4/2014 | 1 | Student D3 | | | | Student D7 |
| 14/4/2014 | 1 | Jane Lim | | 7/6/2014 | 1 | Student D4 |
| 21/4/2014 | 1 | Jane Lim | | 8/6/2014 | 2 | Jane Lim |
| 5/5/2014 | 1 | Jane Lim | | 9/6/2014 | 2 | Student D8 |
| 12/5/2014 | 1 | Student D4 | | | | Jane Lim |
| 14/5/2014 | 1 | Student D5 | | 12/6/2014 | 1 | Student D6 |
| 15/5/2014 | 1 | Student D6 | | 23/6/2014 | 4 | Jane Lim |


*Figure 6.19: Snapshot of CSCI235 Facebook Page (2)*


*Figure 6.20: Snapshot of CSCI235 Facebook Page (3)*

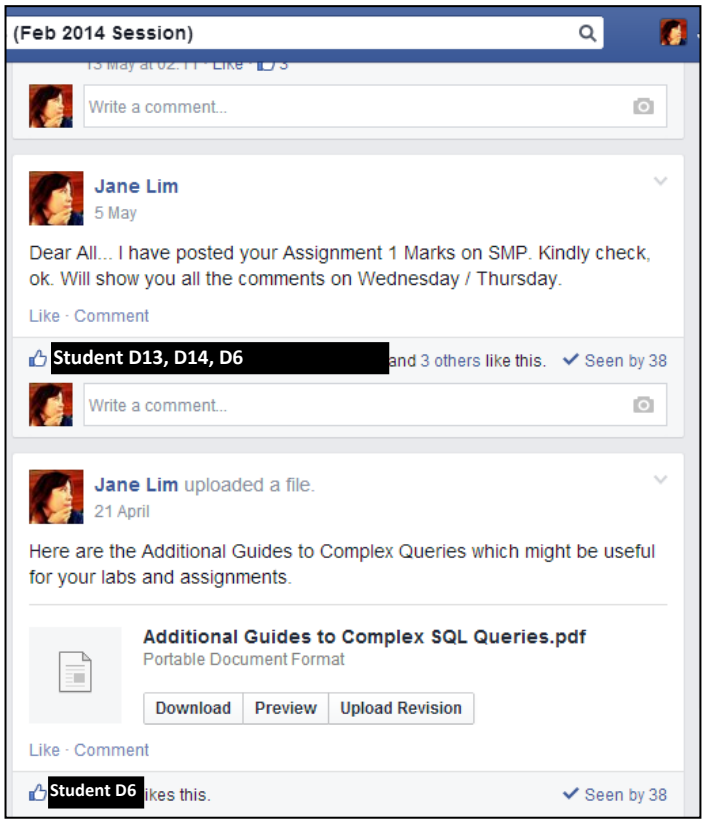



*Figure 6.21: Snapshot of CSCI235 Facebook Page (4)*

Some students in this group also felt more comfortable to send the researcher a private message on Facebook rather than openly posting their questions or doubts on the Facebook Group. Refer to *Figure 6.22* and *Figure 6.23* for the snapshots of the private messages.

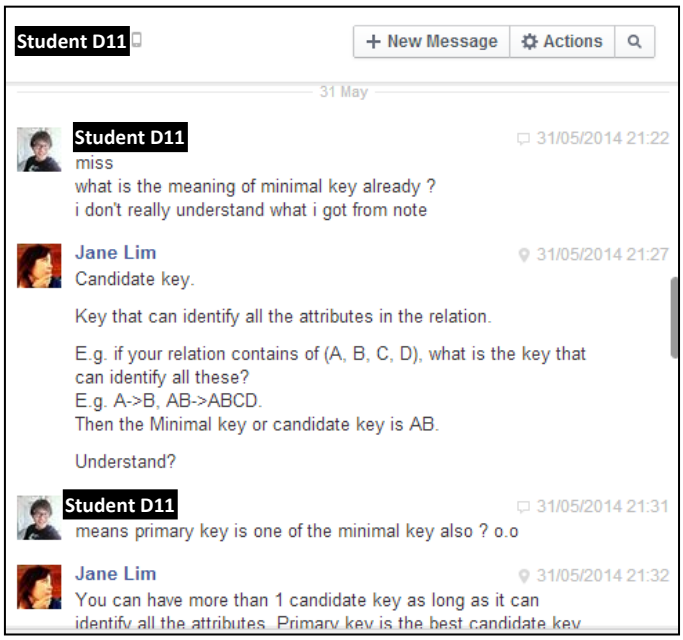



*Figure 6.22: CSCI235 – Consultation via Private Message*

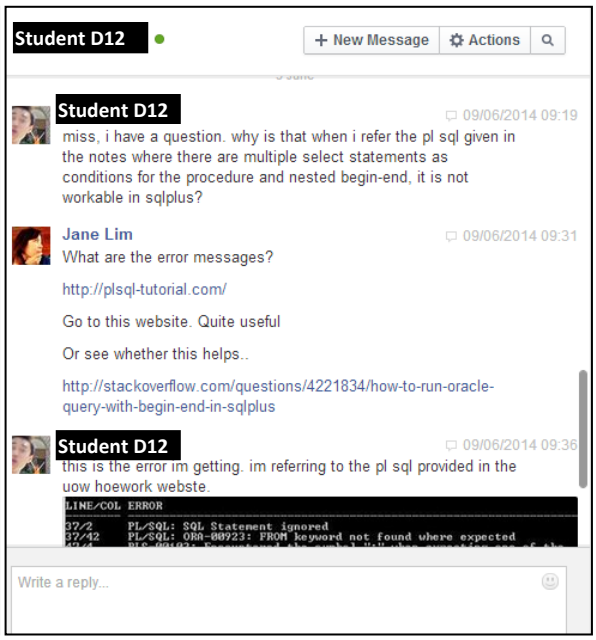



*Figure 6.23: CSCI235 – Consultation via Private Message*

## 6.5 STUDENT'S FEEDBACK

Upon completion of the observation, the researcher created a simple survey page with Survey Monkey to collect feedback from students on their views of using a Facebook Group to support their studies. The snapshots of the survey page in Survey Monkey can be seen in *Figure 6.24* and *Figure 6.25*.

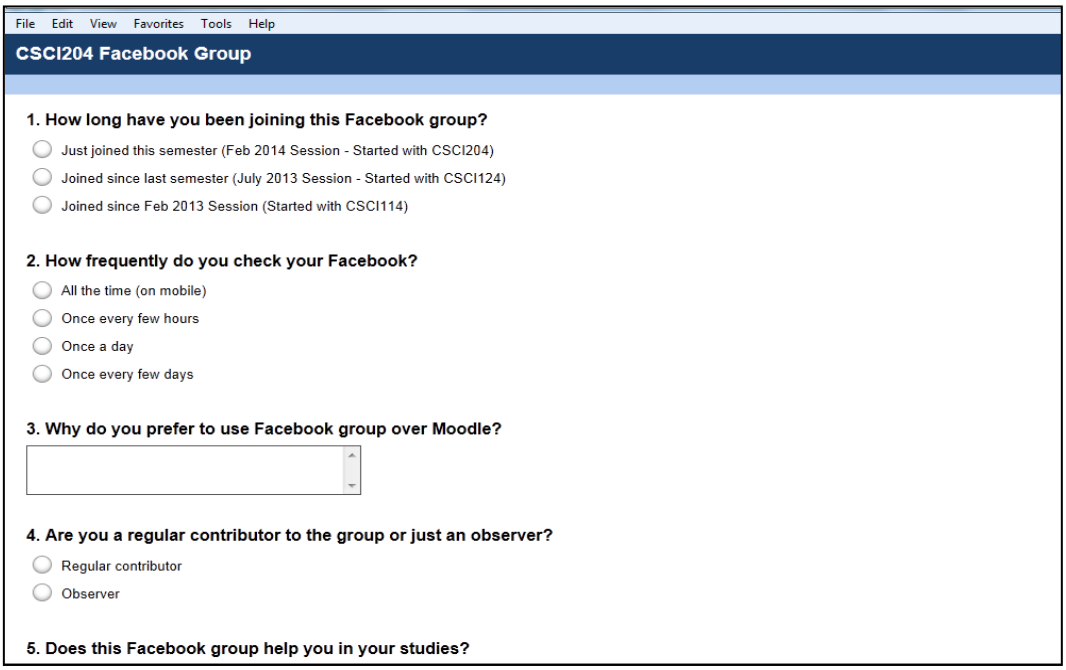



*Figure 6.24: Survey Page for CSCI204 Facebook*

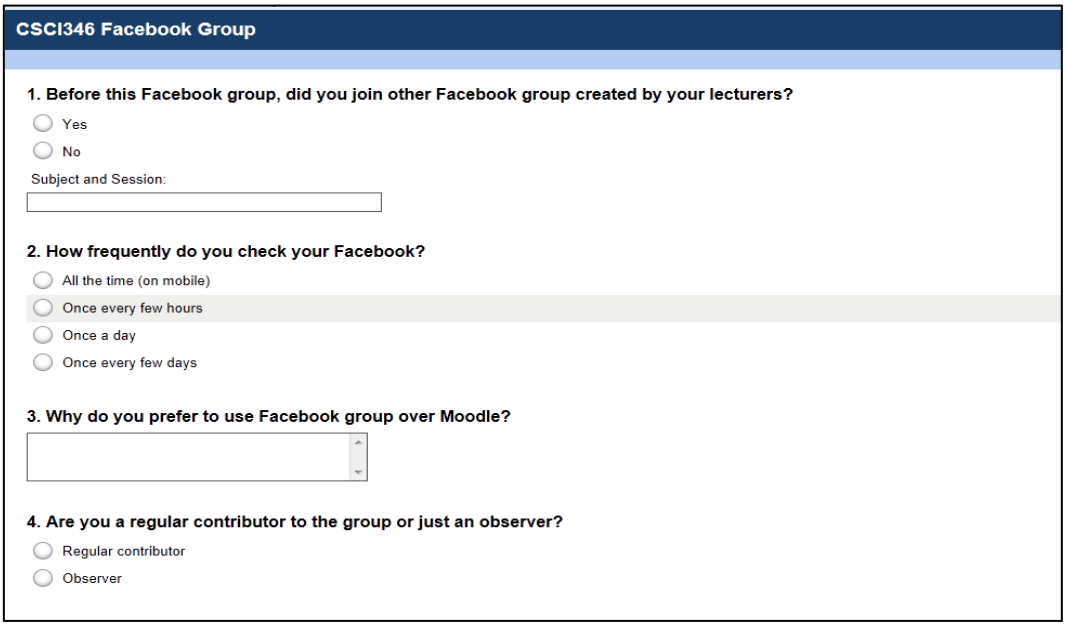



*Figure 6.25: Survey Page for CSCI346 Facebook*

### 6.5.1 CSCI124

There were 22 students in CSCI124 Facebook Group and 11 of them completed the survey in Survey Monkey. 81.2% of the students (9 out of 11) were first timers in joining the Facebook group managed by the lecturer, ***Teacher A***, while 18.18% said that they had previously joined another Facebook group managed by the lecturer in the previous semester (Figure 6.26). In terms of the frequency of access to Facebook, 54.55% claimed that they accessed Facebook every few hours every day, while 36.36% said that they are always on Facebook as they are accessing Facebook via their mobile phones (*Figure 6.27*).

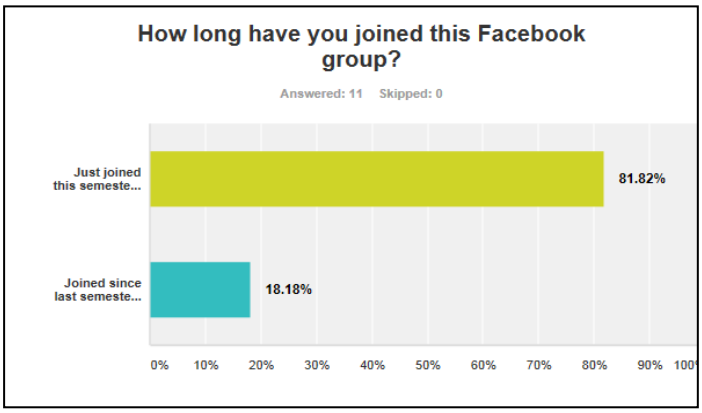



*Figure 6.26: CSCI124 – Joining Period*

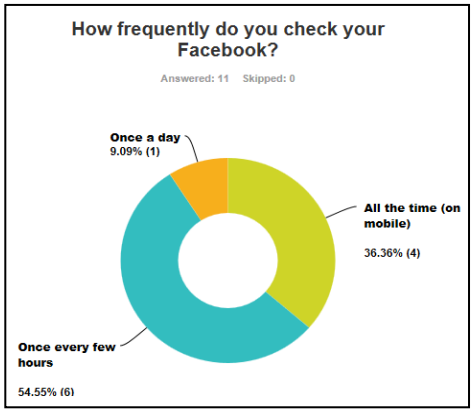



*Figure 6.27: CSCI124 – Frequency of access*

From the surveyed data, students commented that they prefer Facebook over Moodle due to two main reasons: Firstly, Facebook is user friendly, fast and it enables students to connect with their peers, and secondly, Facebook supports a mobile version and has a notification function. 81.82% of the students claimed that they were mostly observers rather than regular contributor to the Facebook Group. Refer to *Figure 6.28* for the contribution to Facebook. Even though the majority of the students were observers, they did feel that this Facebook group did help them in their studies (*Figure 6.29*).

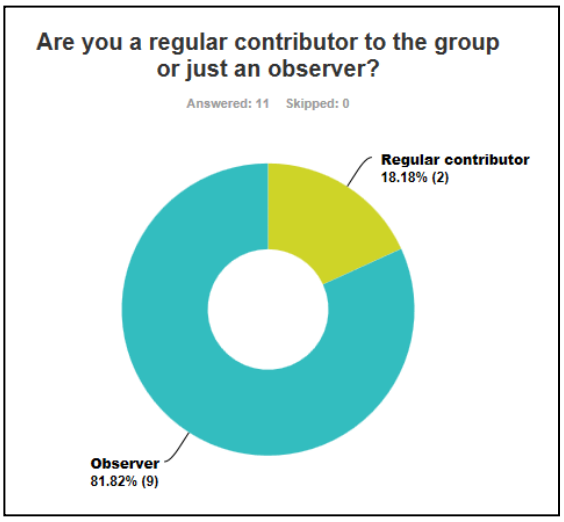



*Figure 6.28: CSCI124 – Contribution to Facebook Group*

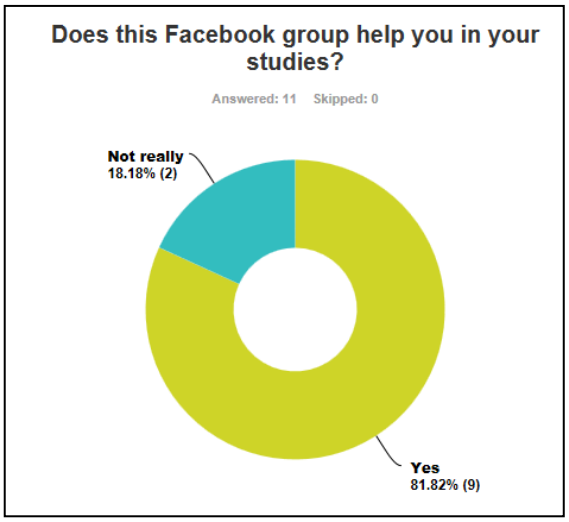



*Figure 6.29: CSCI124 – Usefulness of Facebook in course of study*

Students mentioned the following when they were asked to give examples of the usefulness of Facebook to their studies:

> *"We can get answer immediately and we get to learn from other class mate question." ~ Student 1*
>
> *"Getting information of the class being canceled via Facebook is effective. Questions that I may want to ask could have already been asked and answered in the group." ~ Student 2*
>
> *"I can discuss my problem anywhere anytime." ~ Student 3*
>
> *"Whenever I am having some troubles, I will seek for answer in the group." ~ Student 4*
>
> *"It helps me to understand the assignments specifications better" ~ Student 5.*

All 11 students said they liked the idea of using Facebook for academic purposes and none of them listed any problems pertaining to the use of Facebook for academic activities. Finally, when students were asked to give one suggestion to improve the use of Facebook as an academic tool, students suggested that perhaps to use Facebook for assignment submission, and to have a voice message feature.

### 6.5.2 CSCI204

There were 39 members (students) in CSCI204 Facebook Group and 31 of them completed the survey in Survey Monkey. As mentioned in *Section 6.2* above, some of the members started joining this group in the very beginning stage before the group evolved from CSCI114 to CSCI124 and CSCI204. *Figure 6.30* depicts the breakdown of the students of when they started joining this Facebook group.

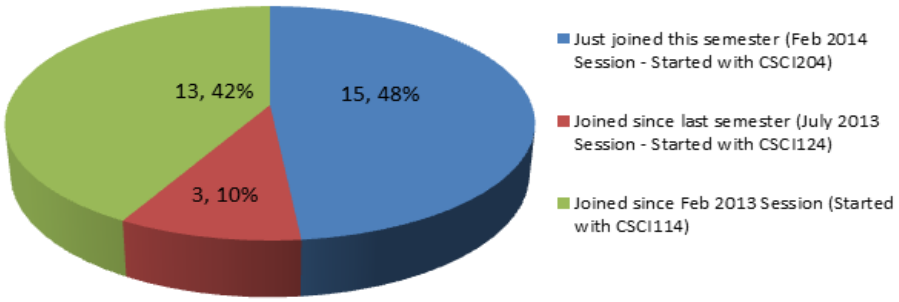



*Figure 6.30: CSCI204 – Joining period*

When asked about the frequency of access to Facebook, 45.16% of the students (14 out of 31) said that they check their Facebook once every few hours, and 35.48% (11 out of 31) said that they were always on Facebook since it is on their mobile phone and auto-notification features were available. *Figure 6.31* shows the summary of frequency of access to Facebook by students.

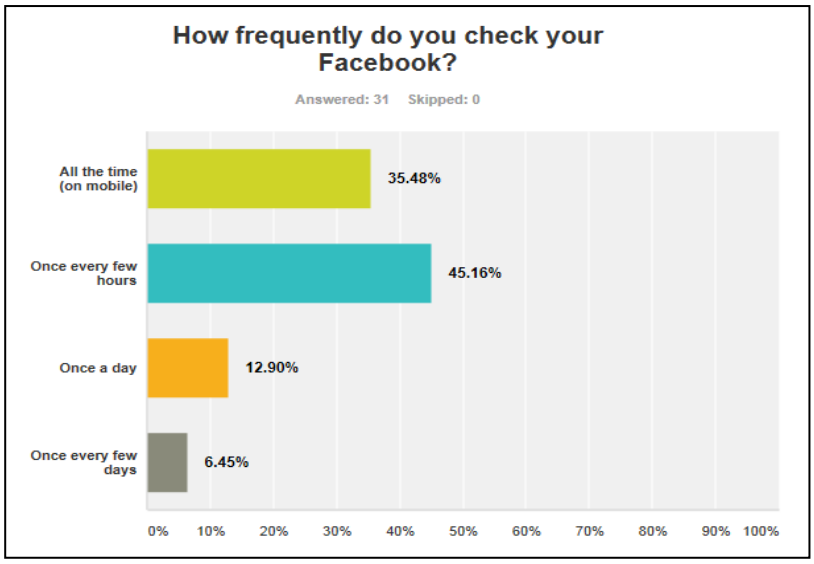



*Figure 6.31: CSCI204 – Frequency of access*

Students were also asked to share why they prefer to use Facebook over Moodle (the official Learning Management System provided by the Institution) and following are some of the quotes extracted from the survey.

*"Moodle has a weak performance, often slow. While Facebook provides better convenience, in terms of access methods (desktop site / mobile site / app / etc.)" ~ Student 1*

*"Most of the times, I am using Facebook. For me, Moodle is just a website to download notes, assignment and so on." ~ Student 2*

*"Easier to access and maybe can say that checking Facebook has become a habit of mine :|" ~ Student 3*

*"Easier to view on mobile." ~ Student 4*

*"Notifications! As long as Moodle doesn't have notifications, Facebook will have the upper hand." ~ Student 5*

*"Because notifications are better and I am on Facebook more frequent than I am on Moodle" ~ Student 6*

*"Because we're already on Facebook all the time, it is more convenient. Plus Moodle sucks, its boring." ~ Student 7*

*"Facebook is practically my social network platform, apart from meeting up with friends and so, hence I'm more or less always on Facebook thus if there are any changes, emergency update or so regarding my classes, assignment etc., I'll be notified immediately." ~ Student 8*

*"No ridiculous waiting time to load a page.. It is definitely a lot quicker and because it is something you use daily, there's no such thing as not knowing how to use.." ~ Student 9*

Even though, it seems like students prefer to use Facebook over Moodle to support their learning activities, many of them chose to be an observer instead of an active contributor to the online community. *Figure 6.32* below shows their contribution in the Facebook Group.

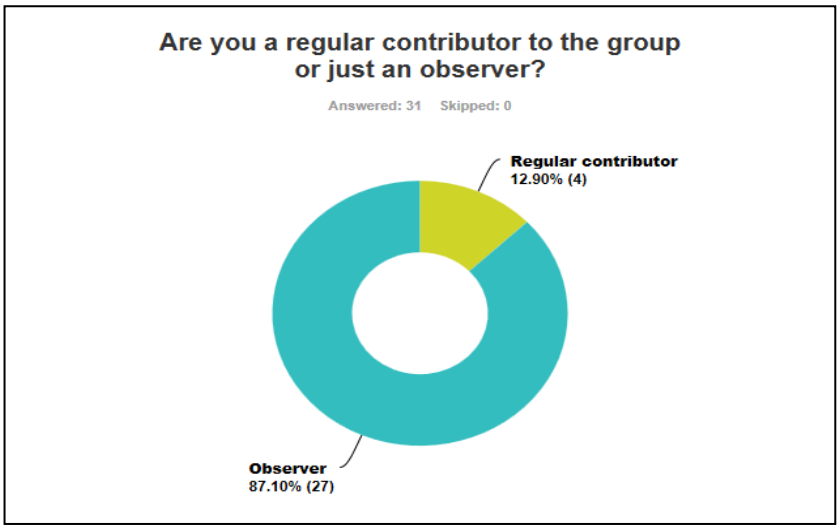



*Figure 6.32: CSCI204 – Contribution to Facebook*

Students were also asked whether the Facebook group did help them in their studies and 77.42% (24 out of 31) said yes even though they were mainly an observer in the group (*Figure 6.33*). When they were asked further on how it helped in their studies, students mainly credit it to the notification features of Facebook that allowed them to receive alerts when there were updates on the page. Some of the comments from students are as follow:

*"Very useful. Able to get a reply fast from other students/lecturer." ~ Student 1*

*"Receiving notifications from the lecturer, assessment tasks discussions between group members." ~ Student 2*

*"I can ask questions in this group and most of my classmates will give answer or suggestion to my questions." ~ Student 3*

*"To be able to get the latest info of this subject for example any changes in lab task or assignment, as well as questions regarding our tasks can be asked and get replied straight away." ~ Student 4*

*"I can easily know when classes are cancelled, announcements are made and also when work is required to be handed in." ~ Student 5*

*"Questions that I have may be asked by someone else earlier and might consist of useful feedback from lecturer or from other users". ~ Student 6*

*"I can get updates on assignment and I get to know if my lecturer is on medical leave and etc. (this is important so we no need to waste our time to travel for a long distance)" ~ Student 7*

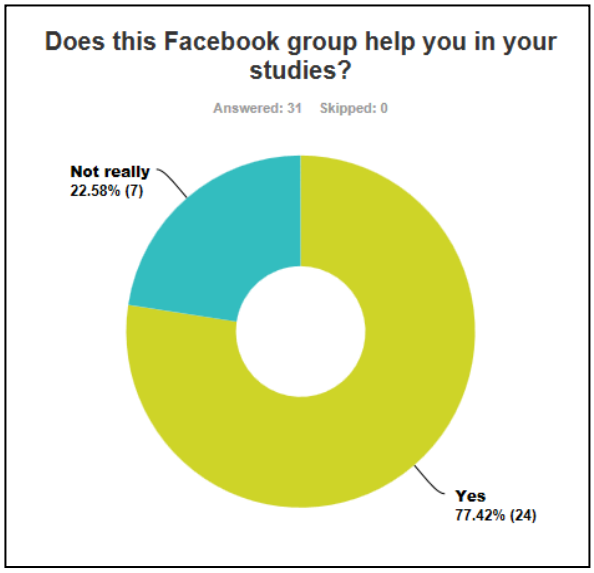



*Figure 6.33: CSCI204 – Usefulness of Facebook in course of study*

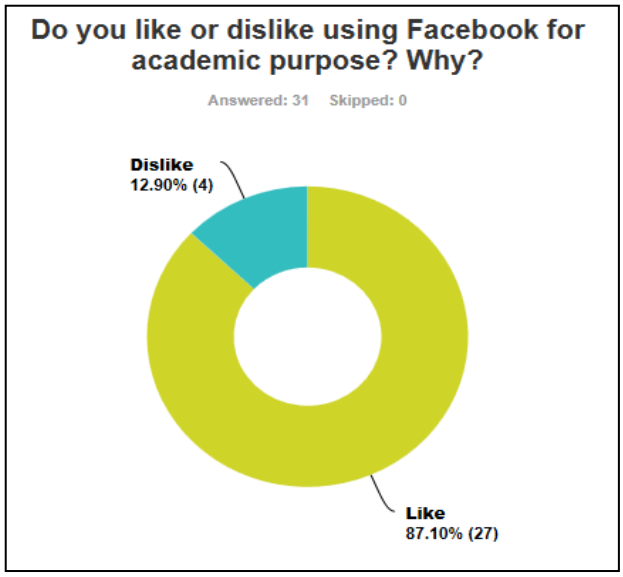



*Figure 6.34: Preference on using Facebook for academic purposes*

Students were also asked whether they encountered any problems with the use of their Facebook group and only 3 students commented that they faced problems like delays in responding to the posts, spams and file management features in Facebook. The rest of the students all commented that they did not have any problems with Facebook. When students were asked whether or not they like Facebook to be used for academic purposes, 87.10% said they like it while only a very small number of students said they disliked it (*Figure 6.34*). The reasons given by one of the student who disliked Facebook being used for academic purposes was because he/she still prefers face-to-face consultation rather than meeting people online all the time. The other students added that the comments in the posts may also turn to spams of unrelated topics and this will defeat the purpose of academic use.

Finally, students were asked to give one suggestion to improve Facebook usage as a supporting tool for academic purposes and following are some of the comments from the survey.

*"Better file management system, and making sure group privacy is set to secret to prevent non students being able to view the contents of the group" ~ Student 1*

*"Group members should be more active in the group to post/converse." ~ Student 2*

*"Incorporate Facebook as a spot to ask lecturer questions pertaining things that we don't understand" ~ Student 3*

*"Any suggestions that can be made will be on Facebook's side, nothing really UOW can do. So far it works well for us students and also for the lecturer since you're able to see how sees the post; there are no more excuses of not receiving any updates or memos." ~ Student 4*

*"Organize the post into announcement, discussion, e-resources, and so on". ~ Student 5*

*"Improve video call so we can easily contact other lecturer". ~ Student 6*

*"Facebook can be used to replace Moodle of coz, but still need an official central hub namely Moodle. Assignments can be uploaded to FB, pin or flag important posts in the group". ~ Student 7*

### 6.5.3 CSCI346

CSCI346 Game Development is a Year 3 subject in UOW Computer Science Program. There were 10 members in the Facebook Group including the lecturer and the researcher (only 8 students). Out of 8 students, only 5 completed the survey. 60% of the students said, prior to this Facebook group, they had previously joined other Facebook groups created by their other lecturers. Only 40% said that this was the first time they joined a Facebook group created for academic purposes. When asked about the frequency of access to Facebook, 60% of the students said they checked their Facebook every few hours, while 20% said their Facebook was on their mobile phone, thus, they were always on Facebook (*Figure 6.35*). However, similar to the students in CSCI204, the majority of the students were mainly observers instead of active contributors on the Facebook Page (*Figure 6.36*).

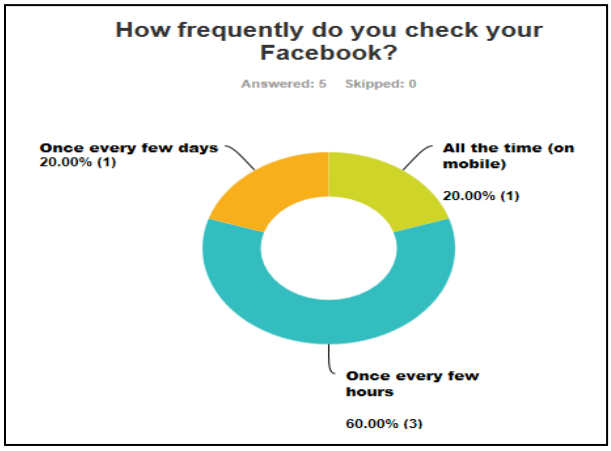



*Figure 6.35: CSCI346 – Frequency of access*

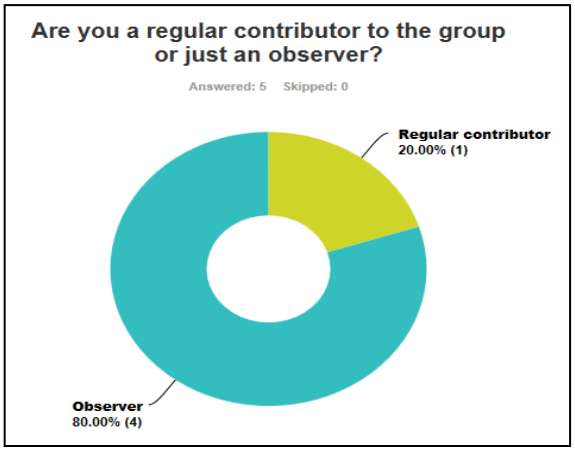



*Figure 6.36: CSCI346 – Contribution to Facebook Group*

Students commented that they prefer to use Facebook over Moodle as they were already on Facebook most of the time and they were also more familiar with Facebook layout and features. Some quotes extracted from the survey can be seen as follow:

> *"It is easier to access information since I spend more time on Facebook. Besides that, it is also more user-friendly and I am more familiar with Facebook layout." ~ Student 1*
>
> *"Because I use Facebook more often." ~ Student 2*
>
> *"Convenient, ease of use" ~ Student 3*
>
> *"I am more familiar with the interface and usage of Facebook" ~ Student 4*

All students in this Facebook group commented that the Facebook group helped them with their studies. They noted the usefulness of a Facebook group as follow:

> *"Allows discussion and also storing of data."~ Student 1*
>
> *"This Facebook group is as useful as Panadol during headache. Very useful." ~ Student 2*
>
> *"It gives me notifications and get new updates from there" ~ Student 3*
>
> *"The announcement made by lecturer notify us, also it is a good platform to communicate with other students who are also taking this subject" ~ Student 4*

80% of the students said they like a Facebook Group to be used to support their studies as they feel closer and more connected to their lecturer. Only 1 student claimed that he / she disliked the use of Facebook as an academic tool without giving any reason.

The only drawback given by students on the use of Facebook as an academic tool was file management features of Facebook. They commented that it is difficult to trace and find the old materials which were previously uploaded if they did not download them immediately. There is no search feature to locate the files. Finally, when students were asked to give one suggestion on how Facebook could be improved so that it could be used as a tool to support academic activities, students noted the following:

> *"A feature to bug me to do my work every day. Though I would most probably blacklist the lecturer for this."~ Student 1*
>
> *"Give bigger upload file size restriction such as 100MB instead of 15MB." ~ Student 2*
>
> *"Making use of more videos for tutorial" ~ Student 3*

### 6.5.4 CSCI235

CSCI235 Databases is a Year 2 subject of UOW Computer Science Program. There were 40 members in this Facebook Group but only 22 students completed the survey. 72.73% of the respondents (16 out of 22) stated that they had joined other Facebook groups created by other lecturers prior to this, and 27.27% (6 out of 22) stated that this was their first time joining a Facebook group for academic purposes. In terms of the frequency of access, most students in this group accessed their Facebook every few hours per day. The breakdown of the frequency of access can be seen in *Figure 6.37*.

In terms of why students prefer Facebook over Moodle, following are the quotes extracted from the survey:

> *"Moodle has an annoying auto time out and have to key in id and password every time. It is really annoying when u want to have quick access." ~ Student 1*
>
> *"Facebook is more convenient, has a better interface and a much more casual way of interaction and environment." ~ Student 2*
>
> *"By the time i use my Facebook, i can also discuss group project or assignment with my fellow friends." ~ Student 3*
>
> *"It convenient because we can socialize with friends while checking the stuff that the lecturers post." ~ Student 4*
>
> *"Facebook does not require additional log-in to the site. Moreover, notification on update in Moodle is hardly noticeable, it is hard to tell which subject has just recently being updated with more contents, whereas, Facebook notification is just by the side telling us how many new posts we haven't read." ~ Student 5*
>
> *"Easier to get notification of any latest updates." ~ Student 6*

In the survey, about 91% of the students (20 out of 22) admitted that they were mostly observers instead of an active contributor to the Facebook group, but it didn't mean that they did not benefit from this Facebook group as all 22 of them said that this Facebook group helped them in their studies. They added that they appreciated the additional learning materials shared in the group and also the information that they get from the posts posted by their peers and lecturer, which really helped them in completing their assessment tasks. Students were also asked to provide some examples on how this Facebook group helped them in their studies, and they commented as follow:

*"Notifications are real time with no delay -files can be downloaded and accessed easily - interaction between students and lecturers are quick and efficient." ~ Student 1*

*"We are able to discuss question or problems with other students." ~ Student 2*

*"Communicate with lecturer when got problem with assignment, download revision question and others." ~ Student 3*

*"Lecturer provided, many useful extra notes for the subject, as well as schedule of replacement class are listed on the group which we can easily keep track on it." ~ Student 4*

*"We can obtain information easily because my other classmates are equally as active on Facebook." ~ Student 5*

In terms of the problems that they faced when using Facebook for academic purposes, only one student listed that it was hard to find a specific post which was previously posted on the group because Facebook does not have a function to filter the post. Other students had no problem with Facebook usage. 95% of the students said they liked to use Facebook for academic purposes while only 4.55% (1 out of 22) said they disliked it. The main reason given for not liking it was because posts in Facebook may be spammed and any informative comments or posts could be pushed all the way back and makes it hard to be traced.

Finally, students were asked to give one suggestion on how Facebook could be improved so that it could be used as a tool to support academic activities. Some of the ideas given included getting all lecturers to create Facebook groups for the subjects that they taught, a filter feature that can allow students to find a specific post inside the group, a video call feature and cloud services.

## 6.6 LECTURER'S FEEDBACK

Upon completion of the observation process, lecturers involved were also interviewed to understand their views and comments on the Facebook Group that they joined. As the researcher was one of the lecturers in the case study, she has also included her reflective report based on her personal observation and experience in using social media for academic purposes.

### 6.6.1 Teacher A

***Teacher A*** is a senior lecturer at INTI International College Subang. She has more than 15 years of teaching experience in tertiary education. Prior to teaching in the University of Wollongong Program, ***Teacher A*** had also taught in Diploma programs as well as Informatics Programs of a UK University. Her specialization is in Programming, for example JAVA Programming, C Programming and C++ Programming. ***Teacher A*** started using SMTs, mainly Facebook, about 2 years prior to this study. The main reasons she started exploring Facebook for her class was because it enabled her to form groups so that only certain audiences could be involved in the discussion. In addition, most students were already on Facebook and they preferred to use Facebook anyway. She also added that Facebook enabled her to view and take part in discussions wherever and whenever she wanted to, plus it was also easy for her to attach documents (examples notes, programming codes, videos, many more) as part of additional teaching resources. When asked about the frequency of access to Facebook, ***Teacher A*** commented that she is on Facebook almost all the time as she has a smartphone with Internet access. Thus, it is always connected and accessible.

In terms of Moodle, the Learning Management System used in the Institution, ***Teacher A*** claimed that it is slow and not comfortable to be used on small devices such as smartphones. Moodle is not available in a mobile version, making accessibility difficult. Currently, ***Teacher A*** is using a Facebook group in her class for subject discussion, in which problems and doubts were answered by students or the lecturer, and uploading of additional teaching resources, making announcements of class cancellation or replacement, and other instructions related to the subject matter were also added.

When asked to give her view on the usefulness of Facebook Groups to her students, ***Teacher A*** noted the following:

> *"Facebook is very useful to my students because they can get information fast. The nature of the subject I am teaching is that the students consistently do work (lab tasks and assignments every week). And the subjects are all technical subjects. Students always have questions either regarding the problems they are solving or certain topics that they do not understand. They need to get solution to their problem fast. If they had to wait until the next consultation time then it would be delaying their learning process. From my own observation, the students are very comfortable using it and appreciate the use of Facebook for their studies".*

In terms of the problems or challenges faced in using Facebook for academic purposes, ***Teacher A*** commented that the lecturer has to make sure that students stick to the topic of discussion related to their study, and not to post unrelated information to the group. In addition, when a lecturer is prepared to accept this way of communication (using Facebook), it also means that the lecturer has to be ready to have no limit to the consultation time as it will surely go beyond office hours. She also added that, as Facebook supported mainly text in the post, it is sometimes quite difficult to explain or express the terms or concepts to students. It would be very much easier if tools like drawing and sound could be embedded in Facebook features.

Lastly, ***Teacher A*** was asked to give some suggestions that could help to improve the use of Facebook as an academic tool, ***Teacher A*** commented that perhaps, there should be a more systematic way in which assignments and marks could be uploaded to Facebook. At this point of time, lecturers are still relying on Moodle to disseminate assignments, collecting completed assignments and publishing marks. Facebook might be too informal to be used for that purpose at this point of time. Additional features like drawing tools and voice message might be of help too to enhance the features of Facebook as a suitable tool for academic purposes.

### 6.6.2 Teacher C

At the time of the study ***Teacher C*** was a senior lecturer and Associate Dean of UOW Informatics Programs at INTI International College Subang. His specialization is in the area of Multimedia and Games. He had more than 13 years of teaching experience in multimedia related subjects and he had taught CSCI346 Game Development for the past 2 years.

***Teacher C*** started using Facebook for teaching and learning activities about 2 to 3 years prior to this study. The factor that motivated him to use Facebook for his classes was the quick response time. Since most students use Facebook for their own personal reason, in his view it is so much faster to get to them via Facebook. He found that it is easier to get students to respond to announcements and postings posted on Facebook. According to ***Teacher C***, he is on Facebook all the time as his Facebook is accessible via his smartphone. He also prefers to use Facebook over Moodle as Facebook can be accessible via any mobile devices, unlike Moodle which has limited accessibility especially on smartphones.

***Teacher C*** used this Facebook group to conduct subject discussions, for sharing teaching materials or resources such as video files, documents, and others. He felt that Facebook is a good supporting tool to be used in his classes as all his students are using Facebook on mobile phones. When asked about the feature of Facebook that make it so useful for academic purposes, ***Teacher C*** stated the following:

> *"It allows the lecturer to see which students have read the questions or posts, and how many of them actually reply on that".*

***Teacher C*** also commented that so far, he hadn't encountered any problem with the use of Facebook in his class. He also added that it would be good if in the near future, Facebook could provide tools to lecturers to conduct Online Tests (which is currently available in Google Apps), so that lecturers do not have to use so many different tools for class activities.

### 6.6.3 Jane Lim

In this section, the researcher is writing a reflective report based on the observations that she conducted on her own class. At the time of the study, the researcher was a senior lecturer with 16 years of teaching experiences in tertiary education. Her specialization is in Database Management Systems and Information Systems. The subject that the researcher was teaching, CSCI235 Databases was a new subject which had just been offered in her institution that session. Prior to this, she had taught similar subjects in other degree courses. Based on her past experiences, the researcher believed that the fastest way to reach out to students was via Facebook. Due to the tight schedules of both students and lecturers, it is always difficult to find a common time (apart from the designated class time) for students to have a face-to-face consultation with the lecturers. Hence, resorting to Facebook to support out-of-class support might be a better option. Even before the Facebook era (between year 2002 to 2006), the researcher had started using online community-like websites to get connected to her students. The popular ones which were once used for academic purposes included Circle 99 and Community Zero.

As a lecturer, the researcher felt that Facebook was a great tool to get connected to students and to provide them with additional academic support. Moreover, the nature of the subject taught by the researcher is quite technical in which students occasionally need clarification on the concepts as well as the assessment tasks. With Facebook, all their doubts could be cleared within a short period of time and they can move on to complete their tasks. Even though, not all the students in the online community were active participants, but at least when questions were posted by some other students, the rest of the group did get to see and learn from each other. The Facebook features that the researcher liked most were the acknowledgement and real-time notification alert. When announcements or posts are made, the owner of the posts can actually see how many people have seen the posts. Students can also acknowledge by clicking on the LIKE button. As for real-time notification, each time there were any updates on the Facebook page or when students sent private message to the researcher, real-time notifications were received. This notification enabled the researcher to check the urgency of a reply. Both students and lecturer were very happy and comfortable with the use of Facebook as a supporting academic tool.

The researcher also noticed that students disliked using Moodle for several reasons. Firstly, they said Moodle is very slow and lagging. Secondly, they also said that Moodle is too formal. Thirdly, Moodle does not send notifications when there is any update, and finally, it is hard to access Moodle using their mobile phones. The researcher had tried posting announcements on Moodle but none of the students reacted to the announcement made. Subsequently, the researcher tried posting on Facebook and students acknowledged it immediately. The researcher believes in the old saying *"If you can't beat them, join them"*.

From the observations, the researcher also noticed that many students prefer to drop the researcher a private message whenever they need help instead of posting it publicly on the group. Perhaps, they do not want their peers to see the weaker side of them. But usually, when the researcher received more than 1 similar question posted by different students, the researcher would then summarize the problem and post it to the group so that all the other students could learn from this.

If Facebook is to be used for academic purposes, perhaps, the feature that needs to be improved is the file management and post searching features. Currently, it is really difficult to locate files that have been shared. In addition, to trace back the posts made some time ago might be a great challenge. If these features could be improved, Facebook could be a great tool to be used for teaching and learning activities.

## 6.7 WRAP-UP OF THE OBSERVATION

After completing the observations, the researcher found many similarities in the pattern of Facebook usage by students and lecturers, regardless of subjects. The summary can be seen in *Table 6.5* below. The majority of the students were accessing their Facebook once every few hours. More than 80% of them were mainly observers instead of regular contributors to the online

community. However, this doesn't necessarily mean that they do not benefit from the online community. More than 75% of them do agree that Facebook does help them in their studies. The common reasons that they noted that motivated them to use Facebook as an academic tool were the notification features that alerted them on any updates that take place within the community, and the ability to ask questions and get fast responses. In addition, they were also able to learn from each other within the online community. In terms of why they preferred Facebook and not Moodle, students from all four classes reason that it is more convenient for them since they were already on Facebook most of the time. Moreover, Moodle doesn't support a mobile version, which makes access more difficult. Lastly, in terms of the improvement that they would like to see happen in Facebook, they noted the inclusion of video call features, improvement on the file management system as well as the ability for them to submit their assignments in Facebook.

*Table 6.5: Summary of Facebook Usage*

| No. | Questions | CSCI124 | CSCI204 | CSCI346 | CSCI235 |
|---|---|---|---|---|---|
| 1. | Frequency of Facebook access | Once every few hours | Once every few hours | Once every few hours | Once every few hours |
| 2. | Contribution to Facebook Page | Observer (81.82%) | Observer (87.10%) | Observer (80%) | Observer (91%) |
| 3. | Does the Facebook group helps in your studies | Yes (81.82%) | Yes (77.42%) | Yes (100%) | Yes (100%) |
| 4. | Like or dislike Facebook as academic tool. | Like (100%) | Like (87.10%) | Like (80%) | Like (95.65%) |
| 5. | Reasons for using Facebook for academic purposes | • Getting faster response<br>• Learning from others<br>• Notifications on updates | • Notifications<br>• Can ask questions and solutions<br>• Quick updates | • Allows discussions<br>• Notification & new updates | • Problems discussion & solutions |
| 6. | Why Facebook, not Moodle | • User friendly<br>• Regular use of FB.<br>• Notification feature<br>• Mobile Version | • Notification<br>• Always on FB.<br>• Convenient<br>• Can view on Mobile | • Use FB very often<br>• Easier to access<br>• Convenient and ease of use.<br>• Notification | • Convenient and casual<br>• No additional log-in.<br>• Notification & updates |
| 7. | Suggested idea for FB improvement as academic tool | • Voice Note / Voice Call<br>• Allow assignment submissions | • Better file management system.<br>• Video Calls | • Better File Manageme nt<br>• Bigger upload file size | • Video Call<br>• Filter feature (to search for posts) |

From the researcher's observation, students in the Year 1 community (CSCI124) were more active compared to the others. The number of posts on that Facebook group were mostly posted by students compared to the others (example for CSCI235 and CSCI346, where most posts were by lecturers) even though it might be from the same few students. The researcher thought probably it was because of the nature of the subject as it involved many programming elements. But when the researcher relooked at CSCI204, the nature of the subject was similar to CSCI124, but the number of posts related to the subject was so little compared to CSCI124. Then, the researcher recalled that the CSCI204 group had actually evolved from CSCI114 and CSCI124, and the researcher went back to the group and looked at the posts prior to the evolvement of CSCI204. The posts showed that students were more active prior to CSCI204 in which more posts related to subject matter were posted in the group. With that, the researcher argues that students, when they are in Year 1, might need more attention and help on subject matter. Whenever they have doubts, they will turn to Facebook, hoping to get the answers from their lecturers or peers. However, when they move on to Year 2, they become more mature and were able to analyze their problems before resorting to seek help from the others. As their technical skills improved over the semesters, especially in this case in which students were still doing the same programming language for CSCI124 and CSCI204, they become more independent and less reliant on others. This could be supported by the fact that for CSCI346, which is a final year subject, more than 90% of the students were observers. There were no posts on the Facebook Group asking for clarification or help.

To confirm the argument made by the researcher on this observation, the researcher decided to contact the lecturer, ***Teacher A*** for clarification. The researcher shared her findings with the lecturer and told the lecturer what she thought. The lecturer agreed with this view and said she felt the same about the argument given. *Figure 6.37* shows the snapshots of the conversation between lecturer and author.


*Figure 6.37: Snapshots of Facebook Conversation*

On a separate note, the researcher felt that it is not straight forward for an academic to make a decision to use Facebook or SMTs as part of an academic tool. Providing academic support via SMTs also means that an academic has to be prepared to extend their consultation hours after office hours. This can be seen from the replies posted on the earlier Facebook groups by lecturers in which some postings were done even on weekends, public holidays and at odd hours.

## 6.8 CONCLUSION

There is great potential for SMTs such as Facebook to be used as an academic tool to support teaching and learning activities. The observation activities gave the researcher a clear view of how students and lecturers used Facebook in their classes. There were many commonalities in terms of the patterns of usage. The most significant one would be that students prefer Facebook over the official learning management system (Moodle) used in the Institution because they felt that Facebook is more convenient and easy to access compared to Moodle. Moreover, they were already on Facebook all the time. So far, the use of Facebook groups by the lecturers is limited to sharing of teaching and learning materials, announcement and updates, and discussion postings. There might be more useful features that have yet to be explored. Perhaps, moving forward, lecturers should explore ways that could encourage more observers to become regular contributors to the online community. On the other hand, higher education institutions have no control over Facebook activities, as opposed to their own Learning Management Systems (LMS). This makes it difficult for higher education institutions to impose rules and regulations on the Facebook activities especially when it will be used to support teaching and learning activities. Additionally, Facebook can be used for unethical or unfair purposes and so this does raise some significant policy issues, which will be discussed in Chapter 7.

# CHAPTER 7

# SOCIAL MEDIA POLICY ANALYSIS

Social media technologies (SMTs) play an integral role in higher education institutions as an excellent tool to promote engagement and interaction among students, instructors and the institutions. However, their growing use needs to be recognized, preferably within a policy framework, to ensure staff, students and administrators have a common understanding of the parameters of use of these tools. The detrimental effects posed by SMTs in the event of improper use by students and staff can be quite alarming. Without guidelines the tools may not be as supportive of student learning and engagement. This chapter discusses the effects of SMT misuse in higher education institutions, explores the importance and the need for social media policy, compares studies of different social media policies in various higher education institutions, and examines the potential guidelines for social media policy development.

## 7.1 MISUSE OF SOCIAL MEDIA TECHNOLOGIES (SMTs)

While Social Media Technologies (SMTs) do offer many benefits to students in their studies, SMTs do pose some negative aspects as well. Some researchers have associated social media with poor academic performance (Karpinski, 2009, Karpinski and Duberstein, 2009, Wang, Chen and Liang, 2011, Stollak, Vandenberg, Burklund, and Weiss, 2011, Rouis, Limayem, and Salehi-Sangari 2011). Examples of some negative impact caused by SMTs include cyber-bullying, invasion of privacy or cyber stalking, sedition, falsification, poor professionalism, pornography and prostitution, posting of sexually explicit photos and videos that cause embarrassment or humiliation, and other unacceptable media practices (Oldham and Fennelly, 2014). Misuse of social media by students or staff is not just affecting them individually, but it also tarnishes the reputation or branding of the institution.

Cyber-bullying is defined as *"repeatedly makes fun of another person online or repeatedly picking on another person through email or text messages or when someone posts something about another person that they don't like"* (Patchin, 2014, p.1). In one of the studies conducted by Indiana State University in the USA (Cornwell, 2012, para.10), *"22% of college students reported being cyber-bullied, while 9% reported cyber-bullying someone else".* In Malaysia, the number of cases reported on cyber-bullying has also increased by 55.6% from 2012 to 2013 (The Star, 2014c). This has not taken into account cyber-bully cases that were not reported as some victims might be too afraid to step forward and seek help. With the advancement of digital technologies and social media that allows dissemination of information through mobile and the Internet just within a click, the number of cyber-bullying cases has increased and become common especially in schools. The impact caused by cyber-bullying ranges from minor humiliation for the victim, to more serious consequence such as suicide. The victims of cyber-bullying are not necessarily involving students only. In some cases, academic staff are also subjected to cyber-bullying by students.

Dempsey (2014, p.1) defined Cyberstalking as *"the use of the Internet or other electronic means to stalk or harass an individual, a group, or organization. It may include false accusations, defamation, slander and libel. It may also include monitoring, identity theft, threats, vandalism, solicitation for sex, or gathering information that may be used to threaten or harass."* The increased use of social media such as Twitter, Facebook, LinkedIn, etc. to upload personal information and photos, has also increased the chances of cyberstalkers stalking using this information to find their victim. Stalking has become much easier on social media environments especially when the target victims are heavy users of social networks, updating their status regularly, uploading photos of every activity that they do, and clicking on the check-in button on FourSquare or Facebook to report their current location. Cyberstalkers might also hack into electronic devices such as computers, tablets or smartphones or the cloud storage of the target victim to retrieve very personal photos which might not even be shared on social media. Online predators are always on the lookout for opportunities to locate victims. For example, the simple naïve action by new students who post their very first identity card on Facebook with all their personal details (photo, full name, identification number, serial code, program enrolled) might attract cyberstalker's attention.

When Social Media Technologies are allowed to be used within an education institution, there is a real chance of students or staff posting unnecessary statements including inflammatory and insulting comments on the social networks sites such as Facebook and Twitter. For instance, students or staff discussing sensitive issues about politics or racial discrimination in the institution's social networking sites, commenting about the institution's problems on their personal social networks instead of approaching the administrator of the institution directly, posting illegal activities, or even recruiting members for illegitimate activities. In many cases, information posted or content shared cannot be fully trusted as the integrity of the content might not have been verified prior to sharing in the social networks. Once content is shared, it cannot be easily retracted. Too much freedom in social media on campus without careful control might potentially tarnish the reputation of the institution or might even drag the institution into unnecessary legal implications.

Students and staff have to be very careful with what they post on social media as it reflects on their professionalism. Many employers today tend to do a simple background check on the potential candidate via Google or social networking websites such as LinkedIn and Facebook before considering them for an interview. Too many unpleasant photos and activities posted on social network might leave a bad impression to the potential employer. Thus, students, especially those who are about to graduate, need to be extremely careful with their social network activities especially if they make their profiles public, which could be viewed by anybody. As for staff, they also need to be careful in their social network updates. They might get themselves into trouble if they, for example, call in for sick leave but update their status on a social network that described their feelings attending another job interview or posting photos of a wild party.

In some cases, staff, especially the academics might also turn to social media to vent their frustration and anger with students or the institution. This might affect the image of their professionalism as an educator. It is also not professional for academic staff to post any status updates commenting about their work on social media. Some people will just turn to social media to pour their heart out about anything that happens to them and it surely doesn't reflect their profession as an educator, especially when it involves the institution and their students. Being in a

professional role, academic staff need to be extremely careful with what they post on their social networks. A simple mistake by posting an offensive comment, inappropriate status update, or photos will tarnish their reputation as an academic.

The advancement of technology also leads to other social problems, Sexting, an act in which sexual content is distributed or disseminated via mobile phones, emails, and now, social media is becoming a difficult issue for social media users. In a report published by Gizmodo Australia, Latrobe University's Australian Research Centre in Sex, Health and Society has conducted a comprehensive study and found that Australian school aged children are overwhelmingly using social media to make contact and develop sexual relationships (Pash, 2014). He also claimed that *"the use of social media is almost universal and clearly plays a large role in the negotiation and development of sexual relationships"* (Pash, 2014, para.13). The study also reported that *"higher proportions of young men than young women reported sending (25% vs. 11%) and receiving (76% vs. 66%) explicit images of someone else and using social media for sexual reasons (45% vs. 23%)"* (Pash, 2014, para.12). Refer to Appendix O for more examples of social media misuse.

## 7.2 THE NEED FOR SOCIAL MEDIA POLICY IN HIGHER EDUCATION INSTITUTIONS

Proper use of SMTs can enhance student engagement and increase student's involvement. However, the use of SMTs within higher education institutions by students and staff has to be properly monitored and controlled. As discussed in section 7.1, the misuse of SMTs potentially could put an institution at unnecessary risk. As social media is not hosted by institutions themselves, it is sometimes difficult to monitor the usage by students and staff. In addition,

> *Social media channels present a unique amount of risk when compared with traditional media because of their openness, their ease of use, the speed with which information or misinformation can be disseminated to a large audience, and the lack of*

*awareness many social media users have on how public or private their favorite channels actually are.* (Fusch, 2011, p.1).

It is important for institutions of higher education to have their own social media policy to govern the appropriate use of social media within their institution. Social media policy is a written policy that addresses the appropriate use of social media in the institution. It lists the guidelines that described the dos and don'ts when using social media, whether or not the content is posted as part of the job or for personal purposes. Some institutions have a common social media policy that applies to both students and staff, while others might have two different policies that address the use of social media by students and staff. To date, little research has been reported on the best practice of social media policy in higher education institutions.

Melissa Venable, an education writer and instructional designer, published an article in 2011 about social media policies in higher education. In the article, she attributed the need for social media policies in higher education for two reasons: Legalities and Safety (Venable, 2011). Staff need to understand that they are responsible and accountable for things that they post on social media as they are perceived as representatives of their institution. Hence, a social media policy is meant to provide a guideline to legally protect all the stakeholders of the institution. In terms of safety, social media policy is intended to minimize the negative impact that might possibly happen to students and staff of the institution, for example cyber bullying, or cyber stalking (Venable, 2011).

Aside from the legalities and safety risk, another negative impact that social media might possibly pose is the risk to reputation. This is very similar to the legalities risk, but it might or might not involve legal implications for the institution. Once the reputation of the institution is tarnished, it can take a lot of work and time from all parties of the institution to recover from the negative effects. This also leads to financial implications as the drop in reputation will subsequently lead to a drop in the public's confidence and eventually a drop in student enrolment.

The objective of social media policy is not to restrict the use of social media within the institution but more to provide a clear distinction to staff and students on their use of social media as a private individual or as a representative of the institution (Fusch, 2011)

Dr. Reynol Junco argued the need for student social media policies for the following reasons: *(1) support usage that leads to positive outcomes, (2) intervene to help students whose technology use has caused or may cause negative outcomes, and (3) intervene to help students who are at the receiving end of negative social media behavior."* (Junco, 2011, p.60)

## 7.3 SOCIAL MEDIA IN THE MALAYSIA CONTEXT

During the quantitative data collection, respondents were asked whether or not they were aware of any social media policy being implemented within their institutions. Out of 42 academic respondents, 67% of them said they were not sure whether there was a social media policy within their institution, while 17% firmly said that there is not one, and 16% said there was a social media policy in their institution. On the other hand, out of 217 student respondents, almost 55% of them claimed that they were not sure whether there was a social media policy within their institution of study. Only 28% of them said that there was a social media policy within their Institution and 17% said there was not a social media policy in their Institution. When the same question was asked of administrators of the higher education institutions, 36.1% of them said they did have a social media policy within their institution, while 44.4% claimed that they were not sure whether there was a social media policy. Only 19.4% firmly claimed that they did have a social media policy. To confirm the trend of the data as above, in which most respondents claimed that they were either not sure about the existence of social media policy or a policy was not available in their institution, the researcher analysed the websites of all the respondents' institutions and found that only Monash University had a social media policy published on their website. Another Malaysian public university that published its social media policy on the website was University Teknologi Malaysia (UTM) which, none of the respondents came from. In addition, many institutions did not have a

formal social media policy reported on their website that specifically focused on the use of social media within the institution. Some did have a general guideline for sharing or dissemination of information online which had been covered in the Institution's ICT Policy. This was confirmed by the administrators who participated in the semi-structured interview during the qualitative data collection process.

## 7.4 COMPARATIVE STUDY ON SOCIAL MEDIA POLICIES

The original plan for this section was to compare social media policies of different higher education institutions in Malaysia, especially those Institutions in which the respondents who participated in the survey and interview sessions came from. However, since there were very limited social policies available in Malaysia higher education institutions, the researcher then decided to analyze social media policies of different institutions in different countries to get a bigger picture of its coverage.

The researcher collected numerous social media policies from different institutions in different countries which were published on their websites for public consumptions. In total, nine (9) social media policies of universities in Australia, United Kingdom and United States of America (3 from each country) were compared for their similarities and differences. At the end of the analysis, the researcher also compared the social media policies of the few Malaysian Higher Education Institution that had guidelines or policies, to those in Australia, United Kingdom and United States. For this study, qualitative document analysis was used to perform the analysis and comparative studies of the social media policies collected.

### 7.4.1 Document Analysis Methodology

The document analysis methodology, also known as documentary research methodology, is a method used to analyze documents that contain information about the phenomenon that a

researcher wishes to study (Bailey, 1994). Payne and Payne (2004, p. 60) described documentary research method as "the technique used to categorize, investigate, interpret and identify the limitations of physical sources, most commonly written documents whether in the private and public domain". Document analysis method is a systematic procedure used to review or evaluate documents such as forms, proposals, brochures, policies, agendas, minutes of meeting, manuals, newspapers, pictures, etc. (Bowen, 2009). The data in the documents were examined and interpreted to form meaning, to gain understanding and to develop empirical knowledge (Bowen, 2009; Corbin and Strauss, 2008; Rapley 2007).

The documentary research method is a widely used method in social research. However, it has also now been used in other fields such as business, education, anthropology, communications, economics and many more (Ahmed, 2010). Generally, this method is seldom used as a primary research method but usually to supplement the information collected in the primary data collection such as survey and interview (Ahmed, 2010; Mogalakwe, 2009).

By using the documentary analysis method, the social media policies collected can be systematically analyzed, evaluated and compared to give the researcher a clearer picture of its coverage.

### 7.4.2 Analysis Process

The document analysis process involved three main phases: Skimming, Reading, and Interpretation (Bowen, 2009). The skimming phase involved superficial examination of the documents collected to get a general idea of the contents of the documents. The content analysis method was used to help organize the contents of the documents into codes or categories. Once the codes are identified, reading phase was then started in which thorough examinations were carried out on the documents collected. This time, the contents of the documents were carefully

and summarized according to the codes identified at the end of the skimming phase. Possible new codes were identified in the event as some contents were not able to be placed in the existing categories. This process of reading was subjected to multiple iterations until all the documents were thoroughly reviewed. Each round of reading produced new codes which would be used for further reading process. Finally, when all the contents have been grouped according to the respective codes, the interpretation phase was conducted in which the contents were evaluated to draw conclusions from the study. *Figure 7.1* depicts the document analysis process for this study.

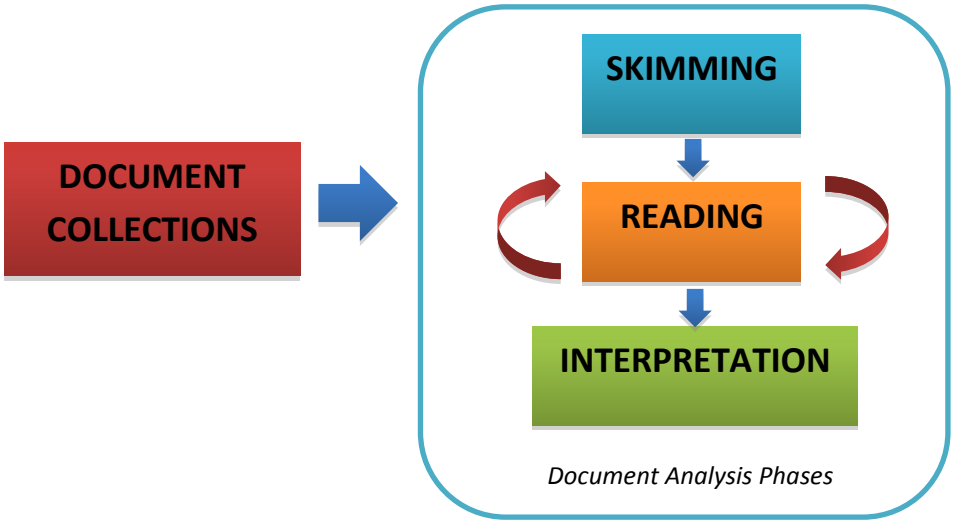



*Figure 7.1: Document Analysis Phases*

#### 7.4.2.1 Document Collection

For the document collection, there were no specific criteria used in selecting the universities of choice. Since there are not many universities in Malaysia that had published their social media policies on their website, the researcher decided to search for social media policies from universities in United Kingdom, Australia and United States for the comparative studies. There were two reasons why these three countries were selected. Firstly, most of the examples of social media adoption in higher education are from universities in these countries and secondly, most of the tertiary education programs offered in Malaysia are based on the curriculum or syllabus from these countries. The universities were selected randomly from the search results that appeared on

Google Search when the researcher searched by the keyword "Social Media Policy of Universities in UK", "Social Media Policy of Universities in Australia", and "Social Media Policy of Universities in US". The researcher chose three social media policies per country to perform the comparisons.

#### 7.4.2.2 Skimming

Once the 9 social media policies were obtained, the researcher skimmed through the documents superficially to get an overview of the coverage of the content. From this skimming process, the researcher identified a list of items that would be focused on during the actual reading of the documents. The list included: the audience, components covered by the policy, penalty statements, technical support availability and the ownership of the policy. The audience of the policy is referring to the targeted consumers of the policy, whether the policy is meant for students, or staff of the institution. On the other hand, the components of the policy refers to the elements which the policy would be focusing on such as the general guidelines for using social media (examples posting and publishing, transparency, branding, compliancy, privacy and confidentiality, and many more.). The policy would also be checked for the availability of a penalty statement, that is the disciplinary actions imposed on the breach of a policy. As the ownership of social media policy differs in each institution, the researcher would also like to compare how different or similar the ownership is among different institutions in different countries. Lastly, support components refer to the availability of help provided to the audience in terms of the use of social media and assistance in some technical aspects. The outcome at the end of this phase was a list of categories which were later used for coding in the reading phase. Figure 7.2 depicts the categories of the skimming process.

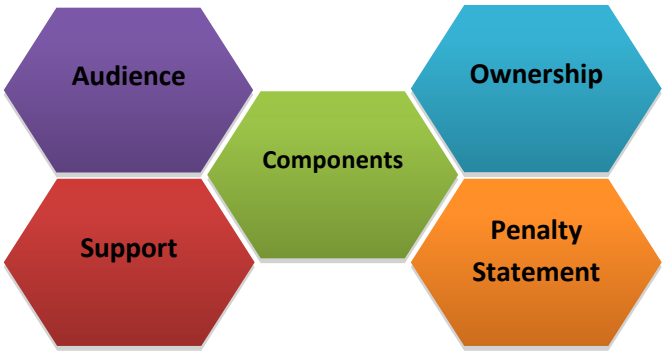



*Figure 7.2: List of Categories for Policy Reading*

#### 7.4.2.3 Reading

In this phase, each policy document was read through very carefully and coding was carried out according to the categories identified at the end of the skimming phase. As the formatting of all the policies was different, the researcher was not able to use Microsoft OneNote for the summation of the policies. Thus, the coding was done manually, summarized and keyed in to a Microsoft Excel document for further analysis later. During these processes, the researcher carefully read through each and every policy (some in web format, while some in PDF format) to group the contents of the policies based on the categories identified earlier in *Figure 7.2* above.

At the end of the categorization process, the researcher found that there were three types of social media policies available within an institution: Social Media Policy for Students, Social Media Policy for Staff (Personal Use), and Social Media Policy for Staff (Professional / Official Use). The researcher also found additional elements which were not identified earlier but commonly appeared in most of the policies read. These additional elements or categories included the date of policy implementation, policy review date, types of social media channels used for official university presence, availability of a dedicated social media office or department within the university, and the links to other associated policies. Additional elements were also identified for the policy for professional use of social media, which include the availability of a social media toolkit or professional help or advice in developing official social media channels, additional resources for social media tools, and procedures for developing a social media presence within the department or faculty. The updated list of elements or categories can be seen in *Figure 7.3* and *Figure 7.4* below. Based on the newly identified codes, the researcher re-read all the policies and re-categorized the content accordingly. The outcome at the end of this phase was an individual summary of tables that recorded the contents of the policies based on the identified categories.


*Figure 7.3: Updated List of Categories for Policy Reading*


*Figure 7.4: Updated List of Categories for Policy Reading (Professional use of Social Media)*

#### 7.4.2.4 Interpretation

Once all the readings were completed and the content of the policies were properly coded and summarized, the interpretation phase commenced in which further analysis was conducted on the policies to compare their similarities and differences, as well as the strengths and weaknesses of each policy. At the end of the interpretation phase, three summaries were produced: (1) Cross comparison table for all policies in terms of coverage and content, (2) Comparison table for all policies in terms of their strengths and weaknesses, and (3) Comparable table for social media policies in Malaysian higher education institutions as compared to the international trends. As part of the analysis process, the researcher also analyzed the websites of each respective institution to identify their social media engagement as well as accessibility to the social media policy via the website. The outcomes of this process are discussed in the respective sections of the individual university's discussion. *Figure 7.5* depicts the complete document analysis phase with the expected outcomes.

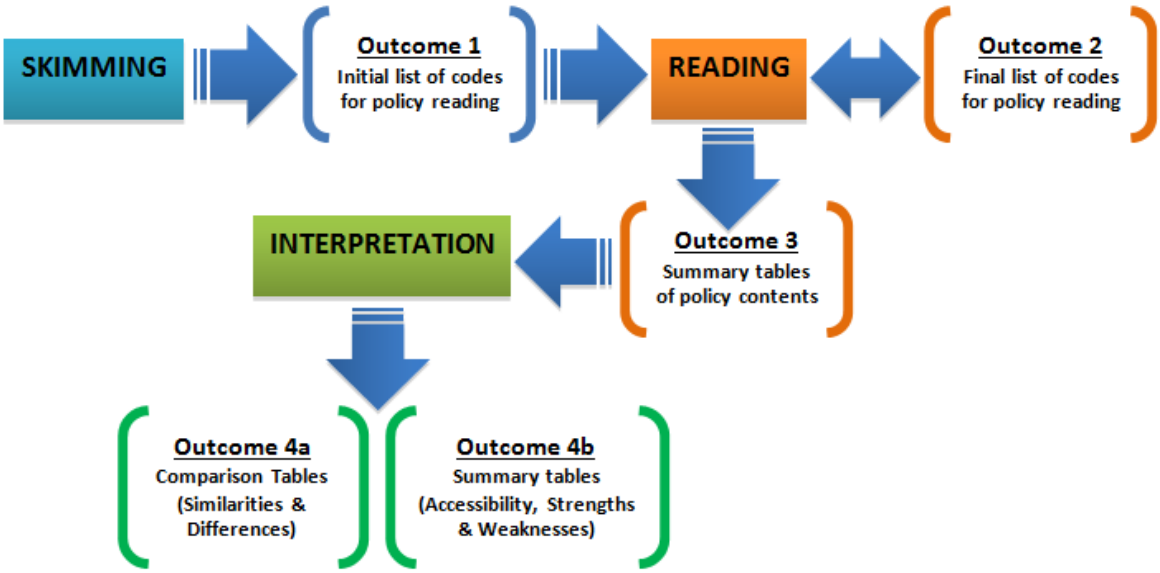



*Figure 7.5: Complete Document Analysis Phases with expected outcomes*

## 7.4.3 Findings

The results of the social media policy analysis for each university are briefly discussed in the following sections and a summary table has been included at the end of this section for clearer comparisons. The content of each policy has been briefly summarized and included in the respective sections for a clearer view and understanding of the coverage before the final comparative tables were produced. For each institution, the researcher also analyzed the availability of the institution's official social media channels and the accessibility of the social media policy from the Institution's Official Homepage.

### 7.4.3.1 Australia

The three (3) universities in Australia that were chosen for comparisons were the Australian National University, Monash University, and the University of New South Wales. These universities were ranked in the top 10 universities in Australia for 2014 by Shanghai Jiao Tong University Academic Ranking of World University (SHJT, 2014).

#### 7.4.3.1.1 Australian National University (ANU)

The Australian National University was established in 1946 and has been ranked as the 1st university in Australia and 25th in the world for 2014/2015 by QS World University Rankings (QS World University Ranking, 2014). Among the three Australian Universities analyzed, the researcher felt ANU engagement in social media the least effective. This could be seen from the ANU homepage in which the social media presence is not strongly emphasized. ANU only uses Facebook, Twitter, YouTube and LinkedIn as their official social media channels (*Figure 7.6* – circled in red). A check on the website also indicated that ANU doesn't provide a Social Media Directory that listed all of the official social media engagements that ANU has.

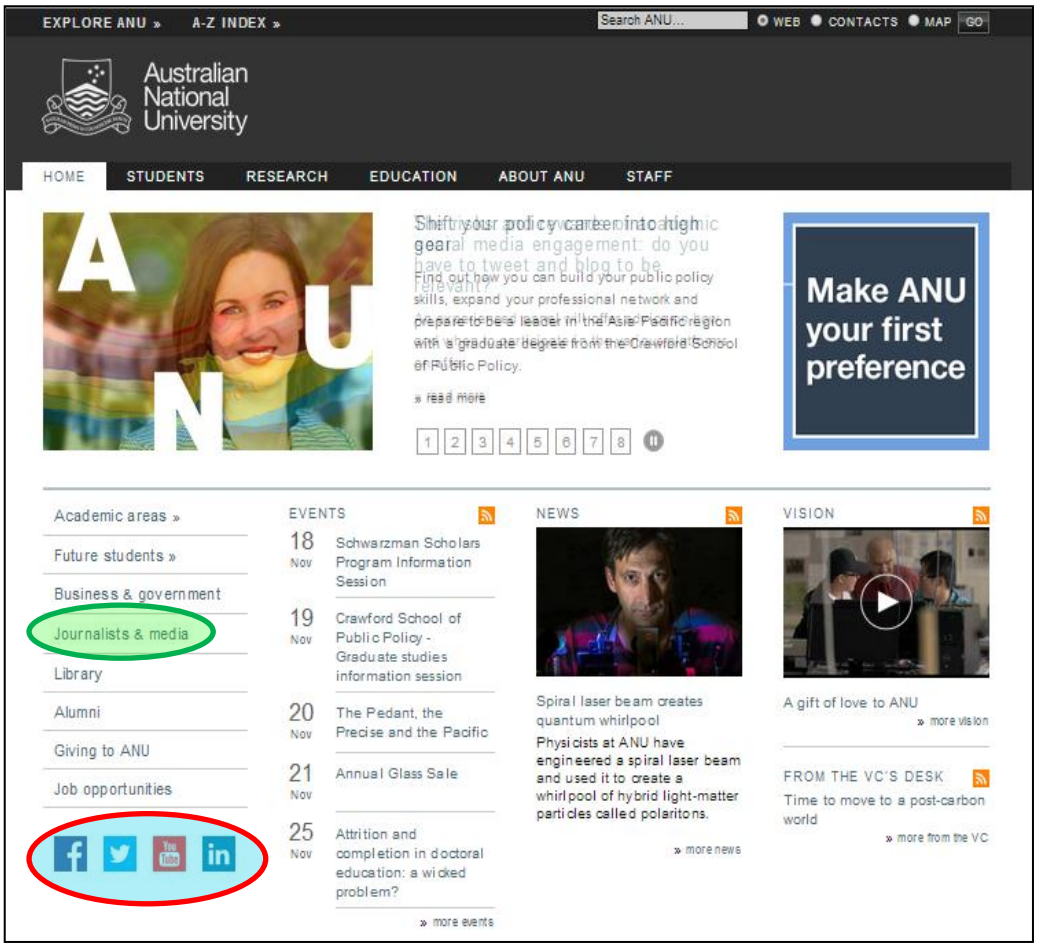



*Figure 7.6: ANU Homepage*

There are two ways to access ANU's Social Media Policy. Firstly, it is via the Journalist and Media option (*Figure 7.6* – Circled in green) -> How to Guides -> Social Media (*Figure 7.7* –Circled in orange). The policies for both students and staff can be accessed by clicking on the links provided (*Figure 7.7* – Circled in purple).

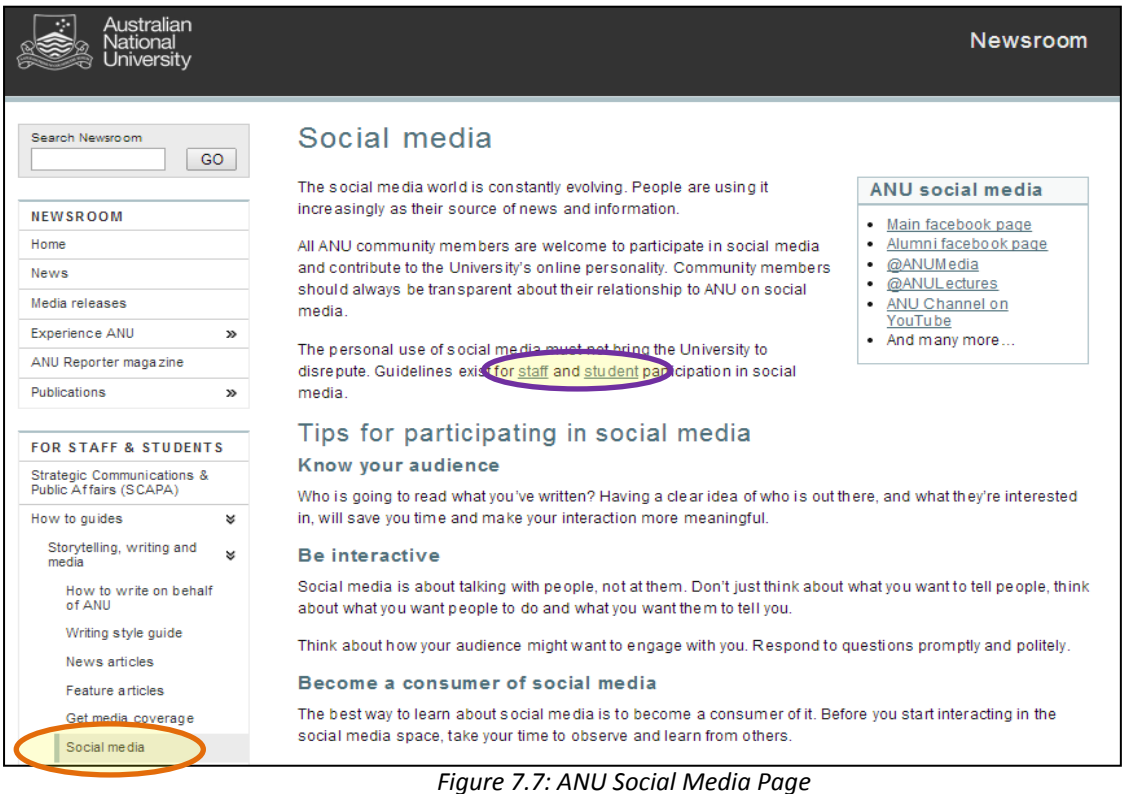



*Figure 7.7: ANU Social Media Page*

Another way to access the policies are via the policies page of each respective group of audiences, in which the guidelines are stored in the Information Technology categories (Refer to *Figure 7.8* ~ Highlighted in blue).

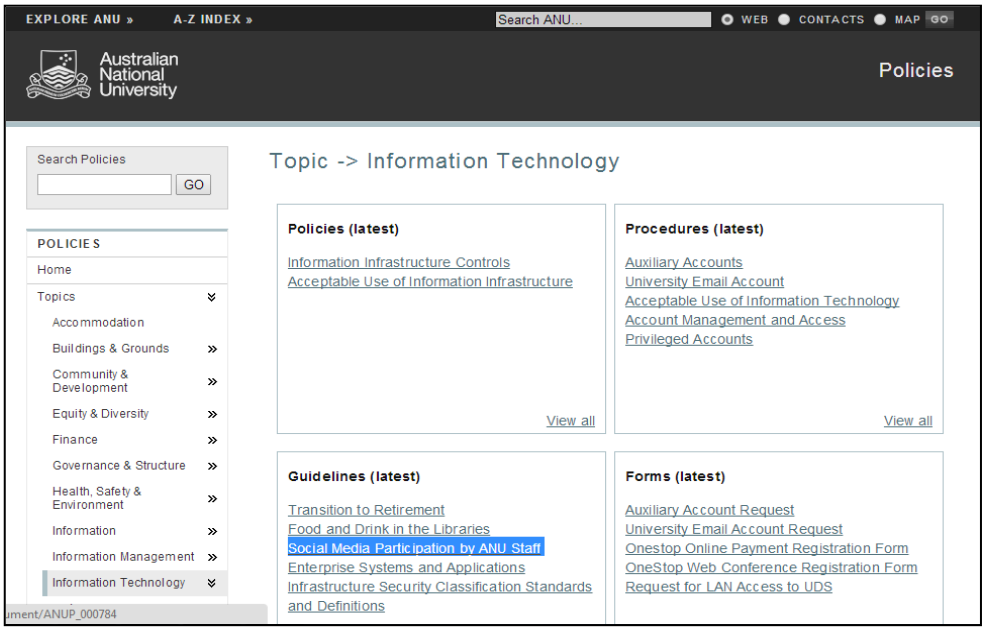



*Figure 7.8: Social Media Participation by ANU Staff*

As stated in ANU's social media guidelines (ANU, 2014), all students and staff are encouraged to participate in the use of social media within ANU's community. ANU social media guidelines were developed collaboratively between the Information Technology Services, Communication and External Liaison Office, and ANU Marketing Office, in consultation with the ANU Legal Office (ANU, 2014). The Social Media Policies / Guidelines for ANU are very simple and straight forward. These guidelines are meant for personal use of social media by students and staff only. It doesn't include the social media policies or guidelines for participating in professional use of social media. There are two documents of Social Media guidelines for ANU Students. The Social Media Guideline which is accessible via the 'Policy' Page is very text-based compared to the other one which is accessible via the 'Information Technology Services' Page (*Figure 7.9*) where the guidelines are presented in a more attractive manner *(Figure 7.10).*

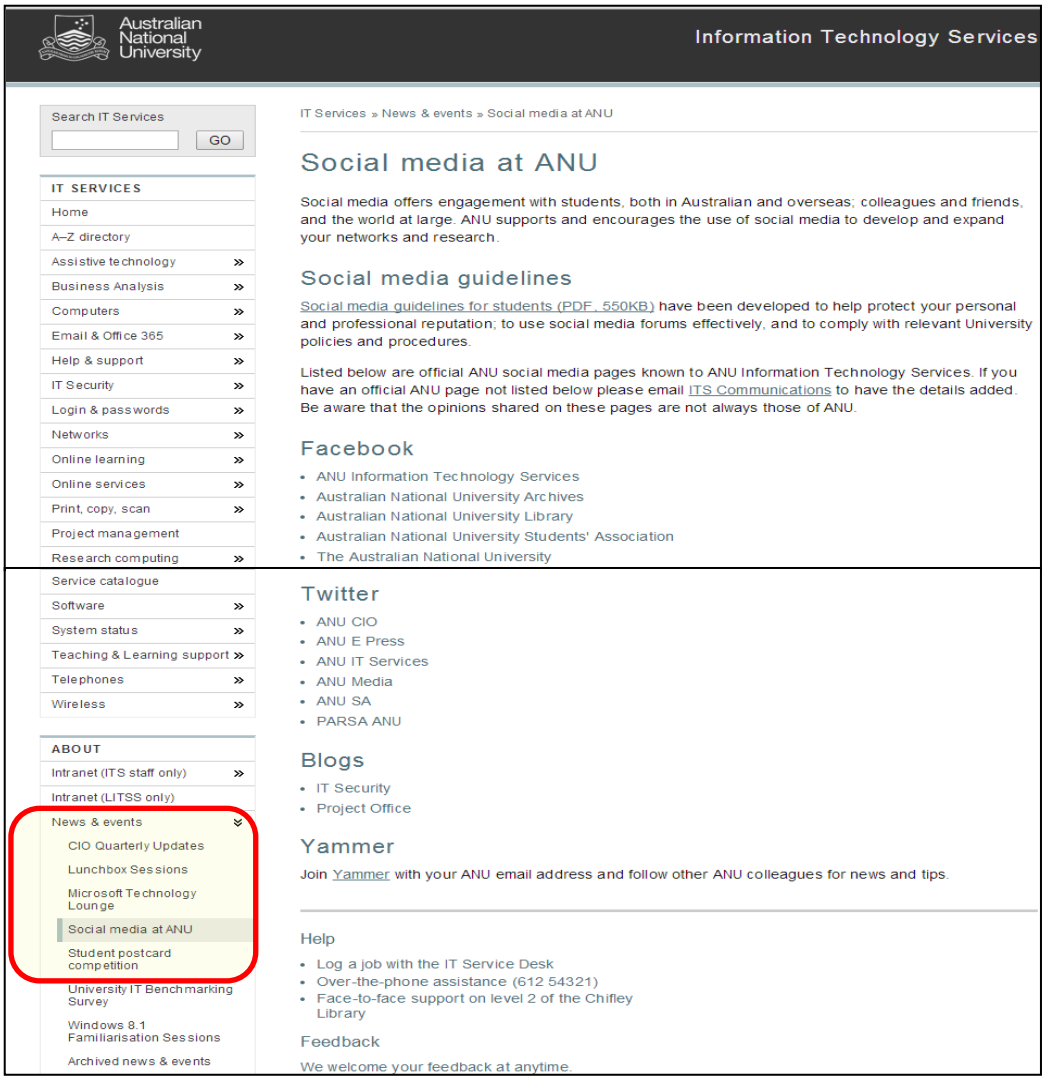
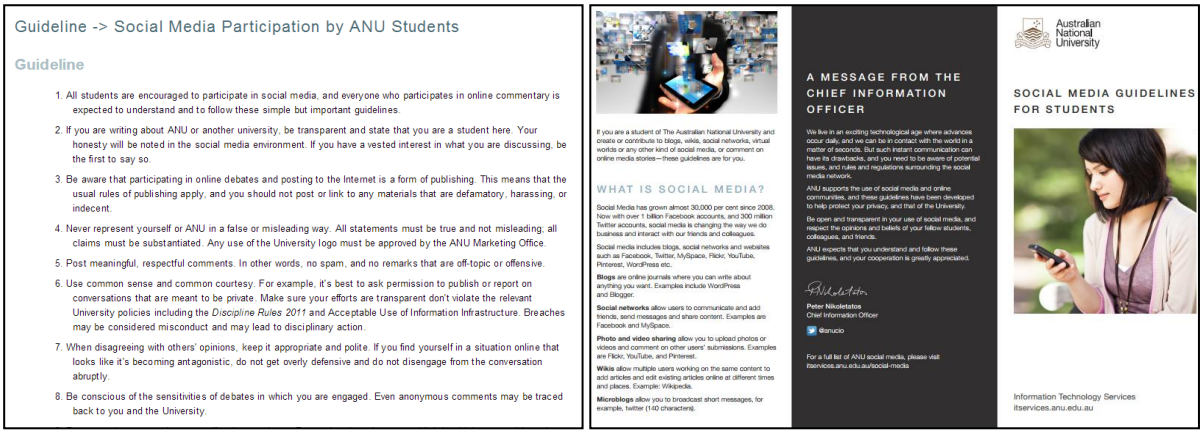



*Figure 7.9: ANU Information Technology Services – Social Media*



Guideline -> Social Media Participation by ANU Students

Guideline

1. All students are encouraged to participate in social media, and everyone who participates in online commentary is expected to understand and to follow these simple but important guidelines.
2. If you are writing about ANU or another university, be transparent and state that you are a student here. Your honesty will be noted in the social media environment. If you have a vested interest in what you are discussing, be the first to say so.
3. Be aware that participating in online debates and posting to the Internet is a form of publishing. This means that the usual rules of publishing apply, and you should not post or link to any materials that are defamatory, harassing, or indecent.
4. Never represent yourself or ANU in a false or misleading way. All statements must be true and not misleading; all claims must be substantiated. Any use of the University logo must be approved by the ANU Marketing Office.
5. Post meaningful, respectful comments. In other words, no spam, and no remarks that are off-topic or offensive.
6. Use common sense and common courtesy. For example, it's best to ask permission to publish or report on conversations that are meant to be private. Make sure your efforts are transparent don't violate the relevant University policies including the *Discipline Rules 2011* and Acceptable Use of Information Infrastructure. Breaches may be considered misconduct and may lead to disciplinary action.
7. When disagreeing with others' opinions, keep it appropriate and polite. If you find yourself in a situation online that looks like it's becoming antagonistic, do not get overly defensive and do not disengage from the conversation abruptly.
8. Be conscious of the sensitivities of debates in which you are engaged. Even anonymous comments may be traced back to you and the University.

If you are a student of The Australian National University and create or contribute to blogs, wikis, social networks, virtual worlds or any other kind of social media, or comment on online media stories—these guidelines are for you.

WHAT IS SOCIAL MEDIA?

Social Media has grown almost 30,000 per cent since 2008. Now with over 1 billion Facebook accounts, and 300 million Twitter accounts, social media is changing the way we do business and interact with our friends and colleagues.

Social media includes blogs, social networks and websites such as Facebook, Twitter, MySpace, Flickr, YouTube, Pinterest, WordPress etc.

**Blogs** are online journals where you can write about anything you want. Examples include WordPress and Blogger.

**Social networks** allow users to communicate and add friends, send messages and share content. Examples are Facebook and MySpace.

**Photo and video sharing** allow you to upload photos or videos and comment on other users' submissions. Examples are Flickr, YouTube, and Pinterest.

**Wikis** allow multiple users working on the same content to add articles and edit existing articles online at different times and places. Example: Wikipedia.

**Microblogs** allow you to broadcast short messages, for example, twitter (140 characters).

A MESSAGE FROM THE CHIEF INFORMATION OFFICER

We live in an exciting technological age where advances occur daily, and we can be in contact with the world in a matter of seconds. But such instant communication can have its drawbacks, and you need to be aware of potential issues, and rules and regulations surrounding the social media network.

ANU supports the use of social media and online communities, and these guidelines have been developed to help protect your privacy, and that of the University.

Be open and transparent in your use of social media, and respect the opinions and beliefs of your fellow students, colleagues, and friends.

ANU expects that you understand and follow these guidelines, and your cooperation is greatly appreciated.

Peter Nikoletatos
Chief Information Officer

@anucio

For a full list of ANU social media, please visit itservices.anu.edu.au/social-media

Australian National University

SOCIAL MEDIA GUIDELINES FOR STUDENTS

Information Technology Services
itservices.anu.edu.au

*Figure 7.10: Guidelines for Social Media Participation by ANU Students vs. Social Media Guidelines for Students*

*Table 7.1* below summarized *the* policy components covered in the social media guidelines of ANU.

*Table 7.1: Summary of Social Media guidelines in ANU.*

| Audience | Components | Descriptions |
|---|---|---|
| **Student**<br>(Social Media Guidelines for ANU Students) | What is Social Media? | Brief description about social media descriptions on some examples of social media channels. |
| | Introduction | Brief Introduction about this policy / guidelines and its purposes. Includes the Social media tips (e.g. the need to seek permission for the use of ANU logo, protection of privacy and confidentiality information, unnecessary participations in spams and inappropriate comments, avoid postings that involved defamation and copyright issues, the need to comply with relevant University policies including the Acceptable Use of Information Infrastructure, and avoid false or misleading representation of one self or ANU. |
| | Guidelines | Covers the following guidelines: Be transparent, Be Honest, Be Respectful, Be Polite, Write what you know, Use your best judgment, Use a disclaimer, and think of your future. |
| | | |
| **Student**<br>(Guidelines: Social Media participations for ANU Students) | Guidelines | 1 page guidelines that include the need to seek permission for the use of ANU logo, protection of privacy and confidentiality information, Post only meaningful, respectful comment, unnecessary participations in spams and inappropriate comments, avoid postings that involved defamation and copyright issues, the need to comply with relevant University policies including the Acceptable Use of Information Infrastructure, avoid false or misleading representation of one self or ANU, be conscious of the sensitivities of debates in which you are engaged, and reminder on the permanent effects on the online posts. |
| | | |

| Audience | Components | Descriptions |
|---|---|---|
| **Staff** | Purpose | Brief description on the purpose of the social media guidelines. |
| | Guidelines | Includes 1 page of guidelines (Do's and don'ts) on staff's participations (postings and commenting) on social media, engaging in online or public debates, etc. It covers attributes such as Transparency (Use of real name, identity, and role for communication), Polite and Respectful, Professionalism, Tips for posting / publishing, Branding (Use of ANU Logo), Privacy and Confidentiality (Personal information & University's confidential and proprietary information), and compliancy to associated policies (ANU Code of Conduct, Use of the University Name and Insignia, University Records and Archives Management, Acceptable Use of Information Infrastructure, and Academic Expertise and Public Debate policy.) |

*Summarized from:* (http://itservices.anu.edu.au/_resources/news-and-events/social-media/social-media-guidelines-for-students.pdf) and (https://policies.anu.edu.au/cs/groups/confidential/@its/documents/edrms/dxbf/mdaw/~edisp/anup_000784.pdf)

### 7.4.3.1.2 Monash University

Monash University was established in 1958 and is the largest university in Australia with approximately 60,000 students and over 250,000 alumni from over 170 countries (Monash University, 2014a). Monash has been ranked as 6th university in Australia and 70th in the world for 2014/2015 by QS World University Rankings (QS World University Ranking, 2014). *Figure 7.11* below shows Monash's involvement in Social Media (in red rectangle) and this is available at the bottom of Monash's Homepage. Monash implemented their social media policy in 2011, following a significant increase in the use of social media within the Monash community (Monash University, 2012). As stated in its policy statement:

*"Monash University embraces the use of social media by staff, students and associates to connect with each other and a broader community of researchers, business partners, alumni, supporters and colleagues as an important tool of academic, community, and business engagement. With the rapid growth and application of social media, Monash University recognises the need to have a policy and procedures, which ensure that those who use social media either as part of their job, study, association with the University or in a personal capacity have guidance as to the University's expectations where social media are used."* (Monash University, 2014b, p.1).

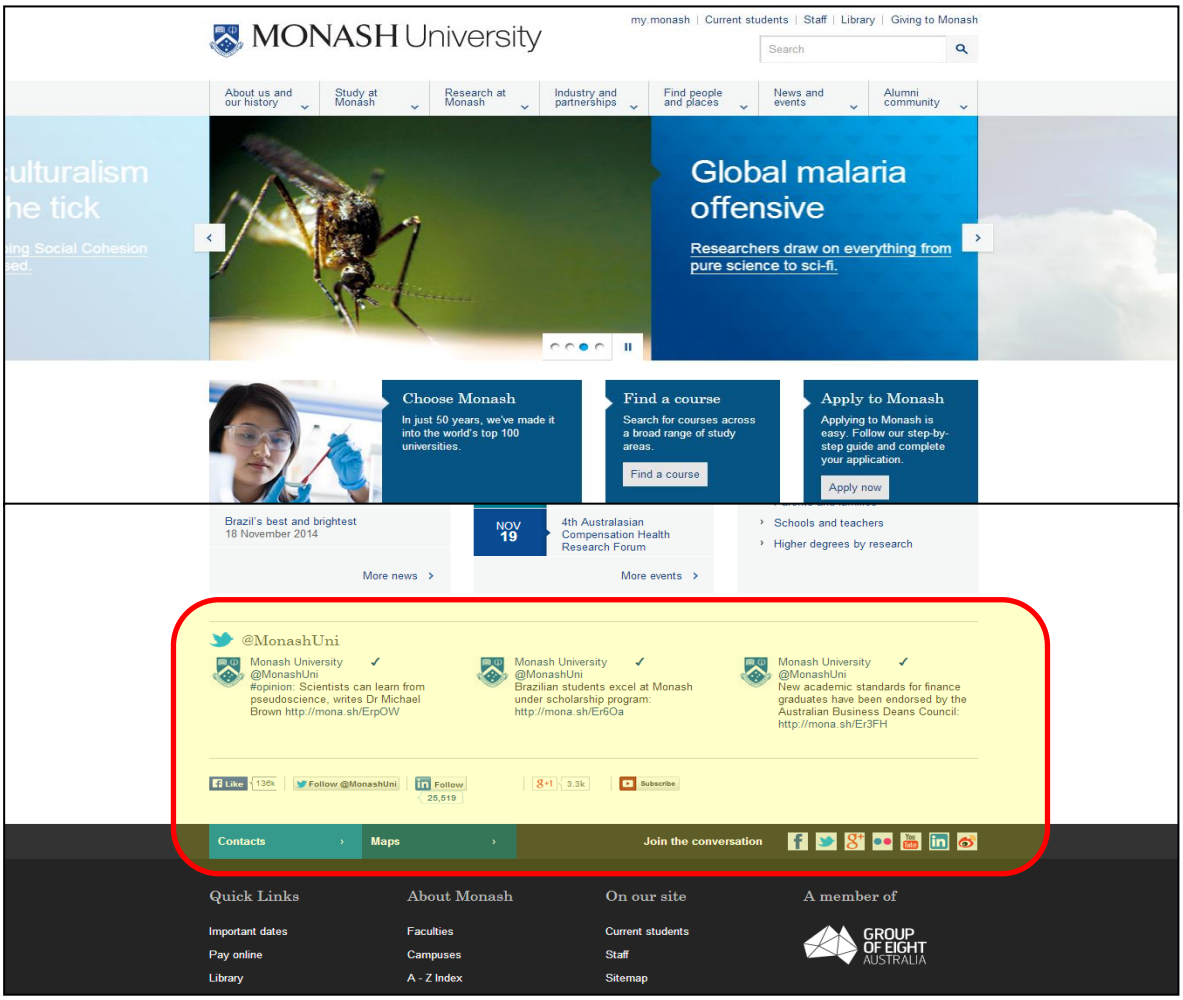



*Figure 7.11: Monash University's Homepage (Cropped)*

Monash University has an online Policy Bank that houses all the policies of the university. From its main homepage, it is not easy to search the website for the 'Policies and Procedures' page unless the search function of the website is used. *Figure 7.12* depicts the Social Media policy page of Monash University and from this page, there are hyperlinks to access the student and staff Social Media Policy (green rectangle).

Monash University > Policy > Policy-bank > Management > Global-engagement

**Monash University Policy Bank**

**Social Media Policy**

| | |
|---|---|
| **Purpose** | To provide the Monash community with a guide to the appropriate use of social media. |
| **Scope** | All Australian campuses<br>Monash South Africa<br>All media communications (from Australia and Monash South Africa)<br>(In this policy and its procedures, references to Monash University or the University include Monash South Africa [MSA].) |
| **Policy Statement** | Monash University embraces the use of social media by staff, students and associates to connect with each other and a broader community of researchers, business partners, alumni, supporters and colleagues as an important tool of academic, community, and business engagement.<br><br>With the rapid growth and application of social media, Monash University recognises the need to have a policy and procedures, which ensure that those who use social media either as part of their job, study, association with the University or in a personal capacity have guidance as to the University's expectations where social media are used.<br><br>This policy applies to all social media. |
| **Supporting procedures** | Social Media: Student Use Procedures<br>Social Media: Staff and Associates Use Procedures |
| **Supporting guidelines** | |
| **Responsibility for implementation** | Executive Director, Marketing and Communications<br>Associate Director, Media and Communications<br>Executive Director, Advancement and Corporate Affairs (MSA)<br>All members of the University community |
| **Status** | Revised |
| **Related documents** | The Media Office website: www.monash.edu.au/news<br><br>Guidelines for staff about preparation of Web-based materials<br><br>Monash Web Style Guide - Branding and Visual Identity<br><br>Monash Editorial Style Guide<br><br>Privacy at Monash<br><br>Disability Liaison Unit Privacy Statement<br><br>Monash University's Ethics Statement<br><br>Guide on Social Media Use in Teaching and Learning |

*Figure 7.12: Social Media Policy Page (cropped)*

As for staff, there are two types of social media procedures or guidelines available: (1) Global engagement and professional use of social media by staff and associates that have connection with Monash University, and (2) Identifiable personal use of social media, which is governed by the Human Resource department. A summary of the content coverage for each procedure is listed in *Table 7.2*.

*Table 7.2: Coverage and components of Social Media guidelines in Monash University.*

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Students** (Social Media: Student Use Procedures) | Social Media Policy | - | Described the purpose statement of the policy. |
| | Definition of terms | - | Described some specific terms used in the document (e.g. Identifiable personal use, rules). |
| | What is Social Media? | - | Brief description about social media descriptions on some examples of social media channels. |
| | Use of Social Media | Social Media provided by the University: Conditions of Use | Students who use the university's ICT facilities, connections and social media services need to be compliance with the Acceptable Use of IT facilities by Students policy and procedures, and Students Academic Integrity Policy and Student Academic Integrity: Managing Plagiarism and Collusion Procedures. |
| | | Social Media in Education and Research Training | Students using social media for learning and researching are bounded by these procedures. |
| | | Personal Use of Social Media | Students who engage in identifiable personal use are bounded by these procedures. |
| | Rules for Use of Social Media | Publishing / Posting | Guidelines for posting and publishing on the social media. Some attributes include: the use of disclaimer, respectful and courteous comments, accurate and non-misleading contents, etc. |
| | | Compliancy | The need to comply to the following:<br>• The acceptable Use of Information Technology Facilities by Students Policy and Procedures<br>• Student Academic Integrity Policy<br>• Student Academic Integrity: Managing Plagiarism and Collusion Procedures.<br>• Laws about copyright, privacy, defamation, contempt of court, discrimination and harassment.<br>• Terms of Use of the relevant social media platform/website |
| | | Privacy and Confidentiality | Students are not allowed to disclose /discuss non-confidential or publicly available information about the university. |
| | Specific Prohibitions | - | List the activities students are prohibited to do associate to the use of social media. E.g. Posting or making comments that construed to be racial or sexual harassment, offensive, obscene, defamatory, discriminatory towards any person, or inciting hate; Posting or making comments that construed to create risk to the health, e.g. harrassment, bullying, abusive, etc; Speak as a representative of the university; Misuse the identity of the others, etc. |
| | Using Images and videos | - | Specific guidelines on the use of images and videos. E.g.: Prior permission is required to post, share or distribute images of individuals whose images are identifiable; Posting for non-commercial purpose only; Careful when dealing with images of "special populations" |

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| | Breach | - | Penalty statements on the breach of policies. |
| | | | |
| **Staff** (Identifiable Personal Use)<br><br>Conduct and Compliance Procedure – Staff Use of Social Media | Preamble | - | Described the purpose statement of the procedure. |
| | Definition of terms | - | Described some specific terms used in the document (e.g. Identifiable personal use, Social Media and examples, Staff). |
| | Professional Use of Social Media | - | Provided the link to the Staff Global Engagement Policy and Procedure. |
| | Personal Use of Social Media | - | Brief descriptions on personal use of social media and its consequences. |
| | Rules for Use of Social Media | Publishing / Posting | Guidelines for posting and publishing on the social media. Some attributes include: the use of disclaimer, respectful and courteous comments, accurate and non-misleading contents, etc. |
| | | Privacy and Confidentiality | • Only disclose /discuss non-confidential or publicly available information about the university. |
| | | Professionalism | • Be professional in nature. |
| | | Compliancy | • The use of Social Media must be compliance with:<br>  ◦ Monash University's Information Technology Use Policy - Staff and Other Authorized Users.<br>  ◦ Conduct and Compliance Procedure<br>• Need to comply with the law, including laws about copyright, privacy, defamation, contempt of court, discrimination and harassment.<br>• Adhere to the Terms of Use of the relevant social media platform/website |
| | Specific Prohibitions | - | List the activities staffs are prohibited to do associate to the use of social media. E.g. Posting or making comments that construed to be racial or sexual harassment, offensive, obscene, defamatory, discriminatory towards any person, or inciting hate; Posting or making comments that construed to create risk to the health, e.g. harassment, bullying, abusive, etc; Speak as a representative of the university; Misuse the identity of the others, etc. |
| | Breach | - | Penalty statements on the breach of policies.<br><br>Also included contact information for staff to report inappropriate or unlawful content online. |
| | | | |
| **Staff and Associates** (Global Engagement & Professional Use) | Social Media Policy | - | Described the purpose statement of the policy. |

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff and Associates** (Global Engagement & Professional Use) | Definition of terms | - | Described some specific terms used in the document (e.g. Associate, Identifiable personal use, Staff). |
| | What is Social Media? | - | Brief write-up about social media descriptions on some examples of social media channels. |
| | Monash Official Social Media | - | Included a link to the official University social media presence. The official University social media presences have restrictions on the contents and posting of the content. It is managed by the Office of Marketing and Communications (OMC). |
| | Other Social Media with a connection to Monash University | - | Listed circumstances in which the use of social media by staff and associated have a connection with Monash university. Also included list of conditions to be observed before creating a social media presence that has a connection with the university. Creation of contents needs to conform to the Monash Editorial Style Guide and Web Style Guide (hyperlink to the resources included). |
| | Professional Use of Social Media | - | This section provides description and guideline to staff in the event they would like to represent the university in a professional capacity in social media. Subject to Conduct and compliance procedure – staff use of social media, and conduct and compliance procedure – representing Monash (public utterances). |
| | Use of social media by Monash Associates | - | This section provides description and guideline on how Monash's associates should represent themselves in social media, and what they could do if they want to represent the University in social media. |
| | Managing and reporting issues in Social Media | - | This section provides recommended steps to be taken in the event a significant issue arises within social media that has impact on the University, staff or students. |
| | Use of images and / or video | - | This section includes the guidelines to post, share, or distribute images or videos of individuals whose images are identifiable. E.g.: Prior permission is required to post, share or distribute images of individuals whose images are identifiable; Posting for non-commercial purpose only; Careful when dealing with images of "special populations".<br><br>Most images and videos are subjected to copyright and occasionally trademark, design and Intellectual Property protection. |
| | Best Practice Guidelines | - | Guidelines for a successful social media presence include: Be accurate and timely; Be respectful, Follow the conversations; Recognize that online content can and will live forever; Separate the personal from professional; avoid hazardous materials; Keep confidentiality; Be aware of the privacy obligations; Identify the affiliation with the university and area of specialization. |
| | Related Policies | - | Included a list of associated policies. |

*Summarized from the following: (http://www.adm.monash.edu.au/workplace-policy/conduct-compliance/use-of-socialmedia.html; http://policy.monash.edu.au/policy-bank/management/global-engagement/social-media-staff-associates-use-procedures.html;*

*http://policy.monash.edu.au/policy-bank/management/global-engagement/social-media-student-use-procedures.html, and http://policy.monash.edu.au/policy-bank/management/global-engagement/social-media-policy.html)*

Monash University also has guidelines to guide academics in the use of social media in teaching and learning (refer to *Figure 7.12* above ~ blue rectangle). However, access to this guide requires authorized login, thus the researcher was unable to access this guideline.

#### 7.4.3.1.3 University of New South Wales (UNSW)

UNSW was established in 1949 and is a public research university in Australia. It is ranked 5th in Australia and 48th in the world for 2014/2015 by QS World University Rankings (QS World University Ranking, 2014). The UNSW main campus is located in the centre of Sydney with more than 50,000 students from over 120 countries, making it one of the Australia's most cosmopolitan universities (UNSW, 2014a).

UNSW has three sets of social media policies: UNSW Future Students, UNSW Current students, and UNSW Staff. The social media policy for UNSW Future Students is accessible via the UNSW Future Student Facebook Page, which is a *"dedicated space where Australian student can get inspired and find the relevant information to help them to make the right decision about where to study"* (UNSW, 2014b, p. 1). This Facebook page also incorporated other social media platforms such as Instagram and Twitter. The social media policies on this page list the dos and don'ts when posting on the UNSW's social media platforms. *Figure 7.13* depicts the screenshot of UNSW Future Students Facebook page.

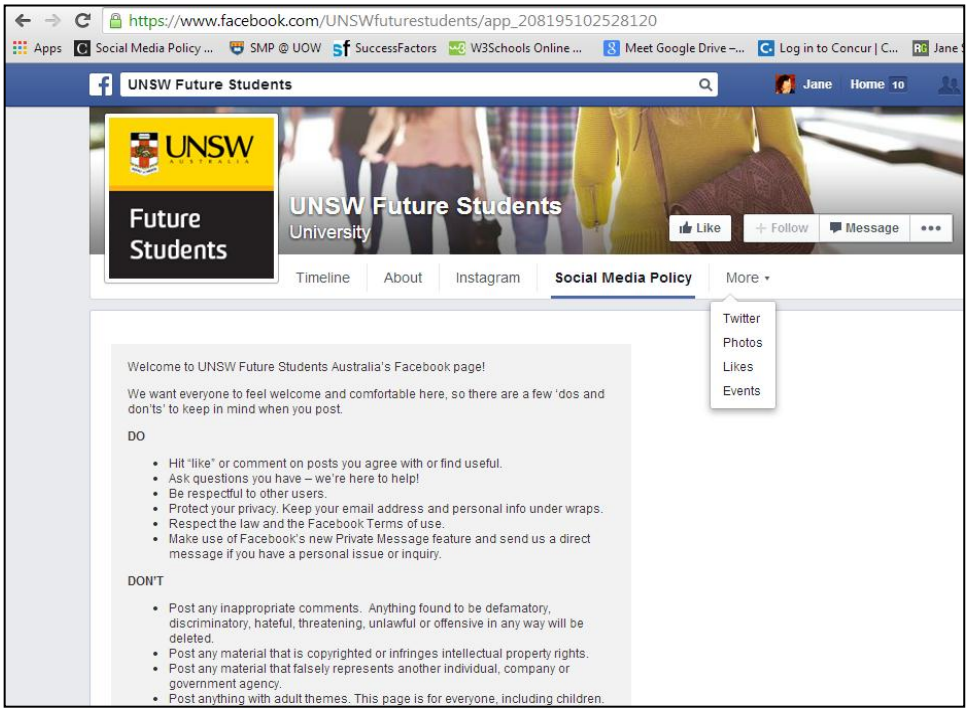



*Figure 7.13: UNSW Future Student Facebook Page*

On the other hand, the social media policies document for UNSW current student is a 2-page document and was last reviewed in January 2014. It is a simple document which was accessible via the 'Current Student' Page of the website. However, the social media guidelines are not clearly visible as it is located in a subsection under 'Campus Life' -> 'Your Community' -> 'Publication & Social Media' (*Figure 7.14* – Social media section is highlighted in red rectangle).

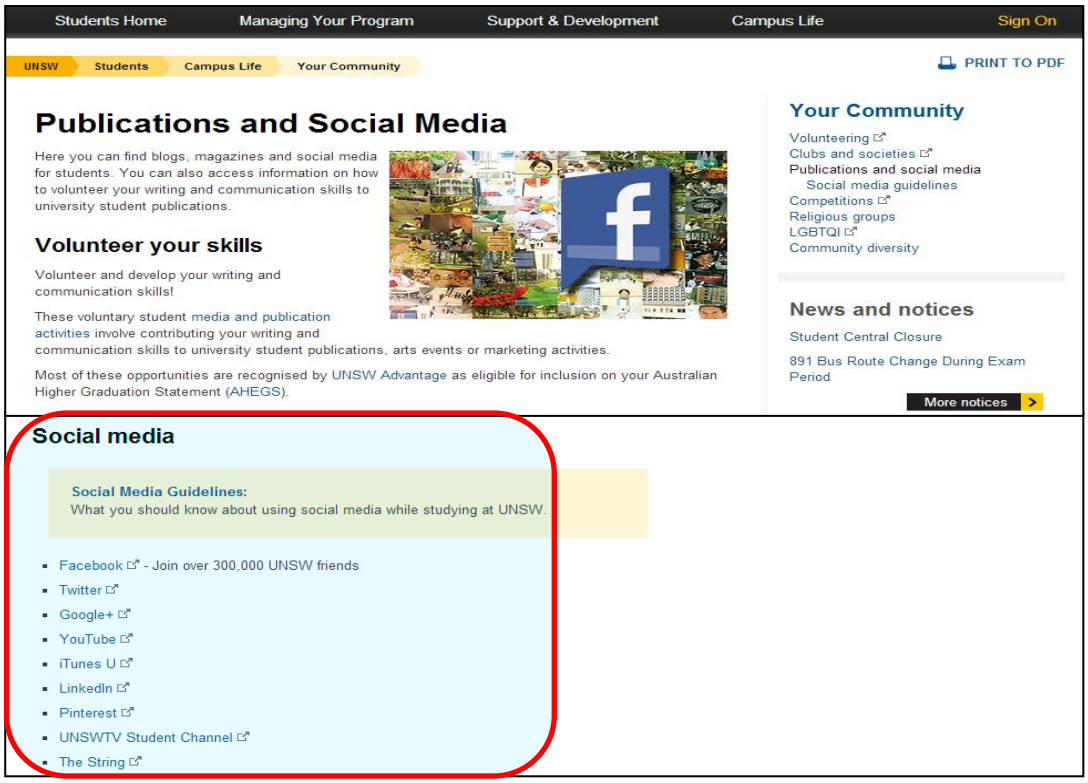
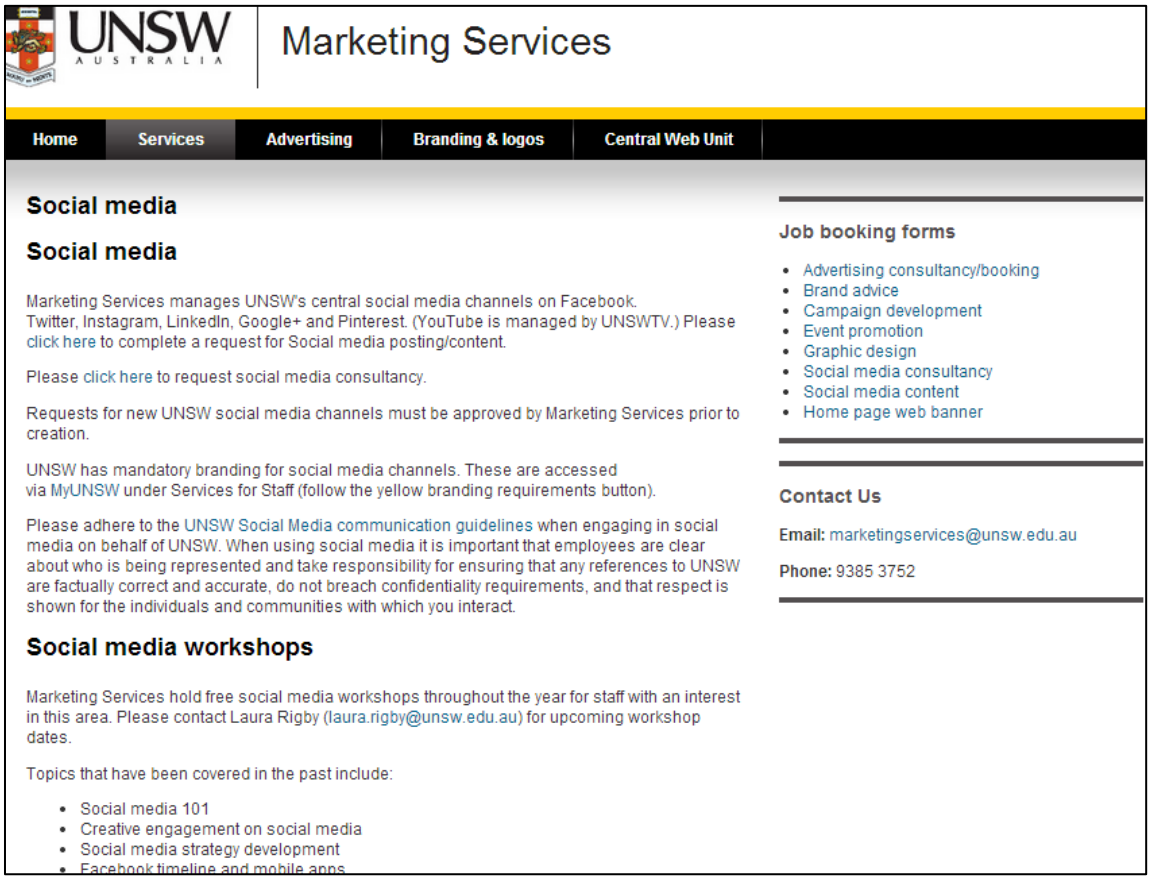



*Figure 7.14: Current Student's Social Media Page (Cropped)*

Lastly, for UNSW staff, the social media policies, known as UNSW Social Media Communication Guidelines, is only applicable to those who use social media in the capacity as an employee of UNSW. It doesn't apply to employee's personal use of social media where there is no reference made to UNSW. The social media policy is governed by the Marketing Services division of UNSW. This document is a comprehensive 8-page document which covers detailed guidelines from the risks associated with social media to handling a crisis in the social media environment. Clear information about the support provided and details of the contact person are available in the documentation. Marketing Services division also provided advice, guidance or help for staff who need to use social media, and free social media workshops are also conducted throughout the year on topics such as Social Media 101, Creative engagement on Social Media, Social Media Strategy, etc. (UNSW, 2014c). *Figure 7.15* depicts the screenshot from the Marketing Services Page.



UNSW AUSTRALIA | Marketing Services

Home | Services | Advertising | Branding & logos | Central Web Unit

## Social media

## Social media

Marketing Services manages UNSW's central social media channels on Facebook. Twitter, Instagram, LinkedIn, Google+ and Pinterest. (YouTube is managed by UNSWTV.) Please click here to complete a request for Social media posting/content.

Please click here to request social media consultancy.

Requests for new UNSW social media channels must be approved by Marketing Services prior to creation.

UNSW has mandatory branding for social media channels. These are accessed via MyUNSW under Services for Staff (follow the yellow branding requirements button).

Please adhere to the UNSW Social Media communication guidelines when engaging in social media on behalf of UNSW. When using social media it is important that employees are clear about who is being represented and take responsibility for ensuring that any references to UNSW are factually correct and accurate, do not breach confidentiality requirements, and that respect is shown for the individuals and communities with which you interact.

## Social media workshops

Marketing Services hold free social media workshops throughout the year for staff with an interest in this area. Please contact Laura Rigby (laura.rigby@unsw.edu.au) for upcoming workshop dates.

Topics that have been covered in the past include:

- Social media 101
- Creative engagement on social media
- Social media strategy development
- Facebook timeline and mobile apps

### Job booking forms

- Advertising consultancy/booking
- Brand advice
- Campaign development
- Event promotion
- Graphic design
- Social media consultancy
- Social media content
- Home page web banner

### Contact Us

**Email:** marketingservices@unsw.edu.au

**Phone:** 9385 3752

*Figure 7.15: UNSW Marketing Service Page – Social Media*

*Table 7.3* below summarized the policy components covered in the social media guidelines of UNSW.

*Table 7.3: Coverage and components of Social Media guidelines in UNSW*

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Students** | What is Social Media | - | Brief description on the purpose of the social media guidelines |
| | Suggestions for using social media | Posting | • Careful when posting or tweeting contents and comments as it can be viewed by anyone.<br>• Avoid making racist / sexist comments |
| | | Privacy and Confidentiality | • Safeguard own privacy and the privacy of the others whose information is visible or accessible.<br>• Avoid breaching other's privacy by uploading unauthorized photographs or revealing information about them. |
| | | Others | • Treat people with respect even when there is a disagreement.<br>• Do not bully or harass others with the use of social media tool. |
| | Take more care in these situations | Compliancy | • Students representing themselves as UNSW's entity will be subjected to Student Code of Conduct.<br>• Using social media for academic purpose is subjected to plagiarism and academic misconduct rules.<br>• Use of UNSW WIFI and terminal with UNSW IP Address is subjected to IT Resources policy. |
| | | Professionalism | • Students should use the right channel to raise a complaint instead of via social media. |

*Table 7.3: Coverage and components of Social Media guidelines in UNSW (Continue)*

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| Staff | Purpose | - | Describes the purpose of the social media guidelines |
| | Definition of Social Media | - | Brief description about social media descriptions on some examples of social media channels. |
| | Risks associated with social media | - | Brief description on the risks associated with the use of social media. |
| | Social media branding | - | Mandatory branding for social media and the link to the appropriate channel (login requires). |
| | Best practices and recommendations | - | Includes guidelines to follow and consider before developing social media channel, guidelines to administer specific social media channel such as Facebook, Twitter, YouTube, UNSWTV, and iTunesU. Also included resources pertaining to the use of these social media channels. |
| | Rules of engagement | Compliancy | • Compliance to Code of Conduct |
| | | Transparency | • Use real name and declare position; admit mistakes (if any) |
| | | Publishing | • Be original, respect copyright. |
| | | Confidentiality | • Do not publish information which is not to be made public. |
| | | Posting | • Be polite, be considerate, and be professional. |
| | | Professionalism | • Stick to your area of expertise and talk about what you know<br>• Make sure your personal online activities don't interfere with your job performance.<br>• Be dedicated, be constant – get permission, listen, plan, contribute regularly and keep listening. |
| | Good customer service – dealing with posts | - | Described different type of posts, and recommended actions in handling each type of posts. |
| | Breach of policy | - | Penalty statement on the breach of policy. |
| | Rules of use for fans/followers | - | UNSW has developed a statement of rules of use for Fans/Followers of UNSW Social media channels. This statement need to be included in all the social media channels that UNSW Staff will be developing. |
| | Stages of banning a user on Facebook | - | A set of guidelines that listed the steps to be taken if the administrator of UNSW Facebook Page wants to ban or remove a user. |
| | Crisis management | - | Included actions to be taken (following the protocol) in relation to the use of social media during crisis (Critical or serious incident on campus or any other serious issues) |
| | University social media contacts | - | Contact details are included. |

*Summarized from: (https://student.unsw.edu.au/social-media-guidelines) and (https://newsroom.unsw.edu.au/sites/default/files/newsletter/UNSWSocialMediaCommunicationsGuidelines.pdf)*

### 7.4.3.2 The United Kingdom

The three universities in United Kingdom that were chosen for comparison were the University of Edinburgh, the University of York, and the University of Exeter. No specific criteria were used to select these institutions. They were chosen from the top 10 search results displayed on Google when the researcher searched for social media policies in UK Universities.

#### 7.4.3.2.1 The University of Edinburgh

The University of Edinburgh was established in 1852 and is one of the oldest universities in the United Kingdom. It has been consistently ranked in the top 50 universities in the world by QS World University Rankings (QS World University Ranking, 2014). In the University League Table 2015, the University of Edinburgh has been ranked number 21 in the United Kingdom (The Complete University Guide, 2014).

The University of Edinburgh has recently developed a new social media policy for staff. In the staff news published in Feb 2014, the University and its HR issued a statement as follow:

*"The University recognizes the benefits that the use of social media can bring to the organization and embraces the use of social networking for positive engagement within our working environment and as a communication tool to share important news, updates and events. The impact of social media can be extremely positive, however, if used inappropriately it could have a negative impact on the University or members of staff, students or the public. On this basis a policy has been developed which provides guidelines on the use of social media which is governed by some simple rules which we consider to be fair and appropriate."* (University of Edinburgh, 2014a)

Another great initiative associated with social media use has also been recently launched: The Digital Footprint Campaign. This campaign targeting students and staff, provides practical guidance on online safety and privacy, e-professionalism, creating online presence, professional networking and using social media for research and the impact within the University. The

campaign also provided resources and guidelines to staff who were integrating social media into teaching and learning activities (University of Edinburgh, 2014b).

The University of Edinburgh has a Social Media Directory (*Figure 7.16*) which listed all the official social media channels used within the Institution. This Social Media Directory is easily accessible at the bottom of the main Homepage, by clicking on the 'Connect With Us' link (*Figure 7.17*)

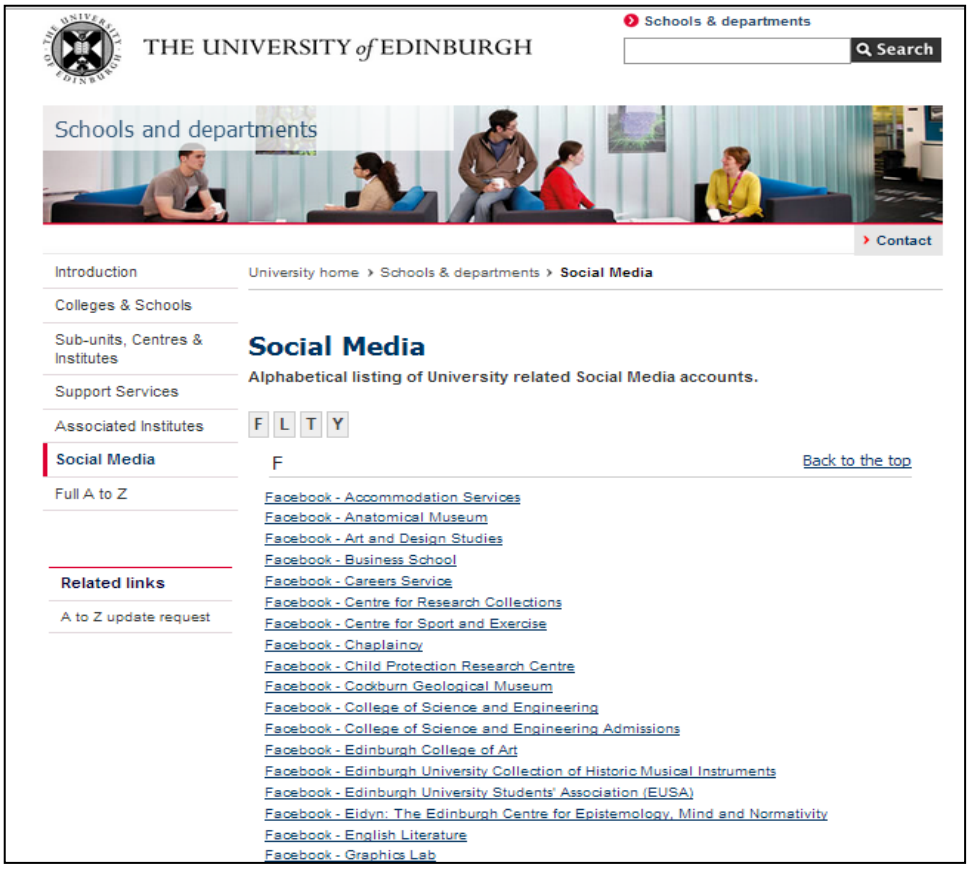


*Figure 7.16: Social Media Directory*

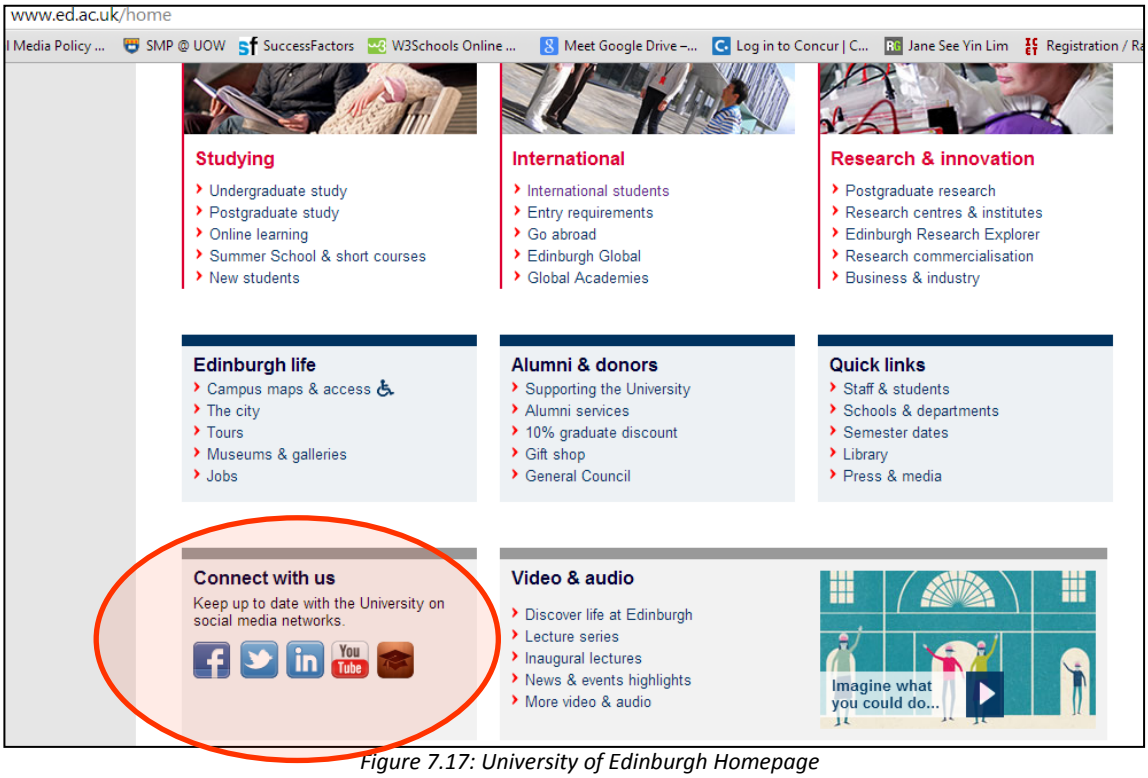



*Figure 7.17: University of Edinburgh Homepage*

After a thorough check on the Internet and the university's website, the researcher was not able to find any social media guidelines for University of Edinburgh's students. The researcher found a Social Media Policy for Edinburgh University Students' Association (EUSA), however, it is meant for staff and volunteers who work for EUSA, instead of students. The researcher also found that it was very difficult to access the social media policy for staff on the webpage as the policy was not listed on their policies and regulations page. The researcher only managed to access the Social Media Guidelines for Staff (Policy on Employee Use of Social Media) after searching for it using the Search Function provided in the webpage. *Table 7.4* summarizes the policy on employee use of social media and this policy is governed by the Human Resource Department of the university. This policy also applies to people who operate on behalf of the university, including the contractors, visiting lecturers, and agencies.

*Table 7.4: Policy on employee use of social media in University of Edinburgh*

| Audience | Components | Descriptions |
|---|---|---|
| Staff | Policy Statement | Brief explanations about the university's expectation on the staff's usage of social media. |
| | Scope and Purpose | Described the coverage of the policy including the target audiences, types of social media use, and purpose of use (personal and business). |
| | Responsible Use of Social Media | Described university's expectation on staff protecting university's reputation, privacy of oneself, colleagues, and students and confidentiality of University's information. |
| | Protecting Reputations and Relationships | Listed the situations in which disciplinary action would be taken in the event that the use of social media is tarnishing university's reputation and its relationships with their stakeholders. |
| | Confidential Information | Reminder for not disclosing confidential information and the need to comply with Data Protection Act and possible disciplinary action in the breach of the act. |
| | General Guidance on the use of Social Media | Reminder to employee to be careful with the disclosure of information through either their personal social account or disclosure of their association with the university through social media. |
| | Account Security | Reminder to employee on the protection of their security information such as login and password, and who they should refer to if they suspect unauthorized access has been gained. |
| | Breaches of this Policy | Described the list of potential breach of policies associated with the use of social media, and advice on next course of actions.<br>• Breach the Computing Regulations<br>• Breach the 'Social Media Guidelines for Staff and Researchers'<br>• Breach any obligations in relation to confidentiality<br>• Defame the University, or its affiliates, students, staff, suppliers or other stakeholders<br>• Harass or bully any employee, student or third party or breach the Dignity and Respect Policy<br>• Unlawfully discriminate against other employees, students or third parties<br>• Breach the Data Protection Policy |
| | Useful Links | Included links to all the associated policies. |
| | Policy History and Review | Described the implementation date of the policy and the next review date. |
| | Alternative Formats | Provided contact information in the event staff would like to request for different format of the document. |

*Summarized from: (http://www.docs.csg.ed.ac.uk/HumanResources/Policies/Social_Media_Policy-Employee-use-of.pdf)*

There is another more comprehensive Social Media Guideline for staff and researchers, which is accessible via the link provided in the previous policy on employee use of social media in the university. This document is a 15-page document and was implemented in December 2011. It is meant for staff and researchers who wish to create an official social media presence within the

University. *Table 7.5* depicts a summary of the social media guidelines while *Figure 7.18* depicts a Flowchart for dealing with comments about the University of Edinburgh.

*Table 7.5: Social Media Social Media Guidelines for staff and researchers*

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff & Researchers** | Overview | - | Included brief overview on the policy, its purposes, opportunities and potential risks associated with the use of social media. Also included brief Do's and Don'ts for General guidance for personal participation, General guidance for hosting a presence, and good practice. |
| | Personal participation in social media | Introduction | Brief descriptions about the personal use of social media. |
| | | Personal responsibility | Reminder to staff about their legal and moral responsibility of not to bring the organization into disrepute, and maintaining university's reputation at all-time even when they use it for personal purpose. Be professional and set the right tone when posting/commenting. |
| | | Disclaimer | Advice to include 'Disclaimer' if commenting on University related matters. |
| | | Deciding what material can be blogged or commented on. | Advice on what can be posted or blogged. E.g. Publishable or public materials, non-commercially confidential information, non-official reports or announcement. Include credits if sharing already public works like publications, websites, annual reports, etc. |
| | | Comments about the University on your social media presence | Advice on how to handle notable comments about the university that appears in the personal blog, website or social media channels. Included a flowchart on how to deal with comments. |
| | | Comments you make on other social media presences. | Advice on what can be commented on other social media presences as the personal identity of a staff can be associated to the professional role of the university. |
| | | Legal considerations | Reminder on the other policies associated with the use of social media (e.g. Data protection act, Terms & Conditions, Usage policy, etc.) |
| | Building an official presence | Introduction. | Brief descriptions about the use of social media for official purpose. |
| | | Set-up | Advices on how to setup the new official social media presence, who to seek approval from, appointment of a contact person to maintain common editorial line and moderating of comments, concern about branding and identity issues and who to contact, and transparency on the social media identity (profile) |
| | | Posting | Included the general guidelines for posting on the social media. Include the Tone and authenticity, and frequency of updates on the social media channels. |

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff & Researchers *(Continue from p. 262)*** | Building an official presence *(continue from p. 262)* | Accessibility | Advice on the need for alternative mode of communication in the event the audiences are unable to access the social media channels. |
| | | Updating your social media presence | Included the Do's and Don'ts when posting, publishing, or commenting on Social Media channels. |
| | | Comments | Guidelines on handling comments received - Follow the Comment moderation flowchart. Included some good criteria of comments or posts: Transparency, sourcing, timeliness, Fair, don't stifle discussions, and measure. |
| | | Freedoms of information request | Included guidelines on how to respond to Freedoms of Information (FOI) Requests |
| | | Exit Strategy | Guidelines on how to handle comments, contents or information on social media channels in the event that the social media presence has to cease its operation. |
| | Questions or comments about these guidelines | - | Included the contact information in which any questions or comments about the policy could be directed to. |
| | University policies | - | Included links to associated policies in which staff need to be compliant with when using social media (E.g. University Brand Guidelines, Computing Regulations, Data Protection, Dignity and Respect Policy, Disability Policy, Disciplinary Policy and Procedure, etc. |
| | Flowchart for dealing with comments about the University | | Included a flowchart that explains what actions staff should take in dealing with comments. |

*Summarized from: (http://www.ed.ac.uk/polopoly_fs/1.78322!/fileManager/111201%20UoE-Social-Media-Guidelines.pdf)*

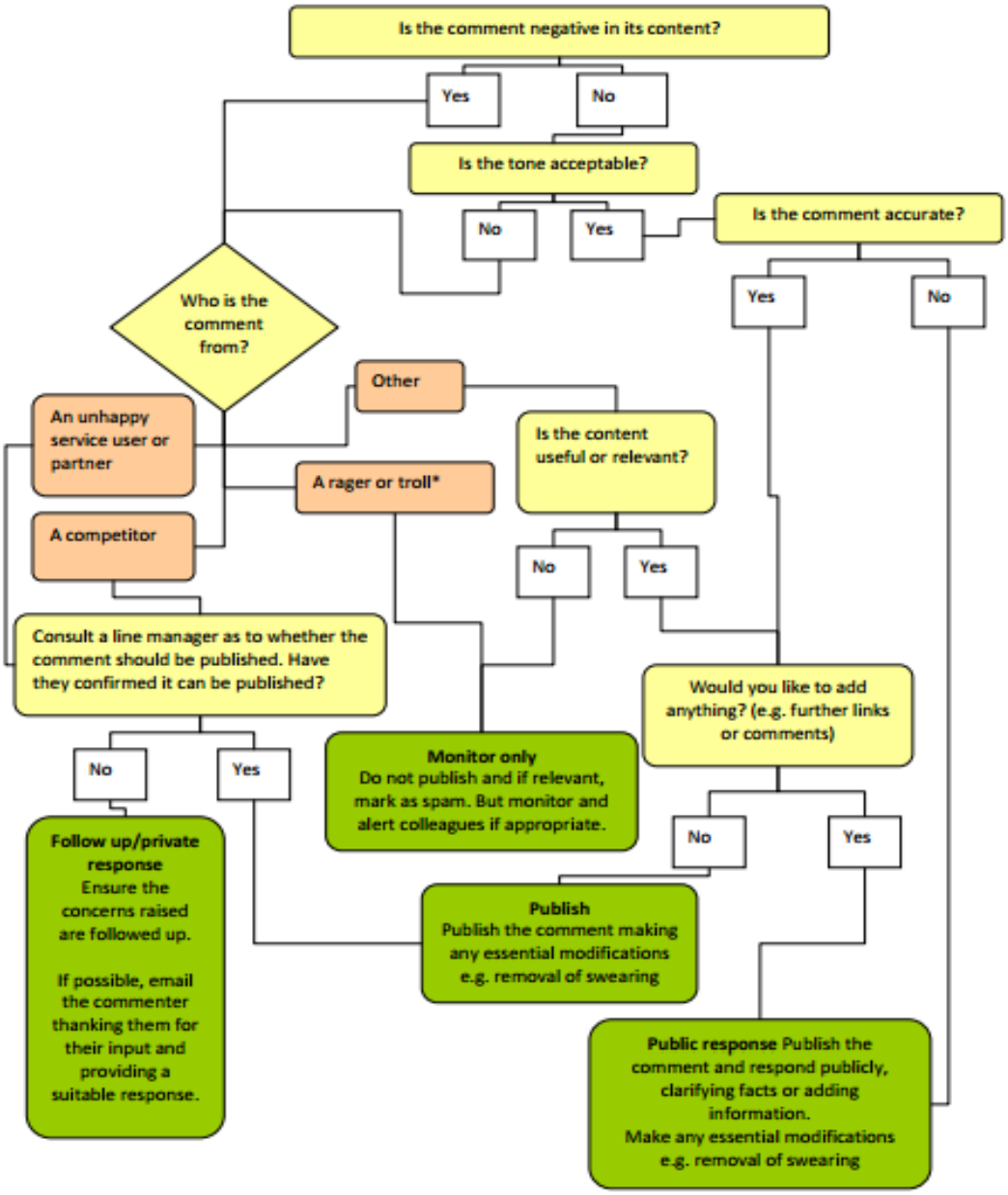



*Figure 7.18: Flowcharts for dealing with comments about University of Edinburgh*
*Extracted from:* http://www.ed.ac.uk/polopoly_fs/1.78322!/fileManager/111201%20UoE-Social-Media-Guidelines.pdf)

### 7.4.3.2.2 The University of York

The University of York opened in 1963 and has just celebrated its 50 years anniversary in 2013. Starting with only 250 students, it has grown to 15,253 students in December 2013 (University of York, 2014a). The University League Table 2015 by The Complete University Guide 2015, ranked

University of York, 14th in United Kingdom, and in the top 150 universities in the world by QS World University Rankings (QS World University Ranking, 2014). The University of York uses various social media channels such as Facebook, Twitter, and YouTube to establish its social media presence (*Figure 7.19* – Circled in red). The University of York also has a Social Media Directory which is not easily accessible via its website. The researcher found it by two means: (1) Via the Search function of the Homepage; (2) Via the Communication and Marketing Page (which was also accessible via the search function). This Social Media Directory (*Figure 7.20*), shows that University of York is using Flickr, FourSquare, Blogs, and Instagram as its official social media channel, however, only the logo of Facebook, Twitter and YouTube could be seen at the bottom of its webpages.

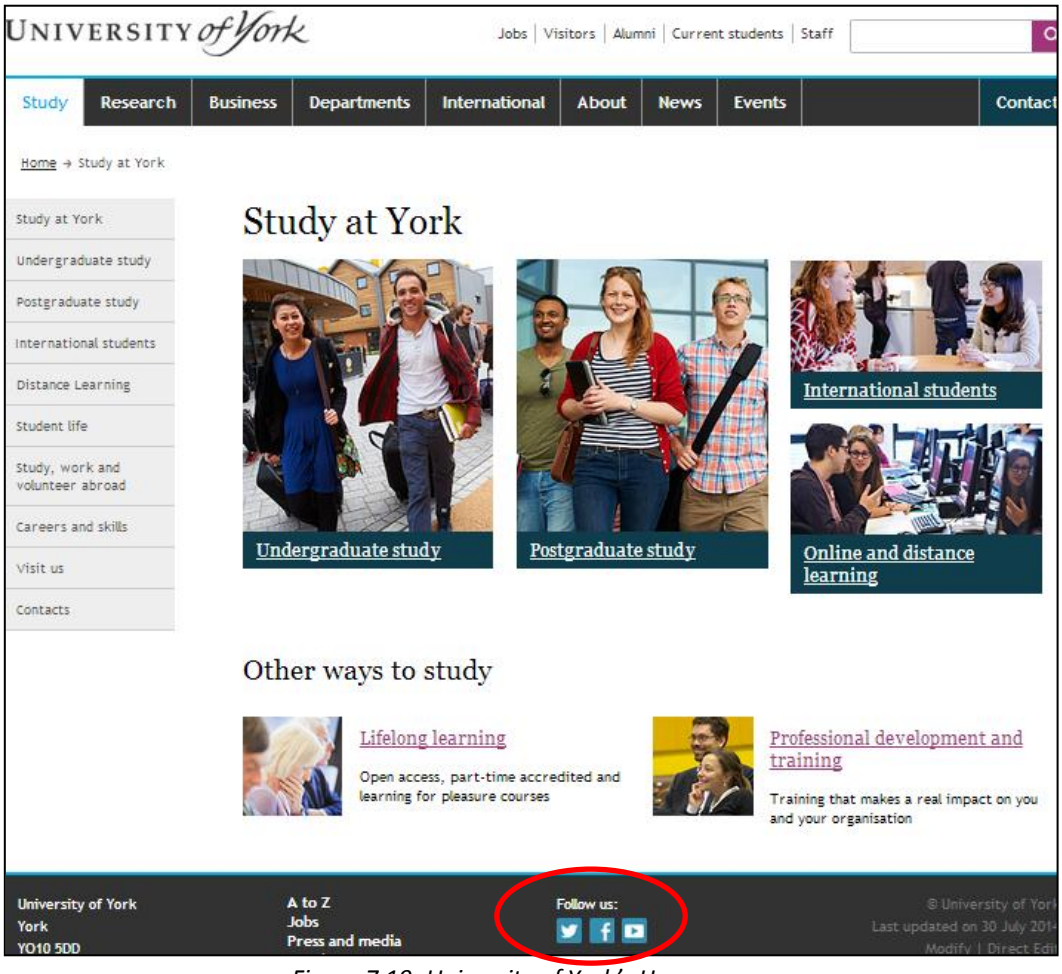



*Figure 7.19: University of York's Homepage*

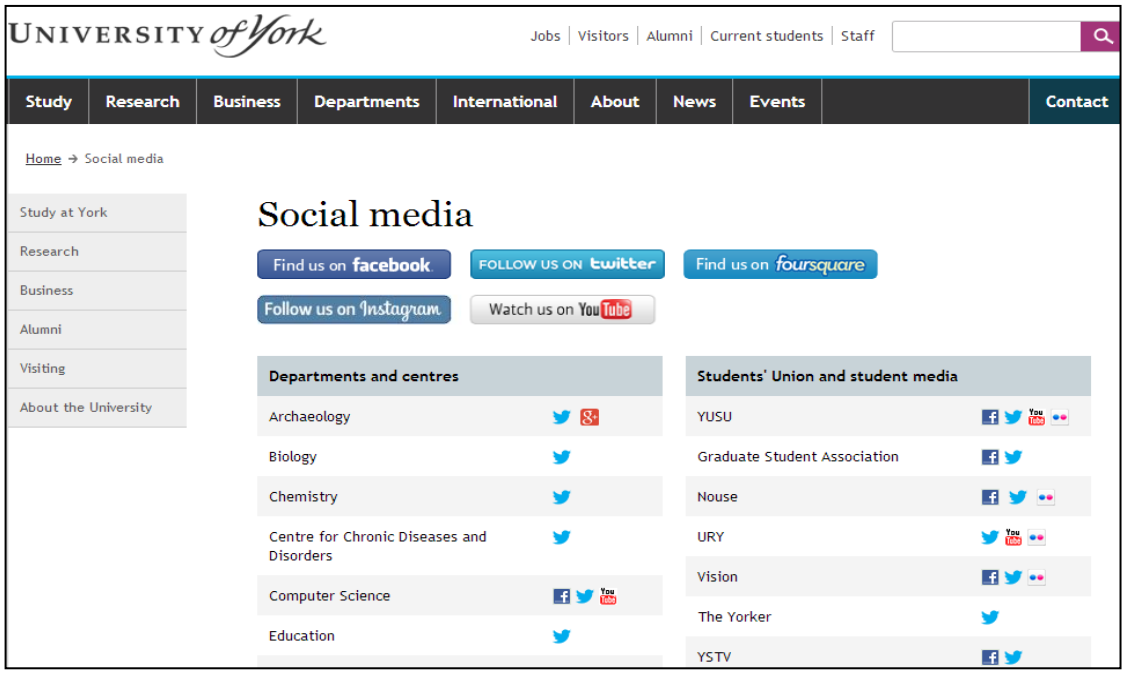



*Figure 7.20: University of York's Social Media Directory*

Despite a thorough check of the Internet and the university's website, the researcher was not able to find the social media guidelines for University of York's students. The Social media guidelines for staff are accessible via the Human Resource Department page, in the policies and procedures section (Refer to *Figure 7.21*).

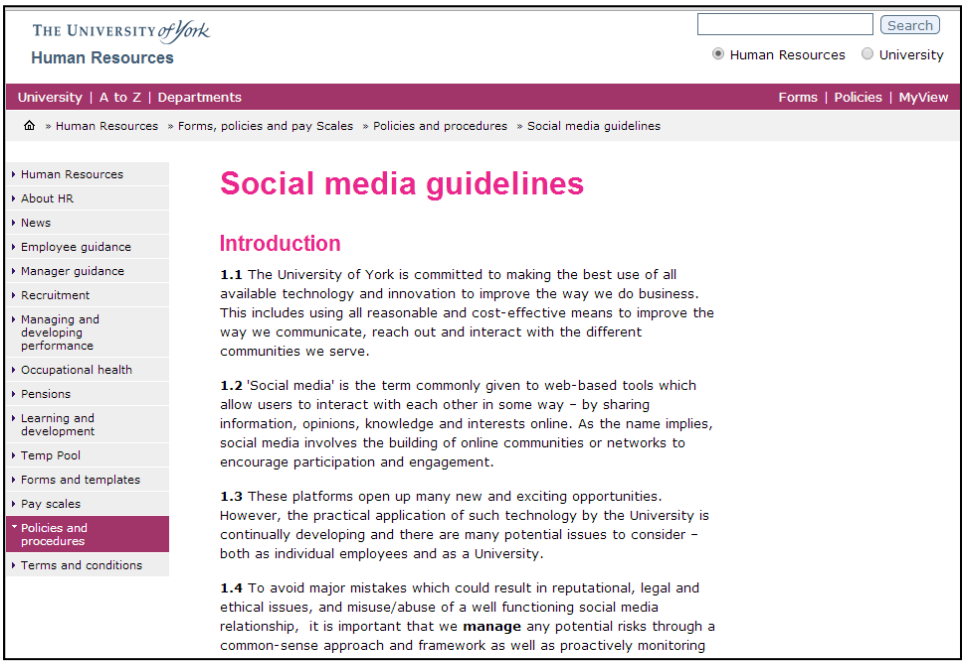



*Figure 7.21: University of York's Human Resource Page*

The summary of the components covered in the social media guidelines for staff which was last reviewed on October 2012 is listed in *Table 7.6* below.

*Table 7.6: Coverage and components of Social Media guidelines in University of York*

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| Staff | Introduction | - | Brief description on social media, benefits of social media to the university, and possible consequences. |
| | Aim | - | Described the aim or purpose of the guidelines. Included links to associated policies (Use of Computing Facilities, and others). |
| | Definition of social media | - | Brief description on social media and reminder on the need to comply with guidelines related to specific social media used. |
| | Use of Social Media | - | Statements of advices on the appropriate use of social media in the university.<br>Guidelines for professional use of social media includes:<br>• Breach of confidentiality,<br>• Do anything that could be considered discriminatory, or bullying or harassment of an individual,<br>• Bring the university into disrepute<br>• Breach of copyright.<br>Examples are included for each element above. |
| | Excessive Use of Social Media at Work | - | Statement that advised staff on the reasonable and appropriate use of social media at work. |
| | Monitoring Use of Social Media During Work Time | - | Statement that states the university's right and the circumstances in which employee's internet usage will be monitored. Subjected to Information Security Policy and associated IT policies. |
| | Social Media in your personal life | - | Guidelines on employee's use of social media in personal capacity. Employees must not:<br>• Breach of confidentiality,<br>• Do anything that could be considered discriminatory, or bullying or harassment of an individual,<br>• Bring the university into disrepute<br>• Breach of copyright. |
| | Use of Social Media in the recruitment process | - | Guidelines on the circumstances where social media will be used for recruitment process. Recruitment process subjected to Equal Opportunities policy and Recruitment Policy. |
| | Disciplinary action over social media use | - | Penalty statement on the breach of policy. Subject to University's Disciplinary procedure. |
| | Public Interest Disclosure (Whistleblowing) | - | Subject to Public Interest Disclosure Policy |
| | Review | - | Statement on the annual review of the guidelines. |

*Summarized from*: (*http://www.york.ac.uk/admin/hr/resources/policy/social-media-guidelines.htm*)

For staff or departments who wish to create an official social media presence, they are required to follow the Social Media Guidelines set by the Communications and Marketing Division. Refer to *Figure 7.22* for the Social Media Toolkit (Circled in red) which requires authorized login to access.

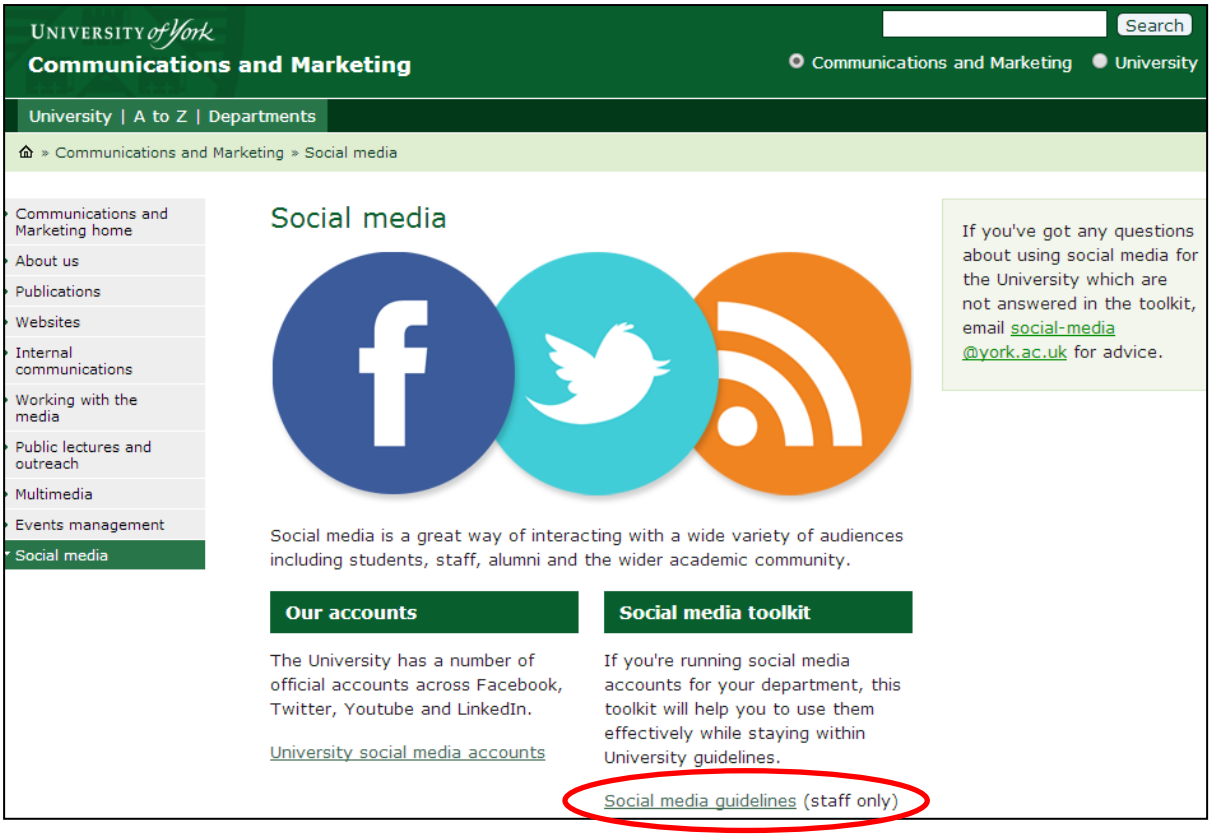



*Figure 7.22: Communications and Marketing Page*

### 7.4.3.2.3 University of Exeter

University of Exeter was founded in 1955. It is a member of the Russell Group of leading research-intensive universities (University of Exeter, 2014a). As of 2014, the University of Exeter had more than 19,000 students from many different nationalities (University of Exeter, 2014b). The University of Exeter has a dedicated page that lists all the official social media channels (social media directory) such as YouTube, Facebook, Twitter, Instagram, Blogs, Flickr, LinkedIn and RSS. This page is easily accessible via the main homepage, under the 'Contact us' or 'About us' -> 'Facts & Figures' Section (refer to *Figure 7.23* ~ circled in green).

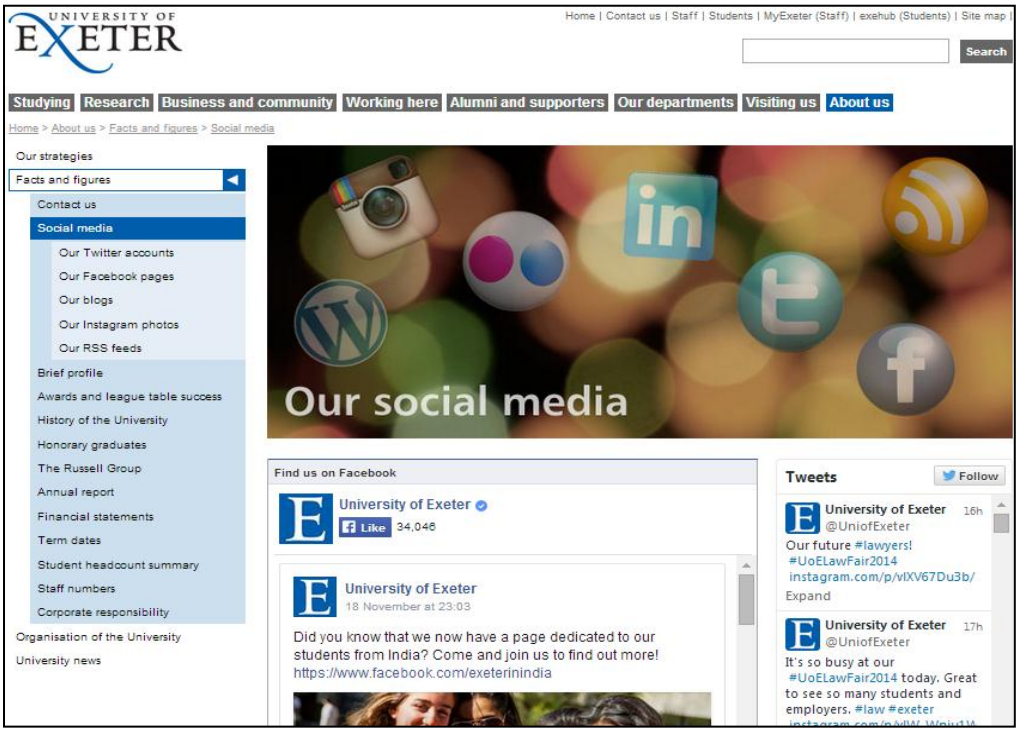



*Figure 7.23: Social Media Page of Exeter University*

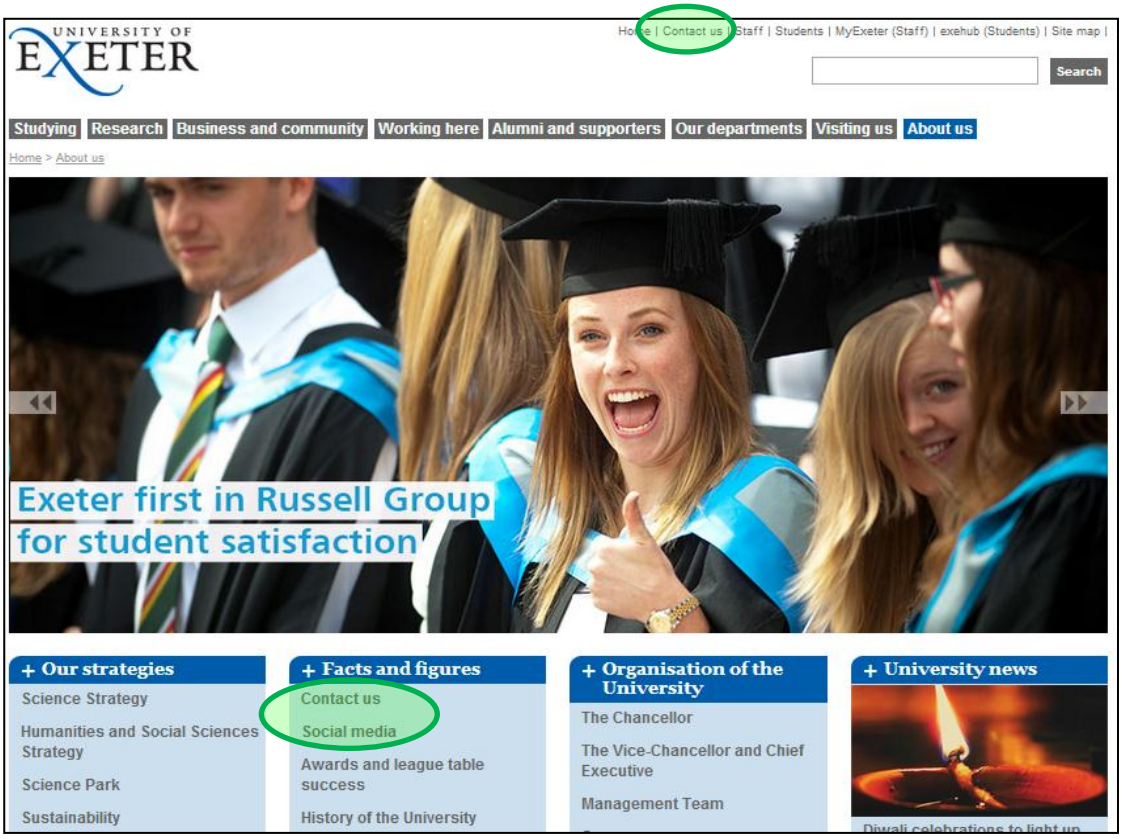



*Figure 7.24: University of Exeter's About Us Page.*

The social media policies or guidelines of the University of Exeter are accessible via a few methods: (1) Our departments –> IT Department –> Information Security –> Security Tips –> Social Media (refer to *Figure 7.25* ~ Circled in blue); (2) Working Here –> Current Staff –> Web Support –> Social Media Guidelines (refer to *Figure 7.26*); (3) Working Here –> Current Staff –> Equity and Diversity –> Dignity and respect –> Good Practice Guide: Social Media (refer to *Figure 7.27*).

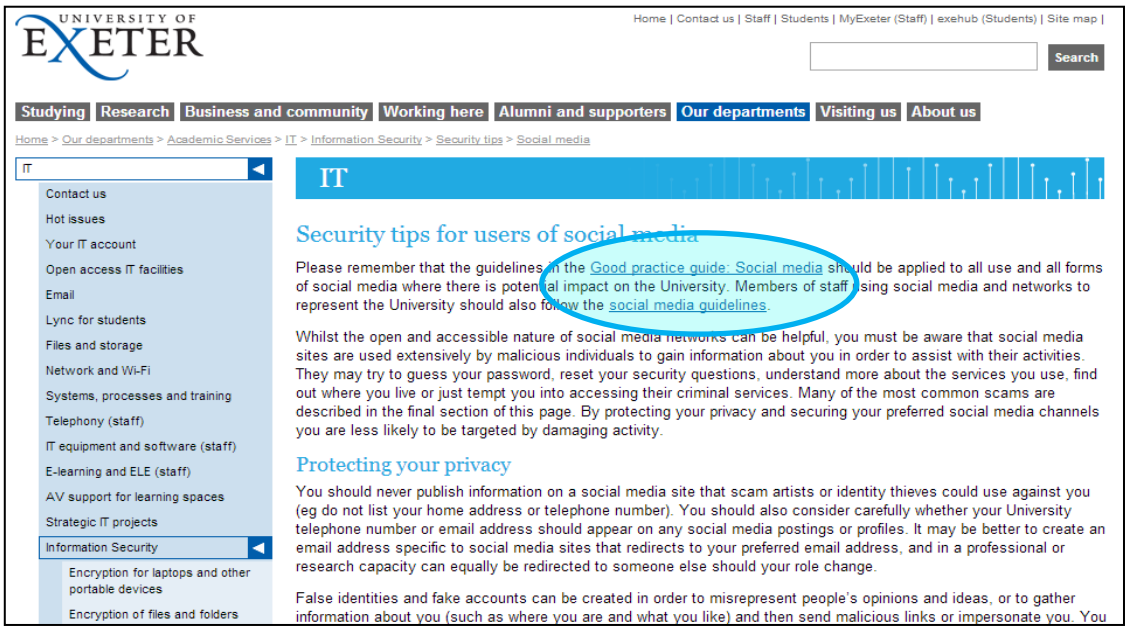



*Figure 7.25: University of Exeter's IT Department Page.*


*Figure 7.26: Social Media Guidelines Page.*

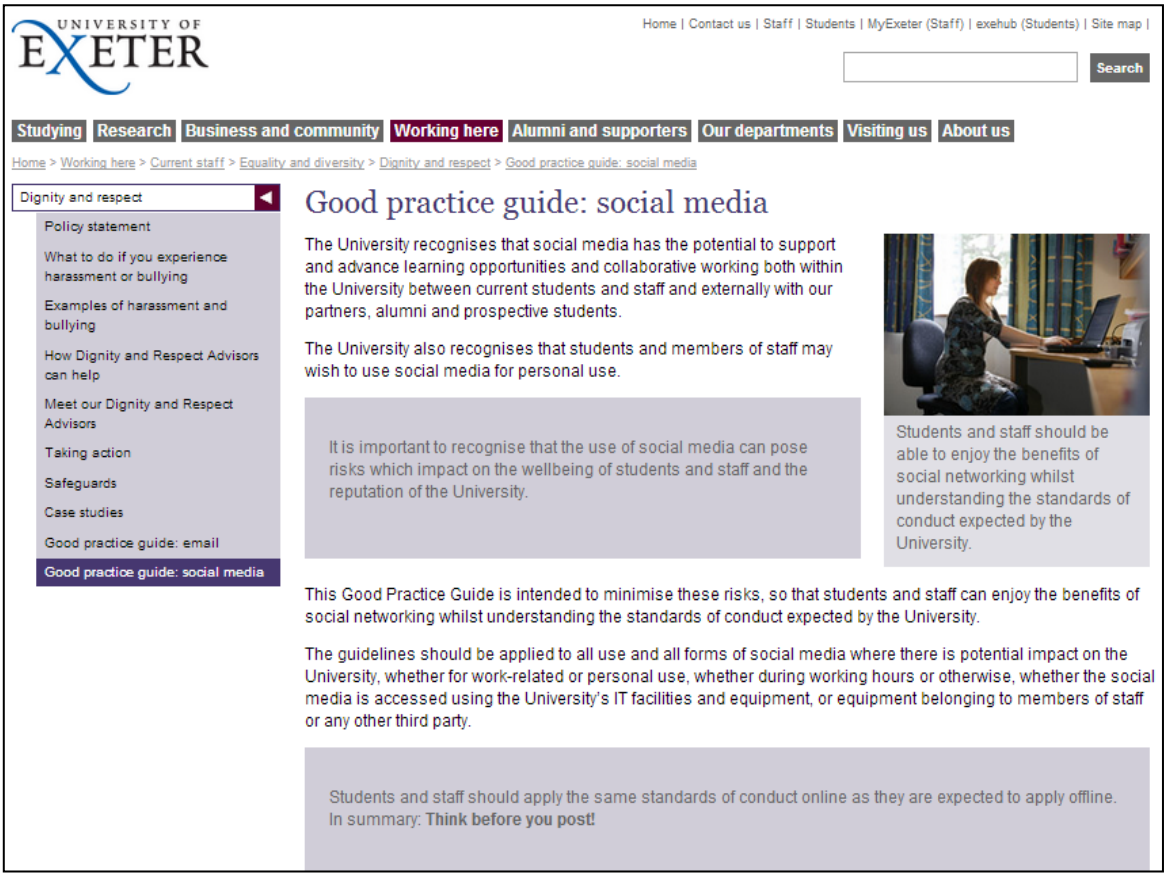



*Figure 7.27: Good Practice Guide: Social Media Page.*

There are two documents related to social media practice in the University of Exeter. The first document is the 'Good Practice Guide', which is a general guide for personal use or work-related use which might have potential impact on the university, while the second document is the 'Social Media Guidelines', which is a more comprehensive and specific guide for those who plan to use social media to represent the university. The Good Practice Guide is meant for both student and staff, however, it is not accessible via the Student's page. A summary of both documents is listed in *Table 7.7* below.

*Table 7.7: Coverage and components of Social Media guidelines in University of Exeter*

| Audience | Components | Descriptions |
|---|---|---|
| **Staff & Student** (Good Practice Guide) | Introduction | Explained the purpose of the guide. |
| | Responsibility | • Responsibility in posting or commenting in the social media.<br>• Apply honesty and appropriate transparency in online conversations. |
| | Disciplinary Procedures | Penalty statement on the breach of university's policy (Dignity and Respect Policy). Also include a list of elements that staff / students should avoid in their posts and comments (defamatory, derogating, bullying, threatening, etc). |
| | University response to misuse of social media | List the actions that university will take if there is a misuse of social media. (E.g. removal of the post, etc). Subjected to IT Regulations. |
| | Using Social Media at Work | List the University's expectation on staff's usage of social media at work. Also list the circumstances in which social media are permitted. |
| | | |
| **Staff** (Social media policy for employees) | Purpose of the policy | Explains the purpose of the policy. |
| | Who does this apply to? | Describes the audience of this policy. |
| | Principles | Describes the do's and don'ts when using social media. Also describe the actions that university might take if there is an inappropriate use of social media by staff. |
| | Responsibility | Describes the responsibilities related to the use of social media by every individual in the institution (e.g. Staff, line manager, and Marketing and Communication unit). |
| | Further Guidance and Advice | Provide hyperlinks to associated guidelines and policies. Also include the link to the contact of Social Media Manager for further advice and guidance. |
| | | |
| **Staff** (Social Media Guidelines) for Professional Use. | Social Media Guidelines | Include the purpose statement of the guideline. This document also includes detail guidelines on using Facebook, LinkedIn, Twitter and YouTube. |
| | Why Engage in Social Media? | Described the benefits of social media. |
| | Things to remember | Described some tips of maintaining and using social media for professional purpose. E.g. Commitment, engagement, appropriate posting and comments, etc. |
| | Security | Advices on protecting personal and university's social media account. |
| | How to behave? | Included guidelines and rules for staff or contractors who involved in online commentary. Covers the following areas:<br>Transparency, honesty, professionalism, appropriate posts and comments, privacy and confidentiality, etc. |

| Audience | Components | Descriptions |
|---|---|---|
| **Staff**<br>(Social Media Guidelines) for Professional Use.<br>(Continue from p. 272) | How to use social media successfully? | Included suggestions on how social media could be used successfully. E.g. Useful ideas for Interactions, Sneezers, Go-Giving, Monitoring, Use the right networks, and measuring success. |
| | Facebook | Brief introduction on Facebook, University presence and ownership, how to create a new presences, who to contact, what to say and how to say it, what are the possible issues. |
| | Twitter | Brief introduction on Twitter, University presence and ownership, how to create a new presences, who to contact, what to say and how to say it, what are the possible issues. |
| | LinkedIn | Brief introduction on LinkedIn, University presence and ownership, how to create a new presences, who to contact, what to say and how to say it, what are the possible issues. |
| | YouTube | Brief introduction on YouTube, University presence and ownership, how to create a new presences, who to contact, what to say and how to say it, what are the possible issues. |

Summarized from: *(http://www.exeter.ac.uk/staff/equality/dignity/socialmedia/)*, http://www.exeter.ac.uk/staff/employment/hrpoliciesatoz/socialmedia/ and (http://www.exeter.ac.uk/staff/web/socialmedia/)

The University of Exeter has a comprehensive set of security tips for users of social media which includes guidelines on protecting privacy, information on how to set privacy settings for major social media channels, passwords for social media sites, malware, and descriptions and examples of social media scams which users should be aware of.

### 7.4.3.3 The United States of America (USA)

The three universities in the United States of America (USA) that were chosen for comparison were Harvard University, Vanderbilt University, and Michigan University. No specific criteria were used to select these institutions. They were chosen from the top 10 search results displayed on Google when the researcher searched for social media policies in US Universities.

#### 7.4.3.3.1 Harvard University

Harvard University was established in 1636, making it the oldest university in the United States. It is also one of the private Ivy League research universities in Cambridge, Massachusetts with about

21,000 students and more than 323,000 living alumni (Harvard University, 2014). Harvard University has been ranked the 2nd University in United States and 4th in the World for 2014/2015 by QS World University Rankings (QS World University Ranking, 2014).

In terms of Social Media engagement, Harvard University was named No. 1 for social media use among colleges in the United States, thanks to its Harvard Social Media Dashboard (Alspach, 2012). The Harvard Social Media Dashboard, which is accessible via the homepage of Harvard University, allows people to tweet, post and view the videos relevant to the University. The Social Media Dashboard can be accessed via two ways: (1) At the bottom of the homepage (*Figure 7.28*) through links to the various official social media channels of the university, and the real-time updates of tweets from Twitter and posts from Facebook are made available; (2) Via the Social Channel's section on the homepage or Dropdown list (*Figure 7.29*), in which upon clicking will link to the Social Media page that housed the Social Media Dashboard and Social Media Directory (Figure 7.30).

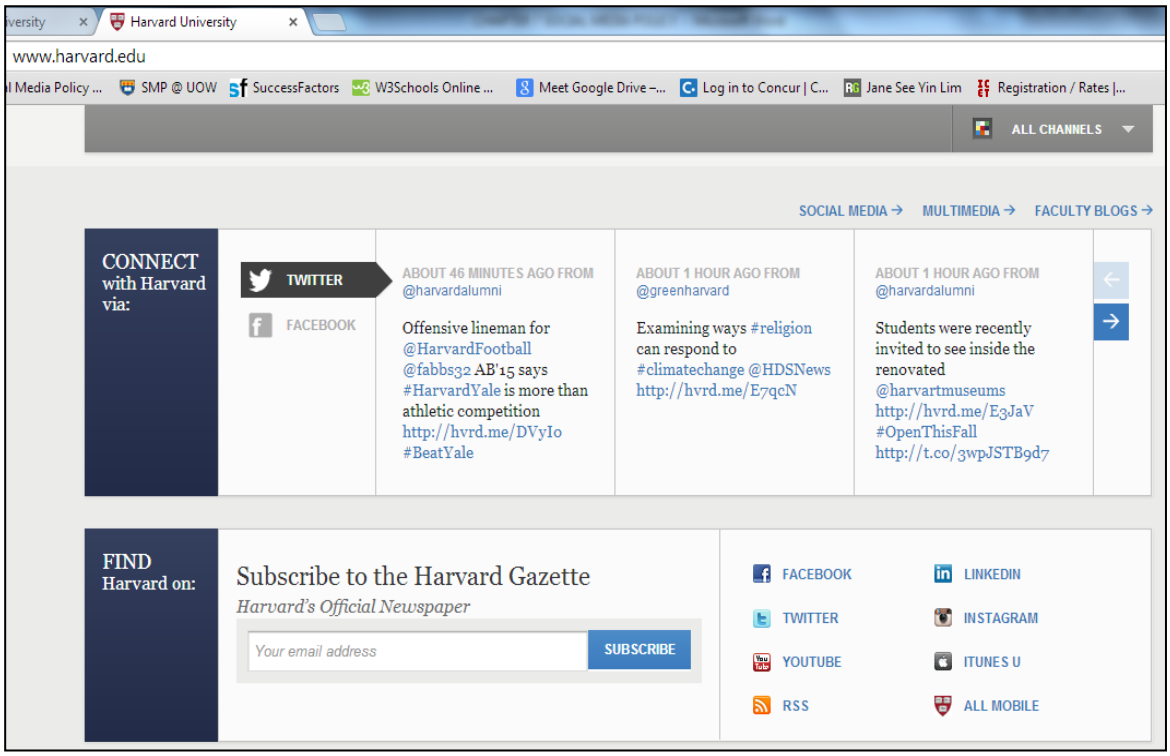



*Figure 7.28: Social Media Dashboard of Harvard University (1)*

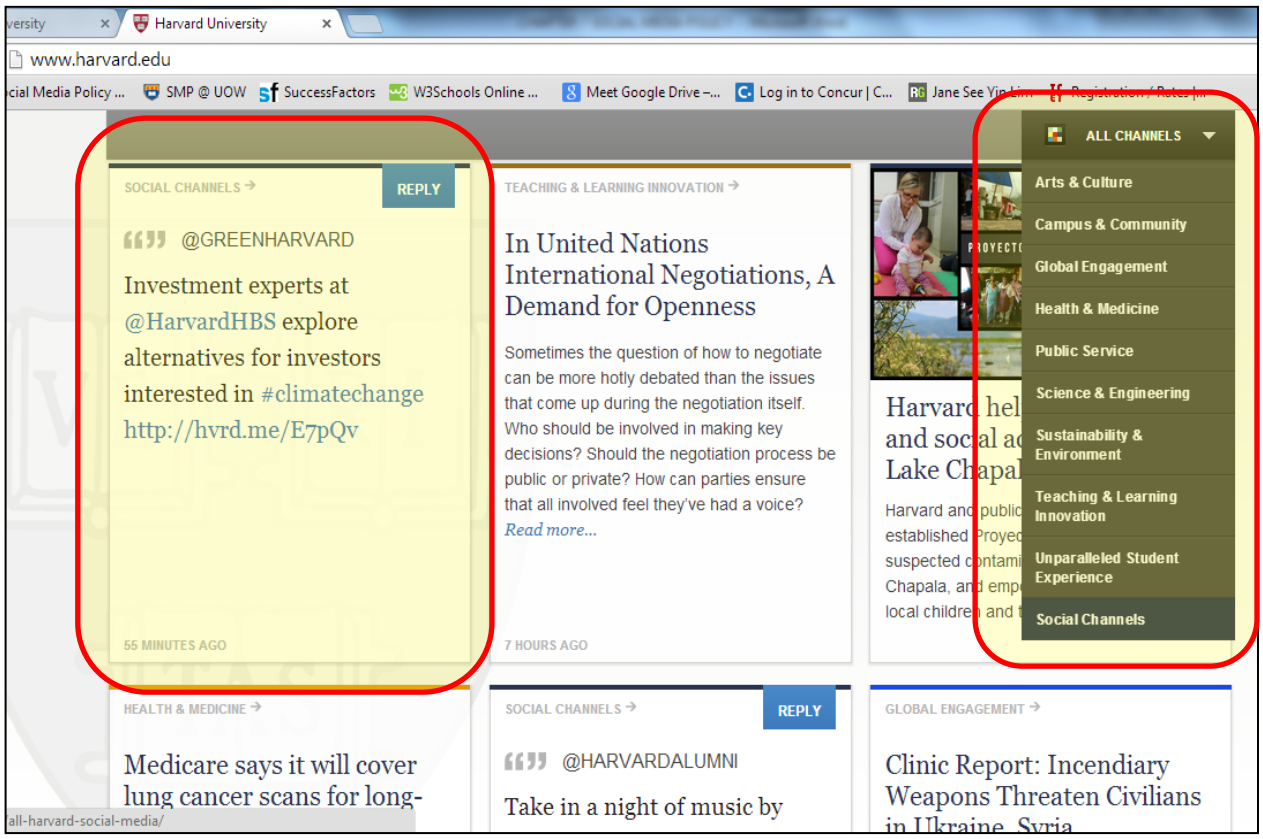



*Figure 7.29: Social Media Dashboard of Harvard University (2)*

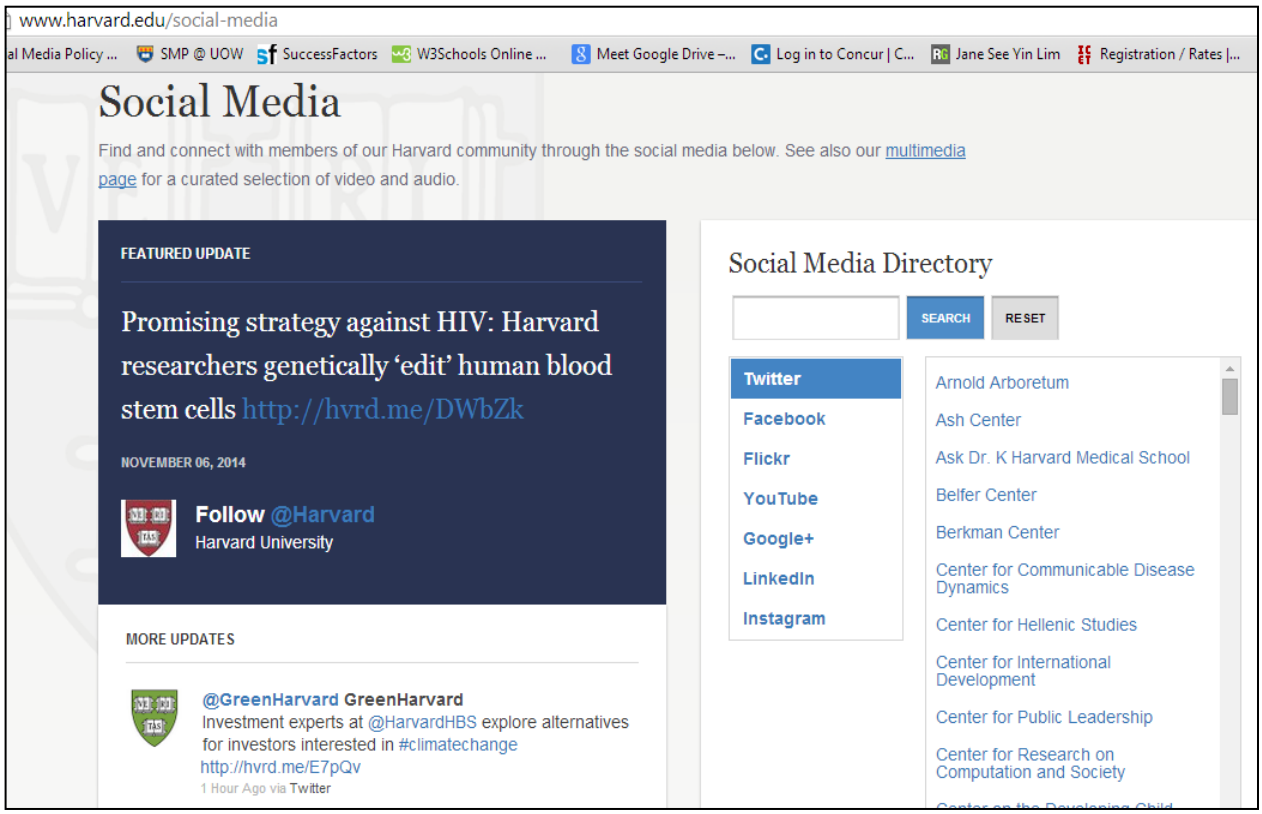



*Figure 7.30: Social Media Dashboard of Harvard University (3)*

The researcher carried out a thorough check on the Internet and Harvard University's website, and was unable to find the General Social Media Policy or Guidelines for Harvard University's students. The only available Social Media Guidelines for students is accessible via Harvard Medical School's Student Handbook Section. It has a very brief description about Social Media usage and a link to the University's Social Media Guidelines. However, the document that it is linked to is actually the Guidelines meant for staff. As all medical students are attached to Massachusetts's Hospital, thus, they are also subjected to the hospital's social media policy as well. Refer to *Figure 7.31*: Student Handbook of Harvard Medical School.

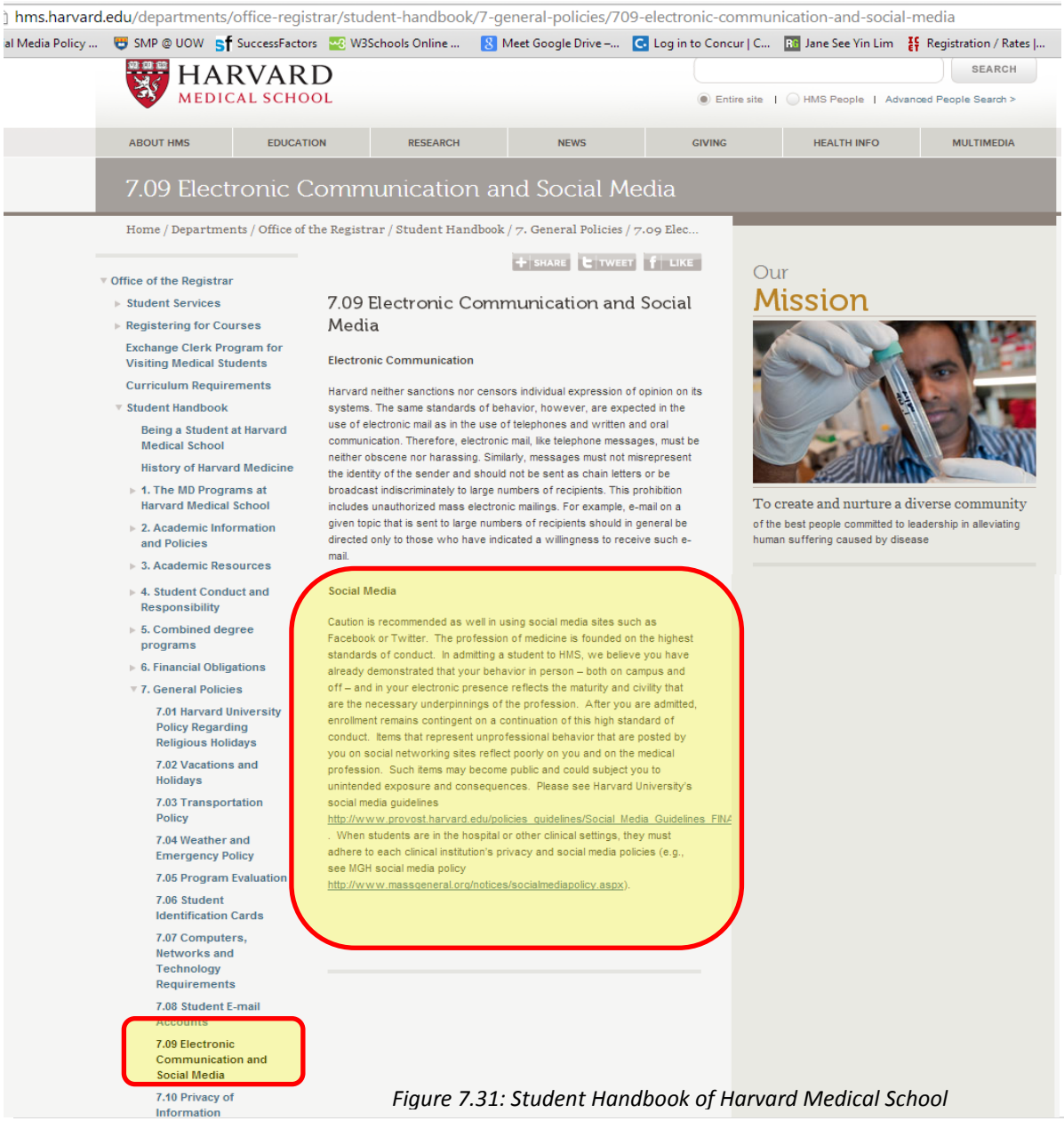



*Figure 7.31: Student Handbook of Harvard Medical School*

As for the social media policy for staff, it is accesible via their Staff Page (known as Harvie – Harvard Information for Employees) of the Website, under the 'Forms, Policies & Contracts' Section. The policy or guidelines has just been reviewed in August 2014 and this guideline is only meant for staff who wish to create a social media presence on behalf of the university. *Table 7.8* summarized the Guidelines for Using Social Media in Harvard University.

*Table 7.8: Guidelines for using Social Media in Harvard University*

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff** | Introductory Section | - | Brief explanations on the recognition of social media uses within the university, the engagements, and the benefits. Also included the purposes of the guidelines. |
| | Individuals Covered by the Guidelines | - | Lists the target audiences of the guidelines. |
| | Reasons for these guidelines | - | Includes the reasons or purposes of these guidelines. |
| | Guidelines | - | Explained the coverage of the guidelines and what the guidelines do not intend to do. |
| | Getting Started | - | Includes standardizes protocols for opening new social media accounts (e.g. Seek approval from local leadership for creating a social media account, appoint a manager. Once a social media account is created and active, email Digital Strategy to add the account to the University's Social Media Directory. |
| | | For areas within Central Administration | The need to contact Harvard Public Affairs & Communications (HPAC) Digital Strategy to:<br>• identify the individual's role in managing the social media account<br>• briefly explain the purpose of the account<br>• join a community of peers to share social media best practices<br><br>Once the social media account is up and running, Digital Strategy Unit need to be informed so that the new Social Media account could be added to the Social Media Directory. |
| | | Account Agreements | Terms of Service or other contractual terms and conditions that users need to agree upon (legally binding contract). |

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff** | Principles | - | Principles to guide authorized individuals to use social media to speak on Harvard's behalf. |
| | | Confidentiality | Reminder for not posting confidential or proprietary information about the University, the students, staff, department, alumni and faculty. Subjected to University and local policies, applicable federal and state laws and regulations such as the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and the Family Educational Rights Privacy Act (FERPA). |
| | | Privacy | Discussion or posting involving names or photos of individual without prior permissions is not allowed. Included the possible impacts caused by social media: Permanence, Audience - confidentiality, Association. |
| | | Do not harm | The use of social media should not harm the university, faculty, students, alumni, or its employees. Provided 3 example of situations in which the use of social media causes unintended harm to the University or its community. |
| | | Access and security | Guidance on maintaining secure communications via social media. Includes: Passwords guidelines, & social media account access (differentiate personal use from professional use). |
| | | Personal Responsibility and Liability | Included some practical tips for representing Harvard online and in an official capacity: Affiliation, Be sensitive about confidentiality, Accuracy, Avoid infringement (copyright), and Be thoughtful and discreet when postings. |
| | | Transparency and Endorsement | Clearly state the position and relationship with the university. Also need to know the limit of authority a person can speak on behalf of the university. Social media should not be used to promote or transact any third-party commercial business. |
| | | Use of the Harvard Name | Included a set of guidelines for the use of Harvard's name and insignias in social media. Harvard University has established the Harvard Trademark programs to ensure Havard's trademarks (name and insignia) are properly used. Included link to the 'Use of names' policies, email contacts of Harvard Trademark Program and Harvard Digital Communication Unit. |
| | | Accessibility | Reminder to social media content owners or administrator to consider the accessibility of the social media channels created by all the community including the disabled people. |
| | | For Recruiters | Brief explanations about the unsuitability of using social media as a recruitment tool. All applications need to go through the ASPIRE system of the university and offers of employment cannot be done via social media. |

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| Staff | | Incidental Personal Use | Guidelines to strengthen advice on incidental use in the workplace and recommended steps to avoid conflicts. |
| | Related Policies and Regulations | - | Included a list of related policies (with hyperlinks) by department in charged. For examples: Information Security and Privacy Policies, Conflict of interest Commitment, Copyright resources, Social Media Guidelines by Harvard Public Affairs & Communications (HPAC), Harvard Business School's Social Media and Blogging Policy, etc. The access to some of these policies requires login access. |
| | Additional Resources | - | Included list of contacts for further inquiries or clarification. For example, Local Human Resource Representatives, Office of Labor & Employee Relations, Office of the Provost, etc. |
| | What's New in Version 2.0 (effective August 18, 2014) | - | Included a list of updates or changes done to this new version of policy. |

*Source: (http://provost.harvard.edu/files/provost/files/social_media_guidelines_vers_2_0_eff_081814.pdf)*

#### 7.4.3.3.2 Vanderbilt University

Vanderbilt University founded in 1873, is a private research university and medical centre offering a wide range of undergraduate, postgraduate and professional degrees. It is ranked 46th in the United States and 182nd in the World Ranking for 2014/2015 by QS World University Rankings (QS World University Ranking, 2014). The total enrolment in 2014 was about 12,795 (Vanderbilt University, 2014a). Vanderbilt University makes use of various social media channels to connect with their students, employees, the public, alumni etc. It has a very comprehensive social media page, known as 'get.social@vanderbilt', which could be easily accessed via the main homepage. *Figure 7.32* depicts the main homepage of Vanderbilt University and how it could be linked to the Social media Page (*circled in red*).

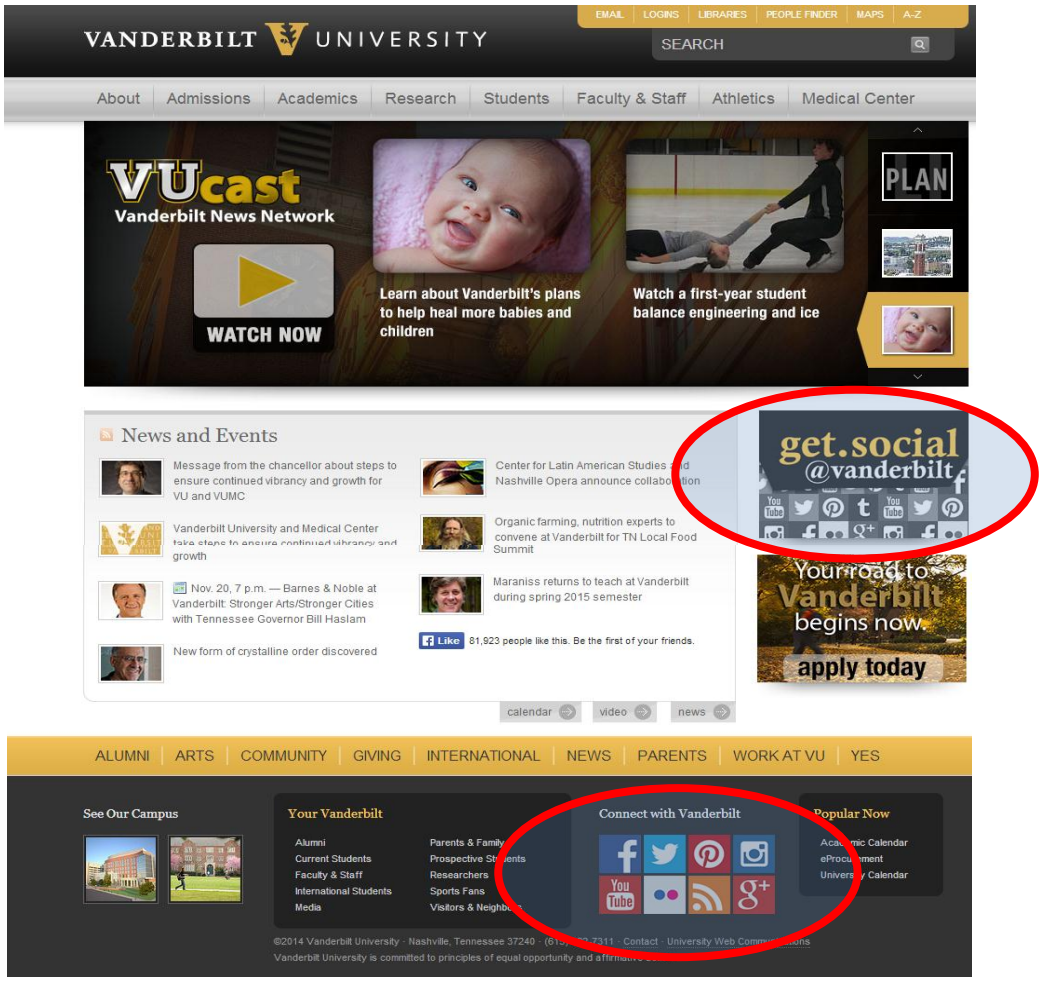



*Figure 7.32: Vanderbilt University's main homepage*

The social media page of Vanderbilt University is shown in *Figure 7.33*. By clicking on the 'Find Vanderbilt on Social Media' (*Figure 7.33* ~ Circled in yellow), users will be directed to the Social Media Directories of all the official channels *Figure 7.34*. Vanderbilt University also has a comprehensive set of social media guidelines that is called the 'Social Media Handbook'. The Social Media handbook is easily accesible from the social media page (circled in blue). *Figure 7.35* in pdf format.

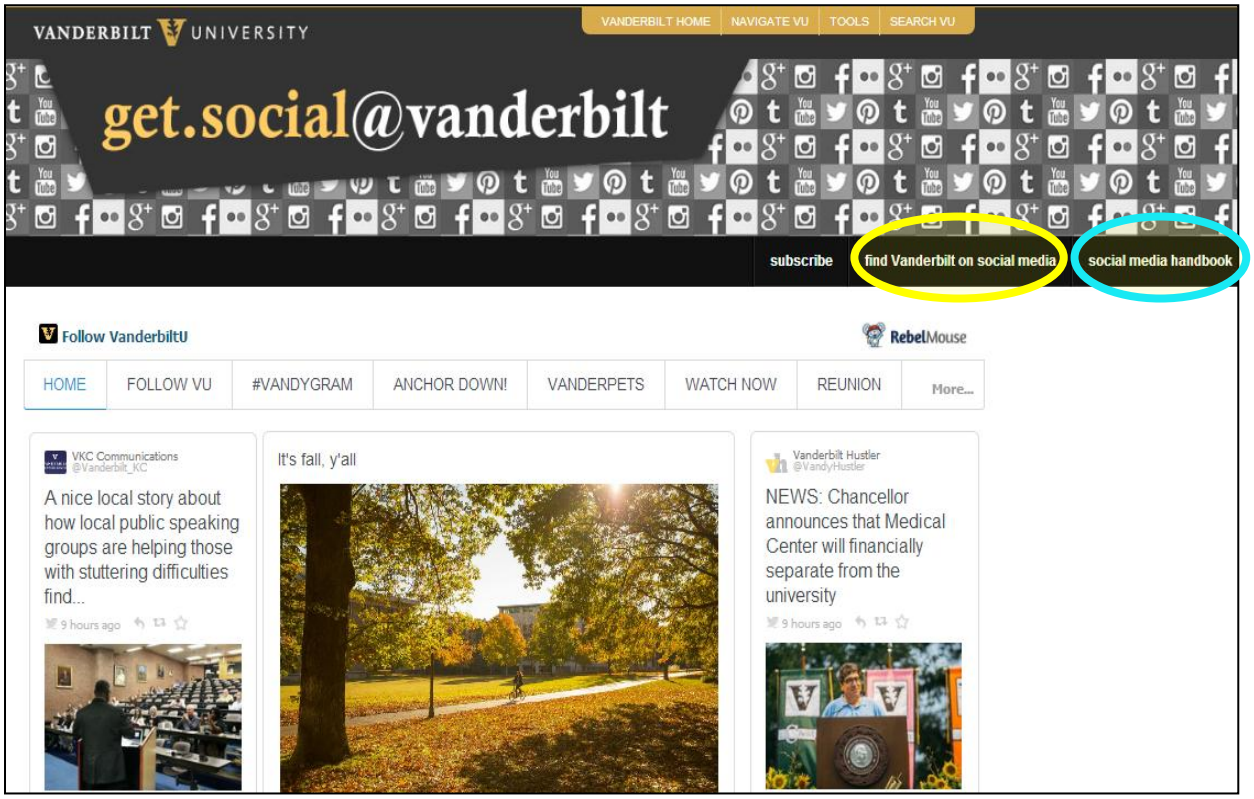



*Figure 7.33: Vanderbilt University's Social Media Page*

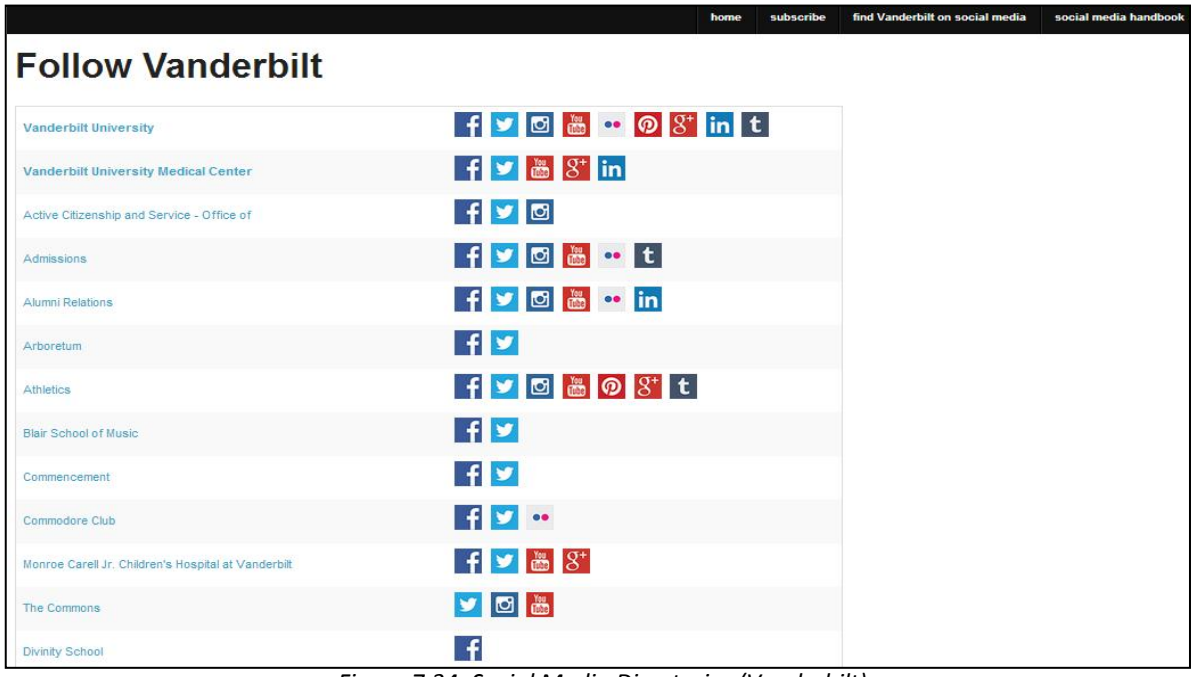



*Figure 7.34: Social Media Directories (Vanderbilt)*

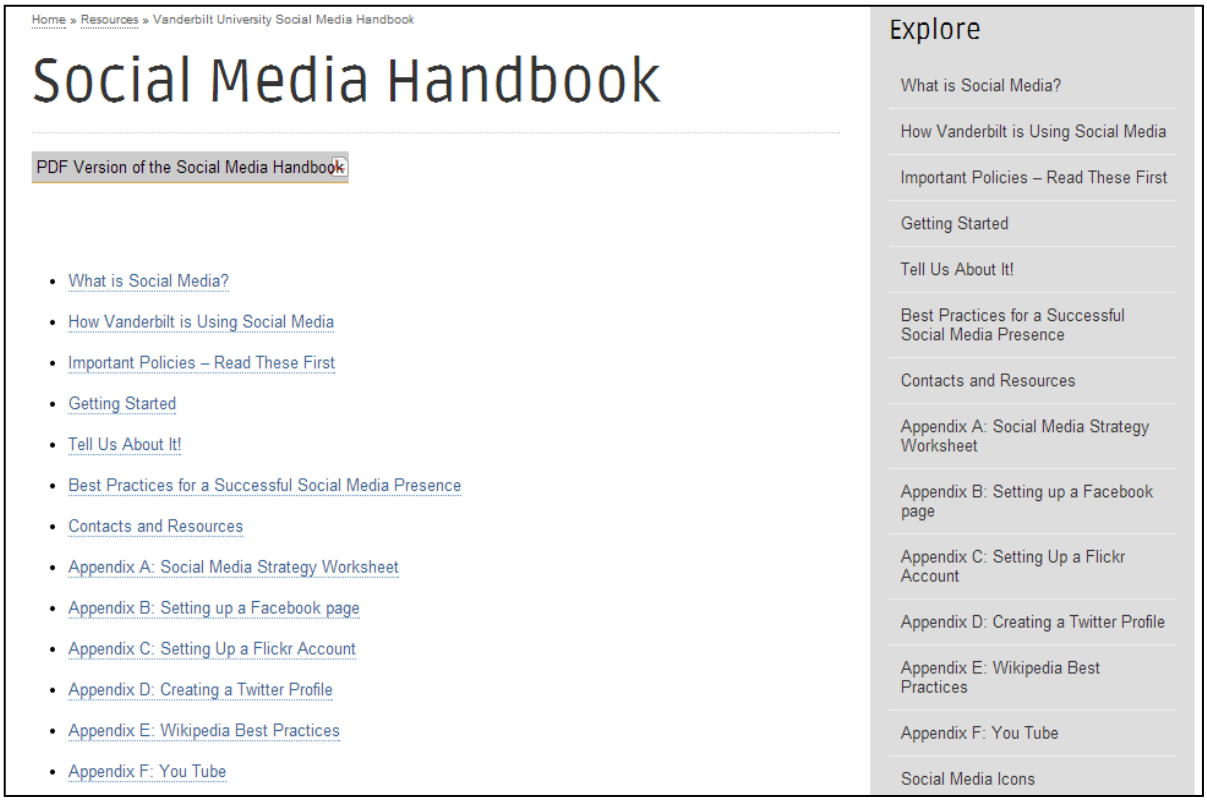



*Figure 7.35: Social Media Handbook (Vanderbilt)*

The summary of the social media handbook for Vanderbilt University can be seen in *Table 7.9* below.

*Table 7.9: Summary of Social Media Handbook for Vanderbilt University*

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff** | What is Social Media | - | Brief Descriptions about Social Media and examples. |
| | How Vanderbilt is Using Social Media | - | Brief descriptions on how the university uses social media and provided a list of official social media channels available. |
| | Important Policies – Read These First | - | List the link to associated policies that governed the use of social media. E.g.<br>• *Electronic Communications and Information Resources Policy Acceptable Use Policy*<br>• *Conflict of Interest Policy*<br>• *Technology Policy*<br>• *Vanderbilt University Medical Center Social Media Policy Guidelines*<br>• *Social media site policies* |

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff** | Getting Started | - | Included guidelines or steps (10 steps) to follow by those who wish to create an official social media channels within the university.<br>1. *Secure the approval of your department head or manager.*<br>2. *Define your goals.*<br>3. *Identify a coordinator.*<br>4. *Create a strategy.*<br>5. *Listen.*<br>6. *Choose your tool.*<br>7. *Name yourself.*<br>8. *Experiment.*<br>9. *Launch.*<br>10. *Adjust.* |
| | Tell Us About It | - | Included contact, advices and reasons of why the staff need to inform University Web Communication about the newly create social media page. |
| | Best Practices for a Successful Social Media Presence | Be respectful. | Advice on the need to be professional and respectful at all time, and not to engage in argument or excessive debates on social media site. |
| | | Be transparent. | Advices on making it clear about your role as a staff member of the university on the social media sites, and do not post on behalf of others. |
| | | Listen. | Advices on the need to listen to the online conversation of the social media sites, in order to maintain a clear and current understanding of what is relevant and of interest to the community. |
| | | Be active. | Advices to the administrator of the social media sites to constantly update the contents of the site and responding to the comments / posts. |
| | | Be timely. | Advices to make sure the Information posted or shared must be up to date. |
| | | Remember, everything you do online can and will live forever. | Reminder to be cautious in what to be posted on social media as the impact might be permanent. |
| | | Comment. | Advice to offer comments on interesting posts and share the good work of others using your sites. Reminder to indicate who you are and your affiliation with Vanderbilt when commenting as part of your job. |
| | | Accept and monitor comments. | Advices on how to monitor and manage the comments on the site. E.g. responding to negative comments, removing comments with vulgar language or abusive words, etc. |
| | | Separate personal from professional. | Advices on the separation of personal use of social media from professional use of social media. |
| | | Be a valued community member. | Advices to share the best information you find from trusted sources outside of Vanderbilt, and don't just post something pertaining to dept. or program only. |
| | Contacts and Resources | - | Included a list of contacts and resources related to social media supports. |

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| Staff | Appendix A: Social Media Strategy Worksheet | - | Checklist with list of questions to consider before jumping into creating an official social media channel. Includes: Identification of the Team members, primary goals, measuring success, audiences, current conversations, content, name and design, and evaluation. |
| | Appendix B: Setting up a Facebook page | - | Brief descriptions on how Facebook could be used and guidelines on how to set up a Facebook Page and the tips (do's and don'ts) |
| | Appendix C: Setting Up a Flickr Account | - | Brief descriptions on how Flickr could be used and guidelines on how to use Flickr, how it could be linked to other social media channels, and tips (do's and don'ts) |
| | Appendix D: Creating a Twitter Profile | - | Brief descriptions on how Twitter could be used and guidelines on how to use Twitter, and tips (do's and don'ts) |
| | Appendix E: Wikipedia Best Practices | - | Brief descriptions on how Wikipedia could be used, and the guidelines for participating in Wikipedia. |
| | Appendix F: You Tube | - | Brief descriptions on how YouTube could be used, and the guidelines on how to getting your videos on the University YouTube channel. |
| | Social Media Icon | - | Included the different sample of allowable social media icons that could be used in the social media environment. |
| | PDF of Handbook | - | Linked to the PDF version of the handbook. |
| | VUMC Social Media Toolkit | - | Provided the link to the Vanderbilt University Medical Centre's Social Media Policy and Toolkit. |
| | Contact University Web Communications | - | Provided a link to the University Web Communications for further inquiry and help with a special web project. Logins are required. |

*Source: (http://web.vanderbilt.edu/resources/social-media-handbook/what-is-social-media/)*

The Vanderbilt University Medical Centre (VUMC) houses the School of Medicine and School of Nursing of Vanderbilt University. VUMC was also one of the first Medical Centre in United States to develop a social media policy to guide its staff, faculties and students in the proper use of social media (Vanderbilt University, 2014b). The Social Media Toolkit (*Figure 7.36*) developed by VUCM is meant for individuals who wish to participate in social media on behalf of VUMC, and this Toolkit is accessible via the Social Media Handbook of Vanderbilt University discussed earlier. *Table 7.10* below summarized only the important components of the Social Media Toolkit of VUMC.

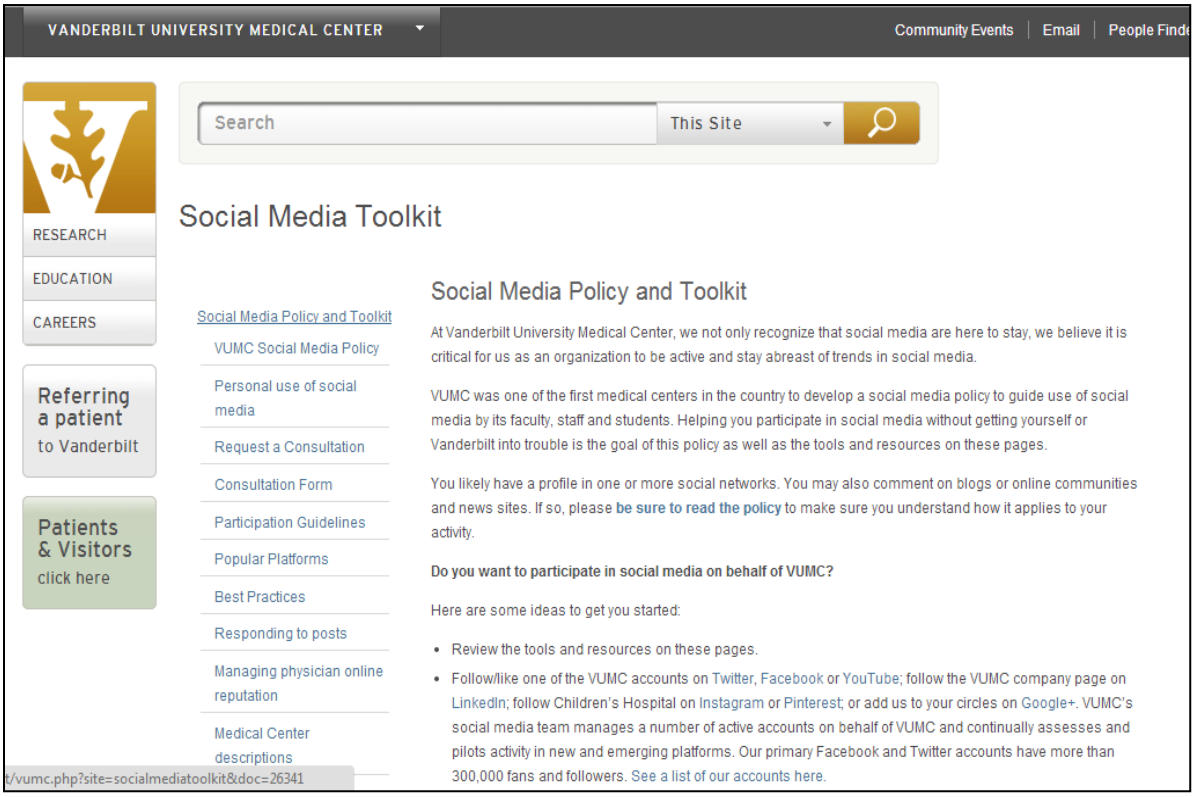



*Figure 7.36: Social Media Policy and Toolkit of VUMC*

*Table 7.10: Summary of Social Media Toolkit for Vanderbilt University Medical Centre*

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff of VUMC** | Purpose | - | Included the purpose statement. |
| | Policy | - | Descriptions of what the policy is intended and not intended to cover. |
| | Definition | - | Included definitions of the terms used in the policy, e.g. (moderator, content owner, social media platforms) |
| | Specific Information | Official Institutional Social Media Communications | Included guidelines for those who wanted to establish official institutional social media channels. For example, approval process, roles & responsibilities of content owners, compliance to other associated policies, etc. |
| | | Guidelines for Online Professional or Personal Activity | Included guidelines for those who engaged in professional use or casual conversation that associated them with Vanderbilt (e.g. LinkedIn, Google+). The guidelines included the do's and don’ts in the postings, inclusion of disclaimer, compliance with other associated policies, handling of comments posted by patients or their family members, etc. Provided the links to associated policy manuals. |

| Audience | Components | Sub-Components | Descriptions |
|---|---|---|---|
| **Staff of VUMC** | Best Practices | - | Included the recommended best practices when commenting or posting on Social Media. It includes: Listen first, Think it through, Add value to the discussion, Adhere, Be respectful, Abide by the law, Be yourself, Use Disclaimer, Be relevant and accurate, Don't be argumentative, What you say, It's not a one-way conversation, Use your best judgment. |
| | Responding to Post | - | Included flowchart to help staff in answers posts that appear in Vanderbilt's social networks. |

*Source: (http://www.mc.vanderbilt.edu/root/vumc.php?site=socialmediatoolkit&doc=26838)*

#### 7.4.3.3.3 The University of Michigan

Founded in 1871, University of Michigan is the oldest public research university in the state of Michigan (University of Michigan, 2014a). It is ranked 12th in United States and 23rd in the World Ranking for 2014/2015 by QS World University Rankings (QS World University Ranking, 2014). The total enrolment of the University of Michigan as of Fall 2014 session was 43,625 (University of Michigan, 2014b).

The official social media channels of the University of Michigan are accesible via the homepage of the University (right at the bottom of the homepage ~ *Figure 7.37*). The Michigan Daily reported that as of January 2014, the University has nearly 63,000 Twitter followers, 27,000 Instagram followers and 538,000 "LIKES" on its Facebook page (Calfas, 2014).

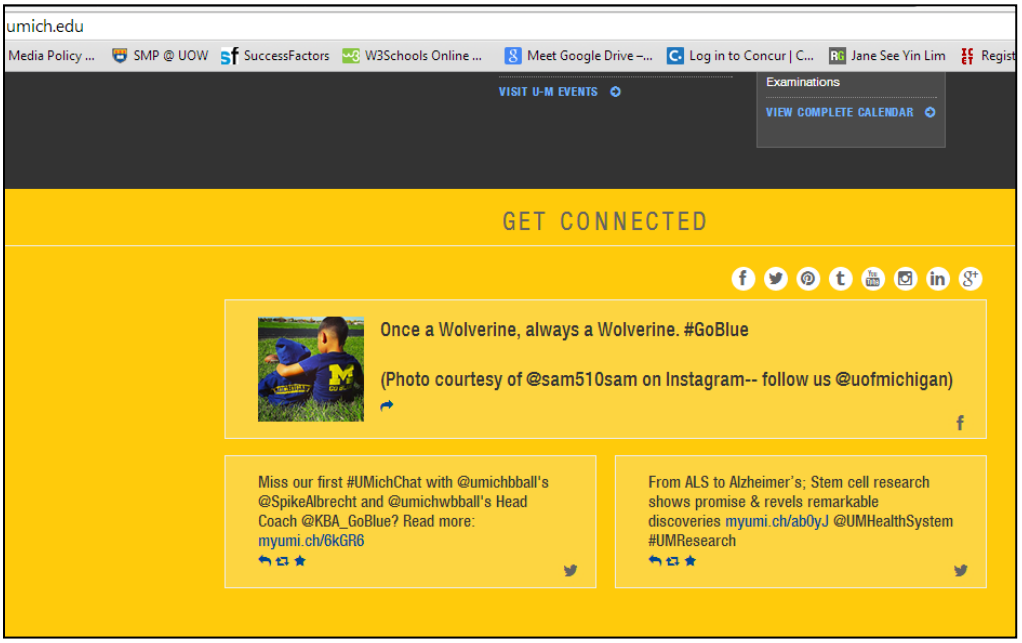



*Figure 7.37: University of Michigan's Homepage*

As for students, they can also access the social media channels via the Student Life's page. Upon clicking on the icon 'Stay Connected' (*Figure 7.38* – Circled in red), they will be directed to the official social media directory (relevant to students only) of the universities. Refer to *Figure 7.39* for the social media directories.

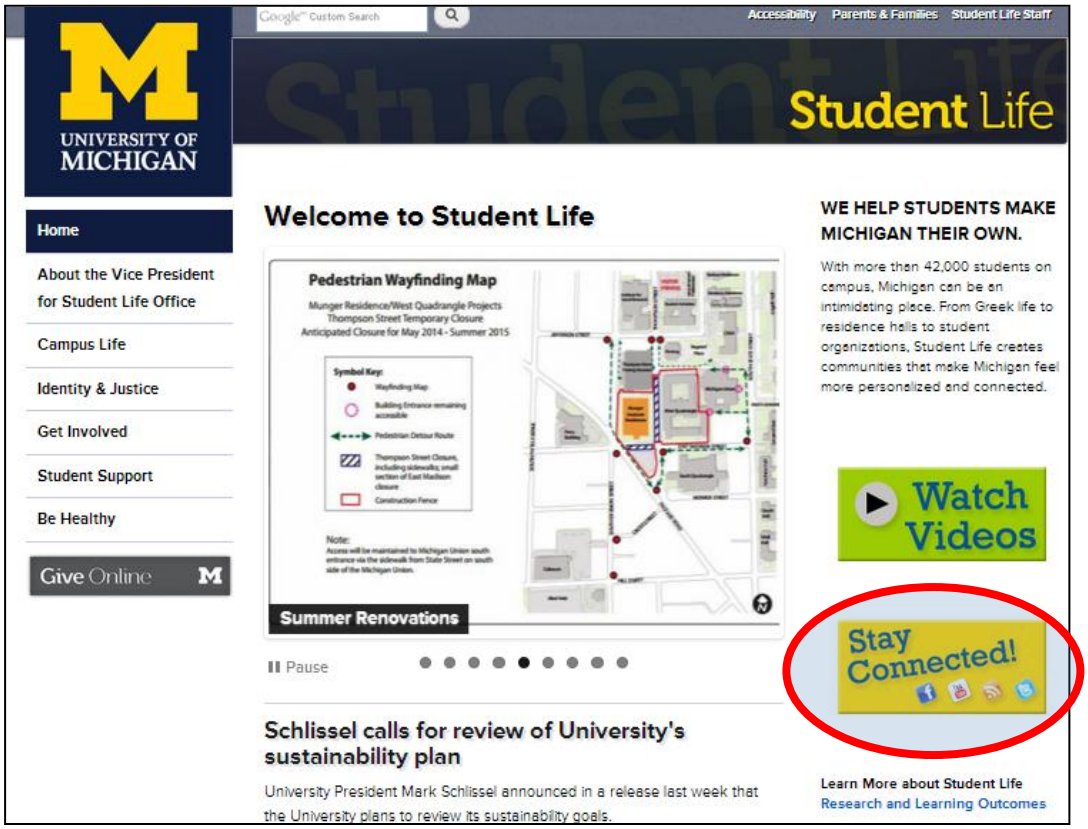



*Figure 7.38: Student Life Page of University of Michigan*

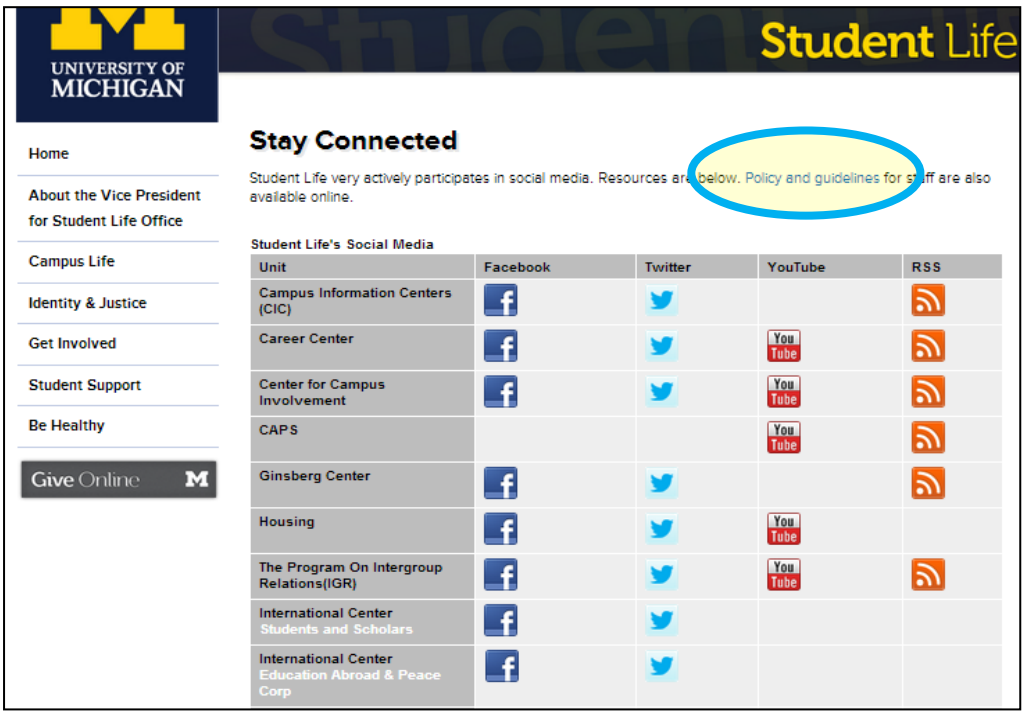
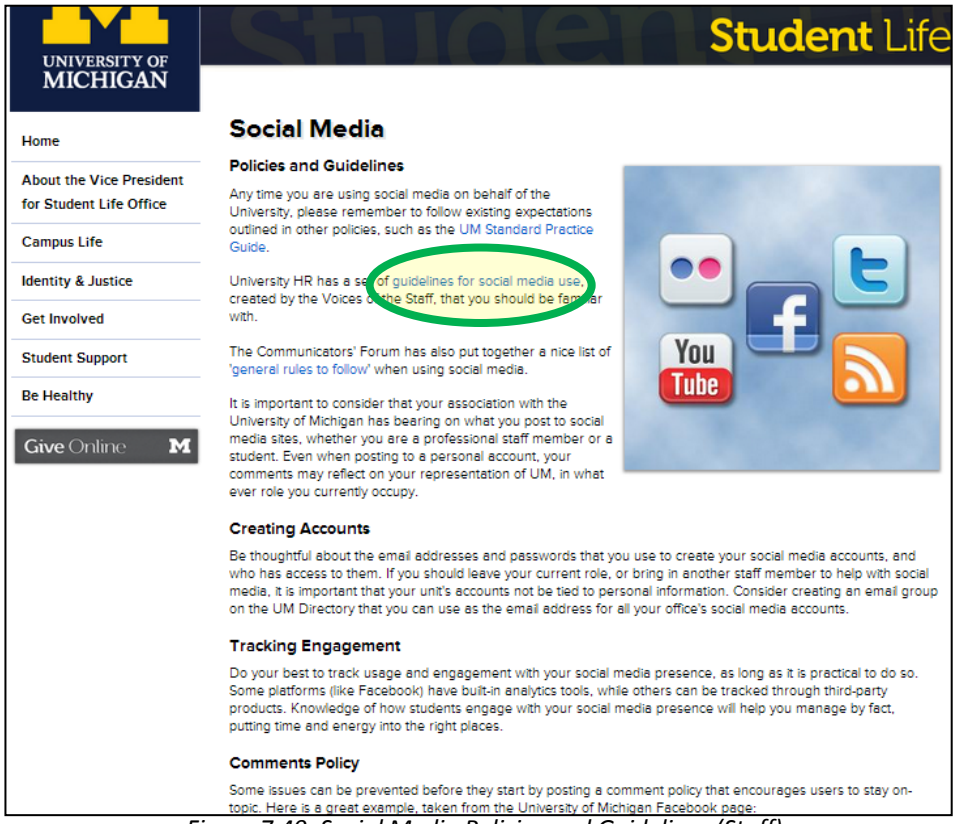



*Figure 7.39: Social Media Directory for Students (Michigan Uni)*

The policy and guidelines for staff can be accessed via the 'Stay Connected' page (*Figure 7.39* – Circled in blue). The descriptions on this page are more directed to staff rather than students. There is a section on 'General rules to follow when using social media', however, the link is broken. From this page, staff can also access a more detailed set of Social Media Guidelines set by the University's HR Department *(Figure 7.40* – Circled in green).



UNIVERSITY OF MICHIGAN

Student Life

Home

About the Vice President for Student Life Office

Campus Life

Identity & Justice

Get Involved

Student Support

Be Healthy

Give Online

## Social Media

### Policies and Guidelines

Any time you are using social media on behalf of the University, please remember to follow existing expectations outlined in other policies, such as the UM Standard Practice Guide.

University HR has a set of guidelines for social media use, created by the Voices of the Staff, that you should be familiar with.

The Communicators' Forum has also put together a nice list of 'general rules to follow' when using social media.

It is important to consider that your association with the University of Michigan has bearing on what you post to social media sites, whether you are a professional staff member or a student. Even when posting to a personal account, your comments may reflect on your representation of UM, in what ever role you currently occupy.

### Creating Accounts

Be thoughtful about the email addresses and passwords that you use to create your social media accounts, and who has access to them. If you should leave your current role, or bring in another staff member to help with social media, it is important that your unit's accounts not be tied to personal information. Consider creating an email group on the UM Directory that you can use as the email address for all your office's social media accounts.

### Tracking Engagement

Do your best to track usage and engagement with your social media presence, as long as it is practical to do so. Some platforms (like Facebook) have built-in analytics tools, while others can be tracked through third-party products. Knowledge of how students engage with your social media presence will help you manage by fact, putting time and energy into the right places.

### Comments Policy

Some issues can be prevented before they start by posting a comment policy that encourages users to stay on-topic. Here is a great example, taken from the University of Michigan Facebook page:

*Figure 7.40: Social Media Policies and Guidelines (Staff)*

The summary of the social media guidelines set by the HR department can be seen in *Table 7.11* below.

*Table 7.11: Summary of Social Media Guidelines of University of Michigan (Staff)*

| Audience | Components | Descriptions |
|---|---|---|
| **Staff** | Overview | Brief descriptions of the purpose / intention of the social media guidelines. |
| | General Guidelines | Includes Guidelines for sharing public information on social media. Included the following:<br>Maintain Confidentiality, Maintain Privacy, Respect University Time and Property, Do No Harm, Understand Your Personal Responsibility, Be Aware of Liability, Maintain Transparency, Correct Mistakes, Respect Others, Be a Valued Member, Think Before You Post |
| | Social Media Guidelines when posting as an individual. | Included guidelines when employee decided to post as an individual: Be Authentic, Use a Disclaimer, Don't Use the U-M Logo or Make Endorsements, Take the High Ground, Don't Use Pseudonyms, Protect Your Identity, Does it Pass the Publicity Test, Respect Your Audience, Monitor Comments. |
| | Social Media Guidelines when posting on behalf of the University of Michigan. | Guidelines when staff want to create or posting to a social media site on behalf of the university: Seek approval, Be accurate, Be Transparent, Be Timely, Be Responsible, Respects others, Be a Valued Member, Be Thoughtful, Use of the U-M Logo. |
| | Safety and Privacy Tips for Social Media Networking | Included some best practices and tips for ensuring safety and privacy in the social media environment. E.g. (Privacy setting, how much contents to be shared, etc). |

*Source: (http://hr.umich.edu/voices/docs/Social-Media-Guidelines.pdf)*

The University of Michigan has a Social Media Office (UMSocial), with a team of staff who are responsible for the strategic development and management of the university's social media presence. In addition, UMSocial also provides consultancy, best practices and training on the development of social media presence and social media tools (University of Michigan, 2014c). However, this page is not accessible via the main homepage of University Michigan. This page does provide general strategies, guidelines and best practices of using specific Social Media tools such as Facebook, Twitter, Instagram, etc. Refer to *Figure 7.41* for the Social Media Page.


*Figure 7.41: UMSocial Page*

### 7.4.3.4 Malaysia

After thoroughly checking on the Internet and on higher education institution websites, the researcher was only able to find a very small number of social media policies even though many Universities have started to embrace social media to create an official social media presence, and to connect to their potential students, current students, alumni and staff. From the findings of the quantitative and qualitative data collection, respondents commented that their universities or institutions did not restrict their access and use of social media. In addition, their universities and institutions have not implemented social media policies to govern the use of social media by their students and staff. As the data collections were completed earlier in the study, the researcher decided to recheck the availability of social media policies by searching using a search engine, as well as thoroughly checking the respective website of the universities. This time, the researcher checked on five public universities (University of Malaya, Universiti Teknologi Mara, Universiti Putra Malaysia, Universiti Sains Malaysia, and Universiti Teknologi Malaysia) and five private universities (INTI International Universities and Colleges, Taylors University, Sunway University, Multimedia University, and HELP University) in Malaysia. All ten universities have a social media presence on their website, mainly to allow public to connect to them. Examples of popularly used social media channels include Facebook, Google+, YouTube, Twitter. A minority of the universities uses Pinterest, Instagram and Weibo.

Out of the ten universities, only Universiti Teknologi Malaysia (UTM) had a social media policy published on their webpage. UTM was established in 1972 and had a student population of 35,053 (UTM, 2014a). UTM is an innovation-led and graduate-focused Research University, and its mission is *"to be a leader in the development of human capital and innovative technologies that will contribute to the nation's wealth creation"* (UTM, 2014a).

In 2009, UTM established a Web Development Team, under the wing of Corporate Affairs of the university, that take care of all the official websites of the universities, conducting workshops, providing consultancy and advice for university web presence, etc. When social media technologies became more prevalent, the Web Development team added a new role, known as a Social Media Coordinator (*Figure 7.43* – red rectangle) who has responsibility for all the Social Media Channels and matters (UTM, 2014b). *Figure 7.40* depicts the Web Development Page of UTM, while *Figure 7.42* depicts the Social Media Policy Page of UTM.

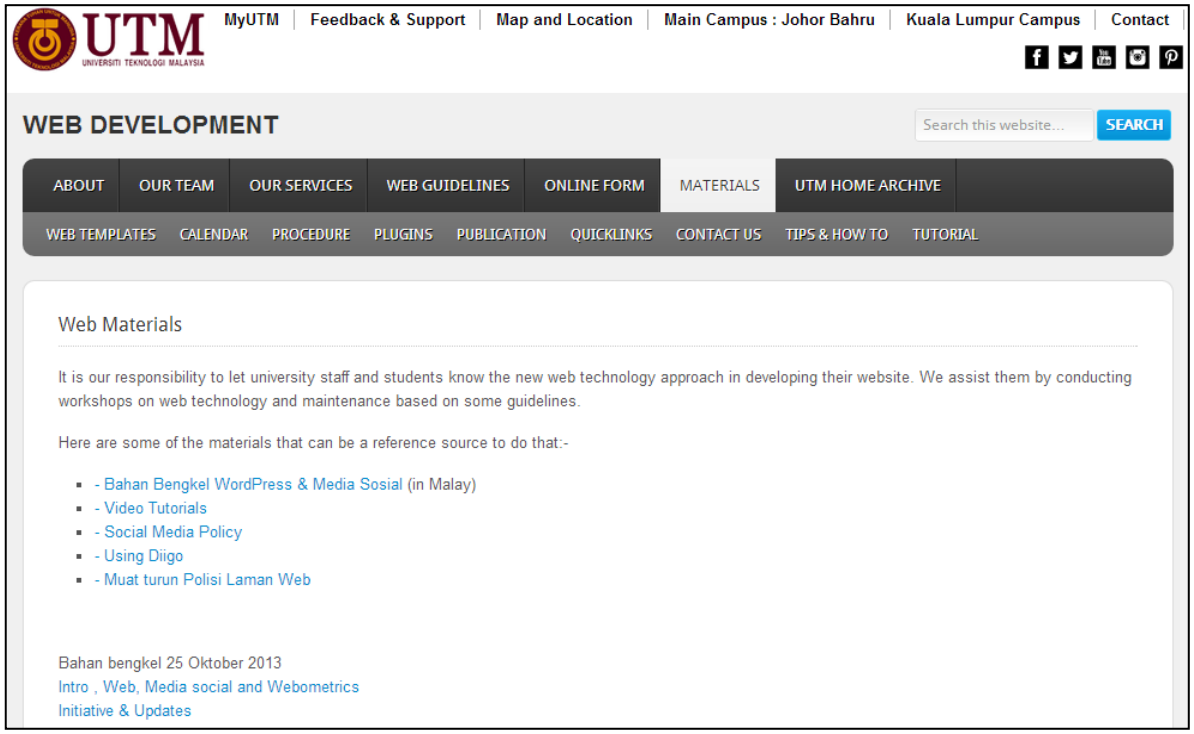



*Figure 7.42: UTM's Web Development Page*

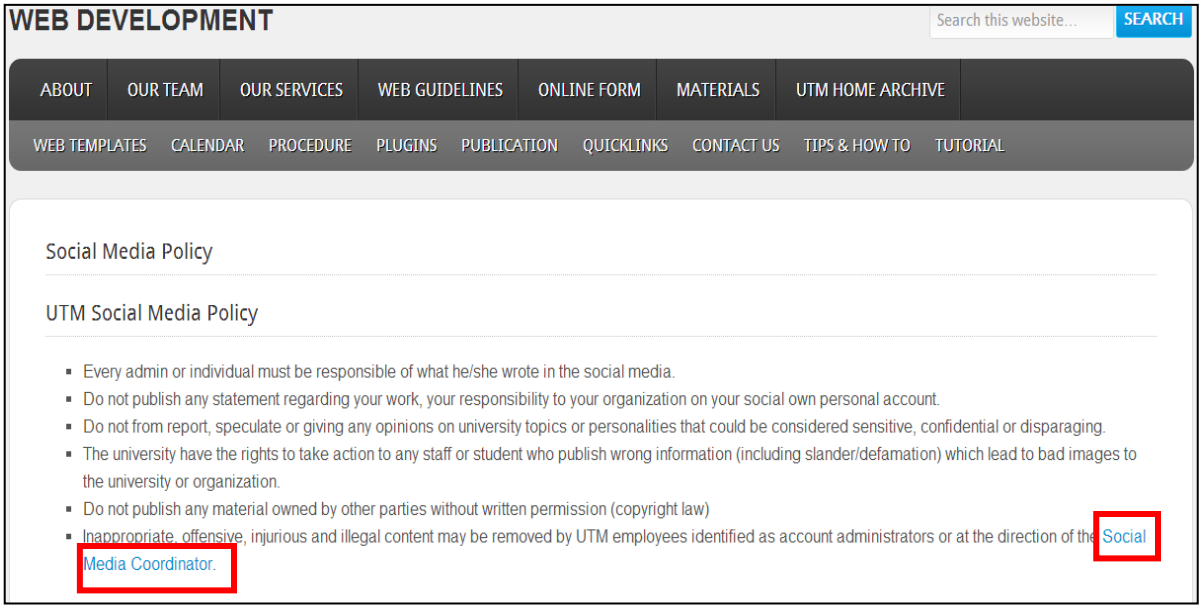



*Figure 7.43: UTM's Social Media Policy Page*

### 7.4.4 Analysis of the Findings

Based on the individual findings of the social media policies or guidelines summarized in the previous sections, the researcher further analyzed the policies by performing a cross comparison analysis of all the Social Media policies to find their similarities and differences. Apart from this, the researcher also analyzed each social media policies's strength and weaknesses in terms of the overall coverage, university's social media involvement, and how accessibility. Lastly, the researcher compared the social media policies found in Malaysia against those policies discussed in the earlier sections from other countries.

#### 7.4.4.1 Cross Comparisons of Social Media Policies

The cross comparisons of all the social media policies was based on the elements identified at the end of the 'Reading Phase' of the Document Analysis Process discussed previously in Section 7.4.2.3 (*Figure 7.2*). The policies are compared based on the target audience, the purpose of the policy or guidelines, effective date and review date, social media channels used by the university, major components of the policies, owners of the policies, availability of support, availability of a social media office or department that could provide consultancy and advices on social media implementation, the inclusion of the associated policies, and the inclusion of penalty statements or possible disciplinary action in the event of a breach of policy. Additionally three elements were identified just for policies used to create official or a professional social media presence within the university. The elements include the availability of a social media toolkit that can help staff to easily create a standardized social media presence, availability of the social media resources such as guides in using and creating social media presence with Facebook, Twitter, YouTube, etc., and finally the inclusion of step-by-step procedures to be followed prior to the development of social media channels for official use. The results of the comparisons are summarized in *Table 7.12* below.

*Table 7.12: Summary of Comparisons of Social Media Policies (Similarities and Differences)*

| University | Audience | Purpose | Effective Date | Review Date | Social Media Channels | Major Components | Ownership | Support | Social Media Office / Dept | Associated Policies | Penalty Statement | Social Media Toolkit | Social Media Resources | Procedures |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Australian National University | Student | Personal Use of Social Media | 3-Oct-12 | 3-Oct-15 | Facebook, Twitter, LinkedIn, YouTube | Guidelines in Posting & Publishing (Tips, Copyright Issues, Use of ANU Logo, Polite and Respectful, Privacy and Confidentiality, & Compliancy) | Chief Information Officer | X | X | ✓ | X | - | - | - |
| | Staff | Personal Use of Social Media | 3-Oct-12 | 3-Oct-15 | | Guidelines in Posting, publishing and participating in online debates. Includes: Transparency, Polite and Respectful, Professionalism, Good Tips, Branding, Privacy and Confidentiality, & Compliancy | Chief Information Officer | X | X | ✓ | X | - | - | - |
| | | | | | | | | | | | | | | |
| Monash University | Student | Personal Use of Social Media & Social Media in Education and Research Training | 13-Jun-13 | 13-Jun-16 | Facebook, Twitter, Google+, Flickr, YouTube, LinkedIn, Weibo | Guidelines in Posting & Publishing, Specific Prohibitions, Use of Images and videos, Breach of policy | Executive Director, Marketing & Communications | ✓ | X | ✓ | ✓ | - | - | - |
| | Staff | Identifiable Personal Use | 3-Sep-13 | - | | Guidelines in Posting & Publishing, Specific Prohibitions, Use of Images and videos, Breach of policy | Executive Director, Monash HR | ✓ | X | ✓ | ✓ | - | - | - |
| | Staff | Global Engagement & Professional Use | 13-Jun-13 | 13-Jun-16 | | Managing and reporting issues in Social Media, Best Practice Guidelines for a successful social media presence, Use of Images and Videos. | Executive Director, Marketing and Communications | ✓ | X | ✓ | ✓ | X | X | X |
| | | | | | | | | | | | | | | |

| University | Audience | Purpose | Effective Date | Review Date | Social Media Channels | Major Components | Ownership | Support | Social Media Office / Dept | Associated Policies | Penalty Statement | Social Media Toolkit | Social Media Resources | Procedures |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| University of New South Wales | Student | Personal Use of Social Media | 03/01/2014 | X | Facebook, Twitter, LinkedIn, Flickr, YouTube, iTunesU, Google+, Pinterest | Suggestions for using social media (Includes guides for posting, privacy and confidentiality, etc), and specific situations in which students need to take more care (e.g. compliancy, academic misconduct, professionalism, etc) | X | X | X | ✓ | X | - | - | - |
| | Staff | Professional / Official use of Social Media | X | X | | Best Practices and Recommendations (Checklist for consideration, and social media resources), Rules of engagement for staff (Transparency, professionalism, compliancy, respect, etc), good customer service (how to deal with posts), stages of banning a user on Facebook, Crisis management. | Marketing Services | X | ✓ UNSW Marketing Services | ✓ | ✓ | ✓ | ✓ | ✓ |
| Edinburgh University | Staff | Business and personal use of Social Media | 27-Sep-13 | Jan 2015 | Facebook, Twitter, LinkedIn, YouTube, iTuneU | Policy Statement, Scope & Purpose, Responsible use of Social Media, Protecting Reputation & Relationship, Confidential Information, General Guidance on the use of Social Media, Account Security, Breaches of policy | X | ✓ | X | ✓ | ✓ | - | - | - |
| | Staff and Researcher | Personal & Professional / Official use of Social Media | 1-Dec-11 | X | | Guidelines for Personal Participations in Social Media (Personal Responsibility, disclaimer, what can or cannot be blogged, commenting on social media, legal consideration); Building an Official Presence (Setup, Posting, Accessibility, Updating social media, commenting, Exit Strategy), flowchart of dealing with comments). | X | ✓ | ✓ EDINA | ✓ | ✓ | - | - | ✓ |

| University | Audience | Purpose | Effective Date | Review Date | Social Media Channels | Major Components | Ownership | Support | Social Media Office / Dept | Associated Policies | Penalty Statement | Social Media Toolkit | Social Media Resources | Procedures |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| University of York | Student | Personal Use of Social Media | Oct 2012 | Annual | Facebook, Twitter, YouTube, Flickr, FourSquare, Blogs, Instagram | Use of Social Media, Excessive Use of Social Media at work, Monitoring use of social during work time, Use of Social Media in personal life, Use of Social Media in recruitment process. | Human Resource | ✓ | ✓ Marketing and Comm. | ✓ | ✓ | ✓ | - | - |
| University of Exeter | Student & Staff | Personal Use of Social Media *(Good practice guide: social media)* | X | X | Facebook, Twitter, YouTube, LinkedIn, RSS, Blogs, Instagram, Flickr | Disciplinary Procedures; University response to misuse of social media; Using social media at work | X | X | X | ✓ | ✓ | - | - | - |
| | Staff | Personal Use (General guides) | X | X | | Purpose of policy; Who does this apply to? Principles; Responsibilities | Human Resource | ✓ | ✓ Social Media Manager, Marketing and Comm. | ✓ | X | - | - | - |
| | Staff | Professional / Official use of Social Media | X | X | | Why Engage in Social Media? Things to Remember?, Security; How to behave? How to use social media successfully? Specific guidelines for Facebook. Twitter, LinkedIn, & YouTube (E.g. Brief introduction of each tools, University presence and ownership, how to create a new presences, who to contact, what to say and how to say it, what are the possible issues. | Communication and Marketing Services | ✓ | ✓ | X | X | X | ✓ | ✓ |

| University | Audience | Purpose | Effective Date | Review Date | Social Media Channels | Major Components | Ownership | Support | Social Media Office / Dept | Associated Policies | Penalty Statement | Social Media Toolkit | Social Media Resources | Procedures |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Harvard University | Staff | Professional / Official use of Social Media | Aug 2014 | X | Facebook, YouTube, Twitter, RSS, LinkedIn, Instagram, iTunesU, Flickr, Google+ | Individuals Covered by the Guidelines; Reasons for these guidelines; Coverage of the guidelines; Getting Started *(standardizes protocols for opening new social media accounts*); Principles *(Principles to guide authorized individuals to use social media to speak on Harvard's behalf. E.g. Privacy, Confidentiality, Professionalism, Responsibility, Transparency, Accessibility, etc)*; What's New in Version 2.0 | Human Resource | ✓ | ✓ Digital Strategy | ✓ | X | X | ✓ | ✓ |
| Vanderbilt University | Staff | Professional / Official use of Social Media | X | X | Facebook, Twitter, Pinterest, Instagram, YouTube, Flickr, RSS, Google+ | Getting Started (*guidelines to follow when creating an official social media channel within the university*); Best Practices for a Successful Social Media Presence *(Transparency, Respect, Professionalism, Timely, Stay Active, Comment, etc.)*; Appendices (*Social Media Strategy Worksheet, resources for setting up social media page*) | Web Communications | ✓ | ✓ Web Comm. | ✓ | x | ✓ | ✓ | ✓ |
| University of Michigan | Staff | Personal & Professional Use of Social Media | Jan 2010 | July 2010 | Facebook, Twitter, RSS, YouTube | Guidelines for sharing public information on social media (e.g. Profesionalism, Transparency, Privacy, Confidentiality, Respect, etc); Social Media Guidelines when posting as an individual; Social Media Guidelines when posting on behalf of the University of Michigan; Safety and Privacy Tips for Social Media Networking | Human Resource | X | X | X | X | X | X | X |

### 7.4.4.2 Strengths and Weaknesses of each University's Social Media Policies

Each social media policy or guideline discussed in the earlier sections was analyzed for its strengths and weaknesses. The strengths and weaknesses are compared in terms of the accessibility to the social media policy, the coverage/ content, and the completeness of the policies. The summary can be seen in Table 7.13 below.

*Table 7.13: Summary of strengths and weaknesses of Universities' Social Media Policies or Guidelines.*

| No. | University | Strengths | Weaknesses |
|---|---|---|---|
| 1. | Australian National University (ANU) | 1. Has Policies Bank / Page which is easily accesible via the main homepage. The Policies in the Policy page are searchable either by topics or by audience (many different categories available).<br>2. Has clear implementation date and review date of the policy. | 1. No indication in the policy header whether it is meant for professional use or personal use.<br>2. The effective date of the policy on the web does not match the date shown in the PDF document (3-Oct-12 vs. 1-Mar-12).<br>3. The hyperlink provided in the 'Social media guidelines for Students' to link to the complete social media guidelines is broken.<br>4. The policy or guidelines are not easily accesible via the webpage .<br>5. The guidelines for both staff and students are very simple (only 1 page).<br>6. No social media directory available .<br>7. No social media policies or guidelines for participating in professional use of social media.<br>8. There are 2 social media guidelines for students – Might cause confusion.<br>9. Do not have penalty statements for breach of policy. |

| No. | University | Strengths | Weaknesses |
|---|---|---|---|
| 2. | Monash University | 1. Has very comprehensive policies for students and staff.<br>2. Has a clear description in the policy on who is bounded by the respective policy.<br>3. Has a definition of the frequently used terms in the policies.<br>4. Has 2 policies for staff: Professional use of social media, and identifiable personal use of social media.<br>5. The policies for professional use of social media covers the associates and contractor of Monash University.<br>6. Has clear penalty statement for breach of policies. Included contact for students and staff to report misconduct, inappropriate and unlawful contents.<br>7. Included statement that indicate the right of the University to request students to remove inappropriate contents.<br>8. Most policies only indicate good guides to posting and publishing but Monash listed list of specific prohibitions in which students are not allowed to do.<br>9. Has clear guideline on the use of specific images and videos.<br>10. Has specific procedures for Students who use social media for learning and researching – "Social Media in Education and Research Training".<br>11. Provides recommended steps to be taken in the event a significant issue arises within social media that has impact on the University, staff or students.<br>12. Has a guide on how academic could use social media in teaching and learning. | 1. Do not have Social Media Directory within the Website. The list of official University social media presences are hosted in the Intranet and it requires authorized login for access.<br>2. It is difficult to navigate to the 'Policy Bank' Page to retrieve the policies. Need to use the Search function on the webpage.<br>3. Do not include procedures to follow in the policy prior to the development of official social media presence. |

| No. | University | Strengths | Weaknesses |
|---|---|---|---|
| 3. | University of New South Wales | **<u>Student's Policy</u>**<br>1. Has statement that stress on student's use of social media for university work ~ Reminder on plagiarism and academic misconduct. Provided some examples of academic misconduct using social media.<br>2. The implementation date of the policy (Student) is not visible from the website (only when the policy is printed in PDF document).<br><br>**<u>Staff's Policy</u>**<br><br>3. Has comprehensive guidelines for Professional use of Social Media by Staff – Included penalty statement, steps, or protocols in handling crisis or banning users from official Facebook channel, etc.<br>4. Included checklist or list of considerations for staff to consider before developing a social media channels.<br>5. Included key things to keep in mind while administrating a specific social media channels (Facebook, Twitter UNSWTV, YouTube, and iTuneU. Also included list of useful resources with hyperlinks on how to use specific Social Media Channels.<br>6. Included recommended actions in dealing with posts and stages in banning user on Facebook. Included protocol for Crisis Management.<br>7. Has a dedicated unit (Marketing Services) that provides consultancy services to staff who would like to an official social media presence. Marketing Services hold free social media workshops throughout the year. | 1. Do not have General Social Media Policy or Guidelines for Staff (Personal Use).<br>2. Social Media Guidelines for Students are not visibly located on the website and it is very brief.<br>3. No Penalty statement for breach of in the Student's Social Media Policy or guidelines.<br>4. Very brief Social Media Guidelines for students. Not much content available.<br>5. No information about the Owner of the Student's Social Media Policy or guidelines.<br>6. No support information included in the Student's Social Media Policy or guidelines. |

| No. | University | Strengths | Weaknesses |
|---|---|---|---|
| 4. | University of Edinburgh | 1. Has Social Media Directory which is easily accessible via the main homepage.<br>2. Has clear policy and purpose statement, clearly defined scopes cover by this policy, and expectations on employees on the use social media (protecting the university's reputation and confidential information).<br>3. Has comprehensive guideline for staff and researcher that who wants to create a social media presence on behalf of the University or even for personal use. It includes how to create a social media presence, how to manage and administer it, what can or cannot be included in the social media, how to make comments and handle difficult comments (included flowchart).<br>4. Included list potential breaches of policies or actions that will lead to the breach of policies. Also included contact information in which staff could report any suspected or potential breach of policy.<br>5. Provided the list of items that staff should not post on social media.<br>6. Has dedicated Department or Unit (EDINA) who looks after all the Social Media matters. | 1. Unable to find the Social Media Guidelines for Staff via its Policy & Regulation Page.<br>2. No clear indication on the ownership of this policy or guidelines.<br>3. Unable to find Social Media Guidelines for Students.<br>4. Might be confusing as there are 2 documents on personal use of social media.<br>5. No information about the owners of the policy or guidelines. |

| No. | University | Strengths | Weaknesses |
|---|---|---|---|
| 5. | University of York | 1. Has examples of unprofessional use of social media in the pollicy.<br>2. Include statement that the University might monitor the Internet Usage of staff during working hours (excessive use of social media during work hours, etc).<br>3. Include advice on not using social media for recruitment purposes.<br>4. Include disciplinary actions for breach of policy.<br>5. Include examples of situations in which staff should avoid when using social media.<br>6. Has dedicated Department or Unit (Marketing and Communication) who looks after all the Social Media matters. | 1. University of York is also using Flickr, FourSquare, Blogs, and Instagram as its official social media channel. However, only the logo of Facebook, Twitter and YouTube could be seen at the bottom of its webpages.<br>2. Unable to locate the Social Media Directory, Social Media Guidelines, and the Communications and Marketing page from the homepage. Need to use Search Function.<br>3. Do not have social media guidelines for students.<br>4. The statement in the policy claimed that the policy will be reviewed annually. However, the date of last reviewed in the policy was dated in 2012 which was 2 years ago.<br>5. Do not have specific guidelines on posting and publishing that covers the elements like transparency, respect, professionalism, branding, etc.<br>6. Unable to access the guidelines for professional or official use of social media (Requires authorized access).<br>7. There is a statement that indicated that the policy will be reviewed annually. However, the effective date of the policy is dated 2012 and does not reflect the annual review as indicated. |

| No. | University | Strengths | Weaknesses |
|---|---|---|---|
| 6. | Universtiy of Exeter | 1. Has good and comprehensive IT security tips that focused on Social Media usage.<br>2. The Social Media Guidelines: Include clear guides on how the university uses each respective social media channels and guides on how staff could create a new presence, what to say and potential issues.<br>3. Has dedicated Social Media Manager in Marketing and Communication Unit who looks after all the Social Media matters. | 1. The Social Media Guidelines for staff is a bit brief. Not much details are included on how to manage the official social media channels created.<br>2. The Good Practice Guide is meant for general use of social media by staff and students. However, the document is only accesible via 'Current Staff' page, and no link provided in the 'Student' Page.<br>3. University of Exeter is also using Blogs, RSS, Instagram, and Flickr as its official social media channel. However, only the logo of Facebook, Twitter, LinkedIn and YouTube could be seen at the bottom of its webpages.<br>4. For Student Social Media Guidelines, there is no information about the owner of the policy and contact for supports.<br>5. The Staff General Guides to Social Media do not have penalty statements for breach of policy.<br>6. No indication on the effective date and next review date of the policy or guidelines.<br>7. The staff guidelines for official use of social media do not include the list of associated policies. |
| 7. | Harvard University | 1. Has comprehensive guides for staff who wants to create official social media presence. Included hyperlinks to many associated policies and contacts.<br>2. Included a summary of changes done on the new version of the policy.<br>3. The policy has just recently been reviewed (Aug 2014).<br>4. Has dedicated department or unit (Digital Strategy) that looks after all the social media matters. | 1. Do not have general social media guidelines for students and staff.<br>2. Has Social Media guidelines for students from Harvard Medical school, however once the hyperlink is clicked, it will direct user to the social guidelines for staff instead of students.<br>3. No indication on the next review date of the policy.<br>4. Did not include any penalty statements for breach of policy. |

| No. | University | Strengths | Weaknesses |
|---|---|---|---|
| 8. | Vanderbilt University | 1. Has a very comprehensive guides / procedures for staff who wants to create official social media presence.<br>2. Has a flowchart in the guideline to guide staff in responding to posts that appear in Vanderbilt's social networks.<br>3. Has dedicated department or unit (Web Communications) that looks after all the social media matters, and provide consultancy services or advices to staff who wish to create new social media project.<br>4. Has Social Media Toolkit that aid and standardize the development or creation of social media presence. | 1. Guidelines are only relevant to the Employees, not so much to the students.<br>2. Did not include any penalty statements for breach of policy.<br>3. The PDF version of the guidelines indicated a 'DRAFT' in the heading.<br>4. No information on the effective date and review date of the social media policy. |
| 9. | Michigan University | 1. Included the Safety and Privacy tips for Social Media Networking (FAQ).<br>2. Has a dedicate page (UMSocial) that provides general strategies, guidelines and best practices of using specific Social Media tools.<br>3. The social media directory is easily accessible via the website.<br>4. The Social Media Guidelines covers the general guidelines, guidelines when posting as an individual, and guidelines when posting on behalf of the university. | 1. Has only general social media guidelines for staff. Do not have guidelines for creating official social media presence.<br>2. Do not have Social Media Guidelines for students.<br>3. The policy implementation date was about 4 years ago, and the review date was very close to the implementation date (Implementation date = Jan 2010, and Review date = July 2010).<br>4. No information about Support, penalty statements, and associated policies involved. |

### 7.4.4.3 Discussions

From the analysis of all the social media policies from different countries, it is noted that different naming conventions have been used to represent social media policy. Some universities called it a policy, while some called it guidelines. Whether it is guidelines, policies, a handbook or good practice guide, the objectives of these document will be the same, which are to provide a standard guide to inform the proper use of social media by staff and students in the university, and to protect the university's confidential and proprietary information, and its reputation against unnecessary legal implications. The analysis shows that the popularly used Social Media Channels by universities to represent their official presences were Facebook, Twitter, LinkedIn, YouTube, and Flickr, Instagram, and Google+, while the less popular ones included RSS, Weibo, Pinterest, and iTunesU. The coverage of each policy also differ. Some are more comprehensive while some are very brief. However, it is noticeable that most guides or policies would at least cover components like the purpose of the policy, 'Do's and Don'ts' when posting or commenting on social media, penalty statements on breach of policy, associated policies, and contact for support.

Not all social media policies and guidelines are easily accessible and available. Some could only be found via the search function while the minority required authorized access or login. The researcher also noticed that there was no general social media guidelines for staff and students for the three United States Universities under the study. All three universities only had guidelines for creating official social media presence in the universities. Perhaps, the guidelines on the use of social media ha been covered as part of the policy for the use of ICT Infrastructure of the university, but this was not accessible to the researcher.

Finally, the majority of the social media guidelines or policies did not cover the use of social media for teaching and learning or academic related activities. Out of the nine universities in the study, only Monash University had specific procedures for students who use social media for learning and researching, and a guide for academics to use social media in teaching and learning.

#### 7.4.4.4 How does Social Media Policy in Malaysian Higher Education Insitutions compare with others?

As there is a very limited number of social media policies available in Malaysia Higher Education Institutions, the researcher is unable to do a thorough or comprehensive comparison with the other policies analyzed earlier. The researcher can only comment that the social media policy available in Universiti Teknologi Malaysia is very brief, general and simple.There are only six points on the guidelines in posting and publishing on social media in the Social Media Policy. In addition, it is not that easy to navigate the website to retrieve the social media policy. The researcher did it by searching for Web Development in the Contact Directory. There were tutorials and resources provided in the Web Development Page for the use of specific social media channels. However, it was limited as only one resource on WordPress and Diigo was available, and some of these resources are not in the English language. In conclusion, it is clear that universities in Malaysia have not put much emphasis in the official use of social media by their students and staff, and have not realized the criticality or importance of having social media policy within the institution. The researcher thought perhaps the rules and guidelines of using social media have actually been covered as part of the University's ICT Infrastructure policy as claimed by the participants during the qualitative data collection. However, a search on ten Malaysian Universities's ICT Policies (University of Malaya, International Islamic University, University Malaysia Sarawak (UNIMAS), INTI International Universtiy and Colleges, Asia Pacific University (APU), Multimedia University, Taylors University, Sunway University, University Putra Malaysia, and Universiti Teknologi Malaysia) found that the guidelines of using social media were either not covered in the ICT Policy or the ICT Policy is not made available on the university's website. *Table 7.14* below summarized the ICT Policy of the ten Malaysian universities. From the summary table below, the conclusion that can be drawn is that higher education institutions in Malaysia have not put much emphasis in developing policy or guidelines that govern the use social media technologies by their students or staff in the Institution.

*Table 7.14: Summary of ICT Policies*

| No. | University / Institution | ICT Policy | Last Revision | Remarks |
|---|---|---|---|---|
| 1. | INTI International College Subang | http://iics-sls.newinti.edu.my/it-services-guideline-policy | Aug 2008<br><br>(Uploaded on Sept 2014) | 10 pages policy document. Contains guidelines for Computer, Network / Server Account usage, Emails, Software Copyrights and downloads, etc. It has student / staff participation in non-INTI Websites, but does not have specific guidelines or statements that cover the use of social media within the Institution. |
| 2. | International Islamic University Malaysia (IIUM) | http://www.iium.edu.my/sites/default/files/users/138/files/ICT%20Policy%202-1.pdf | July 2012 | 13 pages policy document. Contains guidelines for access to ICT Resources, personal use of ICT Resources, Internet, Email and Messaging, personal websites, security of ICT Resources, etc. Does not have specific guidelines or statements that cover the use of social media within the Institution. |
| 3. | University Malaysia Sarawak (UNIMAS) | http://www.unimas.my/repository/pdf/ICT-policy.pdf | 2010 | Comprehensive policy document (76 pages) that includes policy for email, ICT distribution, Acceptable ICT Use (Staff), Email server, Web Policy, ICT Security, etc. However, there is no policy associated with the use of social media within the institution. |
| 4. | University of Malaya | http://ict.um.edu.my/?modul=Guidelines&pilihan=ICT_Rules_And_Guidelines_ | Feb 2013 | Comprehensive policy document (23 pages) in which in covers the ICT procedures and regulations, ICT Organization policy, ICT Development planning policy, ICT security Policy, ICT Facilities usage policy, etc. There is another separate document which described UM's ICT Rules and Regulations for the use of Computing Facilities. However, none of these documents are associated with the use of social media within the institution. |
| 5. | Taylors University | Not available in the website | - | - |
| 6. | Sunway University | Not available in the website(only available via University's intranet) | - | - |

| No. | University / Institution | ICT Policy | Last Revision | Remarks |
|---|---|---|---|---|
| 7. | Asia Pacific University of Technolgy and Innovation (APU) | http://webspace.apiit.edu.my/pluginfile.php/21/block_html/content/APUStudentHandbook_V5.pdf | 2014 | ICT Policies and Regulations are included in the Student Handbook (Section 6.0). Include guidelines for account creation and management, computer security, wireless policy, Internet, and policy violation. It doesn't have specific guidelines on the use of social media, but it has guidelines on the use of its Webspace forum discussion. |
| 8. | Multimedia University | Not available in the website(only available via University's intranet) | - | - |
| 9. | University Putra Malaysia (UPM) | Not available in the website (only available via University's intranet) | - | - |
| 10. | Universiti Teknologi Malaysia | http://cict.utm.my/wp-content/uploads/polisi/ict-policy.pdf | Feb 2008 | Comprehensive Policy (50 pages) which covers the procedure on the use of Internet, email, contents and publication in website, distribution of computer among staff, use of computer labs, etc. There is no coverage on the use of social media technologies. |

## 7.5 CONCLUSION

The increase in university initiatives in embracing social media technologies as part of their communication tools as well as in teaching and learning has the potential to improve and enhance students' overall study experiences with the university. However, without appropriate rules and guidelines to guide the usage of social media within the institution, this lack of information will potentially bring negative impacts to the institution and its stakeholders. For examples, loss of university's reputation, loss of privacy, loss of university's confidential and proprietary information, legal implications, and many more. As for now, Malaysian institutions of higher education might not realize the significance of having social media policy within the Institution as the official use of social media in the universities might not be as prevalent or mature as compared to the universities in United States, Australia or United Kingdom. However, it is just a matter of time when institutions in Malaysia will be like universities in other countries in which the use of social media becomes so common that the associated risks will also increase. Thus, it is crucial for institutions in Malaysia to start planning for their

own social media policy before it is too late. There are no specific rules of what needs to be be included in the content of the social media policy. However, institutions or universities can refer to those available or accessible online and customize their own policy according to the need and environment. Minimally, social media policy of an insitution should at least include guidelines on the personal use and professional use of social media, the dos and don’ts when commenting or posting on social media, and the penalty associated to the breach of policy or misuse of social media. It is also important to have a separate policy for student and staff as the coverage for both would be different. For staff, guidelines on professional use of social media are very important as academics are perceived as representing the institution. In addition, the guidelines can also help to standardize the social media presence created by staff to better represent the Institution’s image and branding.

# CHAPTER 8

# DISCUSSION

This chapter reviews the findings of the analysis of results completed in Chapter 5, 6 and 7 against the research questions and conceptual model developed in the earlier stage of this thesis.

The three research questions and sub questions developed at the beginning of this research are as follow:

1. **How are higher education institutions in Malaysia using SMTs?**
    a. What are the current SMTs practices in HE Institutions?
    b. What are the initiatives, policies and infrastructures provided by the higher education institutions in Malaysia in supporting the use of social media in the institutions?
    c. How does it align with students and academics perceptions?

2. **How are Higher Education students in Malaysia engaging with SMTs within their university experience?**
    a. How does this engagement manifest itself in teaching and learning?
    b. How does this engagement manifest itself in their relationship with their institution?
    c. How do these students perceive these engagements?
    d. Does the engagement of Informatics students differ from other disciplines?

3. **How are academics in Higher Education Institution in Malaysia using SMTs in teaching and learning, administration, governance and in their interaction with students?**
    a. What are their beliefs, intentions and current use of SMTs?
    b. How does this align with student perceptions?

c. Are there any differences with Informatics Academics from other disciplines?

Each of the above research questions and sub-questions will be further discussed in the following sections.

## 8.1 RESEARCH QUESTION 1 – USE OF SMTs BY INSTITUTIONS

The first research question is concerned with how the higher education institutions in Malaysia currently use social media technologies within their institution, and the type of support provided in ensuring the success of SMT adoption. Two groups of Institution administrators (academic administrators, and non-academic administrators) were surveyed and interviewed to further understand how they administered and managed the social media usage within their institution. Academic administrators who reside in the faculty, were responsible for supporting all the administrative matters pertaining to academic use (for example, monitoring of study plan, enrolment, collection of assessment tasks, et cetera.) and for supporting both students and academic staff within the faculty, while non-academic administrators, who resided at the Institution level, were responsible for institution wide administrative support such as student activities, finance, information technology infrastructure, et cetera. For this research question, the researcher aimed to examine the following: (1) the current SMTs practices in Malaysian higher education institutions; (2) the initiatives, policies and infrastructure provided by the higher education institutions in Malaysia in supporting the use of social media; and (3) how the use of SMTs align with their students and academics perceptions. Each of these sub-questions will be further discussed in the following sections based on the findings collected.

### 8.1.1 Current SMTs practices in Malaysia Higher Education Institutions

Through the findings collected from the anonymous surveys, interviews, and policy analysis, it was found that there was little official engagement with SMTs by Malaysian higher education institutions. Most Institutions used social media to create brand awareness, such as producing and publishing the University's corporate video on YouTube, or to produce the University's Facebook

page that promotes the University's image, activities, and events. In Malaysia, the use of SMTs by higher education institutions to create their official presence was still limited as compared to other countries such as Australia, the United States and the United Kingdom. Popularly used social media channels by most Institutions in Malaysia involve Facebook and YouTube only, while in many other countries, tools such as Instagram, Twitter, LinkedIn, Google+, et cetera. have been actively used. The icons for these social media tools can be clearly seen on the websites of these international universities or institutions. Some even have a Social Media Directory within their websites to show how actively SMTs are being adopted within the Institution's community. The emphasis on the use of SMTs was so high that some of these Institutions even had a dedicated Department, Unit or personnel who provide standard guidelines and procedures for using social media within the Institutions, and provide consultancy and advising services, training or workshops to individuals who are interested in developing official social media channels on behalf of their department, faculty or unit. In Malaysia, the researcher only found one University (University Teknologi Malaysia), which had a dedicated social media officer who takes care of all the social media related matters including providing resources and workshops on social media tools. However, comparing the supports and resources provided by University Teknologi Malaysia with a sample of overseas Institutions (University of Michigan, Vanderbilt University, Harvard University, and many more), it is definitely not as comprehensive and complete. For example, universities like Vanderbilt University have a Social Media Toolkit that aids staff who want to develop a social media presence within the university, while some other universities even include a flowchart or guides on how to respond to posts in the social media channels (example Vanderbilt University, University of New South Wales, and Monash University)

The use of SMTs within sampled institutions in Malaysia, whether used for communication, connection with stakeholders, or even for teaching and learning activities, appears to be entirely dependent on individual self-initiative (academic or non-academic staff). Most Institutions do not set any restrictions on the use of SMTs within the Institution, whether for personal use, academic use or official use. Each department and faculty within the institution has their own freedom in using social media to connect to their students. The faculty or program management team are responsible for their own administration of the social media channels, checking or posting of comments, and updating the social media content. The accountability of the social media content lies in the hands of each individual department, faculty or unit.

### 8.1.2 The initiatives, policies and infrastructures provided by Higher Education Institutions in Malaysia in supporting the use of social media in the institution.

As mentioned earlier, the initiatives and decisions to use SMTs within Malaysian institutions, departments, or faculties sampled were entirely dependent on individuals or heads of units. There is no mandatory enforcement of the creation of a social media presence within departments or faculties, no standardization of social media tools to be used, no acknowledgement by the universities of the social media channels or pages created by each respective faculties or department, and there is no social media directory within the university's homepage that lists all the available social media channels created by each faculty or department. In fact, the initiative of faculty members and academic staff to use SMTs for communicating with their students, or even for teaching and learning activities in classes, appears to be entirely dependent on individuals. According to the study, there is no monitoring of their use of SMTs within the faculty and classes by the institutions.

From the quantitative and qualitative data analysis, most participants commented that there was no social media policy in their Institution. This was confirmed when the researcher conducted a thorough search on the websites of both the private and public universities in Malaysia and only managed to find one university, which had a social media policy (Universiti Teknologi Malaysia). It appears universities in Malaysia have not realized the significance of having social media policy within the Institution as the official use of Social media in the universities might not be as prevalent or mature as compared to the universities in the United States, Australia or United Kingdom. Study participants also commented that they were not aware of any penalties associated with misuse of social media in their Institution. Apart from providing free Internet or Wi-Fi access and high speed Internet bandwidth within the Institution, there was no further support for social media related matters (for example helpdesk to handle issues concerning the use of social media, inquiries, troubleshooting, and many more.), resources (for example guidelines, handbook, workshops, social media toolkit, et cetera) or infrastructure provided by the institution in encouraging the use of SMTs. At the time of this study, universities were only emphasizing the use of their official Learning Management Systems (LMS) and portal, in which all

support and infrastructure was channeled towards these areas. A small number of study participants, (for example, those from INTI International College and University), claimed that their institutions once banned the use of SMTs such as Facebook and YouTube due to the increase use of Internet bandwidth. However as the demand for the use of these technologies increased, especially to support teaching and learning activities and for communications, their institutions eventually decided to lift the ban but still set limits on some gaming platforms to avoid students misusing the Internet bandwidth for unnecessary purposes. They hoped that their institutions will continue to upgrade the Internet bandwidth and WIFI accessibility as the use of SMTs becomes more popular in supporting teaching and learning activities, and the consumption of the Internet bandwidth within the institution increases. If Institutions do not take these issues into consideration, it might eventually interrupt the learning activities in class.

The growth in the use of social media among students and staff within institutions of higher education is quite significant. The detrimental effects posed by SMTs in the event of improper use by students and staff can be quite alarming. Social media policy is used to guide the use of social media within institutions, and the absence of that, will potentially bring negative impacts to the institution and its stakeholders. This might include the loss of a university's reputation, loss of privacy, loss of confidential and proprietary information, legal implications, the inability to control social media content, and many more. As discussed in Chapter 7, the implementation of social media policy by Malaysian institutions of higher education is still not prevalent as compared to universities in the United States, Australia or United Kingdom. Perhaps, this might be because SMTs have not been popularly or formally adopted in Malaysia as teaching and learning tools to support academic activities as discussed in the data analysis chapters earlier.

Junco (2011) identified three needs for student social media policies in higher education institutions. These are "(1) support usage that leads to positive outcomes, (2) intervene to help students whose technology use has caused or may cause negative outcomes, and (3) intervene to help students who are at the receiving end of negative social media behaviour" (Junco, 2011, pp1). Some other researchers and educationalists, who also called for the need for social media policies in higher education institutions, include Venable (2011), Malesky and Peters (2011), Eaton, Luse,

and Hodge (2012), and Ahlquist (2013). Venable (2011) has argued, in her article on Social media Policies in Higher Education, that there is no one perfect set of social media policies that can suit all instructors, students, institution, and even technologies. But all discussions on social media policies are useful in crafting the best practices or guidelines for institutions.

### 8.1.3 How the use of SMTs align with student and academic perceptions.

The responses given by the administrators on the use of SMTs within Malaysian Institutions were very positive. They generally used SMTs as the main communication tools to make announcements, provide program, faculty, and events updates, for sharing of resources, providing administrative support such as course advising, enrolment matters, et cetera. In terms of alignment with students, the participating administrators felt that SMTs were evolving platforms for communication and SMTs can be effectively used as a formal means of communication to reach out to students since SMTs are now easily accessible and people are constantly staying connected whether through their mobile devices, smart phones computers or laptops. Apart from relying on SMTs for communication purposes, administrators also used SMTs to provide academic support such as course and enrolment advice, study plan mapping, events or activities announcements and many more. As of now, most universities or institutions let their faculties or schools decide on the type of SMTs that they use, and on how they plan to use it, leaving them the flexibility to execute their own social media initiatives or plans. The use of SMTs enables administrators of the faculty to provide better administrative support to both students and academic staff.

There is a great deal of existing literature that discusses the use of social media in higher education showing that institutions of higher education are not only using social media to support academic activities but also for recruiting potential students (Nyangau and Bado, 2012; Constantinides and Stagno, 2012; Fusch 2011; Varsity Outreach, 2011; Barnes and Lescault, 2011; Barnes and Mattson, 2009), assisting students in enrolment related matters (Glassford, 2010), support student engagement and communication (JISC Inform, 2014; Baruah, 2012; Davis III, , Deil-Amen, Rios-Aguilar and Gonzalez Canche, 2012; Sturgeon and Walker, 2009), developing alumni

networks (Lauder, 2013; Lowe, 2012; Kowalik, 2011; Lavrusik, 2009), helping new students adjust and adapt to college life (DeAndrea, Ellison, LaRose, Steinfield, and Fiore, 2012; Stutzman, Capra, and Thompson, 2011; Madge, Meek, Wellens and Hooley, 2009), and many more. Top universities in the world like Massachusetts Institute of Technology (MIT), Harvard University, Stanford University, Imperial College London, are leveraging social media technologies and trends to connect to their potential students, current students, alumni and staff. For example, MIT uses MIT Connect, the official social media page that centralizes all social media channels and presences on a single page that enables its audiences to connect to the social media platforms of their choice. MIT Connect also provides the full directories of all of its official social media pages, which are easily accessible. MIT's Social media Dashboard displays the latest updates on tweets, blogs, Instagram, et cetera, enabling the audiences to access the latest information pertaining to the institution. Similarly, Harvard University, Stanford University and Imperial College London have their own social media page, social media dashboard or social network wall that provide the latest updates on the Institution's news and events, and links to the institutions official social media channels.

Martyn Harrow, chief executive for JISC, a nonprofit British digital education and research company quoted by Capelouto (2015, para. 4) said that *"With increased fees and greater competition for a job after graduation, students are choosing their universities very carefully now, and rightly so. Institutions need to make sure they're providing the best possible tech facilities and communicating with students over channels those students are already using."*

## 8.2 RESEARCH QUESTION 2 – USE OF SMTs BY STUDENTS

The second research question is concerned with how students use SMTs to support their studies. For this research question, the researcher aimed to investigate the following: (1) the engagement of students with SMTs that manifested itself in teaching and learning; (2) the engagement of students with SMTs that manifested itself in their relationship with their institution; (3) the student perception on the engagement; and (4) the differences of the engagements between Informatics and Non-Informatics students. Each of these sub-questions will be further discussed in the following sections based on the findings collected.

### 8.2.1 Engagement of students with SMTs that manifested itself in teaching and learning

Students undertaking Informatics Programs shared that the main challenges they faced about the program of studies were the expected technical skills in computing, the involvement of many practical applications, a constant need to adapt to rapidly changing technologies, and the complexity in programming skills and concepts which are tough to master. Thus, they often turned to online learning communities for help whereby they felt it could help them to resolve some of the challenges that they faced in their studies. Based on the findings collected during the quantitative data collection, more than 70% of students (irrespective of discipline of study), spent more than 5 hours online on a daily basis, and 90% and above of the participants were actively using SMTs for both general and academic purposes. In fact, the majority of them (73%) kept their social media applications active while they worked on their educational tasks. They mainly used SMTs for assignments or project collaboration, discussions, sharing of documents, information sharing, activities or events updates, information sourcing, and for communicating with their instructors, faculties or peers. Students viewed the use of SMTs for teaching and learning activities in classes by their instructors as an interactive way of learning, and a platform that gave them access to the teaching and learning resources anytime, anywhere. Some publications on the positive impact of social media technologies on students' learning include the work of Zgheib and Dabbagh (2012), Oskoz and Elola (2011), Yang and Chen (2012), and Churchill (2009).

Bateman and Willems (2012) reported that students used social networking tool such as Facebook to engage in peer tutoring activities. Students helped and supported each other through

collaborative learning processes. Other publications that discussed students use of social media in higher education institutions include Vivan, Barnes and Wood (2014); Sponcil and Gitmu (2013); Dunn (2013); and Akyıldız and Argan (2012). For example, in a recent survey conducted by Dunn (2013) to understand the use of social media to support learning by students from The College of Social Sciences of University of Glasgow, 68% of the respondents thought social media could enhance their learning experience, while only 22% felt it would not add much value or might cause distraction. The most popularly social media platform used by these students was Facebook, followed by Twitter, Google+, LinkedIn and Instagram. Other benefits of using social media to support learning highlighted in the study included an increase in student motivation and engagement with course materials, an increase student-to-student collaboration, enhanced student and lecturer's interaction and accelerated information sharing (Dunn, 2013). Comparing the results of this survey against the findings reported in Chapter 4 and 5 earlier, the findings were very similar where students in Malaysia also listed information or knowledge sharing, innovative teaching methods, peer-to-peer learning, strengthening lecturers and student's rapport as the major benefits of using social media to support learning. Students listed Facebook as their most preferred SMTs, but Twitter, Google+, LinkedIn and Instagram were not in the top 5 preferred list for the Dunn study. Instead, they listed Dropbox, YouTube, WhatsApp, and Skype or Blog as their next preferred tools. Finally, students in Malaysia do agree that social media might potentially cause distraction to their studies.

In research conducted by Creighton, Foster, Klingsmith and Withey (2013) on how the use of social media manifested itself in student's academic success, students claimed that the use of social media did help them connect to their peers and facilitate interactions with their instructors. They strongly felt that these helped in supporting their academic success. Students who participated in the focus group discussion of this research also shared how social media technologies helped them to gather academic resources for their studies. Other publications that support the evident of social media potentially enhancing student connections with their peers and faculty members include Crossman and Bordia, 2011; and Lin and Yang, 2011.

### 8.2.2 Engagement of students with SMTs that manifested itself in their relationship with their institution

Students viewed the use of SMTs by their Institution in a positive manner. Findings from the data collections indicated that Institutions in Malaysia have not fully harnessed the capabilities of SMTs and use it to support their current and potential students and staff. The adoption of SMTs within the Institutions is still very dependent on individual departments or divisions. Students shared that their institutions were using SMTs mainly for disseminating information, making announcements about university events or activities, posting updates about exam schedules and enrolments, et cetera. Individual faculty, schools or departments tended to have their own Faculty Facebook group, which was managed and controlled by the respective units. Some Institutions also created their own Institution wide social media page. However, based on the researcher's thorough checking on the universities or college's websites, information or links about any of the social media pages of the institutions were not made available or accessible via the Institution's main webpage.

The impact of SMTs on student engagement with their institution in the Malaysia context is not well understood as there are very limited studies that discuss this area. Even though there are now increasing numbers of publications in Malaysia that cover the use of social media by higher education students (Mohd Alwi, Ahmad Mahir and Ismail (2014); Yusop and Sumari, (2013); Al-Rahmi, Othman, Yusof and Musa (2015); Al-Rahmi and Othman (2013); Zakaria, Watson, and Edwards (2010)), all these existing studies focus on the use of social media in general, frequency of social media use by students, perception on the effect of social media towards effective communication in teaching and learning, and the use of SMTs for improving academic performance. None of these studies are discuss how the engagement of students in social media activities affect students relationships with the institution.

### 8.2.3 Student perception on the engagement

The research findings showed that all students were quite receptive towards the use of SMTs by their instructors and their institution. They commented that they preferred to use SMTs such as Facebook over their Institution's Learning Management Systems (LMS) as it is more convenient for them since they were already on Facebook most of the time. In addition, both students and academics commented that their LMS (such as Moodle and Blackboard) did not support a mobile version and this made access more difficult. However, Blackboard and Moodle do have a mobile version for their LMS. Perhaps the students and staff were not aware or informed on the availability of the mobile version. Other features of SMTs that motivated them to use SMTs to support their studies included the real-time notification features of Facebook that alert them on any updates that take place within the online community, receiving academic support from their instructors, the use of SMTs to support their learning activities, and the ability to ask questions and get fast responses from both their peers and instructors. In fact, they felt that the online communities set up by their instructors enabled them to learn from each other. In addition, they also felt that the use of SMTs helped to improve their communication with their peers, administrators, instructors, as well as the Institution.

A study of student's perception of Institutional use of SMTs as a learning tool by Dcom, Cant, and Neil (2013) revealed that the most important factors that influence student's perception are the 'Ease of Use', and 'Accessibility'. Some other factors that were deemed to be important by students included the 'Perceived Usefulness', 'Attitudes towards using it', and 'Intention to use it'. Comparing these findings against the findings collected from the Malaysian context, the matching factors given by the respondents above indicated 'Perceived Usefulness' as the main factor that influenced student perception. Other studies that revealed student's positive perceptions towards the use of social media as an official educational platform in their institution include Tasir, Hashen Al-Dheleai, Harun, and A.Shukor (2011); and Irwin, Ball, Desbrow, and Leveritt (2012).

### 8.2.4 The differences in engagement between Informatics and Non-Informatics students.

One common assumption about students undertaking Informatics programs is that they are supposed to be more exposed, advanced and adaptable at using SMTs as compared to Non-Informatics students since they are considered to be more technological-oriented due to their nature of the course of studies. In reality, Informatics students no doubt are more technological-oriented as compared to Non-Informatics students since their course of study requires high commitment, involvement, integration and use of technologies. In addition, they are also required to constantly keep pace with updates of new technologies, which happens quite rapidly. However, the findings showed that there were subtle differences between the Informatics and Non-Informatics students in terms of their ownership of digital devices, hours spent online, exposure to SMTs and use of SMTs. The amount of hours students spent online, the types of SMTs used and the pattern of usage in fact was very closely matched irrespective of the course study. More than 70% of the respondents spent more than 5 hours and above online every day, and about 90% of them used SMTs to support their academic activities. The top three most popularly used social media technologies for both Informatics and Non-Informatics students were social networking tools (example Facebook, Twitter, Google+, LinkedIn, et cetera.), media sharing tools (example YouTube, Flickr, Dropbox, SlideShare, Instagram, Pinterest, et cetera.), and Mobile Messaging Apps (example Whatsapp, Line, eBuddy XMS, Skype, DimDim, GoogleTalk, Tokbox, et cetera). In a nutshell the perception that Informatics students have higher ownership of technology devices, higher usage of online applications and more experience in the use SMTs as compared to their peers in Non-Informatics disciplines appears not to apply to Malaysian students. No other research could be located comparing course of study with SMT use, so it is unclear whether this finding is unique to Malaysia, or universal.

## 8.3 Research Questions 3 – Use of SMTs by Academics

The third research question is concerned with how academics use SMTs to support their teaching and learning activities in class. For this research question, the researcher aimed to investigate the following: (1) the beliefs, intentions and current use of SMTs by Malaysian academics; (2) the alignment with the Malaysian student's perceptions; (3) the differences of the engagements between Informatics and Non-Informatics academics.

Each of these sub-questions will be further discussed in the following sections based on the findings collected.

### 8.3.1 Academic's beliefs, intentions and current use of SMTs.

Comparing academic staff with students, academics reported more reservations or concerns over the use of SMTs for teaching and learning purposes. At the time of this study, none of the academic staff had used SMTs as part of their course assessment. SMTs were mainly used for basic communication, dissemination of academic resources, announcements and updates, basic academic support such as discussions and forums, and for monitoring student's academic progress. There were several reasons that motivated them to consider the use of SMTs for their classes. Firstly, the fact that social media has become part and parcel of student life. Many of the academic staff stated that they took the opportunity to leverage on this phenomenon and thought the use of SMTs might be a good option to gauge student's attention, to be closer to them, and to make learning activities more interactive. Secondly, SMTs have been a powerful communication tool used by students to get connected to their peers, friends and family. They are constantly connected to their social media, and this is again an opportunity for academics to get connected to their students easily. Thirdly, academic staff thought the real-time update features of SMTs enabled timely information to be disseminated to students and quick responses to be collected from them. Lastly, academic staff also realized that students prefer to use SMTs more than the institution's learning management system (LMS) due to the formality and flexibility of the latter. These reasons were enough to convince them to consider embracing SMTs to support their teaching and learning activities in class.

Based on the findings reported in Chapter 4 and 5, 94.7% of Informatics academics surveyed used social media technologies compared to 84.8% by the non-Informatics academics. About 77% to 78% of these academics claimed that they have used SMTs to support their teaching in classes. 81.8% of the Informatics respondents said they used SMTs for assignments or projects collaboration and sharing of documents, while the non-Informatics academics were using it for knowledge or information sharing (90%).

The most popularly used SMTs for teaching and learning activities by academic staff in class was Facebook. Many lecturers created Facebook groups for the subject that they taught every session. They used Facebook sites to communicate or connect to students, monitor students' academic progress, share teaching resources, make announcements about activities or events, and to extend academic support to students. Especially in the case of Informatics programs in which the technicality of the subjects and the practicality of the assessments involved are high, and the rapid changes in technologies are frequent, Facebook was considered to be a very useful tool to keep students updated with the latest information, and offer academic support from their peers and lecturers.

There are many other benefits that could be observed from the use of SMTs in higher education. An, Aworuwa, Ballard and Williams (2009) have reported on a survey on university instructors who had considerable experience in teaching with Web 2.0 Technologies, to explore the best practices, benefits and barriers associated with their use of Web 2.0 or social media for teaching and learning. The Web 2.0 tools used by these participants included blogs, Wikis, Youtube, social bookmarking, podcasts, webcasts, Facebook, Myspace, Flickr, Twitter, Skype, Second Life, and Tegrity. The common benefits recorded from their survey as compared to this study and some other publications (Vivan, Barnes and Wood (2014); Sponcil and Gitmu (2013); Dunn (2013); and Akyıldız and Argan (2012)) were 'Interaction, communication and collaboration'. The use of SMTs or Web 2.0 helped students to build a sense of community, increase their interactions among peers as well as with the instructors, promote collaborative works and encourage resource sharing (An, et al., 2009).

Academic staff who decide to embrace SMTs for teaching and learning activities need to be prepared to face potential challenges such as encouraging active participation and contribution to the online communities, constant monitoring of the online communities to ensure students do not get sidetracked too much from the original objective or purpose of the community, and be ready to spend longer and extended consultation hours which might be beyond the normal working hours. With that, the academic staff that participated in the data collections hoped to get support (such as infrastructures, training, et cetera.) and recognition from their management for the additional efforts and commitment that they put in on the adoption of SMTs in teaching and learning activities.

### 8.3.2 Alignment of the use of SMTs with student perceptions

The greatest challenge faced by academic staff in the adoption of SMTs for academic purposes is student's expectation of immediate response to their queries posted to their instructors on SMTs. As students are constantly hooked on to their social media, they expect their instructors to do the same. When instructors do not respond immediately, they tend to be upset about it. Thus, instructors need to set their ground rules and convey the message clearly to their students at the beginning of each session so that students are aware on this matter. From the data collection and the survey conducted after the observations, students were happy and supported their instructor's decision to use SMTs for teaching and learning activities in class. They commented that Facebook is user friendly, fast and it enables students to connect with their peers. Secondly, Facebook also supports a mobile version, which the staff and students believed the commonly used Learning Management Systems (LMS) do not have. They also liked the real-time notification feature that kept them informed with the latest updates. Students added that they might not be a regular contributor to their online communities, but they felt these online communities created by their instructors did help them in their studies, especially when they observe; the conversations about the subject being posted and answered by their peers or instructors, examples given or discussed within the communities, and inquiries regarding the assessment tasks given by the instructor. Students claimed that this informal way of learning makes their studies more interactive, and they felt more connected to their peers and lecturers which helped in building a better rapport. Academic staff also observed some benefits when using SMTs in classes. The

prevalent responses from them include they believed SMTs helped to improve student engagement and participation, communication, motivation to learn, rapport and offered timely information and fast responses as well as the ability to monitor their student's progress.

In summary, the successful adoption of social media to enhance student learning experiences via active learning and deep interaction between students and lecturers can only be achieved if there is an extended degree of technological engagement by all parties involved (Laird and Kuh, 2005).

### 8.3.3 Differences in engagement between Informatics and Non-Informatics academics

The findings of the data collection showed a slight difference in terms of the ownership of digital devices such as smartphones, tablets, laptops, et cetera. between Informatics and Non-Informatics academics. In addition, the time spent to go online by the Informatics academics was 50% higher compared to the Non-Informatics academics due to the nature of the discipline itself in which Informatics academics are involved and exposed to technologies more than the Non-Informatics academics. In terms of general usage SMTs, there was also a slight difference between the two groups of academics, where the Informatics academics were slightly higher compared to the Non-Informatics academics. Despite the differences in terms of the ownership and exposure, the percentage of respondents using SMTs for academic purposes and the type of SMTs used were closely matched. The only difference was the ranking of most preferred SMTs (for example, for Informatics academics, the most preferred SMTs were Facebook, followed by Dropbox, YouTube, What's App and Skype, while for the Non-Informatics academics, the most preferred SMTs were YouTube followed by Facebook, Wikis, Blogs and Dropbox), and for how SMTs are being used for teaching and learning activities with their students (example 81.8% of the Informatics academics used SMTs for assignments or projects collaboration and sharing of documents, while 90% of the Non-Informatics academics used SMTs for knowledge or information sharing). No other studies have been located reporting on discipline differences in staff SMT use.

## 8.4 HOW DO THE FINDINGS RELATED TO THE CONCEPTUAL MODEL

This section discusses whether the findings from data collection, analysis and observations conducted earlier match the conceptual model (*Figure 8.1*) developed at the beginning of this research (Chapter 3).

The original intention of the conceptual model was to guide the research process and to interpret the data from within a theoretical context. In order to better explain the connection of the conceptual model to the overall findings of the data analysis, the researcher has broken the explanations into multiple sections as follow.

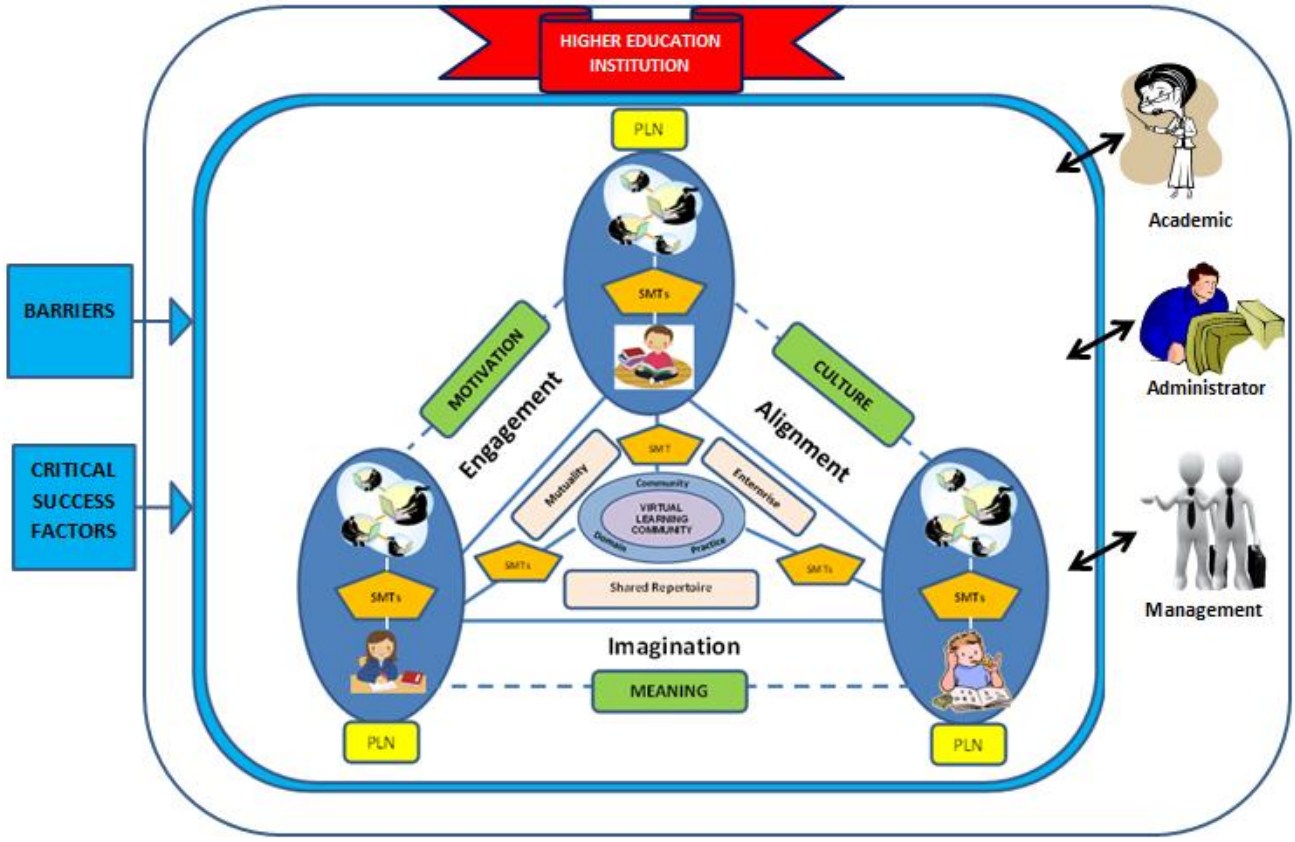



*Figure 8.1: Conceptual Model (Revisit)*

### 8.4.1 Stakeholders

The conceptual model showed the involvement of multiple stakeholders that will affect the adoptions of SMTs within the Institution. These stakeholders play an important role in the successful adoption of SMTs within the institution. Apart from the students, other stakeholders include the academics, the administrators and the management. All of the stakeholders except 'Management' were surveyed, interviewed or observed to get their views on the use of SMTs for Informatics Programs in Malaysian higher education institutions. The findings collected from students, academics and administrators, did identify the importance of the Institution's management in terms of the support provided, recognition given to the academic staff for their efforts and commitment, financial support, infrastructure, et cetera. Thus, the Management has been included as a stakeholder in the conceptual model as have a crucial role in ensuring the success of SMTs adoption.

### 8.4.2 Barriers and Critical Success Factors

Careful identification of the barriers or constraints and the critical success factors are crucial, as both will affect the adoption of SMTs. Some commonly identified barriers by the major stakeholders (students, academic staff and administrators) during the data analysis included 'Academic resistance', 'Distraction and loss of concentration' and 'Privacy and/or security concern'. There were many other barriers but some were only relevant to a particular group of the stakeholders such as 'Expected timely and fast response', 'extended consultation', 'informal tools', 'lack of management support', et cetera. which were relevant to only the academic staff. In fact these barriers will potentially lead to academic resistance or refusal to integrate SMTs into teaching and learning activities. It is important to properly manage these potential barriers and to develop strategies to control or minimize the barriers as much as possible to ensure the successful adoption of SMTs within the Institution.

On the other hand, factors that motivate and drive the use of SMTs in teaching and learning were also identified during the data analysis. The common success factors identified by all the

stakeholders included the availability or the improvement of the Internet connectivity, security, and privacy; and the commitment and participations from both students and staff. The support from the management of the institution, and the proper use of SMTs features or functions and its suitability for teaching and learning activities are also crucial in ensuring the achievement of positive outcomes.

By focusing on the barriers to SMTs adoption and the possible success factors discussed earlier, it helps to minimize the potential risks associated with the implementation of SMTs.

### 8.4.3 Connectivism

As discussed in Chapter 3 and at the beginning of this chapter, the Conceptual Model was developed based on the integration of Community of Practice Theory, developed by Ettiene Wenger (1998), and Connectivism Learning Theory, proposed by George Siemens (2004). Connectivism learning theory is best suited for disciplines or subjects that involve complex learning, a rapidly changing core, and diverse knowledge sources (Siemens, 2008). From the findings, both Informatics students and academics identified some challenges that they faced in pursuing and teaching in the Informatics discipline. Some of the challenges include the technicality of the subjects, practical applications requirement and the constant changes in technologies that require them to keep updating themselves with the latest information.

Fourman (2002) defined the scope of Informatics as follow:

> *The interaction of information with individuals and organizations, as well as the fundamentals of computation and computability, and the hardware and software technologies used to store, process and communicate digitised information. It includes the study of communication as a process that links people together, to affect the behaviour of individuals and organizations. (Fourman, 2002, p.2)*

Informatics programs are technological-oriented in nature. Students undertaking Informatics programs are trained to thrive in challenging advanced technical environments as manifestations of the fast-paced world of Information Technology. Students must be able to think logically and learn "how to learn" as "knowledge on demand" is one of the expected capabilities of Informatics graduates. This rapid change in knowledge and skill sets requires learners to not only be lifelong learners, but to be constantly connected to the field of computing.

All these challenges and expectations in fact make Connectivism learning theory a suitable paradigm for teaching and learning in this field of studies. In fact, the definition of Connectivism by Siemens (2004) aligns with the description of an Informatics program by Fourman (2002). Siemens (2004, p.6) defined Connectivism as follow:

> *Connectivism presents a model of learning that acknowledges the tectonic shifts in society where learning is no longer an internal, individualistic activity. How people work and function is altered when new tools are utilized.*

The keywords that could be extracted from Fourman's definition include 'Interactions', 'Technologies', and 'Communications'. In Siemen's definition of Connectivism, learning is no longer an internal, individualistic activity. This means 'interactions' and 'communication' with people and organizations. Secondly, it describes how the utilization of new tools will affect people. In the context of Informatics, this discipline by its nature is about the study, design, creation and use of 'technologies' or 'tools', and how the use of these tools would affect people.

The findings showed that students used more than one type of SMT that help them to build their own personal learning networks (PLN), and a PLN connects them to various online resources which they need to filter for correctness, reliability, integrity and accuracy. This Personal Learning Network is an informal learning platform for students in which they connect, interact and communicate with people, their peers, professionals, et cetera. in their own personal learning environment. Every student has their own unique PLN and they may be a member of more than

one online community. Each online community that they are connected to has many other members and each member again has their own personal learning network. The intertwined connections of the PLN, exposes students to diverse sources of information, which help them to acquire knowledge. The interconnectivity of this environment is what Connectivism is all about. As defined by Siemens (2006), "Knowing and learning are today defined by connections…. Connectivism is a theory describing how learning happens in a digital age. Connectivism is the assertion that learning is primarily a network forming process" (p.4). The effective sharing and sourcing of information in the entire network could be achieved through the connections supported and established via the use of Social Media Technologies.

The findings showed more than 70% of the students who participated in the data collections were active users in which they spent more than 5 hours online on a daily basis, checking or accessing their social media at least once a day, and keeping their social media applications active while they worked on their educational task. The respondents also said they joined online learning communities to seek help whenever they encounter academic related problems that they could not solve. They felt that online learning communities were useful in their course of study, especially in the field of Informatics. Both students and academics also identified participation and engagement as important elements or factors that ensure the successful adoption of SMTs. In fact, students did say that the lack of participation and commitment from students and lecturers was one of the constraints that constrain their use of SMTs in their studies.

*Figure 8.2* below illustrates how students in the digital age form personal learning networks (PLN) and how they are connected to each other via the connections of their network as well as their peer's connections via the use of SMTs. They interact in their virtual online communities that might be internally set-up by their instructors or study group, or can be external virtual learning communities such as the support groups for technologies. The collaboration and the interaction that take place in the communities will contribute to their learning and academic success, and this is the fundamental objective of Community of Practice and Connectivism Learning Theory.

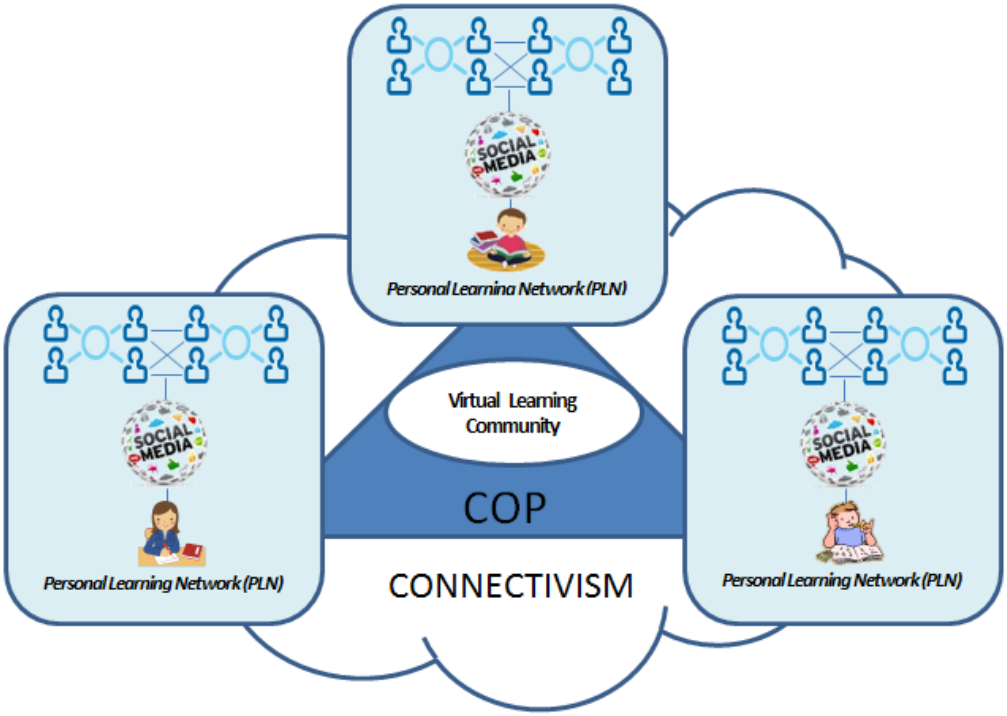



*Figure 8.2: Graphical representation of the summary of the Conceptual Model.*

In the conceptual model shown *in Figure 8.1*, there are three enabling conditions that linked students and their PLN together. As defined by Pettenati and Cogognini (2007) and discussed in Chapter 3, the three enabling conditions: Motivation, Meaning and Sociability, make members of the community commit and stay on. From the findings obtained in the data analysis and observations, these three enabling conditions were not clearly identified or specified but they were superficially described within the discussion. The respondents did share that one of the factors that will contribute to the successful adoption of SMTs was high commitment and participation from both students and academics, and their willingness to share within the communities. Obviously, if students are not motivated, and they could not relate the meaning or purpose of the communities, they will not want to stay on and be part of it. Similarly, if they are not sociable, they will not be willing to participate and share their resources within the community. Thus, the researcher did feel that these enabling conditions, which were previously specified in the conceptual model, do apply in the real context.

## 8.4.4 Community of Practice

The other fundamental learning theory behind the Conceptual Model discussed in Chapter 3 is Community of Practice (CoP). CoP is central to the learning model in this digital learning environment in which students started joining and learning via online communities. For example, a group page on Facebook, a Massive Open Online Course (MOOCS), Blogs, and many more. As shown in the findings, students were very receptive to their instructor's use of Facebook Groups within each subject that they took. In addition, the findings also show that most students are turning to online learning communities to learn new things as well as to seek help for the academic problems that they are facing in their studies. Both Connectivism and Community of Practice learning theory are highly relevant and connected to one another in the social media environments. Kop and Hill (2008, p.1) described, *"In connectivism, the starting point for learning occurs when knowledge is actuated through the process of a learner connecting to and feeding information into a learning community".* To form a learning community, students need to interact, engage and connect with each other actively so that the knowledge exchange process can be developed. On the other hand, to strengthen the learning community, students need to actively participate and contribute to the knowledge exchange process by connecting to each other within and beyond the respective community. In other words, students need to be connected to, and in, the community, and know how to source, access and filter the information that they require so that they could further contribute information and content to the community.

Similar to the previous Connectivism explanations in Section 8.4.3, the elements, dimensions and modes of belonging as shown in the Conceptual Model in *Figure 8.1* were not clearly or obviously identified during the data collection and observations. However, it could be indirectly represented through the data analysis results. *Figure 8.3* illustrates the extracted components from the central triangle of the Conceptual Model for easier reference in this section. Firstly, a close look at *Figure 8.3* showed three characteristics that surrounded the virtual learning community: Domain, Community and Practice. These three characteristics form the objective and purpose of the learning communities. In the context of the data analysis, students or instructors of every subject created their own respective learning community in which the focus was only on a particular domain or subject area. This learning community is usually a closed-group community in which

only approved members are allowed to view and participate in the information sharing and discussion. From the analysis discussed in Chapter 6, the online communities are either created by the respective instructor, or student representative who later invite the instructor to join the community. In terms of the practice, it is the shared repertoire of resources or specific knowledge that the community develops, shares, and maintains. In this case, it could be seen that instructors shared their teaching and learning resources in the community, updating events and activities details, and supporting students on academic matters, while students also interacted by posting comments, inquiries, sharing of new knowledge and ideas, as well participating in problem solving activities. These could only be possible if the members of the community speak the same language (in terms of knowledge and skills), and actively participate, are involved and contribute to their community.

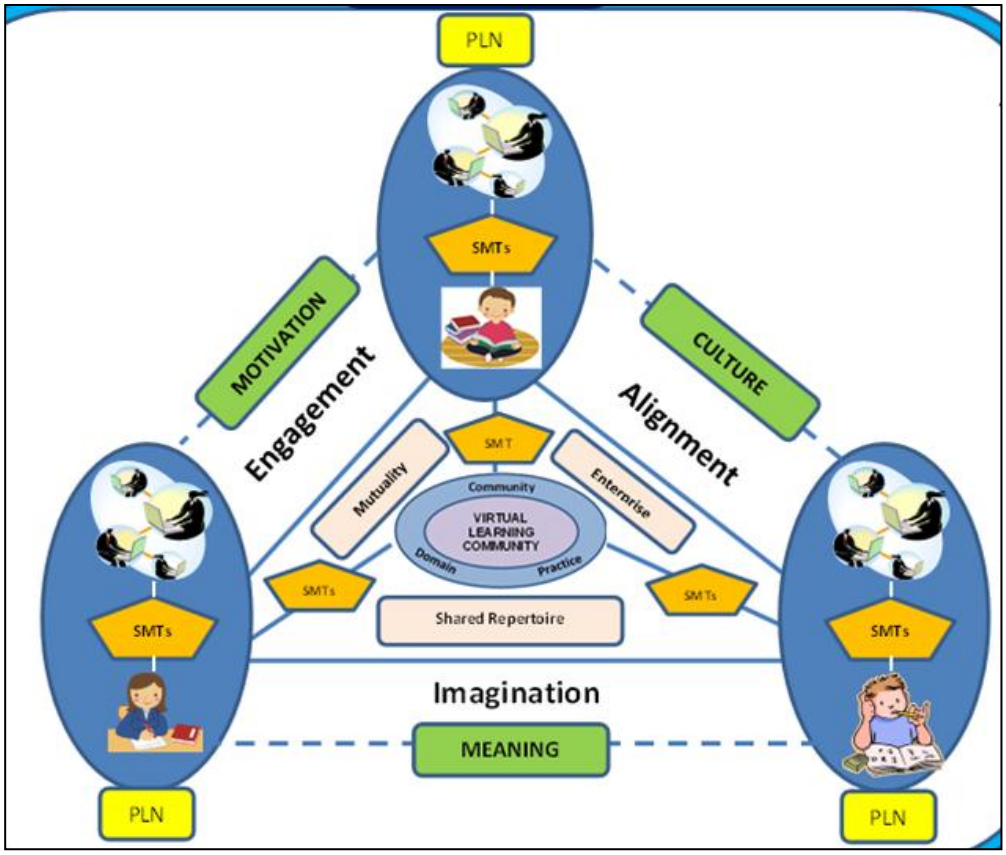



*Figure 8.3 – Extracted Components of the Conceptual Model*

Secondly would be the three dimensions Wenger (1998) suggested which help the members of a community to co-exist and work together. These dimensions include the Enterprise, Mutuality, and Shared Repertoire. Each online community by right is an individual enterprise itself. Members of the community are responsible to keep their enterprise active and functioning by having mutual understanding and a sense of belonging to each respective community. The shared repertoire refers to the communal resources produced by the community such as the language, routines, sensibilities, artifacts, tools, stories, styles, et cetera, that bond the members of the community together. During the observations, the researcher observed students and their instructors interacting within their community and contributing to their community. Interestingly, in this study, non-contributing students believed that their lack of contribution did not represent a lack of commitment and involvement with their community.

Lastly, the three modes of belonging defined by Wenger (2010), which he deemed to be important to capture the different forms of participation and position learning in the Communities of Practice (CoPs) includes Engagement, Imagination, and Alignment. The Engagement component represents students actively engaged in the social media technologies and the community that they belong to. Technically, imaginations help students to see themselves, and how they belong to the community, and alignment helps them to adjust their thinking, activities, communications and actions to fit into the learning community. However, these two components (imagination and alignment) are a bit difficult to measure by the researcher through the data collected as both are a bit individualized and internal properties of individual students.

### 8.4.5 Limitations of this study

One limitation of this study is the mapping of the initial Conceptual Model against the findings of the data analysis. *Figure 8.3* illustrates the summary of the qualitative data findings as described in Chapter 5.

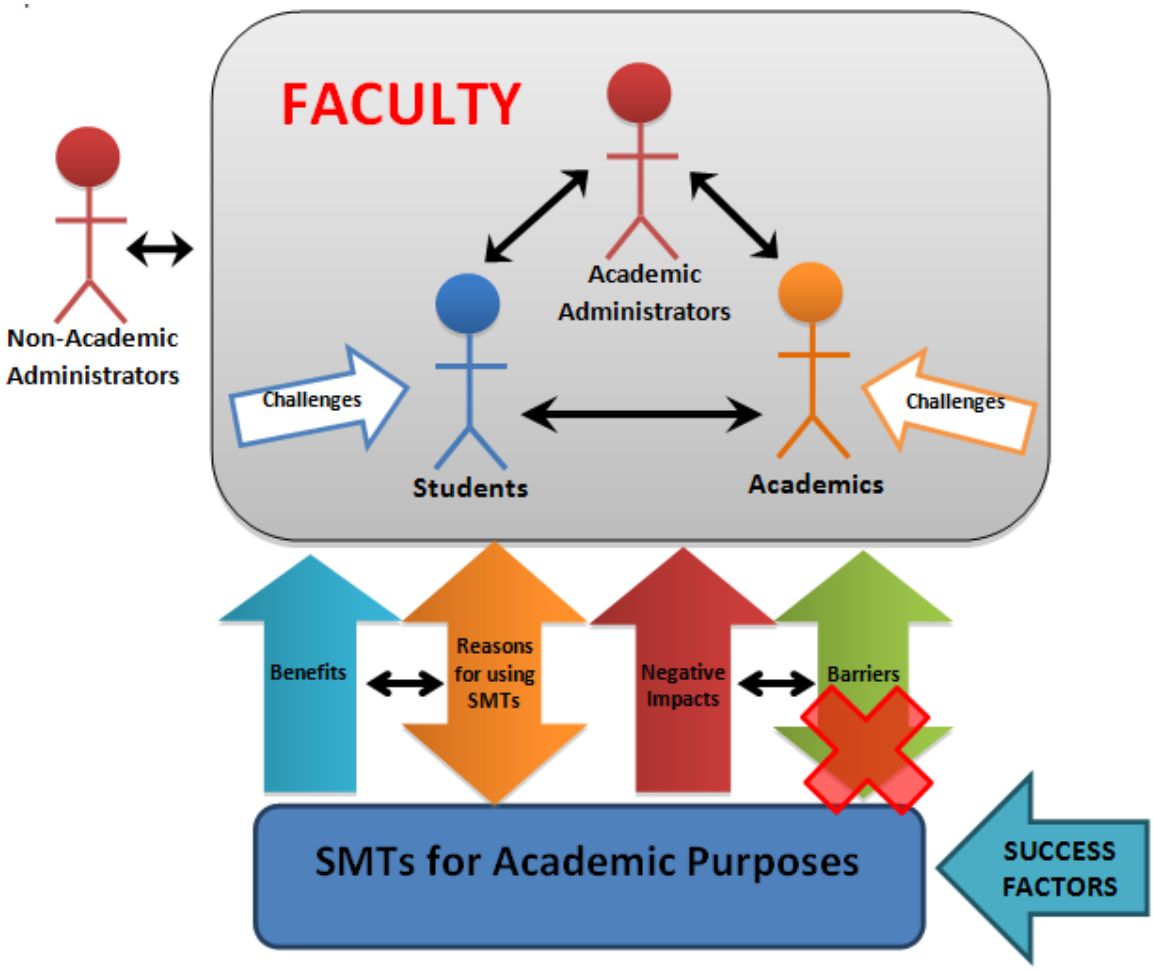



*Figure 8.4 – Relationship diagram for the cross analysis (revisit)*

The results of the findings do inform and match the major components as defined in the conceptual model. However, the 'Management' component in the conceptual model was not directly represented in *Figure 8.4*. During the qualitative data analysis, the management component was identified and discussed as part of the 'Barriers – Lack of Management Support and Recognition', and the 'Critical Success Factor – Management Support and Recognition', and thus, it was not represented as an entity in *Figure 8.4*. Some other components in the conceptual model, which could not be represented clearly in the findings, include the Personal Learning Network (PLN) and its connections, and the elements, dimensions and modes of belonging, which are located at the central triangle of the Conceptual Model (Refer to *Figure 8.3*). These components have been discussed and interpreted earlier in Section 8.4.4.

### 8.4.6 Further Research

As described in Section 8.4.5, this study is not able to support all of the components in the central triangle of the conceptual model clearly as the data collected did not represent the components as initially proposed. Further research is needed to fully understand how these components inform, influence and affect the successful implementation of SMTs that make use of the virtual learning communities to support student's learning, engagement and academic success.

Additionally, now that a broad picture of the use of social media technologies in Malaysian higher education has been reported here, more detailed studies of the specific outcomes of use of SMTs, using larger sample sizes to investigate the individual factors for success proposed in this study are needed. Further, the alarming lack of policy within the Malaysian context needs to be examined further to try to understand why so many higher education institutions have ignored the risks of unsupported and supervised SMT use within their institutions.

## 8.5 CONCLUSION

This chapter concludes that all the research questions identified at the beginning of the study were answered through the findings reported. Even though the numbers of participants involved in the data collections were limited, a broad picture has been produced of the current state of SMT use in Malaysian higher education. The findings have been mapped against the conceptual model, which was based on the Connectivism and Community of Practice (CoP) learning theory. It has been argued that most of the components stated in the conceptual model (for example the stakeholders, barriers, challenges, and success factors) were reflected in the data collected. . The centre part of the conceptual model, which represented the elements, dimensions and modes of belonging of virtual learning communities were difficult to measure as they are depended on the individuality of the participants. The researcher also felt a high connection between Connectivism with Community of Practice (CoP) learning theory, in which the formation and functioning of the online learning communities allows Connectivism to take its course.

# CHAPTER 9

# PROPOSAL

This chapter discusses the proposed framework that could be used as a guide by faculties of higher education institutions in Malaysia to integrate Social Media Technologies (SMTs) in teaching and learning activities. The proposed framework has taken into consideration the elements of the conceptual model as proposed in the earlier chapter in which all the stakeholders (Institutions, Students, Academics and Administrators), the barriers, and critical success factors have been considered. This framework has also considered the three types of factors identified by Nantz and Lundgren (1998) that will influence the adoption of technology at universities, namely the technical factors, individual factors and institutional factors. The technical factors are covered as part of the infrastructures element of the framework, while individual factors take into account the students and instructor's aspects. Finally, the institutional factors are covered at the bottom and top of the framework, i.e. the Institution's vision and missions, and the continuous quality improvement (*Figure 9.1*).

## 9.1 PRIOR RESEARCH ON SOCIAL MEDIA FRAMEWORKS

There is limited published research about frameworks for social media implementation in higher education institutions. The researcher found three publications on existing frameworks that discussed how social media could be implemented in education settings. The first publication was from Foroughi (2011) where he proposed a research framework to evaluate the effectiveness of social media implementation in higher education. Foroughi's framework provides a guide to researchers on how to conduct more rigorous and analytical research on the use of social media technologies (SMTs) in higher education by higher education institutions. It identified factors (independent variables) that impact on the implementation of Web 2.0 initiatives based on 3

levels (Macro - Institution, Mezzo - Instructors and Micro - Students) and the relevant outcomes (dependent variables) that should be measured or need further investigation. This framework enables researchers to drill into any of the specific factors (independent variables) that will impact an institution and its stakeholders so that the effect on the outcomes can be further analyzed to understand the effectiveness of the Web 2.0 initiatives.

The second publication is from Baxter, Connolly, Stansfield, Tsvetkova, and Stoimenova (2011) who developed an implementation framework to guide the adoption of Web 2.0 using a structured approach. The framework covers the four stages of implementation which includes planning, support, development and implementation. It also covers the activities involved in each stage along with clear justification for each activity. This framework focuses on activities that can be carried out to formalize the use of Web 2.0 or SMTs in the course curriculum.

Lastly, Hamid, Waycott, Kurnia and Chang (2014) developed a framework that guides lecturer's appropriation of social technologies for higher education. Unlike the previous frameworks proposed by Foroughi (2011), and Baxter et al. (2011), this framework only focuses on the process involved in implementing or integrating SMTs into a module by an individual instructor. It covers the 3 phases of appropriation, which include planning, management and assessment aspects on the use of SMTs by instructors. Additionally, the framework also includes 15 activities that instructors can engage in during the appropriation process. This framework provides a more systematic approach for instructors who decide to embark on SMTs for teaching and learning.

The researcher found the coverage of the three frameworks discussed earlier was incomplete and these gaps were considered and included in the proposed framework presented here. In Foroughi's framework, it mainly covers the identification and analysis of possible factors that affect the Web 2.0 initiatives based on the institution, students, and the instructor's perspectives (Foroughi, 2011). The framework does not discuss how higher education institutions could address these factors and guide the Institution in the integration of social media into their current practices. As for Baxter et al.'s framework, it is the most comprehensive framework among the

three discussed in this section. However, this framework does not cover the success factors relevant to the implementation of the Web 2.0 and the activities discussed do not focus on the student perspective. This framework does not clearly spell out whether the activities involved are at the faculty level or institutional level. It also doesn't cover the instruments used to measure the success or maturity of the implementation. Finally, Hamid et al.'s framework represents a structured process that an instructor has to undertake in appropriating social technologies for education purpose in an Institution (Hamid et al., 2014). The focus is mainly on the systematic process and detailed activities that individual instructor should carry out during the appropriation of SMTs on a particular module. The framework does not cover the broader aspects of the implementation that effect or influences the social media initiative, for example, faculty context or organization context. The summary of the three frameworks can be seen in *Table 9.1* below.

*Table 9.1: Summary of existing frameworks*

| Framework | Focus area | Downsides |
|---|---|---|
| Foroughi, 2011. | Factors that will impact the implementations of social media based on the 3 levels (Macro - Institution, Mezzo - Instructors and Micro - Students) and the intended outcomes to be achieved that can be used to measure the success of social media initiatives. | • Doesn't cover how HEIs could address the factors identified in the 3 levels.<br>• Doesn't guide the institution in the integration of social media into the current education practices (no implementation details). |
| Baxter et al. 2011. | 4 iterative stages of implementation, which includes planning, support, development and implementation. Also covers the activities involved in each stage and the justification for each activity. | • Does not cover the success factors relevant to the implementation of the Web 2.0.<br>• Not covering the instruments to measure the maturity / success of the integration.<br>• Does not cover the institution aspects of the integration. |
| Hamid, et al., 2014. | 3 phases of appropriation process which include planning, management and assessment aspect and the underlying activities for each process on the use of SMTs by instructors. Provide a more systematic approach for instructors who decide to embark on SMTs for teaching and learning. | • Does not cover the broader aspects of the implementation (faculty context or organization context).<br>• Focus on individual instructors and the associated modules only.<br>• Does not cover the factors that influence the success of the SMTs initiative. |

## 9.2 PROPOSED FRAMEWORK

The framework proposed here for the adoption of SMTs is represented in *Figure 9.1*. At a glance, the framework resembles a building-like shape that represents the Institution as an entity. The framework can be explained by segmenting it into 4 sections: the lower part, the sides, the middle, and the top. The lowest section of the framework is actually the most important part of the entire framework as it forms the basic foundation that will hold and support the structure of the entire framework.

In the case of this proposed framework, the institution's vision and mission forms the lowest section of the framework. With a clearly stipulated vision and mission, it guides the institution in developing their strategic plans, which will then be cascaded to the entire institution. There are six pillars that form and hold the structure of this framework: Infrastructures, social media policy, social media units and support, faculty and institution's support and recognition, social media resources and toolkits, and Faculty professional development. The middle section focuses on the faculty readiness in preparing and integrating social media tools as one of the vehicles to drive the teaching and learning in classes. There are three phases altogether, starting with Faculty embarkment on the initiative; research, awareness and education; and finally, the actual adoption or integration of SMTs which focuses on both the students and instructors. The integration and the maturity of SMTs adoption by students and instructors can be measured using the Bloom's Digital Taxonomy revised by Andrew Churches from the original Bloom's Taxonomy (Churches, 2001), and the proposed maturity stages by the researcher. At the top of the framework is a process of continuous quality improvement where the success and effectiveness of SMTs adoption by faculty members is measured, while reviewing the needs for further improvement. The individual elements of the framework will be further discussed in the following sections.

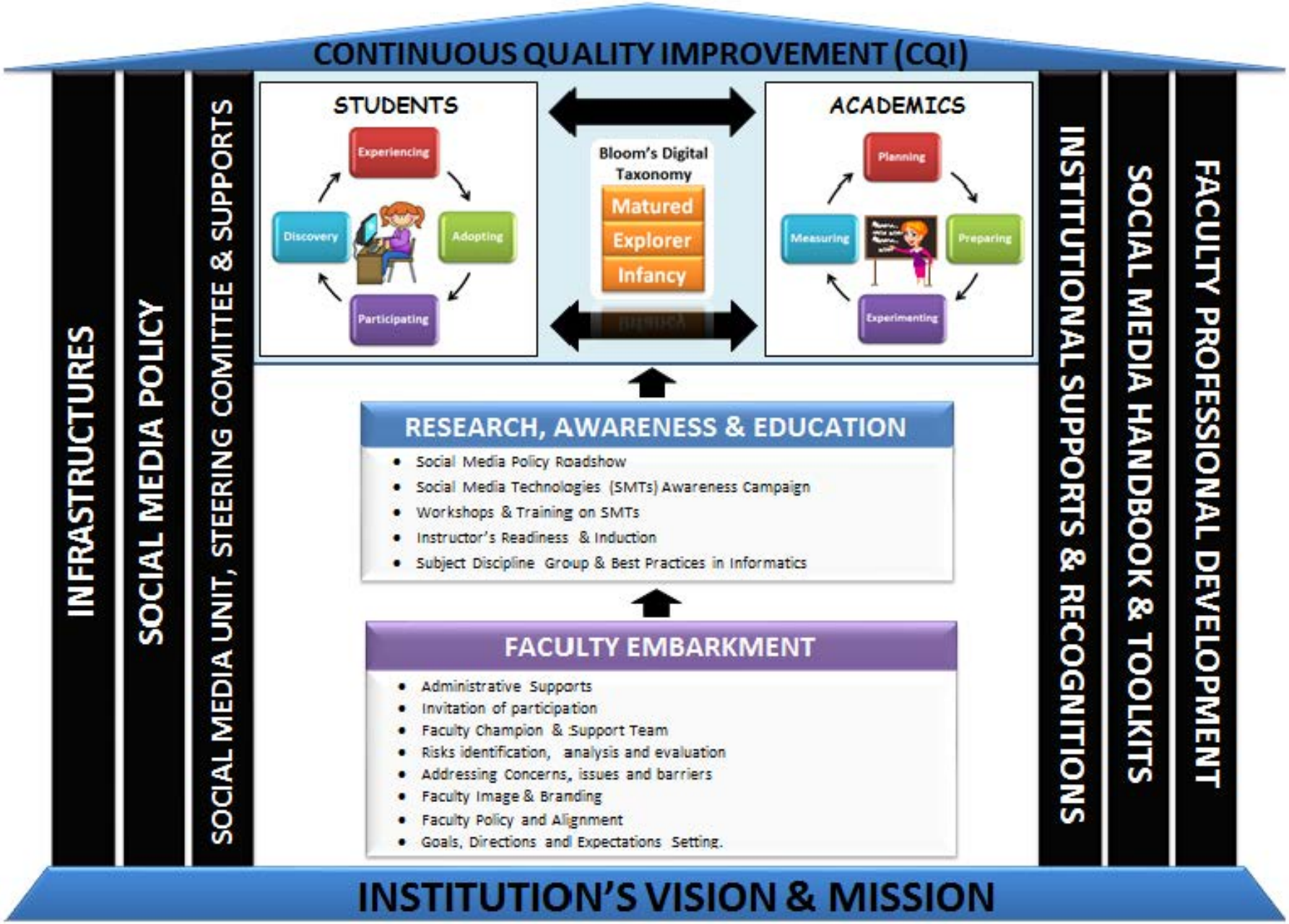



*Figure 9.1: Proposed Framework for SMTs integration*

### 9.2.1 How does the proposed framework addresses the gap in the existing frameworks?

The proposed framework addressed the gap in the existing frameworks by including the elements, which were absent in the existing frameworks (Foroughi 2011; Baxter et al. 2011, and Hamid et al. 2014). For example, the proposed framework includes the factors that will support and influence the success of the social media initiatives, which were not clearly described in Baxter et al. and Hamid et al.'s framework. The six pillars of the proposed framework cover these. The instruments used to measure the maturity of the integration and adoption of SMTs, which was missing from Baxter et al. and Hamid et al.'s framework, has also been covered in the Bloom's Digital Taxonomy and maturity stages of the framework. The proposed framework also emphasizes 3 levels of focus (Institution, Students, and Instructors), which is discussed in Foroughi's framework and not covered in Baxter et al. and Hamid et al.'s frameworks. Finally, elements which were not covered in Foroughi's framework such as how the factors identified in the 3 levels could be addressed, and the missing details of how Institutions could use the framework to guide the integration of social media into their current practices are covered in the six pillars and the Faculty embarkment on the initiative, research, awareness and education, and the actual adoption or integration of SMTs in the proposed framework. A summary of how the proposed framework addresses the gap of the existing frameworks can be seen in *Table 9.2* below.

*Table 9.2: Summary of Proposed Framework addressing the gap of the existing frameworks*

| Framework | The Gap | Addressing the Gap |
|---|---|---|
| Foroughi, 2011. | • Doesn't cover how HEIs could address the factors identified in the 3 levels. | • Six Pillars of the framework |
| | • Doesn't guide the institution in the integration of social media into the current education practices (no implementation details). | • Faculty embarkment on the initiative, research, awareness and education, and the actual adoption or integration of SMTs |

| Framework | The Gap | Addressing the Gap |
|---|---|---|
| Baxter et al. 2011. | • Does not cover the success factors relevant to the implementation of the Web 2.0. | • Six Pillars of the framework |
| | • Not covering the instruments to measure the maturity / success of the integration. | • Bloom's Digital Taxonomy and Maturity Stages. |
| | • Does not cover the institution aspects of the integration. | • Institution's Vision and Mission and the Six Pillars. |
| Hamid, et al., 2014. | • Does not cover the broader aspects of the implementation (faculty context or organization context). | • Institution's Vision and Mission, Faculty Embarkment, and the Six Pillars. |
| | • Focus on individual instructors and the associated modules only. | • Institution's Vision and Mission, Faculty Embarkment, the Six Pillars, adoption of SMTs, which focus on both the students and instructors. |
| | • Does not cover the factors that influence the success of the SMTs initiative | • Six Pillars |

## 9.3 INSTITUTION'S VISION AND MISSION

As of 8th September 2014, there were 26 public universities and 65 registered private higher education institutions in Malaysia which included the branch campuses or institutions as recorded by the Malaysian Qualifications Agency (MQA) in its website (MQA, 2015). It is indeed a very competitive market especially for private higher education institutions (HEIs) in Malaysia as there are so many choices for students. As reported in lecturerlink.com on 29th September 2013 (Lecturerlink.com, 2013), the Malaysian higher education market will continues to grow and there are six challenges that all HEIs will have to face. These challenges are (1) increasing international competition for international students which leads to the reduction of international students seeking education in Malaysia; (2) Increasing international competition for Malaysian students in which more Malaysian students are seeking education overseas; (3) Stiff competition among Malaysian institutions which includes the public institutions, private institutions, and foreign university campus in Malaysia; (4) Escalation in local competition for international students which involves more competition between public and private institutions, more alternatives provided by

foreign branch campus and changes in immigration and government policies; (5) Proliferation of rankings and ratings that leads to an increase in pressure to enhance quality, branding and academic reputation among institutions; (6) Continuous shortage of skilled workers in the academic industry. Additionally, HEIs are also facing challenges in this rapidly evolving education market with the introduction of new modes of delivery such as Massive Open Online Course (MOOCS), which might impact on Institutions that currently offer courses in traditional teaching and learning practices, rapid development of technologies and mobile devices, and changes in learning needs and expectations (Mirriahi, Dawson, and Hoven, 2012).

The NMC Horizon Report: 2014 Higher Education Edition, which is part of the NMC Horizon Project, is a comprehensive research venture established in 2002 that identifies and describes emerging technologies likely to have a large impact over the coming five years in education around the globe. This report was produced by a team of panelist, composed of 53 technology experts from 13 countries on six continents. They have identified six key trends that will drive changes in higher education. The key trends include (1) the growing ubiquity of social media, (2) integration of online, hybrid, and collaborative learning, (3) the rise of data-driven learning assessment, (4) a shift from students as consumers to students as creators, (5) agile approaches to change, and (6) the evolution of online learning. These key trends will drive the Institution's technology planning and decision making over the next five years (NMC Horizon Report, 2014).

Hence, it is indeed critical for HEIs to re-evaluate their current practices and operations in order to address the challenges and the key trends discussed above to maintain their competitive edge. Moreover, potential students today have too many choices when deciding on an option for their higher education, with a range of institutions that focus on high ranking or good reputation, industry-driven curriculum and student's experiential learning via innovative delivery. Future employers are also sourcing graduates who are well rounded, not those who just excel in academia. Mullen and Wedwick (2008) quoted the response of an MIT Professor Henry Jenkins in an interview with NEA Today (2008) that "*Today, the ability to navigate social networks, play games, or participate in online conversations affects the way young people present themselves to*

*the world. There's an informal learning that take place as they interact with digital media which gives way to certain skills, competencies, and literacies.*

Mullen and Wedwick (2008) also added that the knowledge and skills in using social media tools and the ability to use it for collaboration activities are essential in this 21st century. In fact, school can play a role in helping to close the growing digital divide in education by exposing students to all the essential skills for technological success.

The use of social media among students has become so prominent that a great deal of recent research has started to focus on the relationship between the use of social media within an institution and the benefits that it brings. For example, the use of social media by instructors can result in higher student satisfaction and an increase in student learning outcomes (Cao, Ajjan, and Hong, 2013), improvement in student engagement (Van Doorn and Eklund, 2013; Tess, 2013; Chen, Lambert, and Guidry, 2010), and improvement in student's academic performance (Al-Rahmi, Othman, and Musa, 2014). Thus, HEIs should consider the potential benefits of integrating SMTs as part of the delivery and set this as part of the Institution's vision and mission. The vision and mission will serve as a clear purpose, goals or directives that guide the overall Institution's operations. For example, an Institution mission could be 'To provide an innovative learning environment that expose students to 21st Century education' and an example of vision statement would be 'Our vision is to be a creative, forward looking and innovative university that focuses on high quality education through cutting edge learning experiences'. With the clear vision and mission in place, all members of the institution will then align their current practices to follow the institution's directions.

The use of SMTs as part of the teaching and learning delivery could be one of the ways to achieve the vision and mission of the institution. Social media technologies could be used to supplement the current teaching and learning practices within the institution that helps to drive the innovative transformation. The vision and mission statements also have direct impact on the six pillars of the framework as it determines how much of an emphasis and support the institution is willing to put

in to achieve the goals. For example, how much the institution is willing to spend and invest on their infrastructure, social media expert teams, technical and instructional support, policy design, faculty and staff development, et cetera.

Decisions to integrate SMTs as a supplement to the current teaching and learning practices need to be carefully planned in order not to disrupt effective existing practices. There are many issues that require careful consideration, for example, the formality of the implementation – shall it be formal or informal? To what extend shall SMTs be used within the institution? Are the current infrastructures sufficient and able to cope with the implementation? Are the instructors ready and equipped with the knowledge to use the tools? To what extend will the Institution's control or monitor the SMTs activities?

It is advisable that institutions consider phased implementation, i.e. implementing or integrating SMTs into the current practices in stages. The implementation could start off with selected faculties, programs or even subjects and review the outcomes of the implementation before consider implementation across the entire institution. This will not only help to minimize the risk of implementation, but also the ability to address the issues discussed earlier in more manageable manners. For example, upgrading of technology infrastructures could be done in stages, by observing the usage of the Internet bandwidth used during the implementation, and estimating the usage for further implementation. This will also help Institutions to better plan their IT Infrastructure's spending.

## 9.4 THE SIX SUPPORT PILLARS

The six support pillars of the proposed framework comprise of the infrastructure, social media policy, social media units and supports, social media resources and toolkits, faculty and institutional support and recognition, and faculty professional development. These six pillars play a

very crucial role in supporting the implementation of social media technologies within the faculty and institution. All the pillars will be explained in detail in the following sections.

### 9.4.1 Infrastructure

Infrastructure plays a vital role in the implementation of SMTs within the institution as it can be regarded as the backbone that supports the learning ecosystem of the institution. The daily execution and integration of the SMTs is highly dependent on the availability of the infrastructures in place. The infrastructure is mainly referring to the technology or information technology infrastructure, which can include the hardware, software, network and IT, services that are fundamental and essential to support the Institution's operation and smooth integration of SMTs into education settings. Even though access to SMTs does not incur additional costs to the students and the instructors, to ensure the smoother access, performance, maintenance, and support in the use of SMTs within an Institution, additional infrastructure investment from an Institution is essential.

EDUCAUSE, a non-profit association whose mission is to advance higher education through the use of Information technology, has published reports on the top ten IT related issues facing higher education institutions on an annual basis (EDUCAUSE ,2015). Most of the information technology issues listed are more towards the changes that new technologies or trends in IT have brought to HEIs and how HEIs could leverage these changes and relook into their IT spending or funding and the overall strategic priorities of the institution. In the recent report on the 2015 Top Ten IT Issues (Grajek, 2015), a few of the issues listed were quite relevant to the context of this study. For example, (1) Hiring and retaining qualified staff, and updating the knowledge and skills of existing technology staff; (2) Providing user support in the new normal—mobile, online education, cloud, and BYOD environments; (3) Developing mobile, cloud, and digital security policies that work for most of the institutional community; (4) Balancing agility, openness, and security. By understanding these trends, it helps HEIs to review their current IT spending and make decisions about their IT Infrastructure plans.

Higher education institutions need to make sure that their technology infrastructure is measurable in terms of the availability, accessibility, and performance. For example, Institutions need to ensure that Internet connections are always available and stable within the Institution. Not only that, the Internet connection must be easily accessible by its community either through wired or wireless connection and valid authentication. Lastly, the performance of the Internet connection (Internet bandwidth) must also be sufficient to support the community within the Institutions and the increased usage of SMTs to support teaching and learning activities. In fact, one of the challenges faced by higher education institutions now is the growing number of mobile devices and digital devices within the Institution. This phenomenon indeed has financial impact on the institution as the existing Internet bandwidth and speed might not be sufficient to support the growth of the usage. For example, when more instructors start using YouTube or podcasts, which requires Internet streaming, to complement their teaching, this also means that higher Internet bandwidth will be required to ensure that lessons are not interrupted. Besides upgrading the Internet bandwidth and speed, Institutions also need to make sure that the Wireless (WIFI) connectivity is easily accessible, and stable. Institutions also need to make sure that classrooms have sufficient power plugs or power points that allow students to charge their mobile and digital devices brought to class. Institutions can consider setting up some portable device charging stations within the institution as some students might also work on their education tasks outside the classroom settings.

The other challenge that Institutions will be facing due to the increase use of SMTs within the institution is the security and privacy aspects. Institutions need to develop comprehensive policies and guidelines to guide the use of social media within the community and mechanism to safeguard the organization's data and networks, and to protect the privacy of its stakeholders, without compromising access to the SMTs for academic activities. The guidelines would also inform students and staff on the dos and don'ts when using social media and avoid unnecessary social media activities that will potentially tarnish the Institution's reputation. Enabling students and staff to have access to all available SMTs will also pose potential risks to the Institution's network, for example virus, hackers, et cetera. When planning for the IT infrastructures, the IT Team needs to be vigilant about the network access and security issues.

Unlike the official learning management systems (LMS), SMTs are generally an independent platform, in which it is difficult for the Institution or the Information Technology Department to control the content and activities that take place within the social media environment. Moreover, there is additional responsibility and burden on the IT Support team as students and staff would expect them to resolve any technical issues that they encounter in their use of SMTs in the Institution. As SMTs are constantly evolving and more tools are emerging, this makes technical support work difficult. Thus, institutions might want to consider limiting or determining the types of SMTs that would be used in their Institution to support academic activities so that the IT team could better plan their support resources. As discussed in Chapter 5 (Quantitative Analysis) and Chapter 6 (Qualitative analysis), the findings showed that students prefer to use SMTs over the official learning management systems provided by the Institutions. However, SMTs cannot be used to replace LMS as the official tool in an Institution as they have a different purpose. Thus, the next challenge faced by IT teams is how to integrate or make SMTs and LMS compliment each other.

Lastly, Institutions need to make sure that their IT staff are equipped with relevant knowledge and skills that could help in supporting the current use of SMTs and digital devices. As more students are bringing their own devices to Institutions and accessing social media platforms via the Institution's network, this increases the chances whereby students will seek technical support from the IT team. This also means that IT staff need to be equipped with knowledge of many types of devices and social media platforms in order to be able to assist students when they are in need. *Figure 9.2* below depicts the summary of infrastructures that the Institutions need to consider and invest in, in order to ensure successful implementation of social media initiatives within an Institution.

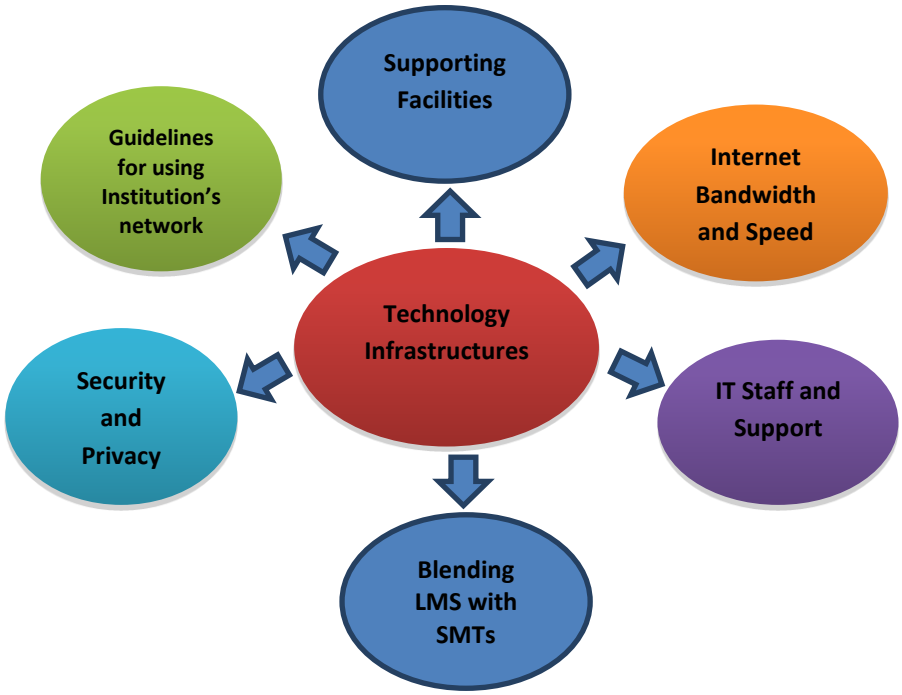



*Figure 9.2: Summary of Technology Infrastructures*

### 9.4.2 Social Media Policy

As discussed in Chapter 7, Social Media policy plays an integral role in higher education institutions to ensure proper use of social media by its stakeholders. The use of social media might post potential risks to students, staff and the institution. For example, loss of university's reputation, loss of privacy, loss of university's confidential and proprietary information, legal implications, and many more. Social media policy is meant to provide a guideline to legally protect all the stakeholders of an institution, and to highlight the negative impact to students and staff of the institution, for example, cyberbullying, or cyberstalking (Venable, 2011). Another negative impact that social media might possibly pose is the risk to reputation in which, the effect might not be easily reversed once it is tarnished. The objective of social media policy is not to restrict the use of social media within the institution but more to provide a clear statement to staff and students on how to use social media as a private individual or as a representative of the institution (Fusch, 2011). Junco (2011, p.60) argued the need for student social media policies for the following purposes*: "(1) support usage that leads to positive outcomes, (2) intervene to help students whose*

*technology use has caused or may cause negative outcomes, and (3) intervene to help students who are at the receiving end of negative social media behavior."*

Based on the findings in Chapter 7, most Institutions in Malaysia do not have a social media policy or guidelines yet. Perhaps, it is time for institutions in Malaysia to realize the importance of social media policy as an official guideline within the Institution that will ensure the proper used of SMTs and will support the overall integration of social media into the education settings. Institutions should develop clear social media policies and guidelines that cover not only the use of social media by students, but also instructors, and staff. In addition, the policy should also cover staff's personal and professional use of social media in the Institution. The policy or guidelines must include the dos and don'ts when using SMTs, guidelines for using SMTs, and the possible consequences in the event of breach of policy. It is crucial for the institution to brief its stakeholders on their social media policy and guidelines and the policy should be easily accessible via the Institution's portal or internal network.

### 9.4.3 Social Media Unit, Steering Committee and Support

Many universities have started setting up a Social Media Unit or Social Media Committee within the Institution to support the influx of SMTs use in the Institution. However, most institutions at this stage, locate their social media specialist in the Institution's Corporate Affairs, Marketing Communications or Digital Communications' Unit (example Indiana University, University of Sans Francisco, Vanderbilt University, University of Exeter, University of York, University of New South Wales, Universiti Teknologi Malaysia, et cetera), in which, their focus is more concerning the Institution's branding, image and reputation. They also tend to be responsible for developing standards to guide those who wish to create an official social media presence within the Institution, as well as working closely with the legal unit and ICT unit to develop social media policy and guidelines for the use of SMTs by students, staff, and other stakeholders. For branding and standardization purposes, the team would usually determine the type of social media platforms

that can be used, standard logo and sizes, themes, and format. They are also usually responsible for maintaining the institution's official social networks. As this research is focused on the integration of SMTs into education settings at the faculty level, the researcher felt it is important to have a Social Media Unit (which could either be standalone or located within the Centre for Teaching and Learning) that concentrates on the academic aspects of SMTs. For example, research on the best practices of SMTs use in higher education, practical workshops on SMTs, teaching and learning pedagogy workshops such as blended learning with SMTs, change of instructor's role and responsibilities, preparation of lesson plans with SMTs, dealing with students in social media environment, et cetera. This unit would also be responsible for compiling social media resources and developing social media toolkits that can help instructors who are novice users of SMTs to kick-start the adoption of SMTs into their teaching. Once they are familiar with the SMTs, they can then improvise with their own toolkits. The details of social media toolkits are discussed in Section 9.4.4 below. Apart from this, the Social Media Unit would also be responsible for the awareness campaign on the use of social media in higher education, briefing on the social media policy, guidelines and best practices on the use of social media for academic purposes, and to provide support to both the instructors and students on the use of SMTs for teaching and learning activities.

Within the Social Media Unit, a Social Media Steering Committee would be set up to oversee the progress and the quality of the social media initiative. A steering committee would be chaired by the a member of the Social Media unit and the members would be made up of Deans and Faculty Social Media Champions of each faculty. The responsibilities of the steering committee would include aligning faculty's goals, directions, and expectations with institution's vision and mission, setting the timelines for social media initiatives, hosting steering committee meetings at the end of every academic session to discuss the problems, challenges, outcomes and achievements of the social media initiatives within each faculty, sharing and reviewing the best practices of each faculty, setting evaluation criteria to measure the quality and success of the implementation, evaluating and recommending plans and activities for continuous quality improvement, and reporting to Institution's management on the progress of the social media initiatives.

### 9.4.4 Social Media Handbook and Toolkits

Not all Universities have a Social Media Toolkit within their Institution. In institutions where social media is well managed, the toolkit tends to be located via a Social Media Resources Page for staff in which the content might include the social media guidelines, personal use of social media, professional use of social media, advice on best practices in using SMTs, resources for popular social media platforms, guidelines on how to respond to posts, social media applications (to request the creation of official social media presence), Social Media Directory of the University, et cetera. Some of the examples of Universities that have Social Media Toolkits easily accessible via their University's Homepage include Vanderbilt University, Washington University, University of Rochester Medical Centre, Oxford Brookes University, York St. John University, et cetera. *Table 9.3* summarized the content or coverage of some universities' Social Media Toolkits. Most of the social media toolkits are focused on creating the official presence or branding within the Institution. The best practices and guidelines included in the toolkit tend to be quite general and not focused on academic use.

*Table 9.3: Summary of existing Social Media Toolkits*

| No. | University | Social Media Toolkit (Coverage) |
|---|---|---|
| 1. | Vanderbilt University Medical Center<br>http://www.mc.vanderbilt.edu/root/vumc.php?site=socialmediatoolkit | • Social Media Policy<br>• Personal Use Social Media<br>• Request a Consultation<br>• Consultation Form<br>• Participation Guidelines<br>• Popular Platforms<br>• Best Practices<br>• Responding to posts<br>• Managing Physician Online Reputation<br>• Medical Center Descriptions<br>• Links and References<br>• Vanderbilt Public Event for Social Media Promotion |

| No. | University | Social Media Toolkit (Coverage) |
|---|---|---|
| 2. | Washington University<br>http://www.washington.edu/marketing/social-media-best-practices/ | • Social Media Guidelines<br>• Blog Best Practices<br>• Facebook Best Practices<br>• Directory of UW Facebook Page<br>• Flickr Best Practices<br>• LinkedIn Best Practices<br>• Directory of UW Twitter Pages<br>• Video Best Practices (YouTube, ITunesU) |
| 3. | Oxford Brookes University<br>http://www.brookes.ac.uk/staff/marketing-and-branding/web-marketing/social-media-toolkit/ | • General Usage Policy<br>• Planning your social space<br>• Communicating and managing your space<br>• General hints and tips<br>• Social networks across the university<br>• Social media from September 2011<br>• Facebook timeline for pages |
| 4. | University of Rochester Medical Centre<br>http://www.urmc.rochester.edu/connect/social-media-toolkit.aspx | • Personal Use Guidelines<br>• Professional Use Guidelines<br>• Social Media Applications<br>• Social Media Contacts |
| 5. | York St. John University<br>https://www.yorksj.ac.uk/social-media-toolkit-1/social-media-toolkit.aspx | • Staff Toolkit<br>  ○ Social Media Policy<br>  ○ Tips for managing your social media presence:<br>  ▪ Facebook<br>  ▪ Twitter<br>• Student Toolkit<br>  ○ Tips on online footprint and safety.<br>• Social Media Directory |

For the purpose of the framework presented here, the researcher proposes Institutions also include a compilation of social media resources, which are more academically based in the Social Media Toolkit that can help instructors, who are novice users of SMTs to kick-start their SMT initiative. The researcher proposes Institutions consider developing a *'Social Media Handbook for Staff'* in which the components are mostly covered by the examples of the existing Social Media Toolkit indicated in *Table 9.3*. The researcher felt that the existing term 'Toolkit' might sound too implementation-specific which gives people the impression that it is a tool that could help instructors to plan their SMT initiative, but in reality, the content tends to be quite generic. Thus,

the researcher proposes this document to be named 'Social Media Handbook for Academics' which would include a section titled 'Social Media Toolkit for Academics'. The Social Media Toolkit for Academics would focus on academic-specific components on the use of social media for academic purposes by instructors and would include (1) A database of best practices in using SMTs for teaching and learning activities, and (2) A template for social media integration by popular platform (3) Guidelines for dealing and managing students in a social media environment.

In July 2014, The Network of Australasian Tertiary Associations announced that the Council of Australian Directors of Academic Development (CADAD) had completed an online Social Media Toolkit, which was the main output from a NATA partner project. The objectives of this online Social Media Toolkit are as follow:

> *"To offer a great range of resources aimed to support the capability development of network members in the use and affordances of social media. It also aims to improve connectivity and networking between Directors of Academic Development as well as with wider higher education stakeholders." (NATA, 2014, p.1)*

The sample screenshots of this online Social Media Toolkit can be seen in *Figure 9.3 and Figure 9.4.* This website includes resources for a varietiy of popularly used social media channels and are grouped according to the categories or purposes of use. There is also security / privacy guidelines included in the webpage, providing information to users on the dos and don'ts in social media environments. This Social Media Toolkit also allows educators to replicate, add, and personalize the resources and the toolkit for their own use. (CADAD, 2014)


*Figure 9.3: NATA – Social Media Toolkit (Homepage)*


*Figure 9.4: NATA – Social Media Toolkit (Social Networking)*

For the purpose of this study, the researcher proposed a list of components that HEIs would want to consider when implementing a Social Media Toolkit in the institution. The first proposed component of the academic toolkit would be a knowledge-management database that compiles all the examples of best practices in using SMTs in supporting academic activities. The case studies would be from either internal or external sources where instructors who have experience in the use of SMTs for their classes share their views, advice, descriptions on how they have done it, and the achieved outcomes with the rest of the community. The database can be compiled by disciplines in which instructors or academic staff can gain some insights into how it could be applied to their classes.

Proposed component would be a template for SMTs based on popular platforms such as YouTube, Twitter, Diigo, Blogs, Facebook, and many more. There is no agreed or perfect template for any social media platform, but at least the proposed templates could be used as a standard guide or point of reference to help instructors who are novice users in SMTs to plan and design their lessons. When the instructors have gained their confidence in the use of SMTs for academic activities, they could then personalized the templates or explore the advanced features of SMTs on their own.

Lastly, it is important to include guidelines on how to deal with and manage students in a social media environment. Communications in the social media environment tends to be very informal and casual. When academic objectives are injected into their social circle, students might get carried away and continue to communicate and behave in the same way as before. Instructors need to understand and know how to manage students who do not participate or engage in social media activities pre-planned for them, and dealing carefully with the unpleasant posts by students. Perhaps, it would be good to include a flowchart on how to handle negative posts and unpleasant situations in the social media environment. In addition, instructors need to maintain their professional image and appropriate relationship with their students. This is especially challenging when trying to mix a formal agenda (academic) with an informal agenda (social

activities). Instructors need to know how to communicate with their students in the social environment and at the same time manage student attitudes, expectations, participation and engagement to ensure the intended learning objectives and positive outcomes are achieved. *Figure 9.5* below is a sample of proposed social media handbook for staff, which includes the social media toolkit for academic.

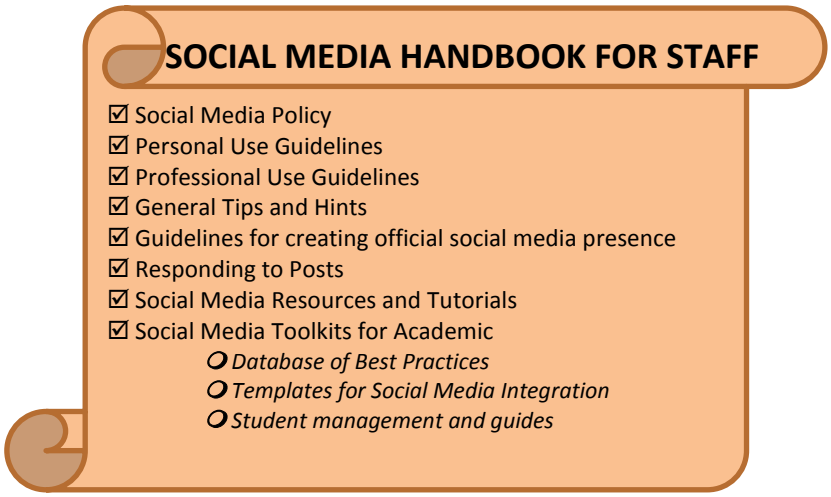



*Figure 9.5: Proposed Social Media Handbook for Staff and Social Media Toolkit for Academic*

### 9.4.5 Faculty and Institution's support and recognition

The findings of the qualitative analysis in Chapter 5 indicated a lack of faculty and institution support and recognition as one of the barriers to SMTs adoption in Institutions. The participants also identified management and institution support as one of the success factors that would determine the success of the implementation of a social media initiative in their institution. Examples of management or institutional support can be by means of instructor's workload reconsideration, sufficient faculty development and training, recognition of instructor's efforts by making this part of their annual key performance appraisal, investment in infrastructure and facilities that will support social media initiatives, forms of incentives that will attract and encourage more instructors to adopt social media for academic purposes, and development of clear policy and guidelines on the use of social media that will protect the security and privacy of staff and students in the use of social media for academic purposes.

As discussed in the findings of Chapter 5 – Qualitative Analysis, academic staff did note the increase in workload as one of the barriers that would make them think twice before deciding on integrating social media into their current teaching and learning activities. Integrating social media into curriculum involves additional preparation time from the instructors to redesign their courses and class activities, familiarise themselves with the tools, additional consultation time which might be beyond the normal class time, monitoring students' participations and engagement when using social media for academic activities, et cetera. Institutional recognition can be in terms of reduction of academic staff's workload to allow time for preparation, planning, redesigning and implementing of social media into the existing curriculum. Institutions also need to develop mechanism to reward the additional efforts put in by academic staff. For example, additional incentives or allowances for staff who embarking on this initiative, awards for innovative teaching and learning, setting it as the key performance indicators (KPI) which will be measured in the annual performance appraisal for staff.

Further forms of support by the institution could be to financially fund or invest in the facilities, infrastructure initiatives (including setting up social media units and support teams) and faculty professional development plans required for the successful implementation of social media. Upgrading of infrastructures and facilities tends to be an ongoing and continuous requirement in order to ensure the smooth running of the Institution's operations. In addition, investment on the professional development plan such as training, professional certificates and others should also take place from time to time, depending on the evolvement of social media tools and changes in education trends. Besides all these, it is also crucial for institutions to develop a clear and comprehensive social media policy and guidelines, which can protect the security and privacy of its stakeholders including the students, academic staff, and others. As mentioned previously, the use of social media will offers potential risks to the institution and its stakeholders. Thus, an effective mechanism needs to be in place to ensure that all the stakeholders of the institution will be protected from unnecessary risks when using social media within the institution. Refer to *Figure 9.6* for the summary of Institutional Support.


*Figure 9.6: Institutional Supports and Recognitions*

## 9.4.6 Faculty Professional Development

Faculty Professional Development is usually an ongoing process for every academic in his or her teaching career. Investment in faculty development is essential, especially when deciding on integrating technology in higher education. Aside from providing training on pedagogical aspects and skills on how to use technologies for teaching and learning, it is important to also provide training on understanding Net generation learners and their perception of the use of technology (Moore, Moore and Fowler, 2015). Knowing just how to use social media tools and how to apply their use to classes does not guarantee a successful integration of SMTs into the educational context. Instructors or academic staff need to understand how exposed the Net generation learners are to social media, how they use it, how they communicate, and how they behave and learn, in order to plan and design SMTs' activities which will attract students' participation and engagement in classes. Institutions could consider developing Faculty Development Modules, which can complement the social media initiative of the Institution or faculty. Some examples of

training modules adapted from Moore et al. (2015) and Josh (2012) are *'Shifts in faculty perceptions of students' expectations, Students' use of technologies such as instant messaging and blogs, Teaching strategies that can successfully address such behavioral shifts, Ways to design for active learning, The appropriate means for dealing with a range of privacy and security issues'* (Moore et al., 2015), and '*What's Social Media All About, Social Media Tools 101, Legal and Ethical Issues, Integration of Social Media'* (Josh, 2012).

With the advancement of technologies, Institutions can consider developing a series of online self-paced Faculty Development Modules that can help academic staff to prepare for the Institution's social media Initiative. It should be the decision of the Institutions to decide whether or not to make the Faculty Development Modules compulsory for all academic staff, but it may be more effective for only those staff that are adopting social media tools in their teaching. The researcher is recommending the following nine Faculty Development modules which are relevant to a social media Initiative. The modules should be completed in sequence. Details of the proposed Faculty Development Modules can be seen in *Table 9.4* and the sequence of the proposed module can be seen in *Figure 9.7* below.

*Table 9.4: Proposed Faculty Development Modules for Social Media*

| Module | Title and Descriptions |
|---|---|
| 1 | **The Net Generation: Who, What and How?**<br>This module covers the descriptions and characteristics of the Net Generation (Who are they), their exposure to digital technologies and social media expectation (What) and the way they use social media technologies inside and outside of classes (How). |
| 2 | **Connectivism: The new learning pedagogy**<br>This module introduces instructors to Connectivism, the new learning pedagogy for Net Generation proposed by George Siemens (2004), how it fits the learning of the Net Generation in this 21st Century, the benefits and how SMTs are associated to it and the importance of Personal Learning Network (PLN). |
| 3 | **Social Media in Education: The Good, The Bad and The Ugly**<br>This module covers the pros, cons and impact that social media bring to students, instructors, and the institution. |

| Module | Title and Descriptions |
|---|---|
| 4 | **Social Media Technologies: What, When and How?**<br>This module introduces instructors to SMTs characteristics, and descriptions on some popular tools, which can be used, in educational settings (What), purposes of the tools and when to use it (When), and tutorial on how the tools can be used (How). |
| 5 | **The Bloom's Digital Taxonomy**<br>This module introduces instructors to Bloom's Digital Taxonomy and why it is essential for 21st Century education compared to the original Bloom's Taxonomy. In this module, instructors will also be exposed to some example of tools, which can be used to achieve the objectives and outcomes of each level of the Bloom's Digital Taxonomy, and how it is related to Connectivism and student's Personal Learning Network (PLN). |
| 6 | **Instructors and the Social Media Technologies**<br>This module introduces instructors to active learning, their professional use of SMTs in the Institution, Instructor's perception on students and social media, alignment of instructor's perception with student's expectations, communication with students on social media environment, expected changes in current practices (examples change of instructor's role from teacher to a facilitator, additional hours for preparation, consultation beyond class times, and many more) |
| 7 | **Designing courses with Social Media Technologies**<br>This module introduces instructors on how to design their courses with Social Media Technologies. For example, selection of tools, designing the lesson plan, deciding on social media activities to be conducted, et cetera. |
| 8 | **Managing Social Media Classes**<br>This module introduces instructors to the actual implementation of SMTs in classes including setting of the ground rules in using social media in classes, connecting to students outside the classes, monitoring students' participations and engagements, and measuring the effectiveness of the uses. |
| 9 | **Blending Social Media with LMS**<br>This module introduces instructors to the knowledge on how they could use SMTs to complement the existing official LMS of the Institution. Instructors will also be equipped with knowledge on how to blend social media with the LMS. For example embedding Twitter (SMT) Into the Moodle site (LMS). |
| 10 | **Social Media and Assessments: Know how**<br>This is a more advanced module in which instructors will be equipped with knowledge on the use of SMTs beyond communications and discussion. Instructors will be exposed on how SMTs could be used to assess subject's assessment tasks and the effectiveness of practicing it. |

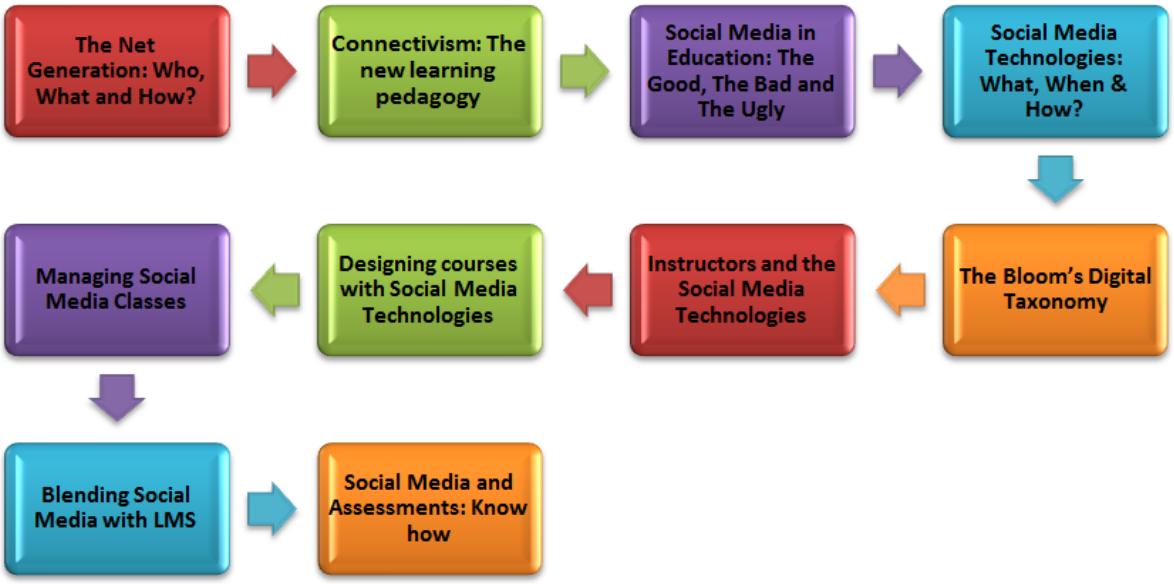



*Figure 9.7: Proposed Faculty Professional Development Modules for Social Media*

Aside from the above modules, academic staff should also be more proactive in their own professional development by sourcing and attending external conference, seminars, workshops and training pertaining to 21st Century Education and social media technologies for higher education. This would help to develop their knowledge and skills in innovative teaching and learning pedagogy, which in turn, could be applied to their own classes. Technologies evolve rapidly and new tools are available regularly, and this evolvement will impact the education industry in many different ways.

## 9.5 FACULTY EMBARKMENT

Faculty embarkment is where the actual implementation of the social media initiative takes place. Once the Institution has set its vision and mission, these directions would be cascaded down to the faculty level for execution. The management of the faculty would then set its own goals, directions and expectations based on the cascaded vision and mission. The Faculty needs to also revise its

policy to reflect the newly set goals, directions and expectations so that the current practices could be aligned accordingly. These policy, goals, directions and expectations need to be clearly communicated to the members of the faculty to ensure that everyone is well informed of where the Institution is moving. It also makes more sense if Faculty could repackage its image and branding to reflect the social media initiative that they are about to embark on. For example, creating a faculty presence on social media, and using it to support students on faculty administrative matters.

A Faculty social media champion is a person within the faculty who is appointed to spearhead the social media initiative at the faculty level. This person should be a person who implements the initiative, understands the faculty's goals, directions, and expectations clearly, and has some knowledge of the use of social media. The faculty champion would be trained by the Institution on how social media could be used in education contexts and how to provide basic support to their peers in the faculty. Depending on the size of the faculty, there might be more than one faculty social media champion. Apart from encouraging faculty members to participate in the social media initiatives and providing advice on social media implementation, faculty social media champions also should be responsible to provide support to their peers whenever they encounter problems or need help. It doesn't mean that faculty champions need to be hands-on or technical in order to help their peers to troubleshoot their problems, but at least the faculty champions should be able to identify the kind of help needed by the faculty members and refer them to the relevant unit or Institution support team for further action. All these problems with the solutions can be documented for future reference in the faculty. In other words, the faculty champion should be a spokesperson between the faculty and faculty members, responsible for conveying messages to both parties related to this initiative. It is recommended that the Faculty champion should be compensated either by reduction of teaching load, or by special allowance or incentives.

Introducing a new initiative to the faculty will usually draw many concerns from the faculty members especially when the institution attempts to formalize a process instead of giving them the flexibility of whether or not to use it. Even though, at the initial stage the participation should be voluntary, eventually, when more examples of success stories and best practices of SMTs

implementation become more prevalent, faculty members should be encouraged to blend their lessons with the use of SMTs. The Faculty management team should let faculty members voice their concerns, listen to each of them, and address each carefully to reduce resistance to implementation. At the same time, the faculty management team also needs to identify any other potential issues and barriers that will hinder the implementation. The implementation of SMTs in the faculty should be done in stages and the changes should not be too drastic since any introduction of new changes usually has associated risks. Potential risks need to be identified, analyzed and evaluated for negative impacts that it will bring to the faculty. If the negative impact is low, the faculty management team should see how best they could resolve it, but if the negative impact is high, then, they should bring it up to the steering committee for institution-wide consideration. If there are too many concerns raised by academic staff in the use of SMTs for teaching and learning activities then these concerns will potentially hinder the adoption of SMTs within the institution. The management of the Institution plays a crucial role in ensuring the success of SMTs adoption. By focusing on the barriers to SMTs adoption and possible success factors discussed earlier, this will tend to minimize the potential risks associated with the implementation of SMTs.

As mentioned earlier, faculty should take small steps in executing the social media initiative. Sending out invitations of participation to the faculty members can start this. The invitation can come with reviewing of the current teaching loads or incentives to encourage participation. Faculty Social Media Champions would also need to play a role in encouraging participation from their peers. At the start of the initiative, participation should be voluntary, and once the faculty members have experienced it, they could then share their best practices, and encourage more peers to join. The management of the faculty should give faculty members ample time to adapt and accept the new directive, especially when not all academic staff are technologically orientated and the familiarity of SMTs might be lower. Rushing into full swing of implementation will only increase the risk of resistance, which might potentially affect the quality of teaching and learning in class. Thus, clear planning needs to be in place with clear timelines communicated to every member of the faculty well in advance, giving them some flexibility in personalizing their social media approach.

The social media initiative is not complete without effective administrative support. As students and faculty members are going to be heavily exposed to SMTs in their academic activities, it would make good sense if the faculty will also start to provide administrative support to students via social media. For example, use of Twitter or Facebook to make announcement on class cancellation and changes, changes in timetable, faculty updates and news, et cetera. This also means that administrative staff who are responsible for supporting students are also required to be familiar with the use of SMTs, the professional and personal use of social media in the institution and communication guidelines with the students. The summary of faculty embarkment can be seen in *Figure 9.8* below.

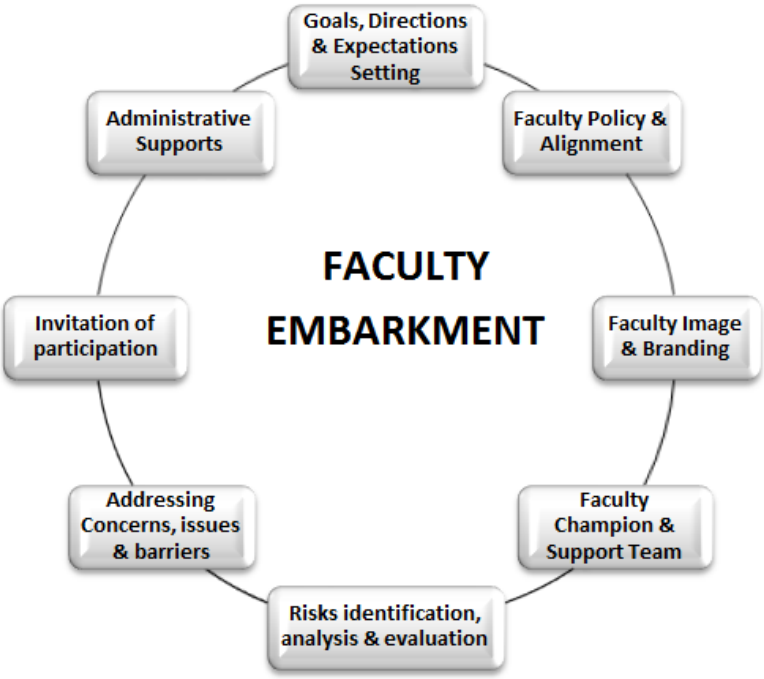



*Figure 9.8: Summary of Faculty Embarkment activities*

## 9.6 RESEARCH, AWARENESS AND EDUCATION

This section focuses on the preparation and induction for the faculty members prior to the actual execution of the plan by faculty members in the class. Before the actual induction program, faculty social media champions could share research on best practices of using social media in Informatics

courses with faculty members. The purpose of this activity would be to expose faculty members to the existing examples of best practice that can help to build their confidence in the use of social media in the field and context of their teaching (in this case, the Informatics courses), and to also give them some ideas on what they could try out on their classes. By doing this, the faculty members could better visualize how the same could be applied to them. In addition, within the Informatics faculty, instructors can be grouped based on their subject discipline (Subject Discipline Group), for example Information Systems, Multimedia, Programming, Web Development, et cetera. Through this Subject Discipline Group, they should discuss the challenges that they possibly face in teaching in the respective disciplines with the implementation of SMTs, research on the best practices and proposed plans and tools, which might be well suited to the disciplines

Faculty members who earlier volunteered to participate in the preliminary round of the social media initiative would be given an induction session which would prepare them for the expectations and experimentation of SMTs in their classes. During the induction session, instructors would also be briefed on the Social Media Handbook for Academics as well as the Social Media Toolkit, which they could explore and consider for assisting them in planning for their lessons. A simple background check on the instructor's social media exposure and knowledge would also help to identify the type of training required and their readiness to kick-start the initiative. For the beginners, it should be compulsory for them to complete the modules as planned in the Faculty Development Modules for Social Media discussed in Section 9.4 earlier before jumping into execution of the plan.

Prior to the actual implementation, a SMTs Awareness Campaign at both the Institution and faculty level needs to be held to create awareness about the Institution's social media initiative. The awareness campaign needs to be extended to all the stakeholders of the institution, including existing students, potential students, parents, staff, et cetera. The Awareness Campaign could include a roadshow, briefings or talks, posters, media releases, publishing on Institution's Webpages and Faculty Webpages, et cetera. A roadshow on the new Social Media Policy would also need to be conducted to brief students and staff on the contents of the Social Media Policy, guidelines on using Social Media for personal and professional purposes and the possible

consequences for breaching the Social Media Policy. The roadshow should be a briefing faculty by faculty, and should be separate for students and staff. The written policy should be easily accessible by the members of the Institution. Refer to *Figure 9.9* for the summary of activities in the Research, Awareness and Education.

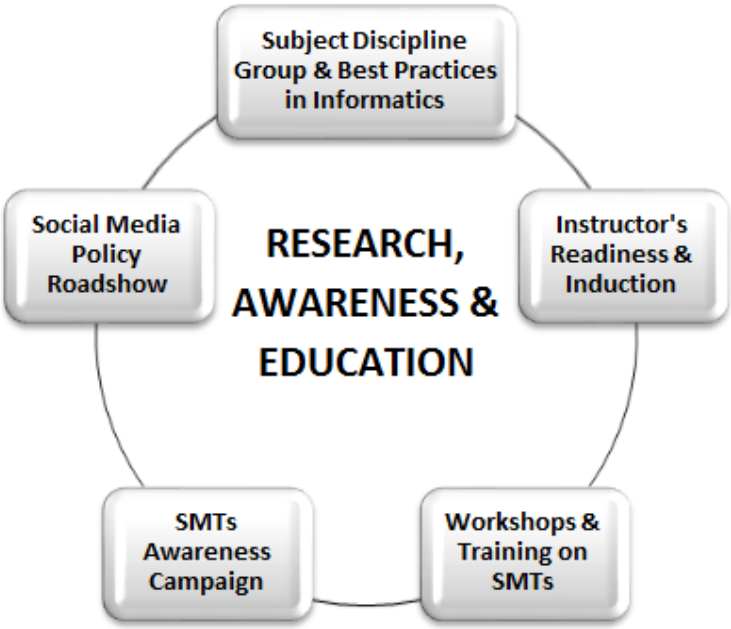



*Figure 9.9: Research, Awareness and Education*

## 9.7 SMTs EXECUTION

The actual SMTs implementation should be separated into two components: the academics, and the students. These are both interrelated and interconnected since the outcomes of one will affect the planning of the other. There are four phases involve in both categories of implementation. For the Academic staff, the four phases include Planning, Preparing, Experimenting, and Measuring, and for Student, the four phases would be Experiencing, Adopting, Participating, and Discovery. Bloom's Digital Taxonomy would be used to measure the maturity of the social media adoption, and the outcomes of the implementation. The detailed explanation for each category of implementation is discussed in the following sections.

### 9.7.1 SMTs Implementation for Academics

As mentioned earlier, there are four phases involved in the implementation of social media for classes by academic staff, which includes Planning, Preparing, Experimenting, and Measuring. After academic staff that volunteered to participate in the initial social media initiatives attended all the necessary Faculty Professional Development Modules relevant to social media, they can then start to develop a social media activities plan for their classes. Lesson plans with descriptions of how the social media activities are to be conducted in classes need to be clearly recorded. Instructors need to decide on the types of activities (example communications, reflective report, discussion forums, et cetera.), types of social media tools to be used (example Facebook, Twitter, Whatsapp, Google+, Blogs, et cetera.), topics to be covered, whether or not to include it as part of the course assessments, how to monitor participation and engagement, how to manage the use of social media in classes, how to measure the effectiveness, and the expected outcomes. When deciding on the types of activities and social media tools to be used, instructors can use the Bloom's Digital Taxonomy as a guide for their plan. A copy of the SMTs plan would be submitted to the Faculty Social Media Champion for review and approval, and the plan would then be submitted to the Steering Committee for continuous quality improvement purposes. Once all the plans are approved and properly in place, the instructors can then prepare for the actual execution of the plan by briefing students who enroll for the class on the initiative, communicating to them the expected learning outcomes upon completion of the module, setting ground rules and communicating instructor's expectations clearly, reminding students of the Institution's Social Media Policy and the guidelines of using it, checking on student's familiarity with the tools that will be used, and if they are not familiar, providing them with a simple demonstration on how to use it.

The third phase is the experimenting phase in which instructors will roll out their social media plan in class. This phase is subject to improvement as it is highly dependent on the acceptance and participation from students. The activities that will take place in this phase include rolling out social media activities, monitor and encourage student's participation and engagement, facilitation activities, managing students in social media classes, observing the activities and sufficient infrastructures that supports the activities, and identifying and addressing issues and challenges which disrupt or potentially disrupt the execution.

Lastly, the final phase should include the measuring phase in which the effectiveness of the implementation should be measured based on the criteria defined earlier during the planning phase. Instructors would assess whether or not the learning outcomes of the course are met through the use of the social media activities. Student evaluation through a teaching and learning survey would also be conducted with students to collect feedback on the effectiveness of the social media activities and their feedback for improvement. The results of the survey would be analyzed for continuous improvement instead of using it to measure instructor's performances. These results could help instructors to better plan their social media activities for the subsequent session, and they could also explain the iterative process of the diagram as shown in *Figure 9.10* below.

Instructors also should prepare a reflective report on their implementation, recording their experiences, processes, observation on activities and students' participation and engagement, challenges and issues that they faced, and the outcomes of the adoption. The positive experiences and outcomes from the instructors and students will be recorded and should be accessible to the Faculty Social Media Champion and the Faculty Management Team for reporting to the Steering Committee as part of the progress monitoring process. Instructors can also share their positive experiences with peers during the Faculty's Social Media Best Practice Session to encourage more participation in the coming sessions. The summary of all the four processes for academic staff can be seen in *Figure 9.10* below.

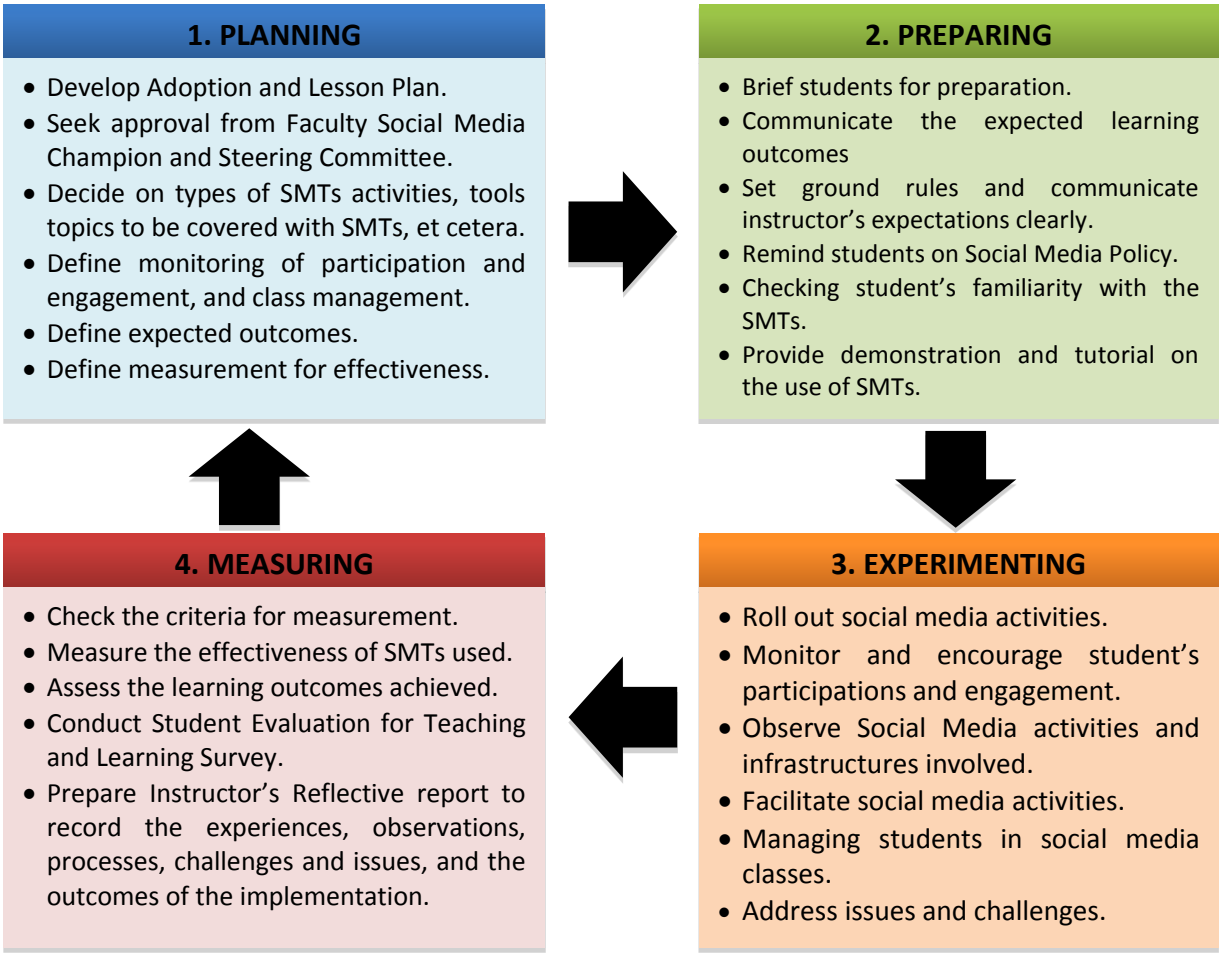



*Figure 9.10: SMTs implementation Phases for Academic*

### 9.7.2 SMTs implementation for Students

Similar to SMTs implementation for academics, there are four phases involved in the implementation for students. The four phases should be Experiencing, Adopting, Participating, and Discovering. In the experiencing phase, this is where students would be briefed on the objective of the use of SMTs in classes by their instructors, the ground rules and expectations, the guidelines on the use of SMTs for classes, and the expected outcomes to be achieved by the end of the session. A technology background check would be conducted by the instructor to understand student's exposure and familiarity with the SMTs to be used in classes. Instructors could also

demonstrate to students the features and functionalities of some selected tools to help students to kick-start their use of SMTs in classes and students can later further explore the tools by themselves.

In the Adopting Phase, students would try to use SMTs in class but as a beginner, they might not participate or contribute much to the group. They are mainly observing the use and seeing how their peers interact and contribute in class. If the confidence level of the students is still low in this phase, instructors might need to monitor and encourage students to help them build their confidence. Students will try to adapt and might refer to their peers or turn to online resources for help in using the tools in class. In the Participating Phase, students would be expected to gain more confidence in using SMTs and start to participate and engage in social media activities. They would start interacting with their peers and form a virtual community that could support their learning in class. Instead of just being a passive participant by observing the activities that take place in the virtual environment, students would now become active participants who contribute their ideas and share resources that make the virtual community livelier. They would also collaborate with their peers using SMTs to complete the tasks assigned to them by their instructor. In the final phase of implementation, students would now be familiar with most of the features and functionalities of SMTs. In fact, they should have started exploring more tools, which are beyond those used in class. In addition, they should be able to be involved in meaningful and applicable problem solving activities in class. Their Personal Learning Network (PLN) would be expanded and they might even explore virtual communities beyond their own group and start to build their connections with others. Students should also be able to evaluate and create new content within their group and discover new knowledge along the way that could help them in their studies. The summary of all the four processes for students can be seen in *Figure 9.11* below.

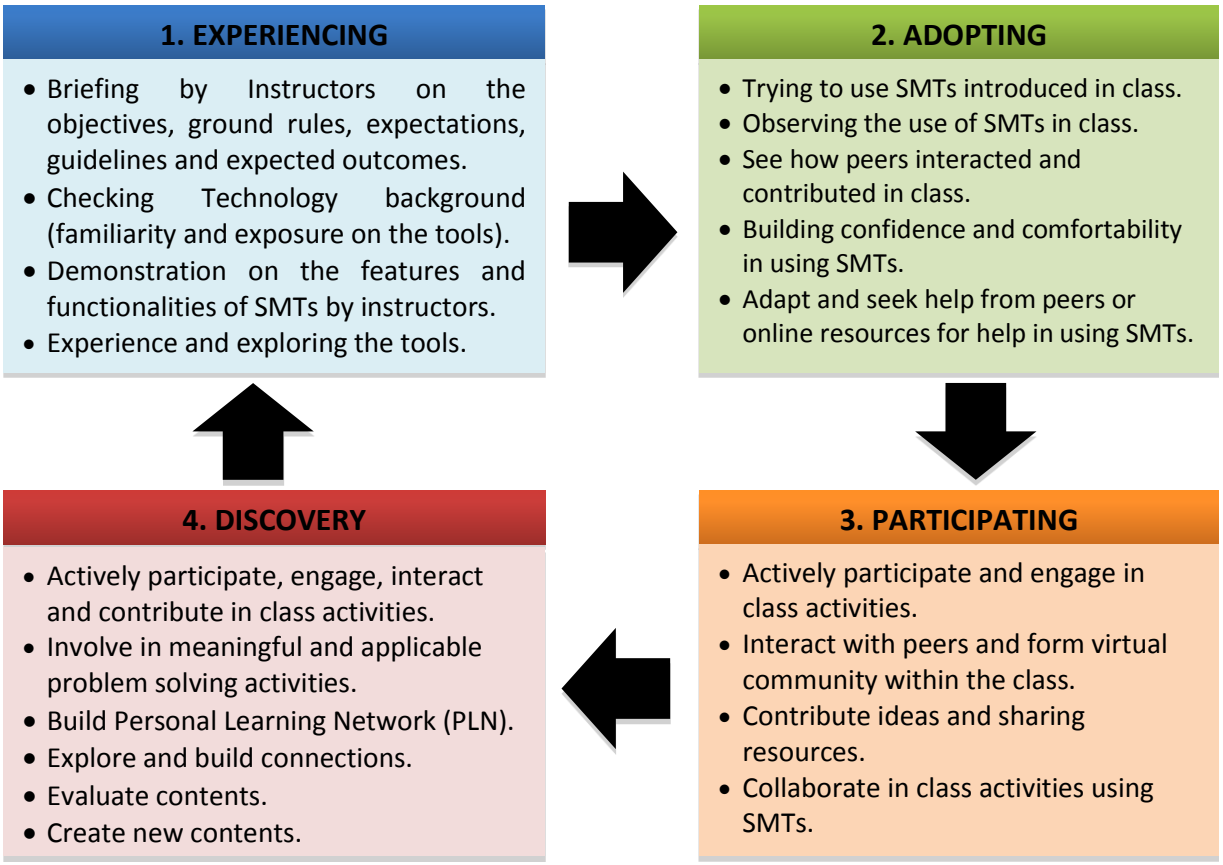



*Figure 9.11: SMTs implementation Phases for Students*

### 9.7.3 Maturity Level of SMTs adoption

The maturity level of the SMTs adoption for both instructors and students could be grouped into three levels: Infancy, Explorer, and Matured. In the Infancy level, the exposure and experience of SMTs is low. This in fact is the initial stage where both instructors and students have limited knowledge of the use of SMTs for academic purposes. In this level, the SMTs would be adopted only as an informal tool to supplement the existing practices. Instructors might only use SMTs minimally in class, mainly making use of the basic features and functionalities of the SMTs for simple activities such as discussion, sharing of resources, and communication. They might only adopt one tool to be implemented in the class. Even though Instructors might have attended all the necessary professional development modules for Social Media prior to the actual

implementation. However, they might only feel the pressure and challenges of implementation when they start using it in class. As for students, their participation and engagement in the social media activities would also be minimal initially as their familiarity and confidence in using SMTs might be low. For both students and instructors this stage or level is more a "learn as it goes", where they will pick up the skills and build their confidence as they experience it and as the session goes on. This level is also the most crucial level as any negative or unpleasant experience for the instructors or students can pose possible risk of resistance and failure in adoption.

The second level is the explorer level where both instructors and students are more familiar with the tools and have confidence to explore more features and functionalities of the SMTs. Instructors now might consider adopting more than one tool in class and might use the tools for more advanced activities such as reviewing, analyzing, differentiating, deducing, summarizing content, and many more. Students will also start to explore other tools which might not necessarily be used in class and join internal virtual communities that could benefit them in their studies. They would start building their own Personal Learning Network (PLN), which might be small in scale but could help them to find the resources that they need. Finally, in the matured level, both instructors and students would have already acquired vast knowledge in the use of SMTs either for classes or for personal use. They would be familiar with the advanced features and functionalities of the tools. Instructors at this level would incorporate SMTs as the formal tools for teaching and learning in class. This would also mean that they would start to use SMTs for coursework assessment tasks such as online quizzes, reflective reports, collaborative editing, creating of content, et cetera. Instructors would also build their connections with external sources such as professional online communities in their respective field to gain knowledge and support, which might be useful in their teaching profession. As for students, their PLN would start to grow into a large network in which connections would not be limited to just their peers within the institution or their circle of friends, but they would have also started to join external virtual communities that expand their network beyond the Institution. They would be able to source for resources that they need and would be able to filter the resources based on the relevancy. SMTs provide platforms for students to have many-to-many interactions, which enable new forms of community-based learning. It also provides a platform for students to engage, interact and collaborate with their peers to enhance their learning experiences. Many researchers claim that

the engagement of students with social media, not only enables them to connect to their peers, but also to establish virtual communities of learners that can ultimately increase their overall learning (Fewkes and McCabe, 2012; Heafner and Friedman, 2008; Jackson, 2011; Liu, Liu, Chen, Lin and Chen, 2011; Nelson Laird and Kuh, 2005; Yu, Tian, Vogel, and Kwok, 2010).

Both Connectivism and Community of Practice (COPs) are achieved in this level as students are not only learning through the formal education in class but also through informal education that they acquire when they connect to their PLN and virtual communities. They are more mature, and they could independently find the resources that they need by connecting to their network and would be able to create knowledge from the resources that they obtain. As for instructors, they can be considered as a Connectivist teacher when they are able to redesign the delivery of the course and create an environment in which students could create their knowledge, explore the content and connect to each other. Instead of focusing on “know what” and “know how” about subject matter, the instructors would encourage students to “know where” to find relevant and useful information that will help them in their learning journey.

### 9.7.4 Bloom’s Digital Taxonomy

In 2009, Andrew Churches developed Bloom’s Digital Taxonomy from the original Bloom’s Taxonomy published by Benjamin Bloom in the 1950’s and the revised version by Lorin Anderson and David Krathwohl in 2001 (Anderson and Krathwohl, 2001). What made Bloom’s Digital Taxonomy different from the predecessors was the latter focused only on the cognitive domain while Bloom’s Digital Taxonomy takes into account the new technologies that have emerged and how it affects the learning process of digital natives, i.e. the cognitive elements, the methods and the tools used to achieve cognitive levels. In another words, Bloom’s Digital Taxonomy focuses on how the use of tools (new technologies) can help to achieve cognitive levels such as recall, understanding, application, analysis, evaluation and creativity (Churches, 2009).

There are six levels of learning in the Bloom's Digital Taxonomy starting with Remembering, Understanding, Applying, Analyzing, Evaluating and Creating. The lower level of the Bloom's Digital Taxonomy focused on building student's Lower Order Thinking Skills (LOTS), and it moves towards building student's Higher Order Thinking Skills (HOTS) as the levels of learning increased. The aim of 21st Century Education is to move from lower order thinking skills to a higher order thinking skills (Churches, 2009). It is important for instructors to plan activities that help students to acquire higher order thinking skills, as once acquired, these skills will be retained by students. Stevenson (2007) in Churches (2009)'s Bloom's Digital Taxonomy document describes knowledge as forming the foundation of student's learning cycle or process. He also defined three knowledge processes of Knowledge Acquisition, Knowledge Deepening, and Knowledge Creation. Churches (2009) grouped the six levels of learning to map the 3 levels of knowledge processes and the lowest two levels which are Remembering and Understanding are mapped to Knowledge Acquisition, Applying and Analyzing are mapped to Knowledge Deepening, and the Evaluating and Creating to Knowledge Creation. At the lowest level of the learning cycle, students acquire their knowledge through remembering and understanding the concepts of the subjects. Their knowledge will be deepened during the learning process when they start to get familiar with the concepts and are now able to apply and analyze the content of the subjects. At the higher level of the learning process, students are able to create their own knowledge and share it with their friends whenever necessary as they are able to evaluate existing content and to create new content. As these skills grow, so will their knowledge grow.

Samantha Penny, the Director of Distance Education in Indiana States University developed the Digital Taxonomy Pyramid (*Figure 9.12*), which crossed Bloom's Digital Taxonomy with over 50 Web 2.0 tools (Roberts, 2012).

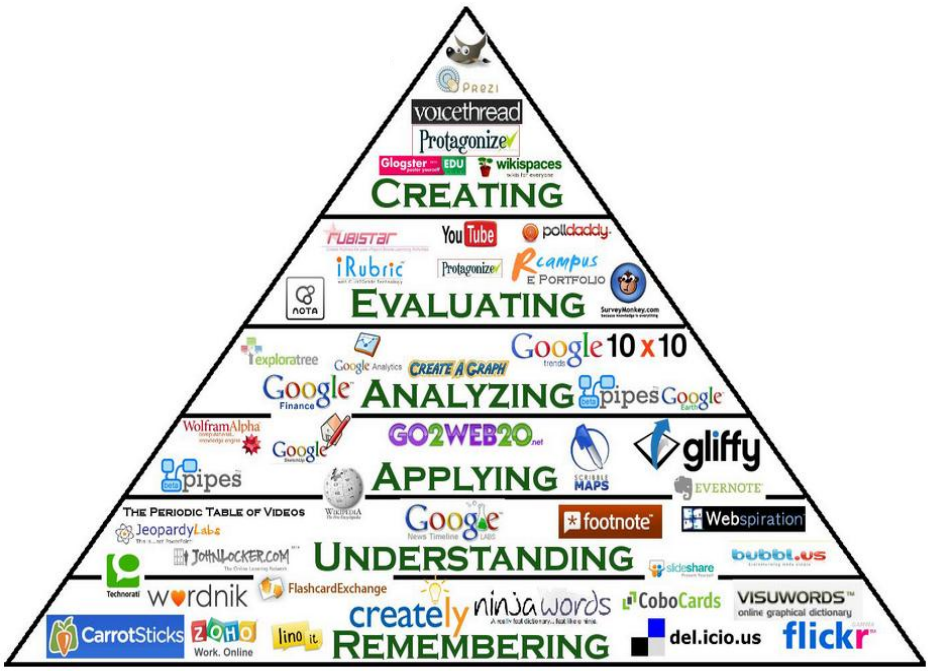



*Figure 9.12: Digital Taxonomy Pyramid*

It has been claimed that one of the essential skills in 21st Century Education is 'Collaboration' (EdTechReview, 2014; Jukes, 2010; Prensky, 2010). Students, who are equipped with this skill, are able to pull the resources together, share their ideas and work along with others towards achieving common goals. Social media technologies are essential tools providing platforms that support collaborative learning, in which students get connected to each other and learn beyond the classroom (EdTechReview, 2013).

The researcher has combined, revised, and summarized the ideas of Bloom (1950), Anderson and Krathwohl (2001), Churches (2009), Stevenson (2007), and Penney (n.d) into a summary table that explains that the six levels of learning are associated to the Order Thinking Skills (Bloom, 19550; Anderson and Krathwohl, 2001) with the knowledge formation process (Stevenson, 2007), and the associated digital activities that can take place in each level of learning (Churches, 2009) along with some examples of SMTs (Penney, undated) that could be used to accomplish each digital activity. In the original Bloom's Digital Taxonomy, the ICT tools that can be used to support the digital activities in each level of learning were described. As this research is only focused on the use of SMTs, the researcher has revised the supporting tools to match the context of this study

since some of the original ICT tools do not have the social media elements or characteristics, for example, Word Processing tools, standalone Desktop and Graphic tools, et cetera. Table 9.5 below shows the summary of the modified Bloom's Digital Taxonomy to fit the context of this study.

In the context of this study, Bloom's Digital Taxonomy is used as a guide for instructors to develop, structure, and map the teaching and learning activities against the knowledge formation process and learning skills that they hope their students would achieve. Bloom's Digital Taxonomy can also be used to measure the maturity level of the implementation, i.e. the Infancy level covers only the Remembering and Understanding learning skills, while Explorer covers the Applying and Analyzing level of the Bloom's Taxonomy. Lastly, students and instructors who are in the Matured Level should be able to perform activities involving high order thinking skills such as those described in the Evaluation and Creation level of the Bloom's Taxonomy.

*Table 9.5* below shows the mapping of the maturity level to the Bloom's Digital Taxonomy and some examples of activities that Instructors teaching in Informatics Programs could give to their students in class.

*Table 9.5: Summary of the modified Bloom's Digital Taxonomy*

| | **Higher Order Thinking Skills (HOTS)** | | | | |
|---|---|---|---|---|---|
| **Knowledge Level** | **Learning Skills** | **Explanations** | **Digital Activities** | **Descriptions** | **Example of SMTs / Web 2.0 Tools** |
| **Knowledge Creation** | **Creating** | Students are able to reorganize all the elements and put them together to form a coherent or functional whole. They are able to design, plan, produce, or develop a new idea, pattern or structure based on the knowledge that they acquired. | Publishing | Students able to publish in text, media or any digital formats based on their understanding, creativity, and knowledge on the subject matters, et cetera. This can include wikis, blogs, video blogs, et cetera. | Glogster, EduBlog, Wikispaces, PBWorks, Voicethread, Protagonize, StoryBird, et cetera. |
| | | | Mashing / Mixing / Remixing | Students able to mix digital contents such as video, graphics, text, animation, websites and audio from an existing source and re-combine it into a creative masterpiece of their own. | Masher, Adobe Air, Pipes, Quintura, Wordle, GorillaSpot Mashup Application, et cetera. |
| | | | Creating / Producing | Students able to create their own production which includes animation, videos, movies, podcast, et cetera. | Vimeo, YouTube, Animoto, Blabberize, Xtranormal, Podomatic, et cetera. |
| | | | Programming | Students able to write their own programs, applications, games, web or multimedia applications in structured environments. | Sharendipity, Scratch, Adventure Maker, Save Skelly, et cetera. |

| Knowledge Level | Learning Skills | Explanations | Digital Activities | Descriptions | Example of SMTs / Web 2.0 Tools |
|---|---|---|---|---|---|
| **Knowledge Creation** | **Evaluating** | Students are able to make judgments based on criteria and standards through checking and critiquing. They are able to hypothesize, test, review, moderate, reflect and validate the materials or contents. | Posting, Commenting / Reflecting | Students able to post or give constructive comments or criticism, and reflection on twitter, blogs, vlogs, wikis, YouTube, et cetera by evaluating the materials in context. | Twitter, Blogger, EduBlog, Wikispaces, Wikipedia, YouTube, et cetera. |
| | | | Collaborating and Networking | Students able to collaborate, communicate, and network with their peers and this involves their ability to evaluate other people's strengths, capabilities, and contributions. | Elluminate, Google+, Skype, Protagonize, Facebook, Ning, Edmodo, Storyfiy, et cetera. |
| | | | Moderating | Students able to moderate and evaluate postings or comments from different angles or perspectives, the values and appropriateness. | Twitter, Blogger, EduBlogger, Wikispaces, Wikipedia, YouTube, et cetera. |
| | | | | | |
| **Knowledge Deepening** | **Analyzing** | Students are able to break the concepts into parts, and determine how these parts are interrelated to one another or to the overall structure.<br>Students are able to organize, reconstruct, differentiate, compare, integrate, and mashed the contents or concepts. | Mind-mapping | Students able to produce a more complex mind map by linking concepts and form relationships. | Mindomo, Mindmapper, Mindmeister,Bubbl.us, FreeMind, et cetera. |
| | | | Mashing | Students able to integrate or mashed several contents together, and to do so, they might analyze the contents for relevancy and appropriateness. | Masher, Adobe Air, Pipes, Quintura, Wordle, GorillaSpot Mashup Application, et cetera. |
| | | | Polling / Surveying | Students are able analyze the results of the online polling and survey conducted. | Survey monkey, twtpoll, PollEverywhere, Response-O-Matic, Toluna, et cetera. |

| Knowledge Level | Learning Skills | Explanations | Digital Activities | Descriptions | Example of SMTs / Web 2.0 Tools |
|---|---|---|---|---|---|
| **Knowledge Deepening** | **Applying** | Students are able to use, carry out, implement, execute, run, edit, or share the acquired knowledge to solve problems related to their study. They are able to use the information, learned materials, concepts, and ideas in a new situation. | Uploading / sharing | Students able to upload and share contents for collaboration purpose. | YouTube, Instagram, Pinterest, Flickr, Dropbox, et cetera. |
| | | | Presentation / Communications | Students able to present and communicate their ideas. | Prezi, Skype, Google Hangout, et cetera. |
| | | | Simulation / Playing | Students able to create avatar and play games in a 3D Computer-simulated environment. They can also interact with each other in the modeled world and work collaboratively in creative project-based work. | Second Life, SocioTown, Wee World, Meez, World of War Craft, SmallWorlds, Twinity, et cetera. |
| | | | Illustrating | Students able to illustrate the concepts by using visualization tools. | Creately, Wordle, Easle.ly, Piktochart, Visual.ly, et cetera. |
| | | | Collaborating and Networking | Students able to work together to the solve problems given. | Elluminate, Google+, Skype, Protagonize, Facebook, Ning, Edmodo, Storyfiy, et cetera. |
| | | | | | |
| **Knowledge Acquisition** | **Understanding** | Students are familiar with the concepts and are able to explain the concepts in their own words. They are able to link the knowledge to form meanings. | Blogging / Journalizing | Students able to write or record their understanding on certain tasks or topics. | WordPress, Blogger, EduBlogs, et cetera. |
| | | | Categorizing and Tagging | Students able to organize structure or classify the online contents. | Delicious, Thinglink, Furl, Diigo, et cetera. |
| | | | Commenting and Annotating | Students able to comment and annotate contents on webpages, pdf files, documents, et cetera. | Reddit, Diigo, Scrible, Annotary, Delicious, et cetera. |

| Knowledge Level | Learning Skills | Explanations | Digital Activities | Descriptions | Example of SMTs / Web 2.0 Tools |
|---|---|---|---|---|---|
| Knowledge Acquisition | | | Twittering / Microblogging | Students to comment on a topic within limited number of characters. | Twitter, Sina Weibo, Yammer, Tumblr, et cetera. |
| | | | Subscribing | Students able to read and revisit the subscribed feed, which will lead to greater understanding. | RSS - Feeder, FeedBurner, FeedForAll, FriendFeed, Netvibes, Flock, TweetDeck, et cetera. |
| | | | Mind-mapping | Students able to organize contents, and visually represent the meaning and relationships of the key terms, ideas and concepts. | Mindomo, Mindmapper, Mindmeister,Bubbl.us, FreeMind, et cetera. |
| | **Remembering** | Students are familiar with the concepts and are able to recognize its use in a different context. Students recall, retrieve and recognizing facts and knowledge from the memory. | Social Bookmarking | Students able to share, store and organize the links or bookmarks of their favorite or preferred web pages. | Delicious, Reddit, StumbleUpon, Digg, Blurpalicios, et cetera. |
| | | | Searching or Googling | Students able to find information by entering keyword to search engine or any platforms. | Google, Webinar, Podcast, YouTube, et cetera. |
| | | | Social Networking | Students able to connect to people to form networks and collaboration. | Facebook, Twitter, Google+, Diigo, Bebo, et cetera. |
| | | | Recalling / Visualizing | Students able to recall, summarize and represent key terms or concepts in visual format such as word clouds, online flashcards, and diagramming. | CoboCards, Wordle, WordItOut, Creately, Ninjawords, Flashcardexchange, et cetera. |
| | **Lower Order Thinking Skills (LOTS)** | | | | |

Table 9.6: Bloom's Digital Taxonomy and digital activities for Informatics Programs

| Implementation Maturity Level | Bloom's Digital Taxonomy (Learning Skills) | Example of class activities for Informatics Programs | Possible SMTs / Web 2.0 Tools |
|---|---|---|---|
| **Matured** | Creating | Instructors can ask students to develop a multimedia application, website, game, standalone program, video, et cetera as part of the project requirement. This involves the highest order thinking skills and students are expected to highly involve in collaborative activities, research, analysis, evaluation, et cetera. Students will make use of their established Personal Learning Network and connections to source for information and resources to complete the projects. They should be able to validate the integrity of the resources collected and make the right judgment to complete the tasks assigned. | Prezi, Skype, Google Hangout, Elluminate, Google+, Protagonize, Facebook, Ning, Edmodo, Storyfiy, Dropbox, Survey monkey, twtpoll, PollEverywhere, Response-O-Matic, Toluna, et cetera. |
| | Evaluation | Instructors can ask students to test newly released software or games (beta version), evaluate its functionalities, strengths and weaknesses. Instructors can also ask students to prepare a proposal on their recommendations for improvement based on their evaluation on the software or games tested. Collaborative activities will be involved and students are expected to give constructive comments through presentation, wikis, blogs, et cetera. The can also record the walkthrough of the games or software on YouTube. | Prezi, Skype, Google Hangout, Elluminate, Google+, Protagonize, Facebook, Ning, Edmodo, Storyfiy, YouTube, cetera. |
| **Explorer** | Analyzing | Instructors can ask students to compare 3 software development methodologies for a given scenario. Students are required to understand, analyze and perform feasibility studies on all 3 methodologies. They might also need to research on software developer communities to collect more supporting evidences, or interview software engineers and developers for more information. They can also divide the tasks and work collaboratively using SMTs. Students need to expand their personal learning network and establish more connections which can help them in sourcing for the information that they need. Surveys or polls can be conducted on software developers or IT Professionals for their preferred choices. | Prezi, Skype, Google Hangout, Elluminate, Google+, Protagonize, Facebook, Ning, Edmodo, Storyfiy, Dropbox, Survey monkey, twtpoll, PollEverywhere, Response-O-Matic, Toluna, cetera. |

| Implementation Maturity Level | Bloom's Digital Taxonomy (Learning Skills) | Example of class activities for Informatics Programs | Possible SMTs / Web 2.0 Tools |
|---|---|---|---|
| **Explorer** | Applying | Instructors can give students software development related case studies or programming problems to be solved in team. Students will have to use collaborative tools to work on the solutions and presentation tools to communicate the solutions to the instructors and the peers. They might also need to use document sharing tools to upload or share their documents. | Prezi, Skype, Google Hangout, Elluminate, Google+, Protagonize, Facebook, Ning, Edmodo, Storyfiy, Dropbox, et cetera. |
| **Infancy** | Understanding | Instructors can ask students to summarize, comment and annotate contents on webpages, blogs, vlogs, podcast, YouTube, et cetera. which are related to the topics of their course. For example, new technologies or trends, development tools, developer advice on systems development activities, et cetera. Instructors can also asked students to record their understanding on blogs or journals. | Reddit, Diigo, Scrible, Annotary, Delicious, WordPress, Blogger, EduBlog, et cetera. |
| | | Instructors can ask students to subscribe to RSS feeds that will push updated contents on the webs to them when there are updates. | RSS - Feeder, FeedBurner, FeedForAll, FriendFeed, Netvibes, Flock, TweetDeck, et cetera. |
| | | Instructors can test student's understanding on specific topics by giving them online quiz or test. | Quizlet, QuizStar, ClassMarker, et cetera. |
| | | Instructors can get students to summarize the contents by producing a mind map at the end of each chapter. | Mindomo, Mindmapper, Mindmeister,Bubbl.us, FreeMind, et cetera. |
| | | Instructors can post simple questions on Microblogging Tools and get students to respond and to test their understanding on the subject matter. | Twitter, Bebo, Sina Weibo, et cetera. |

| Implementation Maturity Level | Bloom's Digital Taxonomy (Learning Skills) | Example of class activities for Informatics Programs | Possible SMTs / Web 2.0 Tools |
|---|---|---|---|
| **Infancy** | Remembering | Instructors can get students to create simple online flashcard on the key terms and concepts that they learnt in class that they could also share with their peers. | CoboCards, Flashcardexchange, et cetera. |
| | | Instructors can test student's memory on the subject by creating simple online quiz or test. | Quizlet, QuizStar, ClassMarker, et cetera. |
| | | Instructors can set-up Subject Group in Social Networking Website and invite students to join for basic communications, collaboration, and supports. | Facebook, Ning, Edmondo, Twitter, et cetera.. |
| | | Instructors can use word cloud at the beginning of each class to show the summary of the lesson. At the end of the class, students will have to produce their own word cloud by recalling the key terms that they learnt from the lesson. | Wordle, WordIt Out, et cetera. |

## 9.8 CONTINUOUS QUALITY IMPROVEMENT (CQI)

Continuous Quality Improvement (CQI) is at the top of the framework. It is a quality management process to ensure the adoption and implementation of SMTs within the Institution is done in a systematic manner and the outcomes of the implementation are positive and of high quality. The objective of CQI is to seek improvement of the SMTs implementation process and find solutions to improve student and instructor experiences. In the context of this proposal, the steering committee owns the CQI process. Faculty Social Media Champions and the Dean, who are members of the steering committees, should be responsible for the collation of the student evaluations of SMTs teaching and learning report, and Instructor's reflection report on the use and adoption of SMTs in class. These reports would be tabled to the Steering Committee Meeting at the end of every session to review the processes and to identify improvements. The proposed steps involved in the Continuous Quality Improvement (CQI) process are shown in Figure 9.5d below. These processes are iterative and the steering committees would meet at least twice per

session (beginning and end of session) to discuss the progress and outcomes of the implementation.

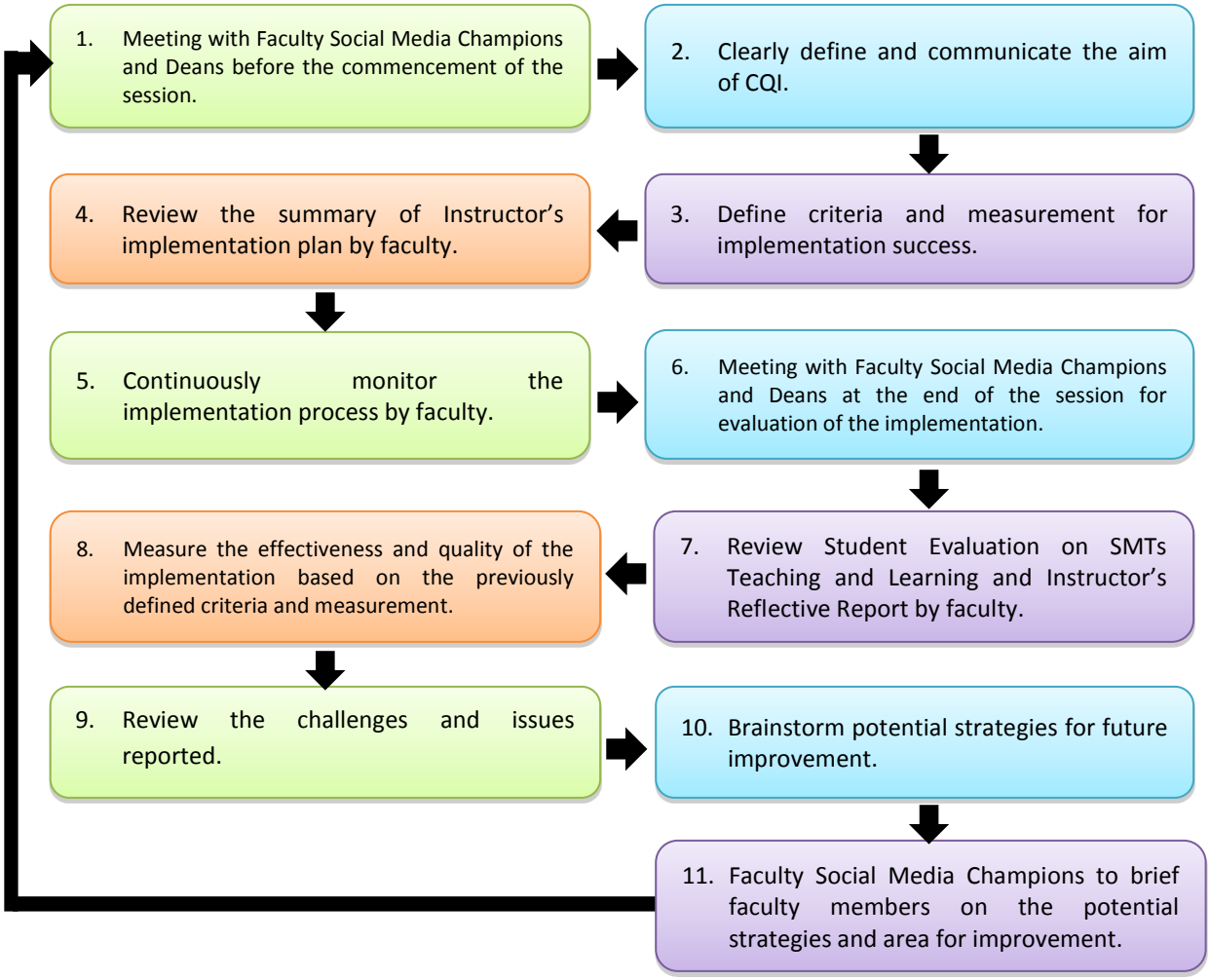



*Figure 9.13: Continuous Quality Improvement (CQI) process*

## 9.8 CONCLUSION

There is an increasing amount of research published that highlights the benefits and use of social media technologies or Web 2.0 Tools to supplement teaching and learning activities in Institutions of higher education. Likewise, Institutions of higher education have started

to harness the emerging new technologies and applications that influence student's learning preferences and expectations. Thus, more and more Institutions have started to explore the use of these tools as part of the Institution's teaching and learning assets especially countries like United States, United Kingdom, Singapore, Australia, et cetera. Malaysia has just started moving in this direction. Looking back at the findings of the data collection earlier, the ownership of mobile and digital devices and exposures to SMTs by both students and instructors in Malaysia is quite high, however, in terms of use for academic purposes, Malaysia is still far behind compared to the others especially in the field of Informatics or Information Sciences.

The framework developed early in this chapter is meant to be used as a guide for Institutions who wish to implement or adopt SMTs as a formal tool for teaching and learning purposes. This framework defined the success factors that influence the implementation plan which include the infrastructures, professional development, policies and guidelines, et cetera, the stakeholders who are involved in this implementation processes and the activities involved, the issues and barriers that need to be addressed, the support from the faculty and top management, and the measures for success and quality improvement. There is no 100% guarantee of successful implementation even if Institutions follow this framework diligently, as it is still subjected to individual Institution's environment, needs, policies and practices. SMTs adoption within an institution needs to be done gradually rather than abruptly. Academic staff need time to understand the value of SMTs adoption, become familiar with the tools, plan and execute their SMTs activities, adjusting to the new ways of teaching and learning, managing the implementations of SMTs in class.

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# APPENDIX A

# CATEGORIES OF SOCIAL MEDIA TECHNOLOGIES

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## 1. Text-based social media applications

Text-based social media applications are collaborative project tools which focus primarily on texts. Some examples of applications that fall under this category include Wikis, discussion forums, Social bookmarking, Blogs, microblogs, and Syndication.

### a) Wiki

Wikis are on-line encyclopedia-like text-based websites developed collaboratively by users. They support collaborative work and projects by allowing users to add, modify, or delete the contents of the webpage created. Some examples of popularly used Wikis include Wikipedia, Wikia, PBWiki, Wiktionary, Wikispaces, Wikiversity, Wikibooks, Wikitravel, et cetera.

### b) Discussion Forum

They are online tools that enable users to post and reply to a topic or message posted by an individual or members of the discussion group. They are also known as discussion boards, message boards or online forum. A discussion forum is usually included as part of a website, blog, or even learning management system. For example, in the Wiki of the Wetpaint Central, there is a discussion forum for members to discuss the photos shared by other members.

### c) Blog

A Blog is an online journal or web-based diary in which people (the blogger) write something about themselves or things that they are interested in. It is usually focused on a single subject or topic. Most blogs allow interactions by letting people leave comments or

messages on the blogs. Some blogs might also include hyperlinks, photos and videos to make the blogs more interesting. Examples of popularly used blogging applications include LiveJournal, Blogger, WordPress, Blog.com, MovableType, ExpressionEngine, Penzu, Posterous, SquareSpace, Elgg, and EduBlogs.

**d) Microblog**

A Microblog is a simpler version of the traditional blog. It only allows up to 140 characters for each post. People post quick updates or status about their daily activities or events. They can also follow the post or updates posted by other people. Some microblogs allow users to post small images and video links. Examples of popularly used microblog include Twitter, Sina Weibo, Yammer, Tumblr, FriendFeed, Plurk, Qaiku, Identi.ca, GoogleBuzz, BrightKite, Meemi, Spotjot, et cetera.

**e) Social Bookmarking**

Social Bookmarkings are online communities or platforms for users to share, store and organize the links or bookmarks of their favorite or preferred web pages. Users can group the bookmarks according to categories. Users can also search the bookmarks added by other people. Some examples of popularly used social bookmarking applications include Diigg, StumbleUpon, Reddit, Furl, Fark, Propeller, and Del.icio.us.

**f) Syndication**

With the use of syndication, website content such as newsfeeds, blogs, events or content updates could be pushed or distributed to the users on a regular basis through the use of the feeder software, known as an aggregator. The technology used behind the aggregator is RSS (Real Simple Syndication), which is an XML Based format used for sharing content among websites. Users could pick the type of feeds that they would like to receive and any updates on that content will be distributed to the users automatically. Examples of syndication applications include FriendFeed, Netvibes, Flock, TweetDeck, bit.ly, socialmention, TubeMogul, radian6, et cetera.

2. **Media Sharing / Contents Communities**

Media sharing software is a platform for users to share digital content such as video, audio, photos, and files.

a) **Photos**

It enables users to upload, edit, share and tag photos online. Users can also add notes and comments on the photos. Some of the examples of popularly used applications include Flickr, Instagram, Phanfare, SmugMug, PhotoBucket, Picasa Web Albums, OpenStudio, Webshots).

b) **Videos**

This tool enables users to upload, edit, share and comment on video clips. Some websites have restrictions on the file size, content, and type of files. Some open source software also allows users to publish video files to create an Internet TV Channel on a website. Examples of other popularly used applications include YouTube, Vimeo, clesh, FORscene, Jaycut, Viddler, DailyMotion.

c) **Audio / Podcasting**

This tool enables users to create, upload, edit, share and comment on audio clips / podcasts. Audio files and podcasts can be downloaded into users' digital devices for later playback. Some examples of popularly used applications include YourListen, AudioFarm, SoundCloud.

d) **File sharing**

This enables users to create, upload, download, edit, and share various kinds of files, either large or small in size. Some applications support collaborative activities by allowing users to collaboratively make changes to the content of the files in real-time. Examples of popularly used applications include BitTorrent, MediaShare, Slideshare, Dropbox, GoogleDoc, et cetera.

3. **Social Networking**

Social networking websites enable individuals who share common interests to form groups or communities with friends, families, and colleagues to keep in touch with each other. They enable users to update their status, add photos or videos, add comments on other people's status, play games, create events, etc. Some social networking sites are open to the public, for example Facebook, MySpace, Friendster, PInterest, QZone, and Bebo, while others are meant for professional / closed groups, for example Ning, LinkedIn, Chatter, and Google+.

4. **Mobile Applications**

The number of mobile applications developed and downloaded to mobile devices like smart-phones and portable hand-held devices is growing each day. There are many applications that support group chats, group meeting, sharing of small files such as images, digital whiteboard, checking-in on location, etc. The applications can be categorized in various ways. The following list illustrates the range of mobile applications becoming available.

a) **Collaborative Applications**

Collaborative whiteboards such as SyncSpace, ZigZag Board, LucidChart, ConceptBoard, and WhiteBoard Lite developed for mobile applications enable users to share digital whiteboard contents in real-time. Fuze Meeting application allows users to conduct and attend meetings from different locations in real time by using their mobile phones or tablet. Collaborative tools like Soonr Workplace provide a single platform for document management, project collaboration, file synchronization, and online backup. Other collaborative tools available include EverNote, Mighty Meeting, KnowledgeTree and TappIn.

b) **Mobile Messaging Applications**

These are cross platform instant messaging applications for smart phones and tablets. They allow users to share photos, videos, and audio media messages with other people in the contact list. Users can create and join groups with friends. Some examples of popularly used mobile messaging applications include Meebo, WeChat, Viber, SnapChat, Google Talk, Whatsapp, Line, et cetera.

**c) Location-based Applications**

These are applications that allow users to check-in on the location in which they have been or they are currently. The application uses the information on the geographical position of the mobile devices carried by the user. Users can use the applications to locate business services, or even friends. Examples of applications include Foursquare, Yelp, FriendsFinder, Google Latitude, Find My Friends, etc. Some other location-based mobile applications like Waze, Trapster, and Aha which use GPS (Geographical Positioning Systems) and Crowdsourcing technology, in which distributed groups of people whom might not even know each other are updating and supplying data into the system that provides updates on live traffic, roadblocks, road-accidents, road construction, GPS navigation, and location-based information about cafés, restaurants, cinemas and others.

**5. Virtual World and Games**

These enable users to create their imaginary identity (avatar) and play games in a 3D Computer-simulated environment. Users can also interact with each other in the modeled world and work collaboratively in creative project-based work that goes beyond the traditional text-based and audio communications. Examples of virtual game worlds and virtual social worlds include Second Life, SocioTown, Wee World, Meez, World of War Craft, SmallWorlds, Onverse, Twinity, Active Worlds, et cetera.

**6. Synchronous Communication and Conferencing**

Synchronous Communication and Conferencing allow more than 1 person to be connected at the same time in real-time communication. Most applications support video, text and audio transmission of real-time communication. For example, Skype, Google Hangout, Face Time, WiziQ, DimDim, Yugma, Breeze e-Conference, et cetera. All these applications can also be run on mobile devices and tablets.

7. **Mashups**

This is an application that allows users to mix digital content such as video, graphics, text, animation, websites and audio from an existing source and re-combine it into a creative masterpiece of their own. For example, users could edit video clips from multiple sources, mix it and create a new video from that. Some of the popularly used applications are Quintura, Wordle, GorillaSpot Mashup Application, Intel's Mash Maker, AdobeAir, et cetera.

# APPENDIX B

## B1. Examples of social web applications in UK Universities – JISC Project (JISC, 2009b)

| No. | Institutions | Case study title and social software tools: primary tool (s) followed by the secondary tool (s) | Summary of the case study |
|---|---|---|---|
| 1 | Anglia Ruskin University | Computer Gaming and Video Capture in Second Life 3-D MUVE (Second Life), Blog (WordPress, Blogger), and University's VLE (Moodle) | Students are required to create an animated film inside the Second Life virtual world to learn about filming and post-production. Students reflect in their blogs. |
| 2 | Birmingham City University | Using Wikis to Support Small Group Work<br>Wiki (PBWiki) and the University's VLE (Moodle) | Wikis are being used to support group activities during seminars. Students in small groups discuss and record their thoughts and ideas in the wiki and also link related resources from the web. |
| 3 | Birmingham City University | Facebook as a Pre-Induction Support Tool<br>Social Networking (Facebook) | A group on the social networking site, Facebook, was set up for pre-induction of the students on the first year of the BA English Programme. |
| 4 | Brighton University | Community@Brighton: Social Networking at University of Brighton<br>Social networking (Elgg) integrated with the university's VLE (Blackboard) | This initiative established a user driven, online community at the university. It is used for induction, social and educational purposes. It complements the University's VLE. |
| 5 | Coleg Llandrillo Cymru | Using Web 2.0 in Further Education Library Services Blog (WordPress), social bookmarking (Delicious) and wiki (Pbwiki) | A library blog has improved upon the library newsletter. Course and subject related bookmarks are provided using Delicious website. The 'How to' guides are written in a wiki (Pbwiki) |

| No. | Institutions | Case study title and social software tools: primary tool (s) followed by the secondary tool (s) | Summary of the case study |
|---|---|---|---|
| 6 | London South Bank University | Photo Publishing with Lulu Photo publishing website with blogs and forums (lulu.com), social networking (Facebook), blog (WordPress, used in 2006 only). | Print on demand (POD) technology was adopted via Lulu.com for students on the digital photography degree. Students developed their own personal learning environments for social networking, blogging and cataloguing via one portal. |
| 7 | Lancaster University | Social Networking through Ning on a Distance-learning Programme Social Networking (Ning) | A social network has been used to provide an online community area in which the students on a part-time structured doctoral program can interact. |
| 8 | Northumberland College | Using a Wiki for Developing a Portfolio and for Communication Wiki (Pbwiki) and the university's VLE (Blackboard) | Students develop an e-portfolio in a wiki on a work-based learning course (hair salon services) |
| 9 | Nottingham Trent University | A Blogging Support System for Trainee Teachers Blogging (Livejournal) | Blogging was initially introduced to enable trainee teachers to support one another. It has subsequently been used to encourage socialization before the course starts and to support the development of reflective reporting. |
| 10 | Open University | OpenStudio: An Online Community for Digtial Photography Students Photo-sharing site (OpenStudio, similar to Flickr) | Students share photographs with fellow students and educators on a digital photography course and comment on fellow students' photographs. |
| 11 | Open University | Collaborative Learningin a Wiki on a Software Enginerring course Wiki (Moodle's wiki) | Students conduct collaborative authoring activities in a wiki on a post-graduate software engineering distance-learning course. |

| No. | Institutions | Case study title and social software tools: primary tool (s) followed by the secondary tool (s) | Summary of the case study |
|---|---|---|---|
| 12 | Open University | Using Wikis and Video Conferencing on Team Engineering course<br>Wiki (Moodle's wiki) and video-conferencing tool (Flashmeeting) | Students work in groups and use wikis and video conferencing to support their project work on a distance-learning engineering course. |
| 13 | Sheffield University | Blogs and Social Bookmarking for Exploration of Historical Courses<br>Social bookmarking (Delicious), blog (WordPress) | The tutor plans a face-to-face tutorial after assessing the bookmarks and questions posted by students during their research on the social bookmarking site and blogs, respectively. |
| 14 | Stockport College | Photo-sharing on Flickr<br>Photo-sharing site (Flickr) | Students share their photographs in a Flickr group on the City and Guilds Photography course. |
| 15 | University of Bradford | Develop Me! Social Networking at University of Bradford.<br>Social networking site (Ning) | An online space has been set up where staff, students and potential students interact to support students' transition into university. |
| 16 | University of Hertfordshire | Using podcasting to Develop Oral Skills for Physiotherapy Practice<br>Podcasts and wiki (as part of StudyNet, MLE) | Students create a description of a particular pathology of the lumbar spine using a wiki. They then record a podcast, role playing the presentation of the condition to a patient. |
| 17 | University of Leeds | Blogs, Wikis and Social Bookmarking to Support Web-based Research<br>Social bookmarking (Bibsonomy), blog (Elgg), wiki (Leeds Wiki based on MediaWiki) | Students use blogs for self-reflection and for set tasks; they develop and present a project using wikis and use social bookmarking to store and share web-based resources. |
| 18 | University of Manchester | Social Networking and Community-building in Dentistry Courses<br>Blog (Edublogs), social networking (Facebook), podcasts. | Blogs, social networking and podcasts are used to supplement traditional communication methods, such as the university VLE, website and email. |

| No. | Institutions | Case study title and social software tools: primary tool (s) followed by the secondary tool (s) | Summary of the case study |
|---|---|---|---|
| 19 | University of Salford | Digital Identity, Communication and Collboration through Web 2.0 Blog (WordPress, Edublogs, Blogger), wiki (Wikispaces, Wetpaint, PBWiki), social bookmarking (Delicious), photo sharing (Flickr), video sharing (YouTube) | Students use a number of social software tools and the objective is to examine how these tools impact on professionals in the broadcast industries. |
| 20 | University of Westminster | Social Networking: Connect-ing Students and Staff<br>Social networking (Elgg) | A social networking site was set up for staff and students to investigate role of an in-house social networking site in community building and for informal learning. |
| 21 | Nottingham University | Google Earth: Practical Exercises in Geographic Information Science<br>Google Earth | Students undertake a practical lab exercise using Google Earth. The aim of the exercise is to encourage students to think about the implications of the source and quality of the underlying data (some of the data is user-generated and some has no known source). |
| 22 | Open University | Using Social Bookmarking: Tools for Finding Things Again Social bookmarking (Delicious, Furl and Simpy) | Students are exposed to a variety of social bookmarking and tagging tools on a course about finding and organizing information. |
| 23 | Open University | Student Engagement: Discussion Forums and Web Conferencing Discussion Forums (First Class conferencing) and Web Conferencing (Elluminate) | Forums and web-conferencing provide a means for students and staff to interact remotely in a distance-learning environment. |
| 24 | Open University | Supporting a Group of Distance-learning Students on Skypecast Voice over Internet Protocol (Skype) and Skyecast | The 'virtual class' enables students to see the results and problems of specific network configurations in a distance-learning course. |
| 25 | Portsmouth University | Using Twitter to Support Students and their Projects<br>Micro-blogging (Twitter) | Students have used Twitter to help them work more closely with their supervisor and with each other while undertaking project work. |

| No. | Institutions | Case study title and social software tools: primary tool (s) followed by the secondary tool (s) | Summary of the case study |
|---|---|---|---|
| 26 | Royal Holloway, University of London | Using Facebook to Obtain Student Feedback<br>Social Networking (Facebook) | Facebook was used to gather student opinion on a library refurbishment project. |

*Source:*

JISC (2009b). A Study on the Effective Use of Social Software by Further and Higher Education in the UK to Support Student Learning and Engagement. [Online]. Available URL: http://www.jisc.ac.uk/media/documents/projects/effective-use-of-social-software-in-education-finalreport.pdf

## B2. Examples of social web applications in Australian Universities (McLoughlin, 2008c)

| No. | Institutions / Authors | Types of Social Media | Description of technology use |
|---|---|---|---|
| 1 | Victoria University of Wellington<br><br>Elgort, Smith & Toland (2008) | Wikis | A mixture of on-campus and distance education students undertaking a Master of Library and Information Studies work in groups to collaboratively produce Web-based resource guides using a wiki. Each group is required to produce three deliverables: the resource guide (a web site providing links to and evaluations of information resources in a specific subject area); presentation of the completed guide to the class; and an online reflective journal, in which students were asked to document the process of creating the guide and reflect on their personal contribution to the project. |
| 2 | Deakin University Samarawickrema (2007) | Wikis | Students from the Faculty of Health, Medicine, Nursing and Behavioural Sciences work in small groups to develop a guide for parents of intellectually-disabled children on the support services available to them. The end product of the activity will be published in print as a booklet. |

| No. | Institutions / Authors | Types of Social Media | Description of technology use |
|---|---|---|---|
| 3 | Charles Sturt University<br><br>Peacock, Fellows & Eustace (2007) | Wikis | Students studying a subject on computer-supported collaborative work (CSCW) learn with and about collaborative groupware tools and information environments and groupware tools, including a range of both Web 1.0 and 2.0 technologies. Students are placed into groups of three or four students, and each group is given a fortnight to complete each of four collaborative exercises. A wiki is used as a platform for interaction and knowledge construction within and across groups. Students are required to contribute 500 words for each of the activities, however the distribution of these 500 words is not stipulated - For example, the words could be "spent" creating a new article, adding to an existing article, or pooled with a group of people to generate a larger article. The wiki is augmented with a page rating mechanism, which is used by students to collaboratively evaluate the quality and usefulness of one another's work using a standard 5-star rating system. In this way, students are encouraged to search, rate, contribute to and learn from one another's content. |
| 4 | Edith Cowan University<br><br>Luca & McLoughlin (2005; 2007) | Blogs | Final-year multimedia students undertaking the unit IMM3330/4330 Industry Project Development work in teams in which they take on the roles of programmers, graphic designers and project managers. Each team negotiates a topic with their tutor, which is aimed at meeting industry needs. They then work with clients to create solutions to design problems and develop a project brief based on elicited requirements. Project teams are also required to report on their progress to other teams, compare project plans and reflect on learning processes, assessment processes and team dynamics. Blogs are used as a project management tool to promote clear and transparent communication between team members for the purpose of sharing given tasks, while creating a sense of ownership and responsibility. This approach also promotes fair and equitable teamwork, as well as supporting the social processes of learning by enabling students to easily see how their peers are progressing with agreed tasks. |

| No. | Institutions / Authors | Types of Social Media | Description of technology use |
|---|---|---|---|
| 5 | Australian Catholic University<br><br>McLoughlin, Brady, Lee & Russell (2007) | Podcasting Blogs | Pre-service teachers studying secondary teaching courses use podcasting and blogs to engage in peer mentoring with their classmates while undertaking their teaching practicum, during which they are assigned to geographically dispersed schools throughout the Australian Capital Territory. They share experiences, stories and anecdotes, as well as offering support, feedback and encouragement to one another. |
| 6 | Deakin University<br><br>Samarawickrema (2007) | Media sharing (images) | Web 2.0 tools are used to complement teaching and learning activities based within the university's learning management system (Blackboard Vista). Second-year undergraduate photography students collaborate with students at another Australian university to create and manage their own virtual galleries / albums. They also make use of the commenting feature of the software to provide constructive feedback and critique on the work of others. |
| 7 | Deakin University<br><br>Samarawickrema (2007) | Social Networking | Faculty and students use the Joomla!-SMF content management system (CMS), which allows simple website creation and maintenance, and incorporates and social networking features. For example, second-year undergraduate Education students use the system to engage in social interaction and communication, as well as a platform on which to practice online teaching with counterparts in Pakistan and Iran. Final year undergraduate Science and Technology students studying in on campus, off-campus and off-shore modes form groups and engage in online role-playing activities using the social networking features of Joomla. |

| No. | Institutions / Authors | Types of Social Media | Description of technology use |
|---|---|---|---|
| 8 | Charles Sturt University<br><br>Lee, Chan & McLoughlin (2006) | Podcasting | Second year undergraduate students take charge of producing talkback radio-style podcasts to assist first year students undertaking a unit of study that the former group previously completed. The brainstorming and researching of script ideas, as well as scriptwriting, editing, and recording of the podcasts was driven by the student producers, with minimal intervention from their instructor, whose role was to provide general guidance and assistance only on request. By engaging in a process of collaborative peer review and critique of podcast scripts, in which the scripts were gradually and iteratively improved and refined, students extended and adapted content for distribution to an audience of peers. |
| 9 | Curtin University of Technology<br><br>Oliver (2005) | Mobile blogs (moblogs)<br><br>Skype-casting<br><br>Podcasting | Interdisciplinary groups consisting of Engineering students studying at Curtin's Perth and Sarawak (Malaysia) campuses, as well as students studying a Curtin Business unit through a partner institution of the university in Addis Ababa (Ethiopia), use handheld computers to form transnational learning communities that focus on their achievement of key learning outcomes. Through the handheld computers, the students communicate and share their learning experiences asynchronously via a group blog and podcast feed, and synchronously through VoIP telephony (Skype). Students are also provided with tools to capture add video and still images to their blogs, and all blogs are interlinked to form a social network in which students can observe and participate in the discourse of other groups through constructive comments/feedback. |

*Source:*

McLoughlin, C. (2008c). Appendix – Web 2.0 in Higher Education in Australia. In A review of current and developing international practice in the use of social networking (Web 2.0) of in higher education. Armstrong J. and Franklin T. (2008). P. 41-60 [Online]. Available URL: http://www.franklin-consulting.co.uk/LinkedDocuments/the%20use%20of%20social%20networking%20in%20HE.pdf

# APPENDIX C

## QUESTIONNAIRES FOR IT / CS / COMPUTING STUDENTS (SET A)

**Section A: Demographic Details**

1. How old are you?
   ❑ 17 – 18 ❑ 19 – 20 ❑ 21 – 22 ❑ 23 – 24 ❑ 25 – 26 ❑ Above 26

2. Please specify your gender.
   ❑ Female ❑ Male

3. Please specify your nationality.
   ❑ Malaysian ❑ Non-malaysian. (Please Specify): _____

4. What level of Computer Science / Information Technology / Computing Programme are you currently studying in your Institution?
   ❑ Certificate ❑ Diploma ❑ Foundation ❑ Degree ❑ Master

5. What specialization are you studying?
   ❑ Computing / Computer Science ❑ Information Technology / Information Systems

6. What major are you specialized in?
   ❑ Networking / Data Communications / Security
   ❑ Business Intelligence
   ❑ Information System / Information Technology
   ❑ Software Engineering
   ❑ Artificial Intelligence / Knowledge Management
   ❑ Internet / Web / Mobile Development
   ❑ Multimedia / Game Development
   ❑ E-Commerce / E-Business
   ❑ Others. (please specify): _____

7. What type of higher education institution are you currently enrolled in?
   ❑ Private College
   ❑ Private University / University College
   ❑ Public University / University College
   Please specify the name of your Institution: _____

8. How long have you been studying in your university / college?
   ❑ < 1 year ❑ 1-2 years ❑ 3-4 years ❑ 4-5 years ❑ > 5 years

9. Which of the following technology devices do you own or use? (You can √ more than one)

❑ Smartphone ❑ Desktop ❑ Laptop / Netbook ❑ Digital Tablet

7. On average, how many hours did you spend on your digital devices to go online daily?
   ❑None ❑ < 1 hour ❑ 1-2 hours ❑ 3-4 hours ❑ 5-6 hours ❑ > 6 hours

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**Section B: Social Media Usage (General)**

10. Do you use any Social Media Tools (SMT)?
    ❑ Yes.
    ❑ No. Please proceed to Question 30 & 31.

11. Which of the following Social Media Tools (SMT) do you use for non-academic purposes? (You can √ more than one)

| Categories | Social Media Tools | | | | | |
|---|---|---|---|---|---|---|
| Social Networking websites | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

12. Please specify the frequency of usage for the following Social Media Tools (SMT) for Non-Academic Purposes.

| Tools | Frequency of Usage | | | | | | |
|---|---|---|---|---|---|---|---|
| | Several times per day | Once Per Day | Several times per week | Once per week | One to two times per month | Several times per year | Never |
| Social Networking websites | | | | | | | |
| Media Sharing tools | | | | | | | |
| Blogs | | | | | | | |
| Wikis | | | | | | | |
| Micro Blogging Tool | | | | | | | |
| Social Bookmarking Tool | | | | | | | |
| RSS Feeds | | | | | | | |
| Mobile Messaging applications | | | | | | | |
| Synchronous Communication & | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Conferencing | | | | | | | |

13. How many years of experiences do you have in using the following Social Media Tools (SMT)?

| | |
|---|---|
| Social Networking websites | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |
| Media Sharing tools | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |
| Blogs | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |
| Wikis | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |
| Micro Blogging Tool | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |
| Social Bookmarking Tool | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |
| RSS Feeds | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |
| Mobile Messaging applications | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |
| Synchronous Communication & Conferencing | ❑ < 1 year ❑ 1 – 2 years ❑ 2 – 3 years ❑ > 3 years ❑ Not Used |

14. What is your level of expertise in using the following Social Media Tools?

| | |
|---|---|
| Social Networking websites | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |
| Media Sharing tools | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |
| Blogs | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |
| Wikis | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |
| Micro Blogging Tool | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |
| Social Bookmarking Tool | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |
| RSS Feeds | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |
| Mobile Messaging applications | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |
| Synchronous Communication & Conferencing | ❑ Beginner ❑ Intermediate ❑ Advanced ❑ Not used |

15. Please (√ ) the purposes and frequency of use for the following Social Media Tools (SMT):

| Purpose of Usage | 1 – Do not use | 2 – Rarely Use | 3 – Often Use | 4 – Use all the time |
|---|---|---|---|---|
| Finding Information | | | | |
| Seeking opinions | | | | |
| Entertainment | | | | |
| Communicate / Socialize / Networking with friends | | | | |
| Sharing experiences / knowledge | | | | |
| Academic purposes | | | | |
| Collaborate | | | | |

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**Section C: Social Media Usage (For academic purpose)**

16. How do you use Social Media Tools to support your studies? (You can √ more than one)
    - ❑ Assignments / Project Collaboration / Discussions
    - ❑ Sharing of documents
    - ❑ Knowledge / Information Sharing
    - ❑ Activities / event updates
    - ❑ Sourcing for information

- ❑ Communicating with Instructors, Lecturers, Professors and Peers
- ❑ None
- ❑ Others (please specify): _____

17. Which of the following social media tools do you use for academic purposes? (You can √ more than one)

| Categories | Social Media Tools | | | | | |
|---|---|---|---|---|---|---|
| Social Networking websites | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

18. Please specify the frequency of usage for the following Social Media Tools for academic purposes.

| Tools | Frequency of Usage | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Several times per day** | **Once Per Day** | **Several times per week** | **Once per week** | **One to two times per month** | **Several times per year** | **Never** |
| Social Networking websites | | | | | | | |
| Media Sharing tools | | | | | | | |
| Blogs | | | | | | | |
| Wikis | | | | | | | |
| Micro Blogging Tool | | | | | | | |
| Social Bookmarking Tool | | | | | | | |
| RSS Feeds | | | | | | | |
| Mobile Messaging applications | | | | | | | |
| Synchronous Communication & Conferencing | | | | | | | |

19. Which of the following Social Media Tools (SMT) do you think is most useful for academic purposes? Rank the Social Media Tools (SMT) from 1 (most useful) to 9 (least useful)

| | |
|---|---|
| Social Networking websites | |
| Media Sharing tools | |
| Blogs | |
| Wikis | |
| Micro Blogging Tool | |
| Social Bookmarking Tool | |

| | |
|---|---|
| RSS Feeds | |
| Mobile Messaging applications | |
| Synchronous Communication & Conferencing | |

20. In the course of your studies, how many of your instructors / lecturers / professors are using Social Media Tools for teaching and learning?

    ❑ None ❑ Some ❑ Most ❑ All ❑ Don't know

21. How do your instructors / lecturers / professors use Social Media Tools (SMT) for teaching and learning activities with the students in your institutions? (You can √ more than one)

    ❑ Assignments / Project Collaboration / Discussions
    ❑ Sharing of documents
    ❑ Knowledge / Information Sharing
    ❑ Activities / event updates
    ❑ Sourcing for information
    ❑ Communicating with students / peers
    ❑ Others (please specify): _____

22. What are the barriers or problems that you have encountered in using Social Media Tools (SMT) for your studies? (You can √ more than one)

    ❑ Privacy concerns
    ❑ Interfering with personal time
    ❑ Lack of support provided by the Institution
    ❑ Easily distracted and loss focus in the studies
    ❑ Lack of integration with Institution's Learning Management System (LMS)
    ❑ Feeling of being watched or stalked by lecturers / professors
    ❑ Limited gadgets or internet bandwidth
    ❑ Unfamiliar with the functionalities / features of the Social Media Tools (SMT).
    ❑ Others (please specify): _____

23. Following are some proposed benefits of using Social Media Tools (SMT) for academic purposes. Put a (√) against the statements that you agree with.

    ❑ SMT support innovative teaching methods.
    ❑ SMT support peer-to-peer learning
    ❑ SMT enhance student motivation
    ❑ SMT improve student's participation
    ❑ SMT enable information / knowledge sharing
    ❑ SMT enable cooperative and collaborative work
    ❑ SMT support the creation of personal learning environment
    ❑ SMT strengthen lecturers and students rapport

24. Would you prefer to use the existing Learning Management System (LMS) provided by your institution over Social Media Tools (SMT)?

    ❑ I prefer to use the LMS.
    ❑ I prefer to use SMT.
    ❑ I prefer to use both LMS and SMT.

❑ Not Sure

25. What do you think about Social Media Tools (SMT) compared with Learning Management Systems (LMS) supported by your Institution?

| | | | |
|---|---|---|---|
| LMS has limited capabilities and functionalities. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is too formal. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is control by the Institutions. Thus, all activities will be monitored and control by the institution. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is too generalized. It is not customizable or personable to suit student's learning style. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables academics to organize and manage their teaching and learning resources. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables students to download learning materials and upload their assessment works. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS allows students to view their grades and monitor their academic progress. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS allows students to communicate among peers and with the academics. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables students to view calendar, activities, events, and announcements posted by the Institution, faculty, academics and peers. | ❑ Agree | ❑ Disagree | ❑ Neutral |

26. If Social Media tools are to be used for academic purposes, will you actively participate and contribute to the learning communities?

❑ Yes ❑ No. (Why?) _____ ❑ Maybe

---

**<u>Section C: Social Media and Institution's Support</u>**

27. Does your Institution support / allow the use of social media?

❑ Yes. ❑ No. ❑ Not sure.

28. Does your Institution have a social media policy?

❑ Yes. ❑ No. ❑ Not sure.

29. What restrictions or limitations have you encountered in the use of Social Media Tools (SMT) in your institution?

❑ Slow Internet connections / low bandwidth.
❑ Blocking of some applications by university / college's firewall.
❑ All activities were being monitored.
❑ Social Media Accounts being hacked.
❑ Privacy issues.
❑ Others: _____

---

***Question 30 and 31 to be answered by those who chose 'No' for Question 10.***

30. What are your reasons for not using Social Media Tools (SMT)?

- ❑ Not interested.
- ❑ Do not have the technologies to support the use of social media.
- ❑ Concern about privacy issues.
- ❑ Restricted by parents / guardians.
- ❑ Not sure how to use it.
- ❑ Waste of time.
- ❑ Others (please specify): _____

31. Will you be considering the use social media tools in the near future?
    - ❑ Yes
    - ❑ No. (Please specify the reason): _____
    - ❑ May be

---

**Section D: General Comments**

32. Would you like to make any comments or give any advice about the use of Social Media Tools (SMT) in Higher Education?

33. If you have had good experiences in the use of Social Media Tools (SMT) to support your studies, would you allow me to contact you to discuss further?
    - ❑ Yes. (Please include your email): _____
    - ❑ No.

# APPENDIX D

## QUESTIONNAIRES FOR NON-IT / CS / COMPUTING STUDENTS (SET B)

### Section A: Demographic Details

1. How old are you?
   ❑ 17 – 18 ❑ 19 – 20 ❑ 21 – 22 ❑ 23 – 24 ❑ Above 22

2. Please specify your gender.
   ❑ Female ❑ Male

3. Please specify your nationality.
   ❑ Malaysian ❑ Non-malaysian. (Please Specify): _____

4. Which level of Programme that you are currently enrolled in your Institution?
   ❑ Certificate ❑ Diploma ❑ Foundation ❑ Degree ❑ Master

5. What field you are currently enrolled in?
   ❑ Business / Commerce
   ❑ Mass Communication / Communication Studies
   ❑ Science (Biotechnology, Medical, Dentistry, Pharmacy, etc)
   ❑ Engineering
   ❑ Actuarial Science
   ❑ Law
   ❑ Others (please specify): _____

6. What type of higher education institution are you currently enrolled in?
   ❑ Private College
   ❑ Private University / University College
   ❑ Public University / University College
   Please specify the name of your Institution: _____

7. Which of the following technology devices do you owned? (You can √ more than one)
   ❑ Smartphone ❑ Desktop ❑ Laptop / Netbook ❑ Digital Tablet

### Section B: Social Media Usage (General)

8. Do you use any Social Media Tools (SMTs) / applications / technologies?
   ❑ Yes.
   ❑ No. Please proceed to Question 24 & 25.

9. Which of the following Social Media Tools (SMTs) do you use for non-academic purpose? (You can √ more than one)

| Categories | Social Media Tools | | | | | | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | None ❑ | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | None ❑ | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | None ❑ | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | None ❑ | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | None ❑ | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | None ❑ | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | None ❑ | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | None ❑ | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | None ❑ | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

10. Please specify the frequency of usage for the following Social Media Tools (SMTs) for Non-Academic purposes.

| Tools | Frequency of Usage | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Daily** | **Several Times per Week** | **Weekly** | **Monthly** | **Quarterly / Half Yearly** | **Once per year** | **Never** |
| Social Networking websites | | | | | | | |
| Media Sharing tools | | | | | | | |
| Blogs | | | | | | | |
| Wikis | | | | | | | |
| Micro Blogging Tool | | | | | | | |
| Social Bookmarking Tool | | | | | | | |
| RSS Feeds | | | | | | | |
| Mobile Messaging applications | | | | | | | |
| Synchronous Communication & Conferencing | | | | | | | |

11. What is your purpose in using Social Media Tools (SMTs)? (You can √ more than one)
    - ❑ Entertainment
    - ❑ Information / knowledge sharing
    - ❑ Collaborative Works
    - ❑ Communications
    - ❑ Academic purpose
    - ❑ Others: _____

## Section C: Social Media Usage (For academic purpose)

12. Do you use any Social Media Tools (SMTs) for academic purpose?
    - ❑ Yes.
    - ❑ No. Please proceed to Question 26 & 27.

13. How do you use Social Media Tools (SMTs) to support your studies? (You can √ more than one)
    - ❑ Assignments / Project Collaboration / Discussions
    - ❑ Sharing of documents
    - ❑ Knowledge / Information Sharing
    - ❑ Activities / event updates
    - ❑ Sourcing for information
    - ❑ Communicating with Instructors, Lecturers, Professors and Peers
    - ❑ Others (please specify): _____

14. Which of the following Social Media Tools (SMTs) do you use for academic purposes? (You can √ more than one)

| **Categories** | **Social Media Tools** | | | | | | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | None ❑ | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | None ❑ | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | None ❑ | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | None ❑ | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | None ❑ | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | None ❑ | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | None ❑ | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | None ❑ | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | None ❑ | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

15. Please specify the frequency of usage for the following Social Media Tools (SMTs) for academic purposes.

| **Tools** | **Frequency of Usage** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Several times per day** | **Once Per Day** | **Several times per week** | **Once per week** | **One to two times per month** | **Several times per year** | **Never** |
| Social Networking websites | | | | | | | |
| Media Sharing tools | | | | | | | |
| Blogs | | | | | | | |
| Wikis | | | | | | | |
| Micro Blogging Tool | | | | | | | |
| Social Bookmarking Tool | | | | | | | |
| RSS Feeds | | | | | | | |
| Mobile Messaging applications | | | | | | | |
| Synchronous Communication & Conferencing | | | | | | | |

16. Which of the following Social Media Tools (SMTs) do you think is most useful for academic purposes? Rank the Social Media Tools (SMTs) from 1 (most useful) to 9 (least useful)

| | |
|---|---|
| Social Networking websites | |
| Media Sharing tools | |
| Blogs | |
| Wikis | |
| Micro Blogging Tool | |
| Social Bookmarking Tool | |
| RSS Feeds | |
| Mobile Messaging applications | |
| Synchronous Communication & Conferencing | |

17. In the course of your studies, how many of your instructors / lecturers / professors are using Social Media Tools (SMTs) for teaching and learning?

    ❑ None ❑ Some ❑ Most ❑ All ❑ Don't know

18. How do your instructors / lecturers / professors use Social Media Tools (SMTs) for teaching and learning activities with the students in your institutions? (You can √ more than one)

    ❑ Assignments / Project Collaboration / Discussions
    ❑ Sharing of documents
    ❑ Knowledge / Information Sharing
    ❑ Activities / event updates
    ❑ Sourcing for information
    ❑ Communicating with students / peers
    ❑ Others (please specify): _____

19. What are the barriers or problems that you have encountered in using Social Media Tools (SMTs) for your studies? (You can √ more than one)

    ❑ Privacy concerns
    ❑ Interfering with personal time
    ❑ Lack of support provided by the Institution
    ❑ Easily distracted and loss focus in the studies
    ❑ Lack of integration with Institution's Learning Management System (LMS)
    ❑ Feeling of being watched or stalked by lecturers / professors
    ❑ Limited gadgets or internet bandwidth
    ❑ Unfamiliar with the functionalities / features of the Social Media Tools (SMTs).
    ❑ Others (please specify): _____

20. Following are some proposed benefits of using Social Media Tools (SMTs) for academic purposes. Put a (√) against the statements that you agree with.

    ❑ SMTs support innovative teaching methods.
    ❑ SMTs support peer-to-peer learning
    ❑ SMTs enhance student motivation
    ❑ SMTs improve student's participation
    ❑ SMTs enable information / knowledge sharing

- ❑ SMTs enable cooperative and collaborative work
- ❑ SMTs support the creation of personal learning environment
- ❑ SMTs strengthen lecturers and students rapport

21. Would you prefer to use the existing Learning Management System (LMS) provided by your institution over Social Media Tools (SMTs)?
    - ❑ I prefer to use the LMS.
    - ❑ I prefer to use SMT.
    - ❑ I prefer to use both LMS and SMT.
    - ❑ Not Sure

22. What do you think about Social Media Tools (SMTs) compared with Learning Management Systems (LMS) supported by your Institution?

| | | | |
|---|---|---|---|
| LMS has limited capabilities and functionalities. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is too formal. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is control by the Institutions. Thus, all activities will be monitored and control by the institution. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is too generalized. It is not customizable or personable to suit student's learning style. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables academics to organize and manage their teaching and learning resources. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables students to download learning materials and upload their assessment works. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS allows students to view their grades and monitor their academic progress. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS allows students to communicate among peers and with the academics. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables students to view calendar, activities, events, and announcements posted by the Institution, faculty, academics and peers. | ❑ Agree | ❑ Disagree | ❑ Neutral |

23. If Social Media Tools (SMTs) are to be used for academic purposes, will you actively participate and contribute to the learning communities?
    ❑ Yes ❑ No. (Why?) _____ ❑ Maybe

---

***Question 24 and 25 to be answered by those who chose 'No' for Question 8.***

24. What are your reasons for not using Social Media Tools (SMTs)?
    - ❑ Not interested.
    - ❑ Do not have the technologies to support the use of social media.
    - ❑ Concern about privacy issues.
    - ❑ Restricted by parents / guardians.
    - ❑ Not sure how to use it.
    - ❑ Waste of time.
    - ❑ Not useful / relevant.
    - ❑ Others (please specify): _____

25. Will you be considering the use of social media tools in the near future?

- ❑ Yes
- ❑ No. (Please specify the reason): _____
- ❑ May be

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***Question 26 and 27 to be answered by those who chose 'No' for Question 12.***

26. What are your reasons for not using Social Media Tools (SMTs) for academic purpose?
    - ❑ Not interested.
    - ❑ Do not have the technologies to support the use of social media.
    - ❑ Concern about privacy issues.
    - ❑ Restricted by parents / guardians.
    - ❑ Not sure how to use it.
    - ❑ Waste of time.
    - ❑ Not useful / relevant.
    - ❑ Others (please specify): _____

27. Will you be considering the use Social Media Tools (SMTs) for your academic purpose in the near future?
    - ❑ Yes
    - ❑ No. (Please specify the reason): _____
    - ❑ May be

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*~ Thank you ~*

# APPENDIX E

## QUESTIONNAIRES FOR IT / CS / COMPUTING ACADEMICS (SET C)

### Section A: Demographic Details

1. How old are you?
   ❑ 30 and below ❑ 31 – 40 ❑ 41 – 50 ❑ 51 – 60 ❑ Above 60

2. Please specify your gender.
   ❑ Female ❑ Male

3. Please specify your nationality.
   ❑ Malaysian ❑ Non-malaysian (please specify): _____

4. Please specify your highest academic qualification.
   ❑ Degree ❑ Master ❑ Doctorate

5. Which level of Computer Science / Information Technology / Computing Program(s) are you currently teaching in your Institution? (You can choose more than one)
   ❑ Certificate ❑ Diploma ❑ Foundation ❑ Degree ❑ Master ❑ PhD

6. How many years have you worked as an academician in higher education institution(s)?
   ❑ Less than 5 years
   ❑ 5 – 10 years
   ❑ 11 – 15 years
   ❑ 16 – 20 years
   ❑ More than 20 years

7. What best describes your academic position?
   ❑ Professor ❑ Associate Professor ❑ Assistant Professor ❑ Senior Lecturer
   ❑ Lecturer

8. What type of higher education institution are you currently attached to?
   ❑ Private College
   ❑ Private University / University College
   ❑ Public University / University College
   Please specify the name of your Institution: _____

9. What are your subject specializations? (You can choose more than one)
   ❑ Network / Data Communications
   ❑ Database / Business Intelligence / Data Warehouse / Data Mining
   ❑ Information System / Information Technology

- ❑ Programming
- ❑ Systems Development / Systems Analysis and Design / Project Management
- ❑ Internet / Web / Mobile Applications
- ❑ Multimedia / Game Development
- ❑ Others. (Please specify): _____

10. Which of the following technology devices do you own or use? (You can choose more than one)
    ❑ Smartphone ❑ Desktop ❑ Laptop / Netbook ❑ Digital Tablet

11. On average, how many hours a day do you normally spend online?
    ❑None ❑ < 1 hour ❑ 1-3 hours ❑ 3-5 hours ❑ 5-7 hours ❑ > 7 hours

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## Section B: Social Media Usage (General)

12. Do you use any Social Media Tools (SMTs)?
    - ❑ Yes
    - ❑ No. Please proceed to Question 31 & 32

13. Which of the following Social Media Tools (SMTs) do you use for non-academic purposes? (You can choose more than one)

| Categories | Social Media Tools | | | | | | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | None ❑ | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | None ❑ | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | None ❑ | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | None ❑ | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | None ❑ | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | None ❑ | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | None ❑ | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | None ❑ | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | None ❑ | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

14. Please specify the frequency of usage for the following Social Media Tools (SMTs) for non-academic purposes.

| Tools | Frequency of Usage | | | | | | |
|---|---|---|---|---|---|---|---|
| | Several times per | Once Per Day | Several times per | Once per week | One to two times per | Several times per | Never |

| | day | | week | | month | year | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | | | | | | | |
| Media Sharing tools | | | | | | | |
| Blogs | | | | | | | |
| Wikis | | | | | | | |
| Micro Blogging Tool | | | | | | | |
| Social Bookmarking Tool | | | | | | | |
| RSS Feeds | | | | | | | |
| Mobile Messaging applications | | | | | | | |
| Synchronous Communication & Conferencing | | | | | | | |

15. How many years of experiences do you have in using the following Social Media Tools (SMTs)?

| | | | | | |
|---|---|---|---|---|---|
| Social Networking websites | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Media Sharing tools | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Blogs | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Wikis | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Micro Blogging Tool | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Social Bookmarking Tool | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| RSS Feeds | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Mobile Messaging applications | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Synchronous Communication & Conferencing | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |

16. What is your level of expertise in using the following Social Media Tools (SMTs)?

| | | | | |
|---|---|---|---|---|
| Social Networking websites | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Media Sharing tools | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Blogs | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Wikis | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Micro Blogging Tool | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Social Bookmarking Tool | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| RSS Feeds | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Mobile Messaging applications | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Synchronous Communication & Conferencing | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |

17. What is your purpose in using Social Media Tools (SMTs)? (You can choose more than one)
    - ❑ Entertainment ❑ Information / knowledge sharing ❑ Collaborative Works
    - ❑ Communications ❑ Academic purpose ❑ Networking
    - ❑ Others: _____

## Section C: Social Media Usage (For academic purposes)

18. Are you using Social Media Tools (SMTs) for teaching and learning activities in your institution?
    ❑ Yes ❑ No (Proceed to Question 33 & 34)

19. Which of the following Social Media Tools do you use for academic purposes? (You can choose more than one)

| Categories | Social Media Tools | | | | | | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | None ❑ | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | None ❑ | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | None ❑ | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | None ❑ | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | None ❑ | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | None ❑ | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | None ❑ | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | None ❑ | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | None ❑ | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

20. Please specify the frequency of usage for the following Social Media Tools (SMTs) for academic purposes.

| Tools | Frequency of Usage | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Several times per day** | **Once Per Day** | **Several times per week** | **Once per week** | **One to two times per month** | **Several times per year** | **Never** |
| Social Networking websites | | | | | | | |
| Media Sharing tools | | | | | | | |
| Blogs | | | | | | | |
| Wikis | | | | | | | |
| Micro Blogging Tool | | | | | | | |
| Social Bookmarking Tool | | | | | | | |
| RSS Feeds | | | | | | | |
| Mobile Messaging applications | | | | | | | |
| Synchronous Communication & Conferencing | | | | | | | |

21. Which of the following Social Media Tools (SMTs) do you think is most useful for academic purposes? Rank the Social Media Tools (SMTs) from 1 (most useful) to 9 (least useful)

| | |
|---|---|
| Social Networking websites | |
| Media Sharing tools | |
| Blogs | |
| Wikis | |
| Micro Blogging Tool | |
| Social Bookmarking Tool | |
| RSS Feeds | |

| | |
|---|---|
| Mobile Messaging applications | |
| Synchronous Communication & Conferencing | |

22. How do you use Social Media Tools (SMTs) for teaching and learning activities with your students? (You can choose more than one)
    - ❑ Assignments / Project Collaboration / Discussions
    - ❑ Sharing of documents
    - ❑ Knowledge / Information Sharing
    - ❑ Activities / event updates
    - ❑ Sourcing for information
    - ❑ Communicating with students
    - ❑ Others (please specify): _____

23. Social Media Tools (SMTs) can enhance the learning process.
    ❑ Strongly Agree ❑ Agree ❑ Neutral ❑ Disagree ❑ Strongly Disagree

24. Following are some proposed benefits of using Social Media Tools (SMTs) for academic purposes. Put a (√) against the statements that you agree with.
    - ❑ SMTs support innovative teaching methods
    - ❑ SMTs support peer-to-peer learning
    - ❑ SMTs enhance student motivation
    - ❑ SMTs improve student's participation
    - ❑ SMTs enable information / knowledge sharing
    - ❑ SMTs enable cooperative and collaborative work
    - ❑ SMTs support the creation of personal learning environment
    - ❑ SMTs strengthen lecturers and students rapport

25. Would you prefer to use the existing Learning Management System (LMS) provided by your institution over Social Media Tools (SMTs)?
    - ❑ I prefer to use the LMS
    - ❑ I prefer to use SMT
    - ❑ I prefer to use both LMS and SMT
    - ❑ Not Sure

26. What are the barriers or problems that you have encountered in using Social Media Tools (SMTs) in your class? (You can choose more than one)
    - ❑ Privacy concerns
    - ❑ Interfering with personal time
    - ❑ Lack of confident with Social Media Tools (SMTs)
    - ❑ Lack of support provided by the Institution
    - ❑ Students were distracted and loss focus in class
    - ❑ Take too much faculty time
    - ❑ Lack of integration with Institution's Learning Management System (LMS)
    - ❑ Inability to measure effectiveness
    - ❑ Complexity / integrity in grading and assessments
    - ❑ Others (please specify): _____

27. What do you think about Social Media Tools (SMTs) compared with Learning Management Systems (LMS) supported by your Institution?

| | | | |
|---|---|---|---|
| LMS has limited capabilities and functionalities. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is too formal. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is control by the Institutions. Thus, all activities will be monitored and controlled by the institution. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is too generalized. It is not customizable or personable to suit student's learning style. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables academics to organize and manage their teaching and learning resources. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables students to download learning materials and upload their assessment works. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS allows students to view their grades and monitor their academic progress. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS allows students to communicate among peers and with the academics. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables students to view calendar, activities, events, and announcements posted by the Institution, faculty, academics and peers. | ❑ Agree | ❑ Disagree | ❑ Neutral |

## Section D: Social Media and Institution's Support

28. Does your Institution support / allow the use of social media?

❑ Yes ❑ No ❑ Not sure

29. Does your Institution have a social media policy?

❑ Yes ❑ No ❑ Not sure

30. What restrictions or limitations have you encountered in the use of Social Media Tools (SMTs) in your institution? (You can choose more than one)

❑ Slow Internet connections / low bandwidth
❑ Blocking of some applications by university / college's firewall
❑ All activities were being monitored
❑ Social media accounts being hacked
❑ Privacy issues
❑ Others: _____

***Question 31 and 32 to be answered by those who chose 'No' for Question 12.***

31. What are your reasons for not using Social Media Tools (SMTs)? (You can choose more than one)

❑ Not interested
❑ Do not have the technologies to support the use of social media
❑ Concern about privacy issues
❑ Restricted by parents / guardians
❑ Not sure how to use it

- ❑ Waste of time
- ❑ Others (please specify): _____

32. Will you be considering the use of Social Media Tools (SMTs) in the near future?
    - ❑ Yes
    - ❑ No (Please specify the reason): _____
    - ❑ May be

---

***Question 33 and 34 is to be answered by those who chose 'No' for Question 18.***

33. What are your reasons for not considering the use of social media for teaching and learning activities? (You can choose more than one)
    - ❑ Not familiar with the tools
    - ❑ Time consuming
    - ❑ Privacy Concerns
    - ❑ Lack of confidence with Social Media Tools
    - ❑ Lack of support by the Institution
    - ❑ Not integrated with Institution's Learning Management System
    - ❑ Others (please specify): _____

34. Will you be considering using social media in your classroom for the coming year?
    - ❑ Yes
    - ❑ No (Please specify the reason): _____
    - ❑ May be

---

## Section E: General Comments

35. Would you like to make any comments or give any advice about the use of Social Media Tools (SMTs) in Higher Education?

36. If you have been doing something interesting with Social Media Tools (SMTs) to either engage students or for teaching, would you allow me to contact you to discuss further?
    - ❑ Yes. (Please include your email): _____
    - ❑ No.

---

*~ Thank you ~*

# APPENDIX F

## QUESTIONNAIRES FOR NON-IT / NON-COMPUTING ACADEMICS (SET D)

### Section A: Demographic Details

1. How old are you?
   ❑ 30 and below ❑ 31 – 40 ❑ 41 – 50 ❑ 51 – 60 ❑ Above 60

2. Please specify your gender.
   ❑ Female ❑ Male

3. Please specify your nationality.
   ❑ Malaysian ❑ Non-malaysian (please specify): _____

4. Please specify your highest academic qualification.
   ❑ Degree ❑ Master ❑ Doctorate

5. Which level of Computer Science / Information Technology / Computing Programme are you currently teaching in your Institution? (You can √ more than one)
   ❑ Certificate ❑ Diploma ❑ Foundation ❑ Degree ❑ Master ❑ PhD

6. How many years have you worked in higher education?
   ❑ Less than 5 years
   ❑ 5 – 10 years
   ❑ 11 – 15 years
   ❑ 16 – 20 years
   ❑ More than 20 years

7. What best described your academic position?
   ❑ Professor ❑ Associate Professor ❑ Assistant Professor ❑ Senior Lecturer
   ❑ Lecturer

8. What type of higher education institution are you currently attached to?
   ❑ Private College
   ❑ Private University / University College
   ❑ Public University / University College
   Please specify the name of your Institution: _____

9. What areas of studies are you currently teaching? (You can √ more than one)
   ❑ Accounting / Finance
   ❑ Art
   ❑ Business Administration / Management / Marketing / International Business / HR
   ❑ Engineering

- ❑ Health Science
- ❑ PR / Communications / Media Studies
- ❑ Law / Politics
- ❑ Humanities / Religions / Sociology
- ❑ Others (please specify): _____

10. Which of the following technology devices do you own or use? (You can √ more than one)
    ❑ Smartphone ❑ Desktop ❑ Laptop / Netbook ❑ Digital Tablet

11. On average, how many hours a day do you normally spend online?
    ❑None ❑ < 1 hour ❑ 1-3 hours ❑ 3-5 hours ❑ 5-7 hours ❑ > 7 hours

---

## Section B: Social Media Usage (General)

12. Do you use any Social Media Tools (SMTs)?
    - ❑ Yes.
    - ❑ No. Please proceed to Question 32 & 33.

13. Which of the following Social Media Tools (SMTs) do you use for non-academic purposes? (You can √ more than one)

| Categories | Social Media Tools | | | | | | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | None ❑ | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | None ❑ | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | None ❑ | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | None ❑ | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | None ❑ | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | None ❑ | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | None ❑ | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | None ❑ | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | None ❑ | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

14. Please specify the frequency of usage for the following Social Media Tools (SMTs) for Non-Academic Purposes.

| Tools | Frequency of Usage | | | | | | |
|---|---|---|---|---|---|---|---|
| | Several times per | Once Per Day | Several times per | Once per week | One to two times per | Several time per | Never |

| | day | | week | | month | year | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | | | | | | | |
| Media Sharing tools | | | | | | | |
| Blogs | | | | | | | |
| Wikis | | | | | | | |
| Micro Blogging Tool | | | | | | | |
| Social Bookmarking Tool | | | | | | | |
| RSS Feeds | | | | | | | |
| Mobile Messaging applications | | | | | | | |
| Synchronous Communication & Conferencing | | | | | | | |

15. How many years of experiences do you have in using the following Social Media Tools (SMTs)?

| | | | | | |
|---|---|---|---|---|---|
| Social Networking websites | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Media Sharing tools | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Blogs | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Wikis | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Micro Blogging Tool | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Social Bookmarking Tool | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| RSS Feeds | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Mobile Messaging applications | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |
| Synchronous Communication & Conferencing | ❑ < 1 year | ❑ 1 – 2 years | ❑ 2 – 3 years | ❑ > 3 years | ❑ Not Used |

16. What is your level of expertise in using the following Social Media Tools (SMTs)?

| | | | | |
|---|---|---|---|---|
| Social Networking websites | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Media Sharing tools | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Blogs | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Wikis | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Micro Blogging Tool | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Social Bookmarking Tool | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| RSS Feeds | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Mobile Messaging applications | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |
| Synchronous Communication & Conferencing | ❑ Beginner | ❑ Intermediate | ❑ Advanced | ❑ Not used |

17. What is your purpose in using Social Media Tools (SMTs)? (You can √ more than one)
    - ❑ Entertainment ❑ Information / knowledge sharing ❑ Collaborative Works
    - ❑ Communications ❑ Academic purpose ❑ Networking
    - ❑ Others: _____

## Section C: Social Media Usage (For academic purpose)

18. Are you using Social Media Tools (SMTs) for teaching and learning activities in your institution?
    - ❑ Yes ❑ No (Proceed to Question 33 & 34)

19. Which of the following Social Media Tools (SMTs) do you use for academic purposes? (You can √ more than one)

| Categories | Social Media Tools |
|---|---|

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | None ❑ | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | None ❑ | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | None ❑ | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | None ❑ | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | None ❑ | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | None ❑ | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | None ❑ | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | None ❑ | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | None ❑ | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

20. Please specify the frequency of usage for the following Social Media Tools (SMTs) for academic purposes.

| **Tools** | **Frequency of Usage** | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Several times per day** | **Once Per Day** | **Several times per week** | **Once per week** | **One to two times per month** | **Several times per year** | **Never** |
| Social Networking websites | | | | | | | |
| Media Sharing tools | | | | | | | |
| Blogs | | | | | | | |
| Wikis | | | | | | | |
| Micro Blogging Tool | | | | | | | |
| Social Bookmarking Tool | | | | | | | |
| RSS Feeds | | | | | | | |
| Mobile Messaging applications | | | | | | | |
| Synchronous Communication & Conferencing | | | | | | | |

21. Which of the following Social Media Tools (SMTs) you think is most useful for academic purpose. Rank the Social Media Tools (SMTs) from 1 (most useful) to 9 (least useful)

| | |
|---|---|
| Social Networking websites | |
| Media Sharing tools | |
| Blogs | |
| Wikis | |
| Micro Blogging Tool | |
| Social Bookmarking Tool | |
| RSS Feeds | |
| Mobile Messaging applications | |
| Synchronous Communication & Conferencing | |

22. How do you use Social Media Tools (SMTs) for teaching and learning activities with your students? (You can √ more than one)
    - ❑ Assignments / Project Collaboration / Discussions
    - ❑ Sharing of documents
    - ❑ Knowledge / Information Sharing
    - ❑ Activities / event updates
    - ❑ Sourcing for information
    - ❑ Communicating with students
    - ❑ Others (please specify): _____

23. Social Media Tools (SMTs) can enhance the learning process.
    ❑ Strongly Agree ❑ Agree ❑ Neutral ❑ Disagree ❑ Strongly Disagree

24. Following are some proposed benefits of using Social Media Tools (SMTs) for academic purpose. Put a (√) on those that you agree with.
    - ❑ SMTs support innovative teaching methods.
    - ❑ SMTs support peer-to-peer learning
    - ❑ SMTs enhance student motivation
    - ❑ SMTs improve student's participation
    - ❑ SMTs enable information / knowledge sharing
    - ❑ SMTs enable cooperative and collaborative work
    - ❑ SMTs support the creation of personal learning environment
    - ❑ SMTs strengthen lecturers and students rapport

25. Would you prefer to use the existing Learning Management System (LMS) provided by your institution over Social Media Tools (SMTs)?
    - ❑ I prefer to use the LMS.
    - ❑ I prefer to use SMT.
    - ❑ I prefer to use both LMS and SMT.
    - ❑ Not Sure

26. What are the barriers or problems that you encountered in using Social Media Tools (SMTs) in your class? (You can √ more than one)
    - ❑ Privacy concerns
    - ❑ Interfering with personal time
    - ❑ Lack of confident with Social Media Tools (SMTs)
    - ❑ Lack of support provided by the Institution
    - ❑ Students were distracted and loss focus in class
    - ❑ Take too much faculty time
    - ❑ Lack of integration with Institution's Learning Management System (LMS)
    - ❑ Inability to measure effectiveness
    - ❑ Complexity / integrity in grading and assessments
    - ❑ Others (please specify): _____

27. What do you think about Social Media Tools (SMTs) compared with Learning Management Systems (LMS) supported by your Institution?

| | | | |
|---|---|---|---|
| LMS has limited capabilities and functionalities. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is too formal. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is control by the Institutions. Thus, all activities will be monitored and control by the institution. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS is too generalized. It is not customizable or personable to suit student's learning style. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables academics to organize and manage their teaching and learning resources. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables students to download learning materials and upload their assessment works. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS allows students to view their grades and monitor their academic progress. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS allows students to communicate among peers and with the academics. | ❑ Agree | ❑ Disagree | ❑ Neutral |
| LMS enables students to view calendar, activities, events, and announcements posted by the Institution, faculty, academics and peers. | ❑ Agree | ❑ Disagree | ❑ Neutral |

## Section D: Social Media and Institution's Support

28. Does your Institution support / allow the use of Social Media Tools (SMTs)?

❑ Yes. ❑ No. ❑ Not sure.

29. Does your Institution have a social media policy?

❑ Yes. ❑ No. ❑ Not sure.

30. What restrictions or limitations have you encountered in the use of Social Media Tools (SMTs) in your institution?

❑ Slow Internet connections / low bandwidth.
❑ Blocking of some applications by university / college's firewall.
❑ All activities were being monitored.
❑ Social media accounts being hacked.
❑ Privacy issues.
❑ Others: _____

***Question 31 and 32 to be answered by those who chose 'No' for Question 12.***

31. What are your reasons for not using Social Media Tools (SMTs)? (You can √ more than one)

❑ Not interested.
❑ Do not have the technologies to support the use of social media.
❑ Concern about privacy issues.
❑ Restricted by parents / guardians.
❑ Not sure how to use it.
❑ Waste of time.
❑ Others (please specify): _____

32. Will you be considering the use of Social Media Tools (SMTs) in the near future?
    - ❑ Yes
    - ❑ No. (Please specify the reason): _____
    - ❑ May be

---

***Question 33 and 34 is to be answered by those who chose 'No' for Question 18.***

33. What are your reasons for not considering the use of social media for teaching and learning activities? (You can √ more than one)
    - ❑ Not familiar with the tools.
    - ❑ Time consuming.
    - ❑ Privacy Concerns.
    - ❑ Lack of confident with Social Media Tools.
    - ❑ Lack of support by the Institution.
    - ❑ Not integrated with Institution's Learning Management System
    - ❑ Others (please specify): _____

34. Will you be considering using social media in your classroom for the coming year?
    - ❑ Yes
    - ❑ No. (Please specify the reason): _____
    - ❑ May be

---

*~ Thank you ~*

# APPENDIX G

## QUESTIONS FOR ADMINISTRATOR (SET E)

### Section A: Demographic Details

1. How many students are enrolled in your institution?
   - ❑ < 1000 ❑ 1001-1500 ❑ 1501-2000 ❑ 2001 – 2500
   - ❑ 2501-3000 ❑ 3001-3500 ❑ 3501-4000 ❑ >4000

2. What type of higher education institution are you?
   - ❑ Private College
   - ❑ Private University / University College
   - ❑ Public University / University College

   Please specify the name of your Institution: _____

3. How long has your institution been in existence?
   - ❑ < 1 year ❑ 1-3 years ❑ 3-5 years ❑5-7 years ❑7-10 years ❑ > 10 years

4. Which unit or department are you attached to?
   - ❑ ICT Department
   - ❑ Sales / Marketing
   - ❑ Admission and Records
   - ❑ School / Faculty
   - ❑ Corporate Unit
   - ❑ Student Services
   - ❑ International Office
   - ❑ Alumni Office
   - ❑ Others (please specify): _____

5. What position do you hold in your department / unit / faculty?

   _____

### Section B: Social Media Usage (General)

6. Does your institution / department / unit / faculty use any Social Media Tools (SMTs)?
   - ❑ Yes.
   - ❑ No. Please proceed to Question 18 & 19.

7. Does your institution support / allow the use of Social Media Tools (SMTs)?
   - ❑ Yes ❑ No ❑ Not sure.

8. Does your institution have a Social Media Policy?
   ❑ Yes ❑ No ❑ Not sure.

9. Which of the following best describes your role in the administration of the Social Media Tools (SMTs) in your institution?
   ❑ Institution's Administrator
   ❑ School / Faculty's Administrator
   ❑ Unit / Department's Administrator

10. Which of the following Social Media Tools (SMTs) do you use in your institution / unit / faculty? (You can √ more than one).

| **Categories** | **Social Media Tools** | | | | | | |
|---|---|---|---|---|---|---|---|
| Social Networking websites | None ❑ | Facebook ❑ | Google+ ❑ | Ning ❑ | LinkedIn ❑ | MySpace ❑ | Others: _____ |
| Media Sharing tools | None ❑ | YouTube ❑ | Flickr ❑ | DropBox ❑ | SlideShare ❑ | Instagram ❑ | Others: _____ |
| Blogs | None ❑ | LiveJournal ❑ | Blogger ❑ | WordPress ❑ | Elgg ❑ | eBlogger ❑ | Others: _____ |
| Wikis | None ❑ | Wikipedia ❑ | Wikias ❑ | Wikispaces ❑ | PBWikis ❑ | Wikiversity ❑ | Others: _____ |
| Micro Blogging Tool | None ❑ | Twitter ❑ | Qaiku ❑ | Sina Weibo ❑ | Tumblr ❑ | Plurk ❑ | Others: _____ |
| Social Bookmarking Tool | None ❑ | Digg ❑ | Reddit ❑ | Stumble Upon ❑ | Delicious ❑ | Furl ❑ | Others: _____ |
| RSS Feeds | None ❑ | TweetDeck ❑ | Flock ❑ | FriendFeed ❑ | Netvibes ❑ | Radian6 ❑ | Others: _____ |
| Mobile Messaging applications | None ❑ | What's App ❑ | Line ❑ | eBuddy XMS ❑ | Meebo ❑ | Furl ❑ | Others: _____ |
| Synchronous Communication & Conferencing | None ❑ | Messenger ❑ | Skype ❑ | Dimdim ❑ | Tokbox ❑ | Google Talk ❑ | Others: _____ |

11. Which of the following Social Media Tools (SMTs) do you think are most useful for education institution? Rank the Social Media Tools (SMT) from 1 (most useful) to 9 (least useful)

| | |
|---|---|
| Social Networking websites | |
| Media Sharing tools | |
| Blogs | |
| Wikis | |
| Micro Blogging Tool | |
| Social Bookmarking Tool | |
| RSS Feeds | |
| Mobile Messaging applications | |
| Synchronous Communication & Conferencing | |

12. What made your institution / department / unit establish a social media presence? (You can √ more than one)
    - ❑ Wanted to experiment with social media
    - ❑ Competitors were using social media
    - ❑ Leveraging on the affordance of technology
    - ❑ Institution-wide mission and vision
    - ❑ Directive from top management
    - ❑ Others (please specify): _____

13. Who are you targeting to engage on your Social Media? (You can √ more than one)
    - ❑ Potential Students / Parents
    - ❑ Existing Students / Parents
    - ❑ Staff
    - ❑ Alumni
    - ❑ Public
    - ❑ Others (please specify): _____

14. What do you intend to achieve through the use of Social Media Tools (SMTs). (You can √ more than one)
    - ❑ Better communication with potential students and parents
    - ❑ Better communication with current students and their parents.
    - ❑ Updating institution / faculty / department's activities and events.
    - ❑ Increased customer satisfaction / Better customer service
    - ❑ Increase brand / product awareness
    - ❑ Reduced communication costs
    - ❑ Better feedback mechanism from customers
    - ❑ Better marketing of products / services
    - ❑ Better ability to showcase institution's expertise
    - ❑ Gain more business contacts
    - ❑ Others (Please specify): _____

15. Does your institution have a dedicated administrator to manage and administer your Social Media Tools (SMTs)?
    - ❑ Yes. (Please specify the position): _____
    - ❑ No
    - ❑ Not Sure

16. How often is the content of your social media presence updated?
    - ❑ Daily ❑ Several days per week ❑ Monthly ❑ Several times per month.
    - ❑ Yearly ❑ Several times per year ❑ Not sure

17. What restrictions or limitations have you encountered in the use of Social Media Tools (SMTs) in your institution?
    - ❑ Slow Internet connections / low bandwidth.
    - ❑ Blocking of some applications by university / college's firewall.

- ❑ Unfamiliar with the functionalities / features of the Social Media Tools (SMTs).
- ❑ Social Media Accounts being hacked.
- ❑ Privacy issues
- ❑ Others: _____

---

***Question 18 and 19 to be answered by those who chose 'No' for Question 6.***

18. What are the reasons for not using Social Media Tools (SMT) in your institution / unit / department / faculty? (You can √ more than one)
    - ❑ Not interested.
    - ❑ Do not have the technologies to support the use of social media.
    - ❑ Concern about privacy issues.
    - ❑ Restricted by management.
    - ❑ Do not see the benefits of using SMT,
    - ❑ Not sure how to use it.
    - ❑ Waste of time.
    - ❑ Others (please specify): _____

19. Will your institution / unit / department / faculty be considering the use of Social Media Tools (SMT) in the near future?
    - ❑ Yes
    - ❑ No. (Please specify the reason): _____
    - ❑ May be

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## Section C: General Comments

20. Would you like to make any comments or give any advice about the use of Social Media Tools (SMTs) in Higher Education?

21. If you have been doing something interesting with Social Media Tools (SMTs) to either engage students or for teaching, would you allow me to contact you to discuss further?
    - ❑ Yes. (Please include your email): _____
    - ❑ No.

---

# APPENDIX H

## INTERVIEW QUESTIONS FOR STUDENTS (SET F)

Name: _____

Program: _____

Institution: _____

1. What discipline are you studying? What are the challenges of studying in your discipline?
2. How often do you check your social media accounts? Do you keep your Social Media Technologies (SMTs) websites active while working on your educational tasks?
3. What makes Social Media Technologies (SMTs) so attractive to you?
4. Do you think there are any negative effects of using SMTs on your educational performance?
5. Do you turn to SMTs for help when you encounter problems in your studies (e.g. posting your problem on Facebook or Twitter, hoping to get some ideas)? Did you get the solutions to your problems from your friends within the same learning communities (taking the same subject) or from friends outside the learning communities (other friends or friends of your friends)?
6. Do you think that online learning communities made up of people who share the same interests, or are taking the same subjects or courses useful in your studies (especially in Informatics programme)? Why?
7. What are the important elements or attributes that are essential for successful implementation of online learning communities within the SMTs (e.g. commitment, participation, etc)
8. How are your instructors using SMTs for teaching and learning? What are some examples of SMTs that are being used?
9. How do you feel about the use of SMTs for teaching and learning by your instructors? Can you share some of your experiences in using SMTs in your classes?
10. What improvement or changes do you hope to see in the use of SMTs by your instructors?
11. What benefits do you perceived with the use of SMTs in your studies?
12. What concerns do you have regarding the use of SMTs in your studies?
13. Do you see any impacts of using social media on students' learning outcomes? Why?
14. How does your institution use SMTs in general?
15. What kind of support does your institution provide for the use of SMTs? How could your institution improve their support of the use of SMTs? If no, what kinds of supports do you think are relevant and useful?
16. What do you think are the factors that will determine the successful adoption of SMTs in higher education?

17. What do you see as the potential and future of social media in learning for higher education?
18. What do you see as the shortcomings of the current SMTs?

# APPENDIX I

## INTERVIEW QUESTIONS FOR ACADEMICS (SET G)

Name: _____

Institution: _____

## Questions

1. What subjects do you teach and which level of studies are they?
2. What are the challenges of teaching in your discipline?
3. Did you notice any differences in students learning style between the pre-Social Media era and post-Social Media era?
4. How long have you been using Social media for your teaching? What SMTs have you used in your classes?
5. What makes you explore the use of SMTs for your classes?
6. How do you assess the social media activities that you set for your students?
7. How do your students respond to your use of SMTs in the class when you first introduce it to them?
8. What teaching activities did you use with SMTs?
9. Do you use SMTs as part of your course assessments in your class? Why and why not?
10. What benefits do you perceived with the use of SMT in your classes?
11. Do you see any impact from the use of social media on students' learning outcomes? Why?
12. What concern do you have regarding the use of SMT in teaching? What strategies do you have to mitigate the concerns that you mentioned earlier?
13. Why do you think that SMTs are still not popularly used by academics in Malaysia Tertiary Education especially in Informatics disciplines?
14. Do you join any online learning communities (within the SMTs environment) which are useful to you as an academic?
15. Do you think that online learning communities made up of people who shares the same interests, or taking the same subjects or courses useful in tertiary education (especially in Informatics programme)? Why?
16. What are the important elements or attributes that a student should possess for a successful implementation of online learning communities within the SMTs (e.g. commitment, participation, etc)
17. How is your institution supporting instructors' use of SMT for Teaching and Learning (e.g. technical, pedagogical, Communities of Practice, financial, etc)? What kind of supports do you wish to see more of from your institutions in supporting SMT initiatives?
18. Apart from using SMT for teaching and learning, what else do you think higher education institutions could use it for?

19. What do you think are the factors that will determine the successful adoption of SMT in higher education?
20. What do you see as the potential and future of social media in learning for higher education?
21. What do you see as the shortcomings of the current social media technologies?

# APPENDIX J

## INTERVIEW QUESTIONS FOR ADMINISTRATOR (SET H)

Name: _____

Institution: _____

Role/Position: _____

1. What is your view of the use of SMTs in Tertiary Education Institutions?
2. How does your institution / faculty use SMTs?
3. What do you think are the factors that will determine the successful adoption of SMT in higher education?
4. What do you see as the potential and future of social media in learning for higher education?
5. What do you see as the shortcomings of the current social media technologies?
6. What concern do you have regarding the use of SMT in higher education institutions?
7. Do you have a dedicated social media administrator or department that takes care of the use of SMTs in the institution?
8. What supports (e.g., financial, infrastructure) has your institution incurred in its social media implementations?
9. How is your institution assessing the use and/or impact of social media use?
10. Does your institution have a Social Media Policy? What does it cover?
11. What are the penalties for breaching the Social Media Policy?

**For IT Support / IT Administrators**

12. What kind of support does your institution provide for the use of SMTs?
13. How is your institution supporting instructor use of SMTs for Teaching and Learning (e.g. technical, pedagogical, Communities of Practice, financial, etc)?
14. Does your institution impose any restrictions on the use of SMT within the institution's environment? Why or why not?
15. What concerns about student privacy does your institution have regarding the use of SMT?

**For Programme / Faculty administrators**

16. Can you briefly explain how you use Social Media within your faculty / department?
17. How frequently is the content in the Social Media websites being updated? Who does this?
18. Who is responsible for checking the posting and comments left by students, staff, etc in the Social Media Websites?
19. Does your institution / faculty provide any kind of student support via social media?
20. What benefits do you perceive with the use of SMT in higher education institutions?

UNIVERSITY OF WOLLONGONG

# APPENDIX K

## PARTICIPANT INFORMATION SHEET (Student)

### Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context.

**PURPOSE OF THE RESEARCH**

This is an invitation to participate in a study conducted by a PhD candidate undertaking a Doctor of Philosophy Course at the University of Wollongong. This study will investigate the perceptions, acceptance, usage and access to social media by students and academics in higher education in Informatics programs in Malaysia. A significant outcome of this study will be the development of a design framework for implementing social media as supporting tools for student engagement and teaching and learning of Informatics Programs in Higher Education Institutions in Malaysia.

**INVESTIGATORS**

| | |
|---|---|
| Jane See Yin LIM<br>PhD candidate, University of Wollongong<br>jsyl769@uow.edu.au or janesy.lim@gmail.com<br>+6012-3390441 | Emeritus Professor Barry M Harper,<br>Dean of Programs<br>Subang Jaya Campus,<br>University of Wollongong<br>bharper@uow.edu.au<br>+60 (03)-56232848 |
| Professor Joe F Chicharo,<br>Deputy Vice Chancellor (International),<br>University of Wollongong<br>chicharo@uow.edu.au<br>+61242215190 | Dr. Shirley Agostinho,<br>Senior Lecturer<br>School of Education, Faculty of Social Sciences,<br>University of Wollongong<br>shirleya@uow.edu.au<br>+61242215512 |

**METHOD AND DEMANDS ON PARTICIPANTS**

At various stages of the process you will be asked to take part in a survey and possibly an individual interview that will be audio taped for accuracy of recording. If you agree to participate in this research, kindly contact the researcher by sending an email to janesy.lim@gmail.com / jsyl769@uow.edu.au. Once the researcher receives your email, a link to a 15-minute online survey will be sent to you. The aim of the survey is to identify and document your exposure and usage of social media technologies to support your learning in general. You can also choose to accept the invitation of participation by clicking on the link

provided in http://www.myedusmt.blogspot.com. Once you have accepted the invitation, the webpage will direct you to the respective questionnaire.

At the end of the survey, you have an option to volunteer for an individual interview in which the aim is to better understand your needs, usage and experiences in using social media technologies in your classes. The interview will be conducted either in your respective institution, or via phone. Some examples of questions include: How do you feel about the use of SMT for teaching and learning by your instructors? Does your institution provide any kind of student support via social media? What do you think are the factors that will determine the successful adoption of SMT in higher education? What benefits do you perceived with the use of SMT in your studies? The interview will take approximately 30 minutes.

**POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS**

Apart from the time involved in discussion, interview, survey and observation we can foresee no risks for you. Your involvement in the study is voluntary and you may withdraw your participation from the study at any time. If you were to withdraw your consent it would not be possible to withdraw any data you may have provided through the anonymous survey.

**FUNDING AND BENEFITS OF THE RESEARCH**

There is no funding involves in this project. The purpose of this study is to examine the engagement of Informatics students and faculty members in the use of social media for teaching and learning purposes. This research will focus on the perceptions, uses, and access to social media in higher education in the Malaysian context. The findings of this research would support the development of a framework for the effective use of social media in Informatics curriculum and assessment.

**ETHICS REVIEW AND COMPLAINTS**

This study has been reviewed by the Human Research Ethics Committee of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the UoW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au.

UNIVERSITY OF WOLLONGONG

# APPENDIX L

## PARTICIPANT INFORMATION SHEET (Academic)

### Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context.

**PURPOSE OF THE RESEARCH**

This is an invitation to participate in a study conducted by a PhD candidate undertaking a Doctor of Philosophy Course at the University of Wollongong. This study will investigate the perceptions, acceptance, usage and access to social media by students and academics in higher education in Informatics programs in Malaysia. A significant outcome of this study will be the development of a design framework for implementing social media as supporting tools for student engagement and teaching and learning of Informatics Programs in Higher Education Institutions in Malaysia.

**INVESTIGATORS**

| | |
|---|---|
| Jane See Yin LIM<br>PhD candidate, University of Wollongong<br>jsyl769@uow.edu.au or janesy.lim@gmail.com<br>+6012-3390441 | Emeritus Professor Barry M Harper,<br>Dean of Programs<br>Subang Jaya Campus,<br>University of Wollongong<br>bharper@uow.edu.au<br>+60 (03)-56232848 |
| Professor Joe F Chicharo,<br>Deputy Vice Chancellor (International),<br>University of Wollongong<br>chicharo@uow.edu.au<br>+61242215190 | Dr. Shirley Agostinho,<br>Senior Lecturer<br>School of Education, Faculty of Social Sciences,<br>University of Wollongong<br>shirleya@uow.edu.au<br>+61242215512 |

**METHOD AND DEMANDS ON PARTICIPANTS**

At various stages of the process you will be asked to take part in a survey and possibly an individual interview that will be audio taped for accuracy of recording. If you agree to participate in this research, kindly contact the researcher by sending an email to janesy.lim@gmail.com / jsyl769@uow.edu.au. Once the researcher receives your email, a link to a 15-minute online survey will be sent to you. The aim of the survey is to investigate your support, exposure and use of social media technologies for engagement, teaching and learning in general. You can also choose to accept the invitation of participation by clicking

on the link provided in http://www.myedusmt.blogspot.com. Once you have accepted the invitation, the webpage will direct you to the respective questionnaire.

At the end of the survey, you have an option to volunteer for an individual interview in which the aim is to better understand your needs, usage and experiences in using social media technologies in your classes. The interview will be conducted either in your respective institution, or via phone. Some examples of questions include: Do you use social media in your teaching and how long have you been using Social media for your teaching? What concern do you have regarding the use of SMT in teaching? How is your institution supporting instructors' use of SMT for Teaching and Learning? The interview will take approximately 30 minutes.

I may also request your permission to observe your classroom usage of Social Media Technologies (SMTs) to understand the effectiveness of these tools for teaching and learning purposes.

**POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS**

Apart from the time involved in discussion, interview, survey and observation we can foresee no risks for you. Your involvement in the study is voluntary and you may withdraw your participation from the study at any time. If you were to withdraw your consent it would not be possible to withdraw any data you may have provided through the anonymous survey.

**FUNDING AND BENEFITS OF THE RESEARCH**

There is no funding involved in this project. The purpose of this study is to examine the engagement of Informatics students and faculty members in the use of social media for teaching and learning purposes. This research will focus on the perceptions, uses, and access to social media in higher education in the Malaysian context. The findings of this research would support the development of a framework for the effective use of social media in Informatics curriculum and assessment.

**ETHICS REVIEW AND COMPLAINTS**

This study has been reviewed by the Human Research Ethics Committee of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the UoW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au.

UNIVERSITY OF WOLLONGONG

# APPENDIX M

## PARTICIPANT INFORMATION SHEET (Administrator)

### Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context.

**PURPOSE OF THE RESEARCH**

This is an invitation to participate in a study conducted by a PhD candidate undertaking a Doctor of Philosophy Course at the University of Wollongong. This study will investigate the perceptions, acceptance, usage and access to social media by students and academics in higher education in Informatics programs in Malaysia. A significant outcome of this study will be the development of a design framework for implementing social media as supporting tools for student engagement and teaching and learning of Informatics Programs in Higher Education Institutions in Malaysia.

**INVESTIGATORS**

| | |
|---|---|
| Jane See Yin LIM<br>PhD candidate, University of Wollongong<br>jsyl769@uow.edu.au or janesy.lim@gmail.com<br>+6012-3390441 | Emeritus Professor Barry M Harper,<br>Dean of Programs<br>Subang Jaya Campus,<br>University of Wollongong<br>bharper@uow.edu.au<br>+60 (03)-56232848 |
| Professor Joe F Chicharo,<br>Deputy Vice Chancellor (International),<br>University of Wollongong<br>chicharo@uow.edu.au<br>+61242215190 | Dr. Shirley Agostinho,<br>Senior Lecturer<br>School of Education, Faculty of Social Sciences,<br>University of Wollongong<br>shirleya@uow.edu.au<br>+61242215512 |

**METHOD AND DEMANDS ON PARTICIPANTS**

At various stages of the process you will be asked to take part in a survey and possibly an individual interview that will be audio taped for accuracy of recording. If you agree to participate in this research, kindly contact the researcher by sending an email to janesy.lim@gmail.com / jsyl769@uow.edu.au. Once the researcher receives your email, a link to a 15-minute online survey will be sent to you. The aim of the survey is to investigate your support, exposure and use of social media technologies for engagement, teaching and learning in general. You can also choose to accept the invitation of participation by clicking

on the link provided in http://www.myedusmt.blogspot.com. Once you have accepted the invitation, the webpage will direct you to the respective questionnaire.

At the end of the survey, you have an option to volunteer for an individual interview in which the aim is to understand how the institutions are adopting and supporting social media technologies and what policies are driving this process. The interview will be conducted either in your respective institution, or via phone. Some examples of questions include: What kind of support does your institution provide for the use of SMT? What do you see as the potential and future of social media in learning for higher education? Do you have a dedicated social media administrator or department that takes care of the use of SMT in the institution? What costs (e.g., support, financial, infrastructure) has your institution incurred in its social media implementations? How is your institution assessing the use and/or impact of social media use? The interview will take approximately 30 minutes.

**POSSIBLE RISKS, INCONVENIENCES AND DISCOMFORTS**

Apart from the time involved in discussion, interview, and survey we can foresee no risks for you. Your involvement in the study is voluntary and you may withdraw your participation from the study at any time. If you were to withdraw your consent it would not be possible to withdraw any data you may have provided through the anonymous survey.

**FUNDING AND BENEFITS OF THE RESEARCH**

There is no funding involved in this project. The purpose of this study is to examine the engagement of Informatics students and faculty members in the use of social media for teaching and learning purposes. This research will focus on the perceptions, uses, and access to social media in higher education in the Malaysian context. The findings of this research would support the development of a framework for the effective use of social media in Informatics curriculum and assessment.

**ETHICS REVIEW AND COMPLAINTS**

This study has been reviewed by the Human Research Ethics Committee of the University of Wollongong. If you have any concerns or complaints regarding the way this research has been conducted, you can contact the UoW Ethics Officer on (02) 4221 3386 or email rso-ethics@uow.edu.au.

# APPENDIX N

**CONSENT FORM FOR …….**

**RESEARCH TITLE:** "Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context."

**RESEARCHERS: JANE SEE YIN LIM, DR. SHIRLEY AGOSTINHO, PROF. JOE CHICHARO, EMERITUS PROF. BARRY HARPER**

I have been given information about the project "Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context."

I have been fully advised of the process and proposed outcomes of this research and have had an opportunity to ask the researchers any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary and I am free to withdraw from the research at any time. I understand that it would not be possible to withdraw any data I may have provided through anonymous survey, group interview and/or observation.

If I have any enquiries about the research, I can contact Jane See Yin LIM (janesy.lim@newinti.edu.my) or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on 4221 3386 or email rso-ethics@uow.edu.au.

By signing below I am indicating my consent to (please tick):

- ☐ Provide data through interview and survey
- ☐ Allow observation of my teaching activities

I understand that the data collected from my participation will be used for *internal reports, reports to the Office of Learning and Teaching , and journal publication,* and I consent for it to be used in that manner.

Signed Date

..... ...../...../.....

Name (please print)

# APPENDIX O – ETHICS APPLICATION & APPROVAL

Research Office use only

HE 08/_

UNIVERSITY OF WOLLONGONG/SOUTH EASTERN SYDNEY & ILLAWARRA AREA HEALTH SERVICE
HUMAN RESEARCH ETHICS COMMITTEE

**APPLICATION FOR APPROVAL TO UNDERTAKE**
**RESEARCH INVOLVING HUMAN PARTICIPANTS**

## A. GENERAL INFORMATION

**1. Descriptive Title of Project:**
**"Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context."**

**2. 7 line summary of project aims:**
This study will investigate the perceptions, acceptance, usage and access to social media by students and academics in higher education in Informatics programs in Malaysia. A conceptual model based on Connectivism and Communities of Practice (CoPS) learning theory will be developed and will be used as a basis of mapping the research questions to the design frameworks and the research outcomes. A significant outcome of this study will be the development of a design framework for implementing social media as supporting tools for student engagement and teaching and learning of Informatics Programs in Higher education institutions in Malaysia.

**3. Participating Researchers**
**Summarise the qualifications and experience of all personnel who will be participating in the project.**

**NB: For student research, a Supervisor must be the Principal Investigator.**

| Role | Name | Experience | Address | Phone | Email |
|---|---|---|---|---|---|
| Chief Investigator | Jane See Yin Lim, PhD candidate, University of Wollongong | - | 295, Jalan 23/39, Petaling Garden, Kepong Baru, 52100, Kuala Lumpur, Malaysia | +6012-3390441 | janesy.lim@newinti.edu.my janel@uow.edu.au |
| Principal Investigator | Professor Joe F Chicharo, Deputy Vice Chancellor (International) | 25 years experience as Doctoral Supervisor | University of Wollongong, Wollongong, NSW, 2522 | +61242215190 | chicharo@uow.edu.au |
| Principal Investigator | Emeritus Professor Barry M Harper, Emeritus Professor of Education, Dean of Programs Subang Jaya Campus, University of Wollongong | 25 years experience as Doctoral Supervisor | University of Wollongong, Wollongong, NSW, 2522 | +60 (03)-56232848 | bharper@uow.edu.au |

| | | | | | |
|---|---|---|---|---|---|
| Principal Investigator | Dr. Shirley Agostinho, Senior Lecturer | 7 years experience as doctoral supervisor | School of Education, Faculty of Social Sciences, University of Wollongong NSW 2522, Building 67 Room 310 | +61242215512 | shirleya@uow.edu.au |

**4. Contact details for correspondence**

| Role | Name | Address | Phone | Email |
|---|---|---|---|---|
| Chief Investigator | Jane See Yin Lim, PhD candidate, University of Wollongong | 295, Jalan 23/39, Petaling Garden, Kepong Baru, 52100, Kuala Lumpur, Malaysia | +6012-3390441 | janesy.lim@newinti.edu.my<br>janel@uow.edu.au |

**5. Expected duration of Research** (Please specify as near as possible 'start' and 'finish' dates for the conduct of research):

FROM: March, 2013 TO: March, 2015

**6. Purpose of Project**

Indicate whether the research is one or more of the following:

- ☐ Staff Research (University of Wollongong)
- ☐ Staff Research (SESIAHS)
- ☒ Student Research - specify: PhD Research
- ☒ Course undertaken: Doctor of Philosophy
- ☒ Unit/Faculty/Department: School of Electrical, Computer, and Telecommunications Engineering
- ☒ Supervisor/s: Prof. Joe Chicharo, Prof. Barry Harper, Dr. Shirley Agostinho
- ☐ Other (Please specify)

**7. Has this research project been reviewed by any other Institutional Ethics Committee?**

NO

**If no, go to Section B. If YES:**

**7.a What committees has the application been submitted to?**

Not applicable

**7.b What is the current status of these applications? Please include copies of *all correspondence* between the sponsor or researcher and the other Ethics Committee(s) to this point.**

Not applicable

B. FINANCIAL SUPPORT FOR RESEARCH

**8. What is the source and amount of funding from all sources for this research?**

Not applicable

**For sponsored research please include the budget for the trial including information about capitation fees, payments to researchers, institutions or organisations involved in the research, current and consequential costs and costs which may be incurred by participants.**

**If the research is sponsored:**

**8.a Is there any affiliation/association or financial interest between the researcher(s) associated with this research and the sponsor/funding body/supplier of a drug, surgical device or other therapeutic device to be used in the study?**

Not applicable

**If Yes, Please detail.**

Not applicable

**8.b Are there any conditions placed on this research by the funding body?**

Not applicable

**If YES, please provide details and provide a copy of the contract/letter of agreement with the funding organisation detailing the terms on which the research is being supported.**

Not applicable

**8.c Is a copy of the HREC approval to be forwarded to the Granting Body?**

Not applicable

**If YES, please advise of any deadlines.**

Not applicable

C. RESEARCH METHODS

**9. Research Categories**

**Please mark the research categories relevant to this research proposal. At least one category should be marked for each grouping. You should mark as many categories as are relevant to the proposed research. For "Other", please specify.**

A Research procedures used

- ☒ Anonymous questionnaires/ surveys
- ☐ Coded (potentially identifiable) questionnaires/ surveys
- ☐ Identifiable questionnaires/ surveys
- ☐ Examination of student work, journals etc

- ☐ Examination of medical, educational, personnel or other confidential records *(Please note: we will analyse consolidated student results and retention rates for the participating subjects and so no individual identifying data will be accessed)*
- ☒ Observation (overt)
- ☐ Observation (covert)
- ☒ Interviews (structured or unstructured)
- ☐ Telephone interviews
- ☐ Procedures involving physical experiments (e.g. exercise, reacting to computer images)
- ☐ Procedures involving administration of substances (e.g. drugs, alcohol, food)
- ☐ Physical examination of participants (including eg. blood glucose, blood pressure and temperature monitoring)
- ☐ Collection of body tissues or fluid samples
- ☐ Surgical procedures
- ☐ Other:

B Research areas

- ☐ Qualitative research
- ☐ Social Science research
- ☐ Humanities research
- ☒ Educational research
- ☐ Health research
- ☐ Psychological research
- ☐ Comparison or evaluation of drugs or surgical or other therapeutic devices
- ☐ Comparison or evaluation of clinical procedures
- ☐ Comparison or evaluation of counselling or training methods
- ☐ Investigation of the effects of an agent (drug or other substance)
- ☐ Investigation of bio-mechanical processes
- ☐ Biomedical research
- ☐ Epidemiology
- ☐ Genetic research
- ☐ Other: _____

**10. Does the project involve: the use of drugs, a surgical device, a therapeutic intervention, or a physiological trial?**

NO

**If no, go to Q11. If YES:**

**10.a Please give details of the type of intervention and provide evidence that appropriate indemnity and compensation arrangements are in place to ensure adequate compensation to participants for any injury suffered as a result of participation in the trial (Indemnification forms and, if the research is being undertaken in a private practice, evidence of adequate and appropriate insurance coverage).**

Not applicable

**10.b Is the research registered:**

- ☐ **As a CTN Trial with the TGA**
- ☐ **As a CTX Trial with the TGA**
- ☐ **On any national or international clinical trial registers**

☐ **Other (Please detail)**

**11. Research design and justification**

**Describe what you want participants to do and justify the design. Please provide an explanation in terms understandable by a non-expert reader. A flow chart or other diagram illustrating the sequence of research activities should be included if possible. For research involving a treatment or physical intervention (eg clinical studies, physiological trials, mental health interventions) a protocol should be provided.**

A mixed-method research methodology will be used for this study with a significant survey research component. This methodology focuses on collecting and analysing qualitative and quantitative data to better understand the research problems. This type of methodology will help to answer questions that cannot be answered by qualitative or quantitative methods alone (Creswell, 2003). Mixed Method research methodology is seen to be most appropriate for this study as it allows the researcher to gather multiple forms of data for diverse audiences such as educators, administrators, and students. For this study, a quantitative-qualitative (Quan-Qual) model will be used in which quantitative data will be collected in the first phase in which surveys will be used to collect data from students, academics and administrators from both Informatics and non-informatics programs to investigate their support, exposure and use of social media technologies for engagement, teaching and learning.

Subsequently, the second phase will involve the collection of qualitative data in which a sample of the same voluntary Informatics academics, students and administrator of the institutions will be interviewed to better understand their needs, usage and experiences in using social media technologies for their classes. Observations will also be conducted based on the classes identified by the voluntary Informatics academics to better understand how social media technologies are being used for student engagement and teaching and learning. The results of the qualitative and quantitative data collection will contribute to this study. A policy analysis framework will be used to examine the current policies being implemented in the higher education institutions sampled (Pawson, 2006).

Students undertaking Informatics Programmes in Malaysia will be surveyed and interviewed to identify and document their exposure and usage of social media technologies to support their learning. The interview questions and surveys are included in Attachments (A, F). Non-Informatics students will also be surveyed to understand the differences of social media usage compared to Informatics students. The survey questions are included in Attachment (B).

Academics teaching in Informatics and Non-Informatics programmes will also be surveyed to articulate and document their adoption and implementation of social media technologies for their classes. The survey questions are included in Attachment (C, D). From the response from the survey, voluntary Informatics academics will be identified and interviews will be conducted to better understand their needs, usage and experiences in using social media technologies for their classes. The interview questions are included in Attachment (G). Observations will be conducted based on the classes identified by the voluntary Informatics academics to better understand how social media technologies are being used for teaching and learning.

Lastly, administrators from higher institutions in Malaysia will be surveyed and interviewed to understand how the institutions are adopting and supporting social media technologies and what policies are driving this process. The survey questions and interview questions are included in Attachments (E, H).

A social media framework and guide for Higher Education Institutions and Informatics academics to embrace Social Media Technologies (SMTs) in creating effective learning communities for Informatics Programmes will be developed.

**Timeline of Activities**

| |
|---|
| **Stage 1**<br>July 2013: Pre-data Collection ~ Identification of the higher education institutions that offer Informatics Programmes, compiling the list of Informatics educators, and sending the invitations of participation in surveys / interviews. |
| **Stage 2**<br>Aug – Oct 2013: Survey of Informatics' educators, administrators, and students.<br>Oct – Nov 2013: Interviews with the selected participants<br>Nov – Dec 2013: Observation of social media usage in teaching and learning practices for selected group of voluntary participants. |
| **Stage 3**<br>Dec 2013 – March 2014: Data analysis of stages 2 & 3 |
| **Stage 4**<br>Apr 2014 – Feb 2015: Design and development of social media framework, evaluation of the project conducted and preparation of the report. |

## 12. Statistical design

Any research project that involves the collection of data should be designed so that it is capable of providing information that can be analysed to achieve the aims of the project. Usually, although not always, this will involve various important statistical issues. It is important that the design and analysis be properly planned in the early stages of the project. You should seek statistical advice. The University of Wollongong has a Statistical Consulting Service that provides such advice to research students and staff undertaking research.

**Are statistical issues relevant to this project?**

YES ☒ NO ☐

**If no, go to Q13. If YES:**

**12.a Have you discussed this project with the Statistical Consulting Service or any other statistical advisor?**

YES ☐ NO ☒

**If NO, please explain why not.**

The surveys conducted will result in data that can be analysed with descriptive statistics, thus, statistical consulting service is not necessary. All principal investigators (supervisors) have experience with descriptive statistics and analysis. The Chief Investigator is a computer scientist and has experience in managing large data sets. Additionally, the online tools used for the survey will facilitate the process.

**12.b Provide the calculations used to determine the appropriate sample size. If no power calculations have been done please explain the reason for choosing the sample size.**

Based on the statistics provided by the Ministry of Higher Education Malaysia (www.mohe.gov.my), as of December 2011, there are 383 higher education institutions in Malaysia, and the total enrolments for students is 1,049,885. There were 122,517 students enrolled in the Science, Maths and Computing Cluster.
For this study, descriptive statistics will be used with the aim to summarize the samples, rather than use the data to learn about the population that the samples of data are thought to represent. Thus, the chosen sample size above will not be based on any probability theory, but a comfortable and reasonable sample representation for each category.
Because of the large number of higher education institutions across Malaysia and the existence of public and private institutions, a representative sample of academic and student responses will require sampling from a range of institutions and the intentions is to maintain a reasonable sample size for each institution to ensure the data is representative.

In total, 120 Non-Informatics academics(20 per institution) and 60 Informatics academics (10 per institution) will be surveyed from 6 institutions (4 private for large, media and small institutions, and two public, large and medium - note there are no small public institutions) and (30) of the Informatics academics will be identified for interview purposes across the range of institutions sampled. For students, 180 students (30 per institution) from Non-Informatics, and 120 students (20 per institution) from Informatics will be surveyed in the same institutions and (30) Informatics students will be selected for interview across the sample institutions. Lastly, at least 18 administrators from 6 private and public universities or colleges in Malaysia will be surveyed and (12) will be interviewed.

Because of the nature of the recruiting process, data received will be tabulated until the number of responses exceeds the sample sizes proposed. Additional data will be beyond this will be held, but not processed.

## D. ETHICAL CONSIDERATIONS

**13. What are the ethical considerations relevant to the proposed research, specifically in relation to the participants' welfare, rights, beliefs, perceptions, customs and cultural heritage? How has the research design addressed these considerations? Consideration should be at both individual and collective level.**

The details of this project will be explained to all participants and their voluntary participation will be sought. Participants even after they have volunteered to be involved will be advised that they may choose not to participate and that they have the respective right to withdraw from the involvement in any data-gathering processes.

Information collected from participants will remain confidential and be presented in the form of aggregated data or anonymous quotations with any potentially identifying details removed. Participants will be advised that the information they provide will not be disclosed to any other member of their organisation.

## E. RISKS AND BENEFITS

**14. Does the project involve the risk of emotional distress or physical harm, or the use of invasive procedures (e.g. blood sampling)?**

NO

**If YES**
**14. a What are the risks?**

Not applicable

**14.b Explain how the risks of harm or distress will be minimised. In the case of risks of emotional distress, what provisions have been made for an exit interview or the necessity of counselling?**

Not applicable

**15. Is information about criminal activity likely to be revealed during the study?**

NO

**If YES, have you included a caution regarding any relevant mandatory reporting requirements in the Participant Information package?**

Not applicable

**16. Detail the expected benefits of the study to the participants and/or the wider community.**
Higher education in the 21st-Century is in the process of change. Students in this generation are heavily exposed to digital technologies and the Internet. The extensive use of the Internet and social media has the potential to offer new types of student engagement and educational settings. The use of social media in higher education is becoming critical as the use of these tools and technologies has been part and parcel of current student's lifestyles. Higher education institutions should take this opportunity to harness these technologies that are already integrated into students' daily lives to design an innovative and creative education environment that will enhance and improve their learning experiences. Siemens (2007, para. 6) states: "… our institutions need to change because of the increasing complexity of society and globalization. Schools and universities play a dual role: accommodating learner's method and mode of learning and transforming learners and preparing them to function in the world that is unfolding". Research is showing that social media can be supportive of student learning, but there is limited knowledge on how it is being used and the outcomes of using it within educational settings. This study will attempt to give an in-depth answer to the full questions and to capture student and academic beliefs.

Generally, social media offers some exciting new educational opportunities to higher education institutions. There is wide range of social media usage in educational settings now being reported, but many issues are still unexamined. For example, most researches focused on how a specific tool is being adopted for a specific subject and the responses from students. However, limited studies have been focusing on the educators' readiness, acceptance or refusal in integrating social media into their courses, the perceived effectiveness of the tools and student outcomes for their learning.

Informatics programmes are technological-oriented in nature; hence students and academics themselves would arguably be quite adept at using SMTs. Students undertaking Informatics programmes are trained to thrive in challenging, advanced technical environments as manifestations of the fast-paced world of Information Technology. Students must be able to think logically and learn "how to learn" as "knowledge upon demand" is one of the expected capabilities of Informatics graduates. This rapid change in knowledge and skill sets requires learners to not only be lifelong learners, but to be constantly connected to the field of computing science. SMTs may be the conduit that supports these needs. Despite being an Information and Communication Technology (ICT) hub and having advanced ICT Infrastructure

nationally, the use of social media beyond young people via mobile devices in Malaysia for education purposes is still relatively new and little is known about the user experience, intentions, perceptions and acceptance of these technologies by students and academics. This study will investigate the perceptions, acceptance, usage and access to social media by students and academics in higher education in Informatics programs in Malaysia.

The findings of this research would support the development of a design framework for the effective use of social media in Informatics curriculum and assessment. The specific benefit to the participant individuals will be that they will be directly informed of the findings of the study and thus they will see how their perspective to social media technologies and their use compares with other participants in the study. They will also be sharing ideas for strategies to improve the use of SMT in their learning/teaching context thus will have directly involvement in the recommendations that are generated from this study.

## F. PARTICIPANTS

**17. Mark the categories relevant to this proposal.**

- ☐ Healthy members of the community
- ☒ University students
- ☐ Employees of a specific company/organisation
- ☐ Members of a specific community group, club or association
- ☐ Clients of a service provider
- ☐ Health Service clients (e.g. users/clients of a health service)
- ☐ School children
- ☐ Hospital in-patients
- ☐ Clinical clients (e.g. patients)
- ☐ Aboriginal/Torres Strait Islander people
- ☐ Members of socially disadvantaged groups
- ☐ Cadavers/ cadaveric organs
- ☒ Other (please specify): Informatics and Non-Informatics students, academics and administrators in Malaysia Higher Education Institutions.

**18. Expected age(s) of participants – please mark one or more**

- ☐ Children (under 14)
- ☐ Young people (14-18)
- ☒ Adults (> 18)

**19. What is the rationale for selecting participants from this/these group/s?**

The participants are representative of the population for whom the findings will be relevant.

## G. RECRUITMENT

**20. How will potential participants be approached initially and informed about the project? e.g. direct approach to people on the street, mail-out to potential participants through an organisation, posters or newspaper advertisements, etc. Please explain in detail and <u>include copies of any letters, advertisements or other recruitment information</u>.**

The researcher will invite academics from Informatics and Non-Informatics programme in Malaysia Higher Education Institutions to participate in the survey and interview and to help recruit students. The chief investigator is currently working in one of the Private Higher Education Institution in Malaysia. She has many contacts of academics from other private and public institutions and she will personally invite them to participate in the survey via email. The academic names and email address will also be obtained through the Chief Investigator's personal contacts (some are colleagues, ex-colleagues, friends / acquaintances of current colleagues, ex-colleagues and friends, contacts obtained during conferences and seminars, voluntary contacts obtained through Facebook community, etc). She is also a member of the Doctorate Studies Group in Facebook in which there are more than 12,000 members comprise of mostly professors, academics, post-PhD candidates, and on-going PhD students (mostly academics in public and private institutions in Malaysia). The chief investigator will use the following sample script to post on the Facebook page of the Doctorate Studies Group and construct individual emails to academics to participate in the survey.

A sample script to be posted on Facebook and email for academic and administrator is as follows:

***Dear all,***
***"My name is Jane and I am a PhD student from University of Wollongong. Currently I'm doing research on investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context. I am seeking administrators, coordinators, and academics teaching in both Computer Science / IT programmes and other disciplines who are willing to participate in a 15-minute anonymous survey. I would appreciate it greatly if you could please send me your details (role and email address) so that I could send you the link to the appropriate anonymous survey. Thank you so much for your support."***

***Students will be recruited in collaboration with academics in the participated institutions, by approaching students directly through email or Social Media Technologies such as Facebook. There is no privacy consideration or legislation which needs to be adhered to in Malaysia.***

A sample script to be posted on Facebook and email for student is as follows:

***Dear students,***
***"My name is Jane and I am a PhD student from University of Wollongong. Currently I'm doing research on investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context. I am seeking students from both Computer Science / IT programmes and other disciplines who are willing to participate in a 15-minute anonymous survey. I would appreciate it greatly if you could please send me your consent so that I could send you the link to the appropriate anonymous survey. Thank you so much for your support."***

See Attachment for copies of Participant Information sheets. A copy of the consent form is also included.

**21. Where will potential participants be approached by the researchers to seek their participation in the research, and where will research activities involving participants be conducted?**

Participants will be recruited from the Computer Science / Information Technology Faculties of higher education institutions in Malaysia. The research activities will be conducted in meeting rooms and classrooms at the respective institutions.

**22. How many participants in total do you anticipate will be involved in the project? If the research has several stages and/or groups of participants, please provide the total number of participants expected as well as the number and participant group involved in each stage.**
600 participants

H. CONSENT PROCESS

**Generally the consent of participants must be obtained prior to conducting research. If you do not intend to seek people's permission to use information about them which may be identifying, you may need an exemption from State and Federal Privacy requirements. This is addressed in Section I.**
**Attach copies of any letters of invitation, information packages, consent forms, proxy/substitute consent forms, debriefing information, identification cards, contact detail cards, etc.**

**23. Will consent for participation be obtained from participants or their legal guardians?**
YES
**If NO, go to Q31.**

**24. How will consent for participation be obtained?**

☒ **in writing**

☐ **verbally**

☐ **tacit (eg indicated by completion and return of survey)**

☐ **other (please specify) _____**

☐ **consent not being sought**

**Please explain why the method chosen is the most appropriate and ethical.**

The method of consent chosen is appropriate because the participants are all adults and their involvement in the project is voluntary. Written consent is a means of formalising participant' engagement in the project and ensuring the details of the project and the voluntary nature of participation in the project has been clearly communicated both verbally and in writing.

**25. Is it anticipated that all participants will have the capacity to consent to their participation in the research?**

YES

**If NO, please explain why not (e.g. children, incompetent participants, etc.) and explain how proxy or substitute consent will be obtained from the person with legal authority to consent on behalf of the participant.**

Not applicable

**26. For participants who have the capacity to consent, how does the process ensure that informed consent is freely obtained from the participant?**
The invitation extended to participants indicates that involvement in the project is entirely voluntary. In discussions with participants they will be reminded that their participation in the project is voluntary.

**27. Are any participants in a dependant relationship with the researcher, the institution, or the funding body (for example the researcher's clinical clients or students; employees of the institution; recipients of services provided by the funding body)? If so, what steps will be taken to ensure that participants are free to participate or refuse to participate in the research?**

Some of the academics, administrators and students are in a dependent relationship with the Chief Investigator who is holding a Dean position in the Faculty of Informatics at INTI International College Subang, one of the higher education institutions in Malaysia. It will be made clear that any participation is completely voluntary and one of the Chief Investigator's colleagues will act as an intermediary to recruit staff and students. There will not be any impact on student's marks /assessment and replies from the survey will not be identified.

**28. How does the project address the participants' freedom to discontinue participation? Will there be any adverse effects on participants if they withdraw their consent and will they be able to withdraw data concerning themselves if they withdraw their consent?**

Participants will be informed in writing and for interviews verbally that they are in no way obliged to be involved in the project and that they will not be disadvantaged should they choose to withdraw from the project. Participants will not encounter any adverse consequences should they choose to withdraw from the project. In relation to the survey because the data is not personalised, once the survey is complete, the participant will not be able to withdraw their contribution as their data will not be able to be identified. Participants will be notified of this in the letter of consent.

**29. Does the project involve withholding relevant information from participants or deceiving them about some aspect of the research?**

NO

**If YES, what is the justification for this withholding or deception and what steps will be taken to protect the participants' interest in having full information about their participation?**

Not applicable

**30. Will participants be paid or offered any form of reward or benefit (monetary or otherwise) for participation in the research? If so, please detail and provide a justification for the payment, reward or benefit.**

NO

## I. CONFIDENTIALITY AND PRIVACY

**31. How will the privacy of individual subjects be protected when recording and analysing the data?**

Information collected from participants will remain confidential and no potential identifies will be associated with the analysis of data.

**32. Will information collected from data or interview be published or reported?**

YES

**If YES, what form this will take? All uses of data must be explicitly consented to.**

Possible forms of publication include project reports, journal articles, and conference papers. Participants will be informed of this that there will be no identifiable information used in any publication or report.

**33. Will any part of the research activities be placed on a visual or audio recording (eg audiotape, photograph or video-tape)?**

YES

**If YES,**

**33.a What will the recording be used for?**

Interviews with academics, students and administrators will be audio-taped and transcribed verbatim to keep an accurate record of the conversation. The observation of the Social Media Technologies (SMTs) usage will also be photographed or screen-captured to keep an evidence of the usage and deployment of Social Media Technologies (SMTs) in classes.

**33.b Who will see/hear the recording?**

The Chief investigator and the files will be coded for a transcription service. The participants will also review their own transcript as a member checking process to ensure accuracy of the transcript.

**34. Data (including questionnaires, surveys, computer data, tapes, transcripts and specimens) must be securely stored at all times. Where will the data be held and who will have access to it:**

**a. during the project?**

The data will be stored securely in computer files on the Chief Investigator's computers and in locked cabinets in the Principal Investigators' office at the INTI International College Subang, Malaysia.

**b. on completion of the project?**

The data will be stored securely in computer files on the Chief Investigator's computer and in a locked secure location in her office at the INTI International College Subang, Malaysia.

**35. Data should be held securely for a minimum of 5 years (15 years for clinical research) after completion of the research. How long will the data be stored for? If it is not being stored, please provide an ethical justification for this.**

Yes, for a minimum of 5 years

**36. Does this project involve obtaining identifiable information (e.g. data) from a third party without prior consent from the participant or their legal guardian?**

NO

**If NO: You have completed the questionnaire. Please ensure that the form has all the appropriate signatures and attachments (see checklist) before submission.**

**If YES: go to question 37.**

**37. Who will be providing the information? Please include copies of any correspondence regarding permission to access this information from a responsible officer of the Agency.**

Not applicable

**38. Will the information be deidentified during collection, use, or disclosure?**

YES

**If NO: You must apply for an exemption to the State and Federal Privacy Acts. Please complete the Privacy Exemption Application Form available from the 'Forms' section of the Ethics webpage.**

**If YES:**

**38.a Who will be deidentifying the information? Is this is a person who would normally have access to the information?**

Chief Investigator, Jane See Yin LIM

Yes

**38.b How and when will the data be deidentified?**

Survey/questionnaires will be anonymous. The Chief investigator will de-identify semi-structured interviews and observations and allocate pseudonyms prior to data analysis.

## J. DECLARATION BY INVESTIGATORS

- I certify that I am the Principal Investigator named on the front page of this application form.
- I undertake to conduct this project in accordance with all the applicable legal requirements and ethical responsibilities associated with its carrying out. I also undertake to take all reasonable steps to ensure that all persons under my supervision involved in this project will also conduct the research in accordance with all such applicable legal requirements and ethical responsibilities.
- I certify that adequate indemnity insurance has been obtained to cover the personnel working on this project.
- I have read the *National Statement on Ethical Conduct in Human Research* and the *Australian Code for the Responsible Conduct of Research*. I declare that I and all researchers participating in this project will abide by the terms of these documents.
- I make this application on the basis that it and the information it contains are confidential and that the Human Research Ethics Committee of The University of Wollongong/SESIAHS will keep all information concerning this application and the matters it deals with in strict confidence.

| | | |
|---|---|---|
| Jane See Yin LIM | | 30/7/2013 |
| Name (please print) | Signature | Date |
| Prof. Joe Chicharo | | 31/7/2013 |
| Name (please print) | Signature | Date |
| Prof. Barry Harper | | 30/7/2013 |
| Name (please print) | Signature | Date |
| Dr. Shirley Agostinho | | 31/7/2013 |
| Name (please print) | Signature | Date |

## K. APPROVAL BY HEAD OF UNIT

**This person must not be a member of the research team.**

I am aware of the content of this application. I am satisfied that:

- All appropriate safety measures have been taken;
- The research is in accordance with UOW/SESIAHS Policy; and
- Approve the conduct of the project within this unit.

| | | |
|---|---|---|
| Name (please print) | Signature | Date |

UNIVERSITY OF WOLLONGONG

RENEWAL APPROVAL LETTER
**In reply please quote: HE13/298**

12 August 2014

Ms Jane See Yin Lim
295, Jalan 23/39 Petaling Garden
Kepong Baru, 52100
Kuala Lumpur MALAYSIA

Dear Ms See Yin Lim

Thank you for submitting the progress report. I am pleased to advise that **renewal** of the following Human Research Ethics application has been **approved**.

| | |
|---|---|
| Ethics Number: | HE13/298 |
| Project Title: | Investigating the use and perceived effectiveness of social media for Informatics Programmes in the Malaysian Higher Education Context |
| Researchers: | Ms Jane See Yin Lim, Professor Joe Chicharo, Professor Barry Harper, Dr Shirley Agostinho |
| Renewed From: | 29 August 2014 |
| New Expiry Date: | 28 August 2015 |

Please note that approvals are granted for a twelve month period. Further extension will be considered on receipt of a progress report prior to expiry date.

This certificate relates to the research protocol submitted in your original application and all approved amendments to date. Please remember that in addition to completing an annual report, the Human Research Ethics Committee also requires that researchers immediately report:

- proposed changes to the protocol including changes to investigators involved
- serious or unexpected adverse effects on participants
- unforeseen events that might affect continued ethical acceptability of the project.

A condition of approval by the HREC is the submission of a progress report annually and a final report on completion of your project. The progress report template is available at http://www.uow.edu.au/research/rso/ethics/UOW009385.html. This report must be completed, signed by the appropriate Head of School and returned to the Research Services Office prior to the expiry date.

Ethics Unit, Research Services Office
University of Wollongong NSW 2522 Australia
Telephone (02) 4221 3386 Facsimile (02) 4221 4338
Email: rso-ethics@uow.edu.au Web: www.uow.edu.au

The University of Wollongong/ Illawarra and Shoalhaven Local Health Network District (ISLHD) Social Science HREC is constituted and functions in accordance with the NHMRC National Statement on Ethical Conduct in Human Research.

Yours sincerely

Professor Kathleen Clapham
**Chair, Social Sciences**
**Human Research Ethics Committee**

# APPENDIX P

# EXAMPLES OF SOCIAL MEDIA MISUSE

As discussed in Chapter 7, section 7.1, following are some examples of social media misused and the consequences that it brought to the institution.

## 1. Cyber-bullying

In early 2014, a video of a high school student in Malaysia who was bullied and beaten up by his classmates was recorded using a smartphone and circulated via Facebook. Within a very short period of time, the video went viral with 12,000 shares and received 11,000 'LIKES' on Facebook (my.theasianparent.com, 2014). There were many mix comments posted, some sympathizing with the victim and asking for justice, but many were laughing about it and continue sharing the video. Even though action was taken against the bullies where they were eventually expelled from the school, but, for the victim, his life will never be the same again. *Figure A1* depicts the screenshot of the video that has gone viral on Facebook.


*Figure A1: Cyber bullying Video that has gone viral*

Another more tormented example is where an Italian teenage girl who turned to social networking site to seek sympathy after she broke off with her boyfriend, but received many nasty or negative advices in returned (e.g. "Kill yourself", "Nobody wants you" and "You are not normal"). She took her life by jumping off a high-rise building (BBC.com, 2014). Digital technologies enable cyber-bullies to digitally and anonymously abuse their victims by posting threatening or abusive messages online about their victims, sharing of humiliated photos or videos on their victim's physical appearances (e.g. overweight), or circulating sexually explicit photos or sexually assault videos of their victims on social networks can caused tormented stress to their victims. More cyber-bullying case studies are available on Cyberbullying.ua, a website created by a postgraduate student from University of Alabama who study community journalism. Cited from the website, "The purpose of the site is to serve as a resource for both parents, teachers, and children on the dangers and realities of cyber bullying" (Cyberbulling.ua, 2014).

The victims of cyber-bullying not only involve students, but also academics. In one article published in The Telegraph on April 2014, there is an increase of teachers being the victim of cyber-bully by students and their parents. Social media such as Facebook, Instagram, and Twitter have been used in many ways to make offensive remarks about teachers, commenting about teacher's performance, personal appearances, etc. (Paton, 2014).

## 2. Invasion of privacy and cyber stalking

Other example of more serious cyber-stalking cases include, a student from a university in USA who has been charged in August 2014 for cyber stalking her instructor by sending more than 100 threatening emails in 2013. The contents of the emails include threats on mutilation, torture and murder (FBI, 2014).

In another example, a high school coach was charged for cyber stalking students from another university. He accessed students' Facebook account, taken over the account, posing as the account

holder, tricked and persuaded others to involve in sexually explicit act via Skype. He also convinced his victim to send him their naked photos and videos of themselves, in which some he subsequently shared on social media (Agar, 2013). The last example is where a Computer Science student was charged for hacking into young woman's computer, hijacking their webcams, taking nude pictures of them when they changed their clothes, and blackmailing them to ask for more sexually explicit photos or videos. He also hacked into his victim's social media account such as Facebook, Twitter and Instagram, and posted some of the nude photos there (Botelho, 2013).

## 3. Freedom of Speech

Too much of freedom of social media on campus without careful control might potentially tarnish the reputation of the institution or might even drag the institution into unnecessary legal implications. *Figure A2* below shows an example where student commented about his or her academic on Facebook.

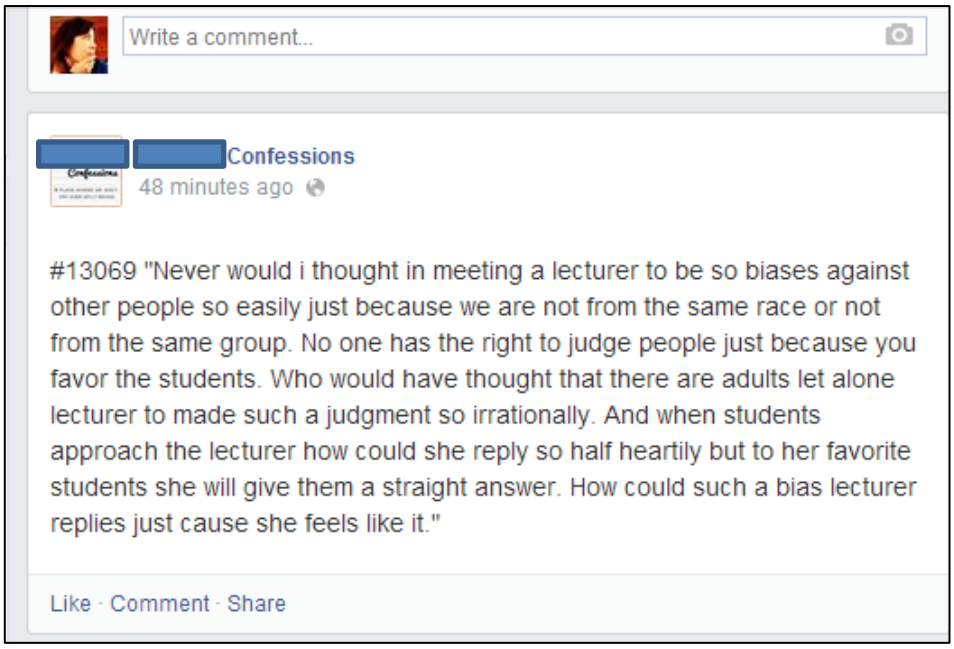


*Figure A2: Example of student commenting on the academic on Facebook.*

In another case which was reported in one of the Malaysia's online news portal: The Rakyat Post.com on 18th September 2014, a Facebook user was slammed for the rude and insulting remarks that she posted on her Facebook regarding the airing of Malaysia National Anthem in the cinema before the start of the movie. The post was shared 616 times, had over 4000 LIKES and generated 1600 comments. Her action has put her under police investigation now for disrespecting the country (The Rakyat Post.com, 2014) and her Facebook account has also been removed. Before her account was terminated, her Facebook profile was searched by many Facebook users and a screenshot of her profile was even posted on a blog (Pisau.net, 2014) which also highlighted the Institution she studied at. Out of the 1600 comments on Facebook, many are mainly commenting about her rude behavior. However, there are also many comments that were slammed directed to the institution that she graduated from, commenting the institution on the quality of graduates that it has produced. This has indirectly affecting the reputation of the Institution. Refer to *Figure A3* and *Figure A4* for the screenshots.

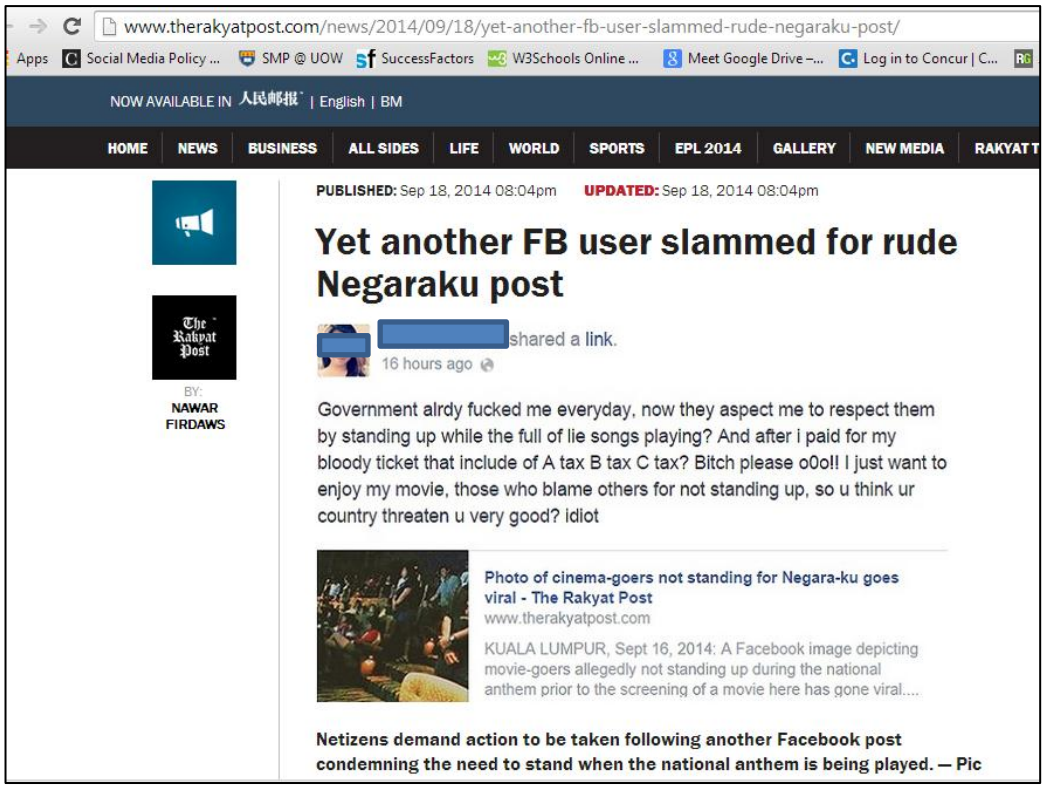


*Figure A3: Screenshot from therakyatpost.com*

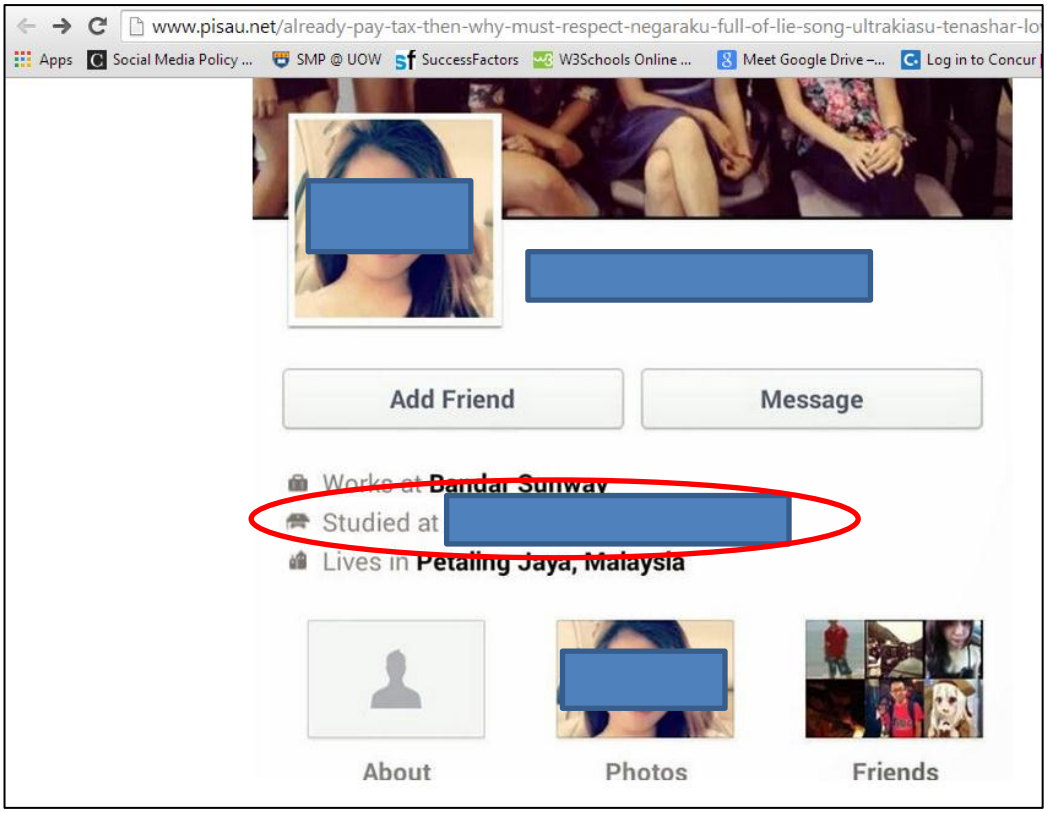


*Figure A4: Screenshot from pisau.net*

## 4. Professionalism

In some cases, staff, especially the academics might also turn to social media to vent their frustrations and angers on students or the institution. This might affect the image of their professionalism as an educator. For example, *Figure A5* and *Figure A6* showed an example where an academic staff turned to Facebook to vent his anger on the institution and requested students to boycott the institution. The post received closed to 700 LIKES on Facebook and was shared by 201 students. Whether or not the statement posted is a truth, students will not verify the integrity of the contents. This could be seen from the number of LIKES and Shares on the Facebook.

Search for people, places and things

[redacted]

Like Page

27 May at 15:37 ·

#13543 "I am a lecturer at [redacted]

What I am going to tell you next is probably the most significant / important / biggest confession ever made here and affects every reader here.

To my fellow students and parents who spends their hard earned money to sent their children to school,

Please don't come / sent your child here to study, [redacted] only interested in your money and not the welfare of your children.

[redacted] has been lying to MQA for the past few years about the lecturers teaching hours.

Most of the lecturers here are overloaded ( 20 hours plus ). Do you know that the standard teaching hours according to MQA are 12 hours ?

The management doesn't care because they want to cut cost.

They get us to lie to MQA and if we don't, we will get sacked / terminated.

This problem goes to the very top. We are talking about the very people who are responsible for this organization.

This college has become nothing but a money making factory.

Why does this concern you ?

Well, when your lecturer is overloaded, he/she will not be able to perform her job appropriately.

This is when you get lecturers who come to class and not able to deliver. Do you really think your lecturers want to do that to you ?

*Figure A5: Example of academic venting their anger on Facebook.*

Search for people, places and things

This is when you get lecturers who come to class and not able to deliver. Do you really think your lecturers want to do that to you ?

Call me a whistle blower if you want. I have put up with this crap for a long time. Its time for this to end.

ASKING US TO LIE TO A GOVERNMENT BODY ON YOUR BEHALF IS A CRIMINAL OFFENSE AND DOWN RIGHT UNACCEPTABLE AT ANY LEVEL.

Please my fellow students, like this, share this, let your parents know.

We are helpless. We need your help for a change."

Like · Comment · Share

[redacted] and 684 others like this.

201 shares

View previous comments 50 of 113

[redacted]

27 May at 20:17 · Like · 3

[redacted] This lecturer,has own my respect!

27 May at 20:22 · Like · 1

[redacted] Ever heard of constitutional rights? It's something I'd personally like to define (do correct me if I'm mistaken) it as the ability to gain votes based on majority and make that change.. Don't talk shit here if you're not going to make a stand. Student... See More

27 May at 20:31 · Edited · Like · 7

[redacted] READ THIS!

See Translation

27 May at 20:34 · Like

*Figure A6: Example of academic venting their anger on Facebook (Continue)*

It is also not professional for academic staff to post any status updates commenting about their work social media. Some people will just turn to social media to pour their heart out about anything that happen to them and it surely doesn't reflect the profession as an educator especially when it involves the institution and their students. Academic staff must also be careful with what they shared on social media especially Facebook when it involves the work or the grades of their students. Sometimes, academic staff might not realized what they thought to be hilarious and shared out publicly would undermine and bring humiliation to their students even though the names of the students have been removed. Anything on the social media might be 'LIKED' or 'Shared' by people and it reflects badly on the affected students as they could recognize their own work. Other students might also loss their confidence on the respective academic staff as the same thing might happen to them too. Refer to *Figure A7* for an example of student's work which was shared on Facebook.

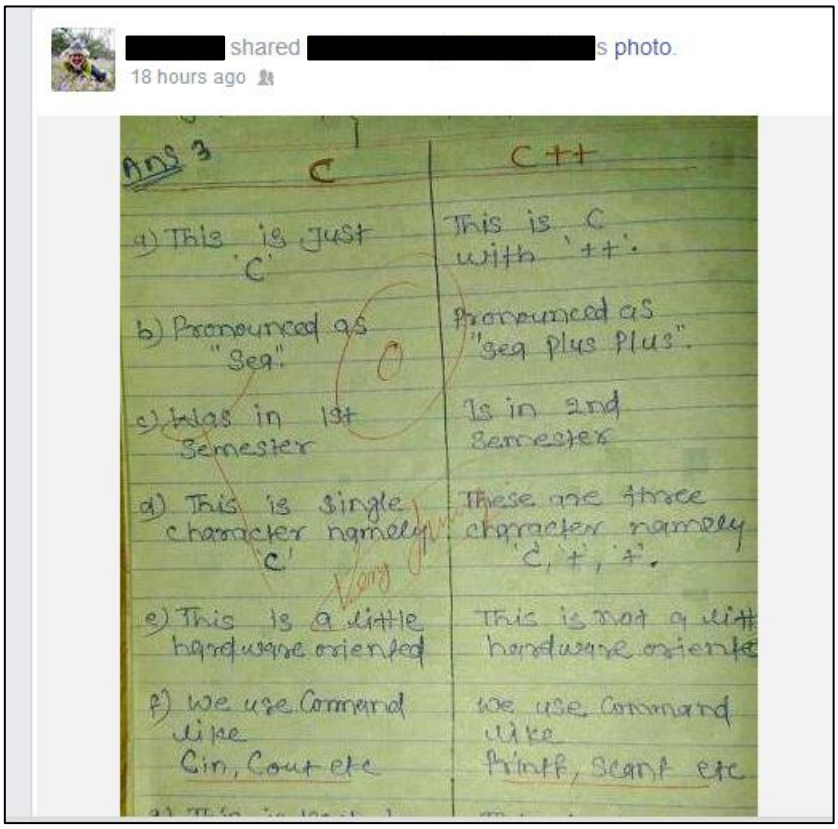


*Figure A7: Example of student's work being shared on Facebook.*

## 5. Sexting and Prostitutions

Sexting is an act in which sexual contents are distributed or disseminated via mobile phones, emails, and now, social media. For example, a naïve female student sent her naked photo to a boy that she admired without realizing that he subsequently shared it on social network or social applications via mobile phone. Or, in another example, when the relationship of a girl and a boy turned sour, the boy posted all their intimate photos or videos on social networks. This lead to a serious ramification when the photos go viral as it is not only tarnishing the reputation of a person, but might also involve a child pornography case if the person involved is a minor. Not only that for a female student, disseminating or sharing sexually explicit photos of themselves via social media might also attract unnecessary online predator such as cyber-stalker or rapist. On another serious note, many gang members have also started using social media to recruit school girls for prostitution. Ronald Hosko, an FBI agent claimed that "*The challenge of social media sites is that it opens the door and the window right into people's houses, and so it makes it a challenge for parents to police it and to be aware of it because it's coming right into your house through the fiber or through the cable"* (Pope, 2012). In a research conducted by Biri and IWU on the social media as correlate of prostitution among students of higher institutions of learning in Delta State, Nigeria, 3089 students have been surveyed and the findings showed that students do use social media significantly for flirting and prostitution (IWU and Ufuophu-Biri, 2014).