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A Professional Learning Partnership (PLP): Connecting Pre-Service and Practicing Teachers in a Technology Supported Environment

A thesis submitted in partial fulfilment of the requirements
for the award of the degree:

Doctor of Education

from

University of Wollongong

By

Ian Olney

BSc., Dip Ed, MEd.

Faculty of Education

January 2007

Abstract

There are concerns about the adequate preparation of pre-service teachers, and the ongoing professional development of teachers in our schools, in relation to the appropriate use of information and communications technologies in the classroom.

The current professional development for practicing teachers and pre-service teachers is generally inadequate, often being in short, unrelated doses, and there is an overlap or duplication of many of these experiences. Both groups need to bridge the various gaps that are created during the preparation and as part of the ongoing professional experience that occurs in schools. These gaps relate to the changing of systems and the various expectations of the structures teachers move into.

This study investigates the design and impact of a “professional learning partnership” (PLP), that was established between pre-service teachers and practicing teachers in our schools. Within the bounds of an established one year teacher education program a small cohort of practicing teachers acted as “online mentors” for pre-service teachers, who, with minimal classroom experience, were challenged with the norms of classroom practice on their school practicums.

Information and communications technologies were used as the catalyst for discussion and set task analysis. A technology-supported environment was created online that linked these evolving groups and allowed both expected and unexpected interactions to occur. The analysis of these interactions has led to a set of recommendations that will help advise key players and teacher preparation institutions who engage in future implementations of similar partnerships. In the current context of determining teaching standards such a learning partnership will also inform the guidelines that may be necessary to allow a teacher’s career to be supported as a professional development continuum.

Declaration

I, Ian W. Olney, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Doctor Of Education, in the Faculty of Education, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. This document has not been submitted for qualifications at any other academic institution.

Ian W. Olney

January 2007

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Glossary of Terms

CEO	-	Catholic Education Office
GDE	-	Graduate Diploma in Education
DET	-	Department of Education and Training
DETYA	-	Department of Education, Training and Youth Affairs – Commonwealth of Australia.
ICT	-	Information and Communication Technologies
PST	-	pre-service teachers
PT	-	practicing teachers
TILT	-	Technology in Learning and Teaching

Key of Icons Associated with Terms

	Pre-Service Teacher
	Practicing Teacher
	Online Mentor
	Online posting from PST
	Online posting from OLM
	Online posting from PT

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Chapter 1 - Introduction

1.1 The Background of the Study

The educational landscape is continually changing and information and communications technologies are having a substantial impact on both students in the classroom and on the lives and working activities of teachers.

Beginning teachers are arriving in schools with increasing levels of ICT skills while practicing teachers are finding it difficult to understand and acquire these skills and to integrate them in their day-to-day classroom experiences.

The gap between the most effective and least effective pedagogy in schools appears to be widening, driven to a significant extent by the impact of information technology.

Our very best teachers have embraced and created classroom practices that place them at the leading edge of their profession. Research shows that their teaching is grounded in a sophisticated knowledge of the curriculum and how it is best taught: they are adaptable and reflective and they constantly challenge the processes of teaching so that their craft is always improving. (Ramsey, 2000, p. 25)

It is often difficult for these groups to share their experiences and acquired skills due to their background and individual learning and teaching environment.

There are many distinct segments in the professional development of teachers and this disconnectedness is an impediment to the professional growth of both new and experienced teachers. Gaps appear in different ways resulting from changes in the social, political, administrative and cultural experiences of both pre-service teachers and practicing teachers. They may surface as communication gaps, experience gaps or gaps in expectation. Exposure to mentors (experts) and diverse learning experiences could allow some of these gaps to be narrowed, provide teachers with opportunities to learn from each other and create a solid basis for the teaching profession that begins with teacher preparation and is maintained and supported throughout a teaching career.

Teacher professional development is often considered to be what happens after initial graduation. The concept of 'life long learning' would suggest that teacher professional development should begin on the first day of pre-service preparation.

There should be a shift in teacher education to conceiving it as a continuum of learning, beginning in pre-service education and continuing in an integrated way throughout teachers'

careers. The structures for this to occur do not presently exist; they need to be developed and implemented. (Ramsey, 2000, p. 84)

Ramsey also states that one of the issues that requires “extensive attention” is

... the need to improve the transition from teacher-in-training to fully fledged teacher, using mentoring, internship and better induction. A professional structure with the responsibility for standards and working with the universities and employers to define their respective responsibilities in teacher education, would have an important role in enabling this important transition to occur more effectively than is the case at present. (p. 14)

The current approach to teacher professional development follows a disjointed pathway that prevents a smooth transition into the teaching service and inhibit a culture of ongoing professional learning.

The decline in teacher participation in relevant continuing education directly impacting on the classroom has occurred at the same time as the decline in overall professional development funding and the ageing of the teacher population in New South Wales. We have failed to address or bridge sufficiently the increasing gap between the knowledge and pedagogic skills of many experienced teachers and the knowledge and practices they actually need for successful teaching, irrespective of how much many may have wanted to keep up. Because there is no professional structure or pathway, this must be seen primarily as a deficiency of the systems within which teachers work.(Ramsey, p. 84)

Initially beginning teachers have an interpretation of what a teacher is and what is expected of them – from their own years as a student. This may change in their transition to a teacher preparation institution where they are exposed to different approaches and philosophies to teaching and learning by their campus lecturers, tutors and in-school practicum experiences.

There has been reduced emphasis given to the professional experience of beginning teachers, which has widened the gap between teachers in schools and teacher educators. Although funding constraints were often raised as the reason for this, more important is the priority given in the total course to such activities. (Ramsey, p. 159)

This internal gap, according to Vice Chancellors of Australian Universities, is one of the reasons for the poor relationship that exists between the university and the major employers of teachers.

Also critical to effective change for the use of ICTs in education is the bridging of the gap between pre-service teacher education and continuing professional development. In the context of reform of the teaching profession, consideration should be given to models that allow the

creation of partnerships between pre-service teacher education and continuing professional development.

Such partnerships between schools and universities need to be developed in the context of rethinking the roles of, and relationships between, student teachers, classroom teachers and teacher educators in the generation of knowledge using ICTs in classrooms. (DETYA, 2002, p. 83)

On completion of their preparation the pre-service teachers may be given the opportunity for professional development from within their school appointment, from within their community of schools or from the departmental system but this varies considerably. For example Fig 1.1 outlines the segmented nature of a teacher's development and one possible pathway that they may take via their own schooling experiences, through their preparation and then as part of their possible school based appointments. This study is focussed on the teacher-training phase of this continuum.

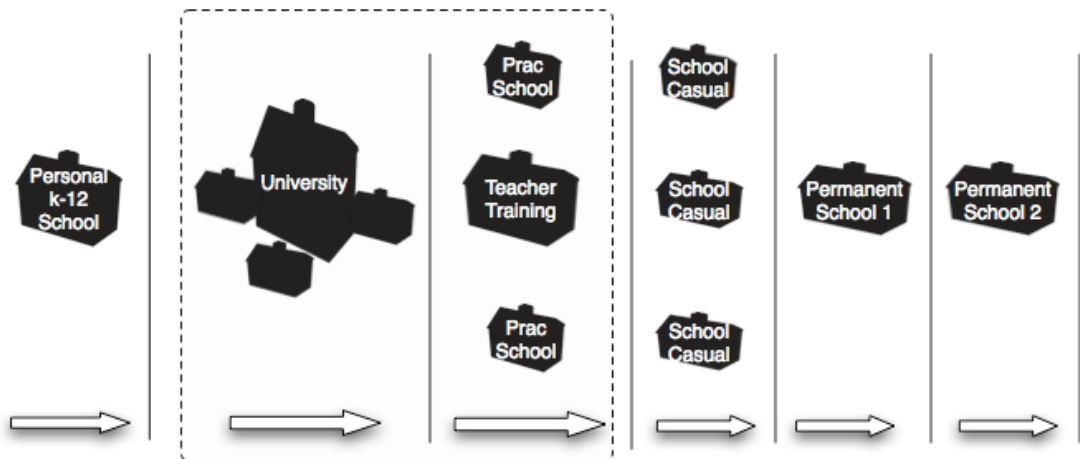


Figure 1.1: Segmented Development as a Teacher

These stages of development from student to teacher are associated with many problems that lead to the formation of gaps in their professional preparation.

Depending upon the support available at each stage the consequences of this 'reality shock' (Perrone, 2003) vary from minor e.g. lack of content / theory / management components, to major issues such as classroom control and coping with course pressures, that lead to withdrawal from the course or leaving the teaching profession.

This issue of teacher attrition in their early years of teaching is a concern to education departments worldwide.

The data on new teacher attrition suggest that efforts to recruit more teachers-which have been the focus of much policy-will not, by themselves, solve the staffing problems plaguing schools. The solution must also include teacher retention. (Ingersoll & Smith, 2003, p. 32)

In recent studies this attrition, also referred to as *beginning teacher burnout* has been found to involve issues of work overload and the lack of professional development.

The conservative nature of the culture of many schools reduced their ability to try innovations or introduce new perspectives. (Goddard & O'Brien, 2006)

This study examines one of those periods in the life of a teacher's career during their training, as a group of pre-service teachers, who were outside the bounds of their university, engaged in practicums in local schools.

These pre-service teachers had an opportunity to communicate in an online environment with a group of practicing teachers in an effort to allow shared professional development and to possibly reduce the isolation established during and beyond these periods of school based experiences.

In the first formal stage of their teaching career many beginning teachers are required to undertake their first school appointments on a casual basis. These one or more casual teaching positions are invariably difficult due to the teaching loads often being a 'mixed bag' of classes and sometimes across teaching disciplines.

From this stage onwards there can also be interruptions in this process depending on the length of time spent at each stage and the individual scenarios of these schools.

In preparing and supporting beginning teachers the process of induction and mentoring of these new teachers has been seen as lacking formal structures.

Induction goes beyond mentoring to provide an extensive framework of support, professional development and standards-based assessments and evaluations. Comprehensive induction programs vary in their particular design, but essential elements include a high quality mentor program, ongoing professional development, access to an external network of beginning teachers, and standards-based evaluations of beginning teachers and the program itself. (Wong, 2006, p. 1)

Carter and Francis (2000) commented that...

The most effective professional learning occurred where mentoring was employed in combination with other forms of induction support to facilitate autonomous action and reflection, complemented and tempered by collaborative endeavour and reflection on practice.

They also suggest

... that contextualised learning or workplace learning mediated by mentors has the potential to assist beginning teachers in their development of an appropriate body of practical professional knowledge.

It is during these periods in a teacher's career that a feeling of isolation either in their practicum school or in the school as a casual appointment is experienced.

...isolation is the common thread and complaint among new teachers in U.S. schools. New teachers want more than a job. They want to experience success. They want to contribute to a group. They want to make a difference. Thus collegial interchange, not isolation, must become the norm for teachers. (Wong, 2003, p. 13)

This leads to the problem of how we might bridge some of these gaps in the development of a teacher. It will require a process that improves communication and provides a means for connecting teachers with a range of experiences so they are aware of the expectations of other teachers, schools and education systems. The result could be a shift in the level of expertise and a more seamless and professional career pathway for all teachers.

1.2 Aims of the Study

This study will provide an insight into the ways in which a professional learning community can be designed and supported in order to act as a medium that will help bridge these gaps and allow for ongoing professional development to assist all teachers – both pre-service teachers(PST) in preparation and practicing teachers(PT) in our schools.

This community and the associated mechanisms are small scale and centred on the teacher preparation Faculty of Education within one small Australian university – as shown in Figure 1.2.

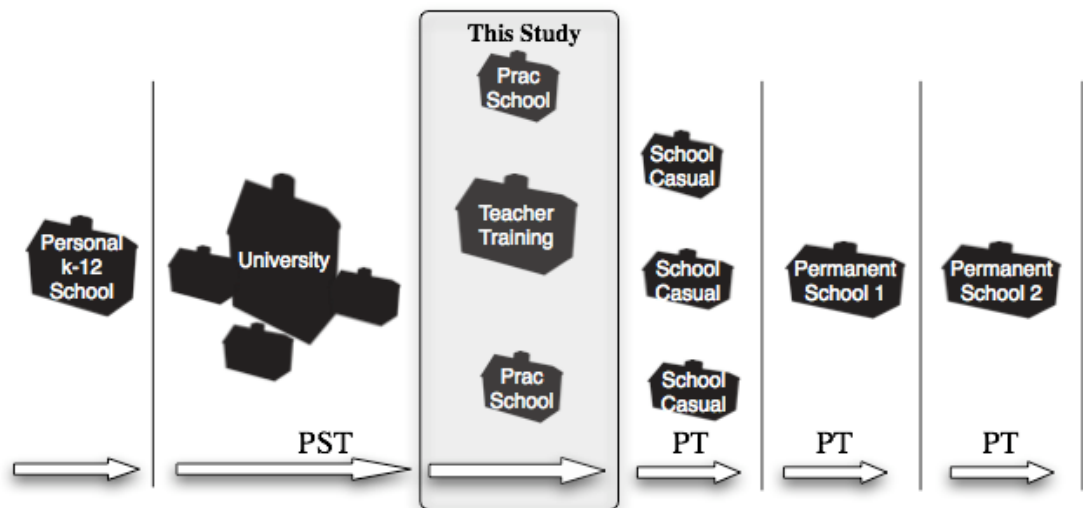


Figure 1.2: Stage 3 - The Study Focus

The pre-service teachers and the practicing teachers are on either side of the study environment shown in Fig 1.2 and both require communication channels and support in their professional development. This research will attempt to bridge this gap and provide evidence about people, places and tools to support and enhance the ways in which we currently prepare confident, competent classroom teachers.

The apparent complementary nature of the experiences of beginning and practicing teachers, if brought together could provide a useful synergy - a professional learning partnership that would allow for a common approach to this issue of disjointed development of teachers.

Creating a structure that allows experienced teachers to work with novice teachers and that acknowledges their expertise will ultimately strengthen the overall organisation, including retaining good practitioners in the classroom. (OECD:Organisation for Economic Co-operation and Development, 2005, p. 121)

The fundamental purpose of this research is to determine how a ‘technology supported’ professional learning partnership (PLP) can be used to connect teachers and provide support via mentoring in an effort to bridge some of the gaps in knowledge, confidence and pedagogical understanding, between pre-service teachers (PST) and practicing teachers (PT).

1.3 Research Questions

To identify the main issues relating to this purpose and to create a logical developmental structure for the thesis the following research questions are examined.

How do you design a professional learning partnership (PLP) to connect pre-service and practicing teachers in a technology-supported environment?

What are the features that impact on the formation and/or sustainability of a PLP, with specific reference to:

- Teachers
- Teacher preparation institutions

1.4 Examining the Gaps from Different Perspectives

To gain a better understanding of the nature and extent of the gaps between pre-service and practicing teachers it is necessary to look from the perspective of each group and the teacher preparation institutions.

Depending on circumstances this support may be significant in that teachers feel isolated by the lack of new ideas and meaningful professional and emotional support that is needed at various stages of their careers.

1.4.1 For Pre-Service Teachers (PST)

For beginning teachers there is an expectation that they

... continually improve their professional knowledge and practice

...are actively engaged with members of their profession and the wider community. (NSW Institute of Teachers, 2005, p. 3)

A number of things that affect their knowledge and skills as they begin their career as teachers. These include:

- Course structures
- Physical structures
- Personal background
- System Constraints

Course structures - trainee teachers are often segregated based on the structure of the course.

- *Primary/Secondary.* Depending on the intake for a particular year students maybe separated for some aspects of their course and combined for others. They enrol in particular courses with a primary or secondary focus and due to a variety of constraints (e.g. physical, financial, timetable) the lectures and tutorials cannot generally be specifically tailored to each group. Segregation also occurs for specific activities like practicums and demonstration schools visits.
- *Teaching disciplines.* Students nominate their teaching methods such as primary, history, or mathematics, and can be separated during university lecture periods and also on school visits.
- *Lectures and tutorial groupings.* Depending on the size of the cohort lectures may be large giving a sense of a 'mass'. The formation of tutorial groups has the effect of breaking this mass into many smaller groups but segregating the group even further.

Physical barriers - These barriers can be created by their preparation and school experiences being conducted on separate and often remote campuses. Often the students are required to travel considerable distances to university and depending on their allocated school, travel during practicum, may be extensive.

Personal background - The background of students attending university is changing and the diverse personal nature of their situation does have an effect on their level of commitment. Impacting influences include: age range; marital status; family commitments; living at or away from home; financial situation; employment (part time job).

System constraints - In order to undertake a university course in teaching formal requirements are imposed by the various teacher employment bodies depending on the pattern of study. Within these restrictions the students studying to be teachers are also required to satisfy educational system requirements that are often linked to their specific teaching method(s).

1.4.2 For Practicing Teachers (PT)

All practicing teachers are being encouraged to bridge gaps:

... identify their development needs and seek advice and support from colleagues ...and keep abreast of and contribute to professional learning and educational discussions as well as contributing to the professional learning of others.(NSW Institute of Teachers, 2005, p. 2)

There are also issues that affect these responsibilities and the segmented nature of their career development as teachers. These include:

- Schools structures
- Physical barriers
- Personal commitments
- System constraints – DET CEO independent

School structures – The varied nature of schools in terms of the demographic makeup of the environments also impact on the ways in which teachers are supported. These include:

- *Primary/Secondary.* Many schools operate in relative isolation from those in their area or local district. Community of schools are being established but depending on schools executive, age of the staff, physical location of the schools there may be little or no interaction with other schools around them.
- *Teaching disciplines.* Schools vary depending on their curriculum structure which may be dictated by their local educational region but also from within a school depending on class/year groupings and expertise/experience of the staff as a whole

Physical barriers – The physical layout of a school may impose segregation based on grade and/or teaching area. For example the one school may be located on a ‘split site’ where there may be considerable distance between parts of the school often resulting in actually two schools in one.

Personal commitments – As with the beginning teachers characteristics such as age, marital status, family financial situation, proximity of home to school may also contribute to how teachers are connected with their school community. These often result in casualisation of the workplace.

System constraints – Departmental and curriculum restructuring and the associated demands on teachers in both public and private education sectors discourage teachers from being involved with professional development and often many of the innovations that would benefit learning and teaching.

1.4.3 For Teacher Preparation Institutions

In the current Australian context there are a number of organizations that are developing structures and guidelines within which to view the career of a teacher as an ongoing continuum.

The NSW Institute Of Teachers has provided a set of Professional Teaching Standards in order to provide a sequence and a framework for all teachers throughout their career. The Framework of Professional Teaching Standards provides

... a common reference point to describe, celebrate and support the complex and varied nature of teachers' work. The Professional Teaching Standards describe what teachers need to know, understand and be able to do as well as providing direction and structure to support the preparation and development of teachers. (NSW Institute of Teachers, 2005)

With reference to these standards Figure 1.3 shows the stages of a teacher's development, in the various domains and the included elements and aspects of this framework. These stages are viewed in this diagram from the perspective of an education system and can be seen as segments or disjointed periods in the career of a teacher.

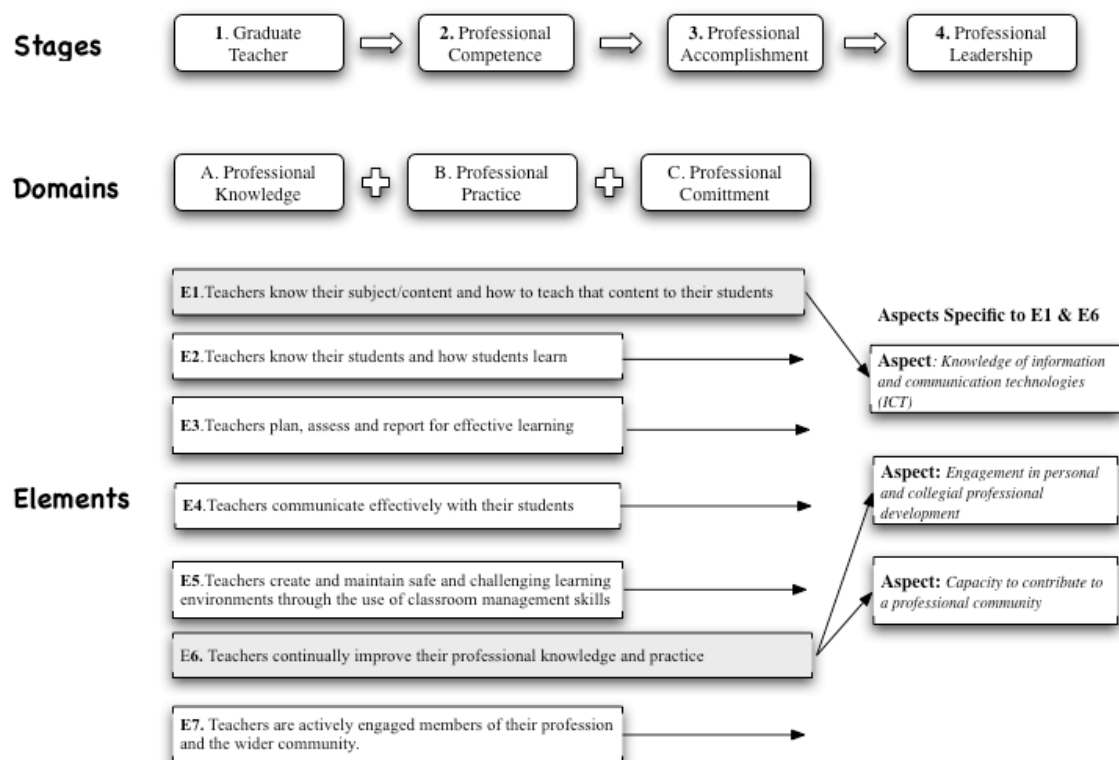


Figure 1.3: NSW Framework of Professional Teaching Standards

These standards do not address the stage *leading into* that of the graduate teacher.

Figure 1.4 shows how this study is focussed around the pre-graduate stage and examines the possibilities in connecting these beginning teachers with practicing teachers who are in the first three stages of this career continuum.

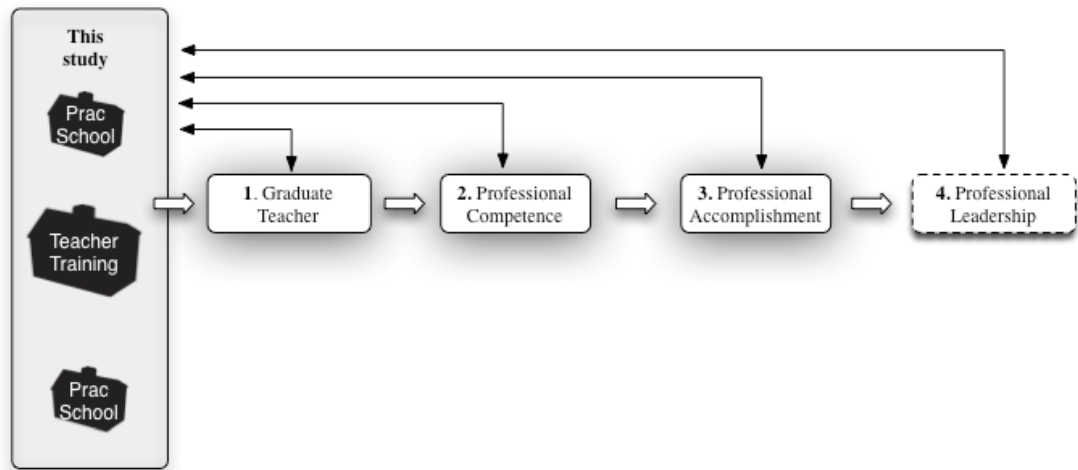


Figure 1.4: Connecting the Study to Teaching Standards of Practicing Teachers

The design and implementation of this research has attempted to specifically address the issues that relate to a number of these elements and some of their corresponding aspects.

1.5 Approaching the Problem

In approaching this problem of disconnectedness this study incorporates the following key areas of current learning and teaching research:

- partnerships;
- mentoring;
- professional development;
- ICT integration.

The approach taken here will examine the interrelationship between these four areas as a means of finding appropriate processes and tools that will allow all teachers to connect and support each other and to use the technology for effective and ongoing learning and teaching. Figure 1.5 represents the research areas that were investigated to inform the design of this Professional Learning Partnership. (PLP)

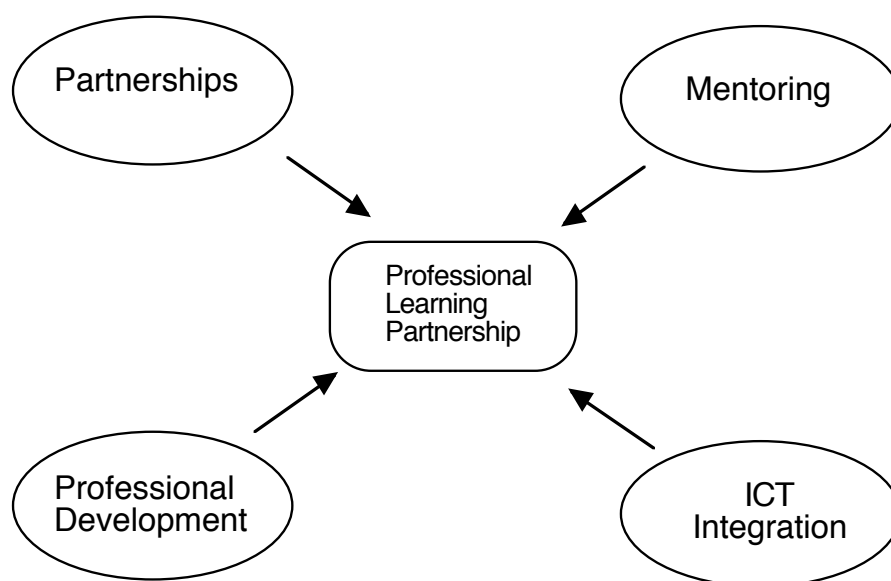


Figure 1.5: Research areas informing the design of a PLP

1.5.1 Partnerships

Many forms of educational partnerships have been established to improve various aspects of education and generally the outcomes for students. Successful partnerships are often characterized by an exchange of ideas, knowledge, and resources. Most partnerships have a particular focus and in this study an effort is made to establish a partnership that would enhance the use and integration of ICT in schools. A number of studies have noted the need for improved links between the educational stakeholders.

...partnerships between teacher education institutions, school systems, local districts and schools such that the expertise within the university, the school and the student teacher cohort can be combined in projects that lead to the enhancement of student learning outcomes and teacher development within schools with regard to the use of ICTs for teaching and learning. A professional structure, with responsibility for standards and working with the universities and employers to define their respective responsibilities in teacher education, would have an important role in enabling this important transition to occur more effectively than is the case at present. (DETYA, 2002, p. 14)

1.5.2 Mentoring

A number of reports suggest that mentoring would be a possible medium for developing and establishing partnerships and generally supporting beginning teachers.

Ramsey (2000) suggests that...

Extensive attention is needed to improve the transition from teacher-in-training to fully-fledged teacher, using mentoring, internships and better induction (p. 14)

And...

...strong support was expressed for the concept of mentoring, the idea of a collegial relationship based on professional responsibility, the experienced for the less experienced. Many identified mentoring as one of the defining characteristics of a profession in which established practitioners exercise responsibility for the induction of new members. (p. 65)

It has been noted by Schön (1983) that there is also considerable value in the mentors being able to reflect on their own practice, the practice of others in a similar environment and thus be in a better position to assist beginning teachers.

1.5.3 Professional Development

This concept is also referred to as staff development, in-service, or continuing professional development (CPD). There are numerous approaches to professional development all with varying degrees of success - many following the traditional systems of resource provision and short term training sessions. Education systems tend to persevere with these models. There is...

widespread belief among educators that conventional strategies for professional development are ineffective and wasteful, and this justifies the adoption of different ways to facilitate professional learning. (Mann, 1997, p. 4)

New and more effective approaches need to be found to instil the practice of professional development as an integral part of a teacher's career. Many consider that professional development requires adequate time for inquiry, reflections, and mentoring and is an important part of the normal working day, of all teachers. There is a need to provide opportunities for teachers to initiate and develop their own form of professional development. Collis (1996) states that:

One type of result that consistently occurs is a result that acknowledges the teacher as the key figure in the eventual success or lack of success of any computer-in-education initiative. (p. 21)

A good teacher may do very good things with networking opportunities; a weak teacher will not, no matter how we try with strategies and in-service training. (p. 29)

The concept of professional development needs to be approached as lifelong professional preparedness and development of teachers, without the stop/start methodology that is often associated with training.

According to Haddad & Draxler (2002) their approach to professional development would follow a continuum of:

- **Initial preparation/training** that provides them with a solid foundation of knowledge, proficiency in pedagogical, social and organization skills, deep understanding of the teaching/learning policies and materials they will be dealing with, and a broad familiarity with sources of educational materials and support. It is equally crucial that candidates are well prepared in the skills of continuous exploration, assessment and acquisition of new knowledge and competencies, according to future demands.
 - **Structured opportunities for retraining, upgrading and acquisition of new knowledge and skills.** Many professions have such requirements to renew certification for practice. It is only logical for the critical profession of teaching to demand re-certification every 2 or 3 years based on evidence of professional upgrading, and it is equally imperative for the education authorities to ensure those systematic opportunities and facilities for such up-grading are provided.
 - **Continuous support for teachers as they tackle their day-to-day responsibilities.**
- (p. 8)

1.5.4 ICT Integration

All teachers as part of their preparation are being required to examine the place of information and communications technologies and the NSW Institute of Teachers (2005) is formalising these as attributes of all beginning teachers.

These include:

Standards Element 1: *E1-Teachers know their subject content and how to teach that content to their students*
and

Element Aspect: *Knowledge of information and communication technologies (ICT) in the following areas:*

The MACQT Review(1999) into quality teaching also suggests that all beginning teachers should have the following skills:

- *An understanding of the basic operations of a computer*
- *Information technology – multimedia, Internet, email*
- *Evaluation of software*
- *Pedagogical issues*
- *Values and ethics*

(Computer Proficiency For Teachers Section 2.1)

1.6 Key Areas and the Professional Standard Elements

The combination of these key areas has been tried in early career development to support professions other than teaching. For example the project NetMentors in the USA was used to support women scientists and engineers. (Malchow, 2001).

Many teacher preparation institutions have also used technology as a way of addressing some of the issues associated with developing teachers. For example Arizona State University has established a model to support beginning teachers and also help integrate technology into their teaching. Their model provides

... ongoing, field based support to pre service teachers throughout their teacher training experiences in order to help them utilise technology in the activities they design for their classes, and including technology integration as part of the overall evaluation of their teaching. (Brush et al., 2002, p. 6)

To establish and support a professional learning community each of these key areas contribute to an understanding of what might impact on the design of an environment connecting pre-service and practicing teachers.

Figure 1.6 outlines a “Problem, Means and Theory” approach taken by the researcher in terms of one way in which these key areas could be used to address the larger problem of how teachers, at all stages of their profession, address the professional teaching standards as shown in Figure 1.3.

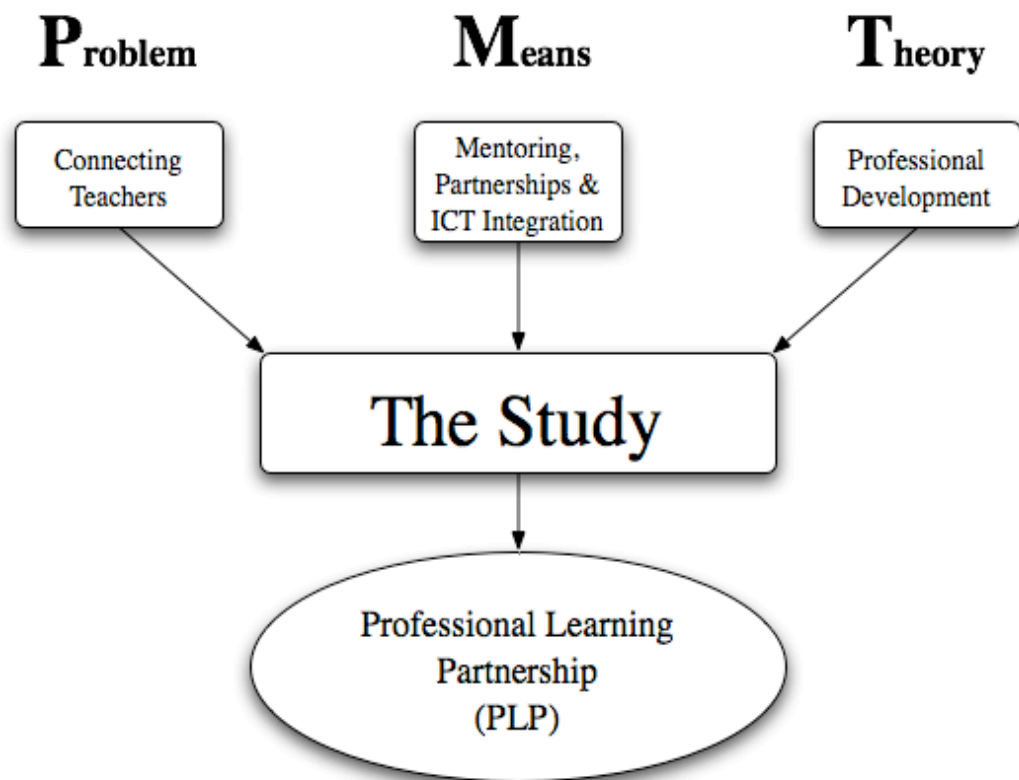


Figure 1.6: A Professional Learning Partnership – The connection of Problem, Means and Theory

This study specifically looks at this problem of connecting teachers by attempting to address two of the elements and their associated aspects, of the Professional Teaching Standards namely:

Element 6 –E6

Teachers continually improve their professional knowledge and practice

Include:

Aspect: *Engagement in personal and collegial professional development*

Aspect: *Capacity to contribute to a professional community*

Element 1 – E1

Teachers know their subject/content and how to teach that content to their students

Specifically:

Aspect: *Knowledge of information and communication technologies (ICT).*

1.6.1 Element 6 (E6) – Professional Knowledge and Practice

There is a demand by departments of education, school districts and teachers themselves for better preparation and improved professional development in skill and content areas. This is a major challenge for education systems around the world.

Seldom are sufficient resources available to meet the career-long professional needs of teachers, and even when such resources are available, teachers are having a hard time getting out of their classes during the school year to attend traditional workshops. (Kante, 2002, p. 1)

In response to dealing with this issue education bodies such as the Institute of Teachers are incorporating structures to monitor and facilitate the acquisition of professional knowledge and associated skills to put it into practice. The full career development pathway for the Institutes' Element 6 and its included aspects is shown in Table 1.1

Table 1.1: Professional Teaching Standard - Element 6

ELEMENT 6 Teachers continually improve their professional knowledge and practice			
Aspect: Engagement in personal and collegial professional development			
Graduate Teacher	Professional Competence	Professional Accomplishment	Professional Leadership
6.1.2 Demonstrate knowledge of the professional standards framework and its impact on the professional life of a teacher.	6.2.2 Use the professional standards to identify personal professional development needs and plan accordingly.	6.3.2 Assist colleagues to identify and implement strategies to address their professional learning needs based on the professional standards.	6.4.2 Evaluate and address the professional learning needs of colleagues with reference to the professional standards framework.
6.1.3 Demonstrate knowledge of the available professional development opportunities and the importance of personal planning to ongoing professional growth.	6.2.3 Engage in professional development to extend and refine teaching and learning practices.	6.3.3 Assist colleagues to plan their professional development to enhance knowledge of subject/ content and classroom skills.	6.4.3 Identify, promote and evaluate personal professional development opportunities for colleagues to ensure engagement in purposeful and ongoing professional learning.
Aspect: Capacity to contribute to a professional community			
6.1.4 Demonstrate knowledge of the importance of teamwork in an educational context.	6.2.4 Work productively and openly with colleagues in reviewing teaching strategies and refining professional knowledge and practice.	6.3.4 Model collegial practices for evaluating and sharing best practice in teaching strategies and professional knowledge and practice.	6.4.4 Critically review research on best practice in teaching and learning to assist colleagues to further develop their teaching expertise.
6.1.5 Accept constructive feedback to improve and refine teaching and learning practices.	6.2.5 Accept and offer constructive feedback to support a professional learning community.	6.3.5 Create and utilise networks to support constructive professional discussion.	6.4.5 Initiate or lead strategies for developing a climate for accepting and providing constructive feedback and recognition of achievement

1.6.2 Element 1 (E1) – Knowing Subject Content

In the report, Making Better Connections, (DETYA, 2002), it was suggested that the curriculum and pedagogies of the various teachers education programs need to be developed...

so that student teachers have ample opportunities to observe effective use or participate in developing effective use; to plan, implement and evaluate its use in their own teaching and learning, and to use ICTs with children in classrooms and online in a variety of teaching and learning situations. (p. 41)

Recent developments in technology and its push into the classroom have highlighted this gap between pre-service teachers and practicing teachers.

With the design and development of professional teaching standards and their inclusion at all stages of a teachers career (NSW Institute of Teachers, 2005) teachers are being required to realise the potential of ICTs in their learning and teaching strategies. The expected standards relating ICT knowledge and competence at various stages of a teacher's career can be seen in Table 1.2

Table 1.2: Professional Teaching Standard - Element 1

ELEMENT 1			
Teachers know their subject content and how to teach that content to their students			
Aspect: Knowledge of information and communication technologies (ICT) in the following areas:			
Graduate Teacher	Professional Competence	Professional Accomplishment	Professional Leadership
1.1.4 Demonstrate current knowledge and proficiency in the use of the following: <ul style="list-style-type: none"> • Basic operational skills • Information technology skills • Software evaluation skills • Effective use of the internet • Pedagogical skills for classroom 	1.2.4 Apply current knowledge and skills in the use of ICT in the classroom to meet syllabus outcomes in the following: <ul style="list-style-type: none"> • Basic operational skills • Information technology skills • Software evaluation skills • Effective use of the internet • Pedagogical skills for classroom management. 	1.3.4 Exhibit and share current skills in the use of ICT in the classroom to meet syllabus outcomes in the following: <ul style="list-style-type: none"> • Operational skills • Information technology skills • Software evaluation skills • Effective use of the internet • pedagogical skills for classroom management. 	1.4.4 Initiate or lead the implementation of policies and processes to integrate ICT into the learning environment.

Teachers and learners at all levels are required to fully embrace the potential of ICT for learning and teaching purposes. The majority of current use of ICT reflects traditional classroom methodology, though some changes are happening to afford increased attention to the individual learner.

Practicing teachers generally are not aware or prepared for the capabilities of current technologies in terms of teaching and learning strategies and lack opportunities to integrate technology in the classroom.

When confronted with evidence that information technology can improve educational outcomes, and the expectation from employers or education systems that this technology will be used in their classes, these teachers feel a moral obligation to incorporate it into their practice. However, many are quick to realise that their low exposure to information technology has left them extremely poorly prepared to cope with basic computer operation.

Even when they master these skills, the curriculum integration and pedagogical issues, which are involved in incorporating information technology in the classroom, remain to be mastered. (ACCE, 1998, p. 10)

Most teacher preparation institutions are attempting to address these skills in their courses and are introducing pre-service teachers to the possibilities of using technology in the classroom but for reasons such as access, opportunity and the lack of encouragement by their supervising teacher and/or school, on practicum, fail to gain authentic experiences in this area.

...teacher preparation programs, while well-intentioned, are not providing the kind of training and exposure teachers need if they are to be proficient and comfortable integrating technology with their teaching. (ISTE, 1999, p. 1)

1.7 The Research Context

This study was centred on the one year Graduate Diploma in Education Course at the University of Wollongong in 2002. The graduate students undertaking a pre-service education course for beginning teachers were exposed to an online environment that was supported by practicing teachers who acted as their online mentors (OLM). Initially this was to support their school-based practicum but the environment was also available before and after these periods. The study was designed to examine the interactions among the PST, PT and the OLM within this online and face-to-face environment. This context is shown in Figure 1.7.

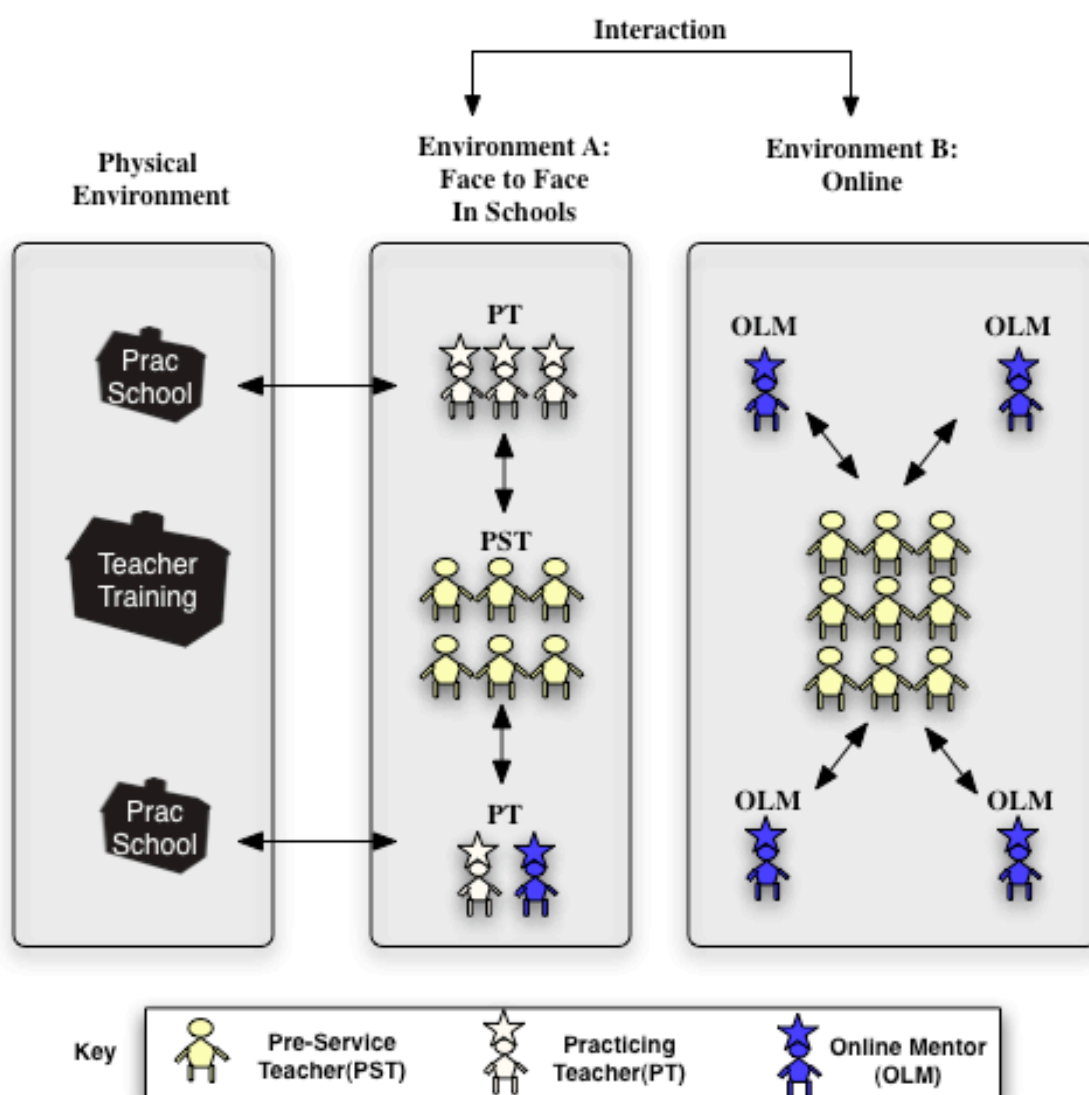


Figure 1.7: The Research Context

1.7.1 The Pre-service Teachers

The progression into this course was not necessarily by the traditional or expected pathway. This diverse group of 178 pre-service teachers was quite different from other students entering an undergraduate education degree. At the University of Wollongong the normal pathway into teaching is via a three-year undergraduate education degree such as a Bachelor of Teaching or a four-year Bachelor of Education.

Most of the pre-service teachers involved in this course had entered their study in teaching via multiple pathways – many students entering this course had come from a non-education undergraduate degree. Figure 1.8 gives an indication of the possible pathways that could be taken upon preparing to enter the course in the study.

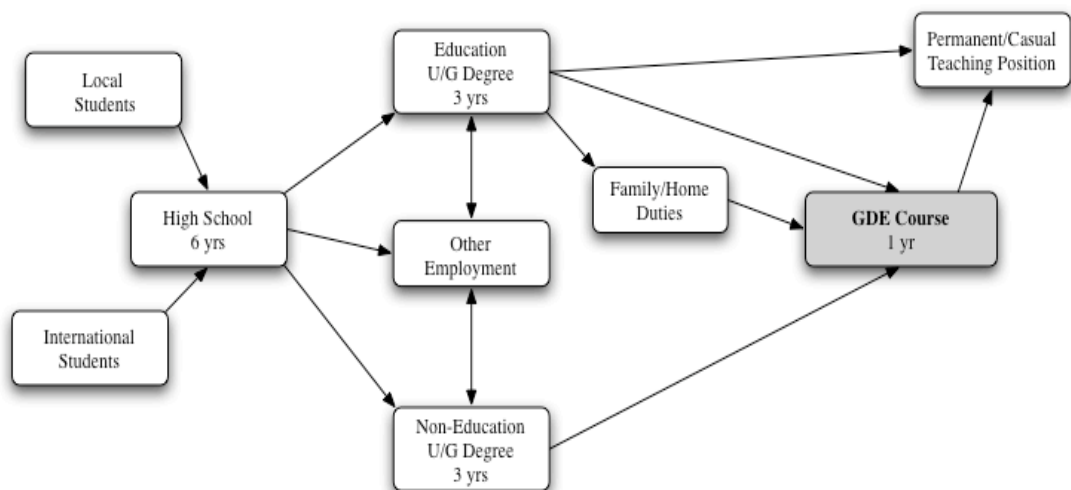


Figure 1.8: Possible Pathways to the GDE Course

On completion of their preparation these new teachers, depending on their specialization, would satisfy the requirements of the various education departments and be placed in schools as either a casual or permanent employee, with these newly developed teaching skills.

1.7.2 The Practicing Teachers

Many teachers in schools rarely interact with pre-service teachers apart from the often brief communication made while they are on their school based practicums. Only a small proportion of the practicing teachers are exposed to the freshness and enthusiasm of these beginning teachers. This study attempts to connect a group of experienced classroom teachers with the pre-service teachers before, during and after their authentic school encounters. While

on practicum the pre-service teachers, as part of their course requirements, were required to investigate various aspects of technology in the school and the possible use of ICT in the classroom. Based on this premise a group of practicing teachers with varying levels of ICT expertise were personally approached by the researcher to be involved in the study. These teachers, from local schools, covered the range from Kindergarten to Year 12 and also a broad range of teaching areas. Their role in this study was to act as “online mentors” in the supporting the pre-service teachers before, during and after their practicum experience. Two typical examples of teachers involved in this role are shown below:

Teacher 1 – Year 4 – Primary school – teaching for 15 years, experience in a number of primary schools, comfortable using email and the computer for worksheet creation- rarely used computers with his whole class.

Teacher 2 – Year 10 – High school – 10 years experience, main subject area textiles and food technology – Often uses technology with her class both in small groups and whole class demonstrations.

A more detailed description of all practicing teachers will be covered in Chapter 3.

All teachers involved had no experience in using online as a mentoring environment and most were comfortable with email as a communications tool.

1.7.3 The Online Environment

In order to connect the pre-service teachers and practicing teachers it was appropriate to make use of the existing online service that was available to support the course. The learning management system “WebCT”, used campus wide, allowed for limited interaction between students and lecturers. This system was generally used to provide a one-way means of communication between the teaching staff and the course participants (pre-service teachers). The provision of course materials, announcements, and forum (discussions) were the main uses of the system across campus.

For this study this online environment was modified to include a number of teachers as OLMs and thus open the way for additional interaction between the two groups.(Fig 1.7: Environment B).

For the pre-service teachers the level of familiarity with the system associated with the online environment varied – depending on their exposure in a previous degree at the University of Wollongong, or at another institution, whereas the teachers in the schools had little or no previous contact with such a environment.

The activity within the online environment was expected to be a key focus of the study and a major source of data. However as the thesis will demonstrate the expected level of interactions between the PSTs and OLMs was limited and therefore a second wave of data collection was necessary to explore in more depth the face-to-face environment to identify reasons why PST did not seek more support from the OLMs. Therefore the research focus shifted from online interactions to explore in greater detail the nature of student groups, school profiles and the extent of PST engagement with face-to-face mentoring.

1.8 Significance of the Study

Establishing an online environment does not guarantee that collaborative interactions will necessarily take place. This study informs the design of an environment to encourage interactions among pre-service and practicing teachers.

The resultant recommendations may impact on the following:

- Modifications in relation to pre-service preparation models
- Improved linkages between schools and universities
- Schools and teacher preparation institutions being better informed regarding the appropriate preparation and support of teachers
- Expansion of an “online mentor” network to allow ‘involvement as required’ by both new and experienced teachers
- The use of appropriate electronic tools that allow teachers to connect with each other

1.9 Limitations

This study was restricted to a particular snapshot encompassed by the one-year Graduate Diploma In Education teacher preparation program within the bounds of one institutional context at the University of Wollongong.

1.10 The Structure of the Thesis

This thesis is structured in the following way:

Chapter 2 outlines a review of the literature associated with the four key research areas of: partnerships; mentoring; professional development and ICT integration, and attempts to provide a basis for the design and implementation of a professional learning partnership within the bounds of this environmental snapshot.

Chapter 3 looks at the study context and gives a detailed description of the people involved i.e. practicing teachers, pre-service teachers, academics at the teacher preparation

institution, and the specific context in which they operated. This chapter will explain the initial design of the online environment, the data collected and the methods of data analysis.

Chapter 4 looks at mentor preparation, website design, discussions around a given task and subsequent patterns of interaction between the PSTs and the online mentors.

Chapter 5 Given the low level of interaction of PSTs with the OLMs, the face-to-face environment is explored in greater detail.

Chapter 6 will review the purpose of the study, examine the expected and actual interactions that took place, provide a summary of the research project with, recommendations and suggestions for further research.

Chapter 2 - Literature Review

2.1 Introduction

In a professional community, all groups (including individual teachers, professional associations, educational leaders, employer groups, teacher accreditation and training institutions, education unions etc.) must share the responsibility for the dissemination and sharing of good practice. Improvements in teaching require collegial and collaborative efforts of all teachers, both beginning and practicing teachers.

The professional growth of all teachers is not something that will only occur as a result of external changes. Teachers have much to contribute from their own experiences, knowledge and understanding. This will allow for personal growth as a teacher and this in turn can have an impact on other teachers and the profession as a whole.

The report, Australia's teachers Australia's future: advancing innovation, science, technology and mathematics, (DEST, 2003) suggests that:

Stronger connections need to be made between initial teacher preparation, beginning teacher practice and ongoing teacher professional learning. In particular, beginning teachers need effective induction and mentoring support to help them in the early, challenging years of their careers, and to ensure that the highest possible number of very able beginning teachers are retained in the profession. (p.47)

The Independent Inquiry Into Public Education into NSW Education (Vinson, 2002) commented on the need for increased funding to allow for more effective professional development of our teachers. In a subsequent presentation he recommended:

A very substantial increase in professional development funding, not to hire-in the services of gurus but to be provided on a basis of nurturing collaborative effort between teachers, to help build professional learning communities. (p. 11)

Vinson (2002) also commented that there is a need to establish a mechanism that may allow teachers to take part in ongoing professional development. He states...

A teachers initial education and induction into the craft of teaching needs to be updated constantly in a society characterised by rapid advances in knowledge and information technology. (Vinson, 2002, p. viii)

Ingvarson (2002) also noted the lack of ongoing and sequential professional development of teachers

While the necessity of professional development is widely recognised, current provision falls far short of what the research says is necessary to improve learning outcomes for all students. There are many individually effective professional development programs and activities operating at school and system levels, but the overall pattern of provision is brief, fragmentary and rarely sequential. The capacity of the profession to engage most of its members in effective modes of professional learning over the long term is weak. (p. 1)

There are many possible interruptions to this sequential professional development of a teacher as illustrated in Figure 1.1 and these are influenced by internal and external constraints.

In order to discover the possible reasons for this form of professional gap it is necessary to investigate the needs and conflicting interests of both pre-service teachers and practicing teachers. As shown in Figure 2.1 these may be examined in terms of pedagogical, system, physical and social perspectives.



Figure 2.1: Conflicting Interests

The following tables illustrate some of the issues that are unique to each of the groups and also those that are common to both pre-service teachers and practicing teachers.

The *needs* of both pre-service and practicing teachers in relation to these perspectives are shown in Table 2.1.

Table 2.1: Needs of Teachers

	Pedagogical	Social	Physical	System
Pre-service Teachers (PST)	To link theory and practice	To become accepted as a teacher	To cope with the demands of the course	To integrate technology (Prof. Teaching Standards) Lifelong learners
Practicing Teachers (PT)	Link new theory with current practice or develop new theory	To be re-invigorated, stimulated and inspired	Accessible, relevant	To become part of a profession (Institute) To integrate technology into current practice Lifelong learners
Common to both	To find out what works in the classroom and be able to articulate this (share)	To feel part of the profession (belong) To be able to discuss issues	Wanting to share and communicate with each other. Proximity – easy access	Lifelong learners within the system

Similarly the *constraints* from the various perspectives can be seen in Table 2.2.

Table 2.2: Constraints on Teachers

	Pedagogical	Social	Physical	System
Pre-service Teachers (PST)	Innovation - theory Vs practice Narrow view or exposure to lecturers and curriculum Diverse teaching styles of lecturers	Diverse group – often not ‘together’ Young Time- P/T jobs Mature age - increase	Geographical-different systems Limited exposure to different school environments Isolation	Forced to change course restructures Beg. Teachers attributes Uni course – design Maybe exposed to only 1 ed. system
Practicing Teachers (PT)	Stagnation Different training Use to ‘their’ way	Narrow school mix Majority in later stage of career	Lack of movement, Technology PD budgets, Isolation	Change/restructure Dept requirements
Common to both	Lack of connection between theory and practice Alternative views Different language	Personal scenarios – single/married Diversity without understanding	Isolation Limited time and money available for professional development away from school	Access to resources Changing demands imposed by departmental standards

If these areas are addressed then a continuous career pathway and ultimately a more professional teaching service may be the result.

2.2 The Key Ideas of 'Bridging the Gap' Between PT and PST

The relevant gap that is being investigated in this study is focussed on the training to become a teacher, and the initial career stages of a beginning teacher.

Various mechanisms, either individually or as combinations, have been used to explore the needs and constraints shown in Tables 2.1 and 2.2 and how they might be used to close this gap i.e.

- Partnerships
- Mentoring
- Professional development
- ICT Integration

2.3 Partnerships

A partnership can be defined as “getting *people with different knowledge bases and different sets of skills together to discuss strategies*”. (Murnane, 2005, p. 1)

Various schools and university partnerships have been established to provide a medium for ongoing professional development for teachers allowing them to discuss current research and practice based on the authentic experiences. They also provide an opportunity for teacher educators to keep in touch with current practices in schools.

It is unrealistic to expect teachers to create schools for inquiry when the settings in which they are prepared are rarely reflective. (Goodlad, 1994, p.47)

Partnerships have been created between universities and school districts to allow practicing teachers to reflect on their current practices. For example Portland State University, Oregon, allows teachers to undertake a master's degree in educational practice and school reform. These teachers are encouraged to examine classroom issues and reflect on their personal experiences. This program utilizes a constructivist approach in which "teachers reinvent curricular theory for themselves"

The Holmes Partnership (2003) a consortium of 96 research universities with professional education programs, was established as a mechanism for re-evaluating the position of schools of education.

This group is...

A network of universities, schools, community agencies and national professional organizations is working in partnership to create high quality professional development and significant school renewal to improve teaching and learning for all children (p. 1)

They use their goals to “Connect schools of education to the schools, and make schools better places for practicing teachers to work and learn”. Its mission statement is to “transform teaching and learning through the creation, development, and expansion of university / school / community partnerships to serve the public good.” In an attempt to fulfil this mission this Partnership aims to “strengthen their links with allies and partners in the profession itself- teachers, specialists, administrators, and their representatives ”. It is hoped that by pursuing these goals the resultant partnerships would develop schools where “novice teachers learn to teach and where university and school faculty members together investigate questions of teaching and learning that arise in the school”.

These links are endeavouring to revise the professional education of school personnel so that they can encourage professionalism in teachers and work with university faculties to create new methods and structures for their schools.

Another body in the United States, the National Network for Educational Renewal (NNER, 2003) has been setup as a national laboratory to implement and test the ideas that emerged from major educational studies. The NNER consists of 23 school-university partnerships in 20 states.

These partnerships are created as a means toward achieving the following three purposes:

- The exemplary performance by universities of their educational responsibilities to those seeking to become educators or to enhance their present performance as educators.
- The exemplary performance by schools of their educational function and the accompanying exemplary performance of school districts in providing the necessary support.
- The exemplary performance of both institutions in collaborative arrangements and processes that promote the two above purposes. (p. 13)

A number of reports have suggested that there is a need to incorporate a level of “partnership” in order to achieve a set of standards for all teachers. The Australian Council for Computers in Education (ACCE, 1998) in a discussion paper on Teacher Learning Technology Competencies suggests that professional development in learning technologies is a long-term strategy to help teachers gain professional knowledge and experiences. It should be considered in conjunction with personal experiences, curriculum renewal, pedagogical renewal, classroom experiences and training.

In relation to the preparation of teachers and ongoing support for teachers, it recommends that certain standards be developed. These were later stated in the report “Raising the Standards, a proposal for the development of an ICT competency framework for teachers” (DEST, 2002).

- For beginning (pre-service) teachers — standards should be developed by a partnership between the teacher education institutions and the employers/education systems.
- For practicing teachers who are beginning users of ICT — standards development should be the primary responsibility of the employers/education systems.
- For practicing teachers who are accomplished/highly-accomplished users of ICT — standards should be development by a partnership of the profession, including the relevant professional association(s) in collaboration with education systems. For school and educational leaders — standards development should be by a partnership of the profession, including the relevant employer and professional association
- For teacher educators — standards development should be by a partnership of the profession including the relevant teacher accreditation agencies and professional associations (p. 6)

This report suggests that teachers and educators should participate in professional communities through professional association activities, local networks, online communities and personal contacts. Where practical and appropriate, teachers are encouraged to make use of information technology in this process.

The government report “Making Better Connections” (DETYA, 2002) comments on the apparent disconnectedness between pre-service and continuing professional development and the difficulties that this separation brings.

Despite the plentiful opportunities for collaboration and the capacity of technology to connect and support such activities, low levels of collaboration and cooperation appear to occur between groups and systems. The various systems tend to work independently on the majority of CPD projects and activities (p. 57)

This report recommends the need for partnerships and collaboration between the school and university sectors in the provision of this training.

Also critical to effective change for the use of ICTs in education is the bridging of the gap between pre-service teacher education and continuing professional development. In the context of reform of the teaching profession, consideration should be given to models, which allow the creation of partnerships between pre-service teacher education and continuing professional development. Such partnerships between schools and universities need to be developed in the context of rethinking the roles of, and relationships between, student teachers, classroom teachers and teacher educators in the generation of knowledge using ICTs in classrooms.(p. 77)

A bridging of this “gap” between these sectors will become necessary for effective change in the use of ICTs in education.

Partnerships may also stem from the development of professional communities and these groups (including individual teachers, professional associations, educational leaders, employer groups, teacher accreditation and training institutions, education unions etc.) must share the responsibility for the dissemination and sharing of good practice in the use of learning technologies in education.

Many projects have focused on the use of ICT supported learning communities. In Australia, various systems have had limited success in developing online communities but have done so primarily for short-term specific programmes and to deliver information. These have mainly been limited to systemic teachers thus not allowing for cross-sectoral sharing. There is thus a narrowing of the effectiveness of such communities that have been created in this way.

Cothrel (1998) reports that most online communities achieve enhanced innovation and learning when they span multiple organizations and can operate beyond the controls of a single institution. Schlager *et al.*,(2000) suggests that growth and evolution in large communities of practice have supported the belief that online communities can also provide the diversity and informality that fosters innovation. Lave & Wenger (1991) discussed the importance of situated learning and becoming a member of a community and learning to participate within that community. Vinson (2002) in his report commented that

there is a need to establish a mechanism that may allow teachers to take part in ongoing professional development. He states:

a teachers initial education and induction into the craft of teaching needs to be updated constantly in a society characterised by rapid advances in knowledge and information technology. (p. VIII)

Teachers in this report expressed their concern about the lack of reflection

“there was little or no time to reflect on their teaching practice, to discuss pedagogical issues with colleagues, or to engage in innovative teaching programs. (p. IX)

In the development of these communities online Feenberg (1999) reminds us of the need for the centrality of the teacher's role to be accepted:

The best way to maintain the connection between online education and the values of traditional education is through ensuring that distance learning is ‘delivered’ not just by CD ROMs, but by living teachers, fully qualified and interested in doing so online. Prepackaged material will be seen to replace not the teacher as a mentor and a guide, but the lecture and the textbook.

Interaction with the professor will continue to be the centrepiece of education, no matter what the medium. However, the focus on the teacher/trainer as being the ‘guide on the side’ [lends itself] to the notion that the instructor can be nothing more than ... a non expert but motivational cheerleader. (p.24)

If education and training are to take advantage of the new technologies then new competencies in the profession have to be encouraged and planned for.

The literature recommends that teachers and trainers need the support of learning communities so that the benefits of technology can be recognised in changed and improved practice.

Stein *et al.*, (1999) explores new patterns for collaboration that are particularly applicable to teaching and training with the new technologies.

A fundamental assumption of the new paradigm is that decisions about professional development and other matters that affect teachers should be made collaboratively by teachers and professional developers ... collaboration does not mean that everyone contributes the same amount, in the same way, at the same point in time. Rather it should be viewed over the long haul, with the understanding that different individuals’ skills will be called into play at different times. The key is to learn how to use differences in expertise and interest productively. (p. 264)

These partnerships may be more effective where they involve the use of mentors, or e-mentors, if online.

2.4 Mentoring

Mentors have long been recognized for their ability to serve as counsellors or guides. In Greek mythology the word mentor appears as the name of a trusted friend enlisted by Odysseus to look after his son when he set off on a long journey. Merlin mentored the young prince who became King Arthur about the subtleties of leadership. Mentoring relationships typically are between an older mentor who shares his/her 's wisdom with a younger person.

There are many definitions and interpretations of what is meant by the term mentor. The Macquarie Dictionary defines the term as “a wise and trusted counsellor”, while Concise Oxford uses the definition “an experienced and trusted advisor “

These definitions may be blended to cover the historical understanding of what we believe is the function of a mentor ie a person, a trusted guide and counsellor in the mentor-mentee relationship who develops a meaningful link between two individuals with differing levels of knowledge and experience in particular contexts. The understanding of the function and role of a mentor has evolved over time and can mean many things depending on the context. According to Schein (1978) these include: *teacher, coach, trainer, developer of talent, positive role model, protector, opener of doors, sponsor and leader.*

Table 2.3 gives alternative definitions or key terms relating to mentoring and lists the possible roles or tasks involved in mentoring.

Table 2.3: Mentoring Definitions

Mentoring is a relationship in which a knowledgeable, usually older person aids a less knowledgeable and usually younger person to better understand how to perform in a new job or a new community of practice. This aid includes not only training in required skills, but also help in getting along with others in the community and appreciating and living up to the values and norms of a new role.

In recent years there has been renewed interest in the social aspects of learning in the form of apprenticeship and mentoring. These ideas are not new as Dewey (1963) recognised the importance of learning in a social realm when he argued that *“all learning is a social experience because it involves contact and communication”* (p. 38).

Vygotsky (1978) defined the zone of proximal development, or distance between the learner’s actual development and the level of potential as determined by a more capable adult or peer. He suggests that we learn best through discussion or dialogue with peers or adults who can challenge what we know and structure what we learn.

Killion & Kaylor (1991) state *“that participants in any professional development program need support, encouragement and assistance”*. (p. 64)

Maxwell (1993, p. 31) in his implementation of a unit of work, where the participants had the opportunity to have on-site mentoring through co-operative teaching sessions with the education advisers, suggests that mentoring is an essential part of a professional development program. Smart (1997) assumes that such formal workplace mentoring can facilitate the change process, transferring life-long learning. Walker *et al.*, (1998) proposed that...

Mentoring, based in adult learning principles, can be viewed as guided learning. The mentor provides structure or “scaffolding” to the learning process, shares knowledge that could otherwise only be attained through experience and supports the protégés efforts without “rescuing” them from their failures. (p. 4)

Although a mentoring relationship could be developed within each individual school workplace, Cardno (1992, p. 32) suggests such networks outside of the school structure are important to develop. Smart (1997) also suggests mentoring “assists teachers to exercise their own professional judgement and skills and be actively involved in determining their own professional development needs.

Butler (1994) proposed “that knowledge does not become real until it has been experienced” and “mentoring sessions form a two way relationship between action and thought” (p. 18)

2.4.1 Key Elements of the Mentoring Relationship

There have been attempts to try and ascertain the key elements associated with mentoring. These include:

- Trust and respect: The mentoring relationship is based on mutual trust. The guarantee of confidentiality is essential;
- Mutually beneficial: Relationship may benefit both mentor and mentee;
- Reciprocity: Mentoring is based on a mutual undertaking and reciprocal exchange. Both parties are responsible for the success of their relationship (each has 100% responsibility for 50% of the relationship). It is important to clarify the roles and responsibilities of each party from the beginning. Research has shown greater benefits result the more pro-active the mentee is; and
- Gradual approach: Mentoring is dynamic and the content of the relationship changes.

(EOWA: Equal Opportunity for Women in the Workplace Agency, 2006)

Mentoring and it's relationship to this study can be view in terms of the following:

- Mentoring online
- Learning communities
- Mentoring and beginning teachers

2.4.2 Mentoring Online – (Telementoring, e-Mentoring)

With the expansion of the Internet, research in computer-mediated communication and programs developing from the private sector to bridge the gap of employers and their employees, telementoring or online mentoring is experiencing a rebirth.

The term e-mentoring more recently has been interpreted as a means of connecting people in the community (business or subject experts) to students, largely through e-mail.

The availability of more advanced technology tools such as online discussion software, videoconferencing, web interactivity and more sophisticated email access, can provide more valuable, and efficient communication, between student and expert, or mentor and mentee.

Recent online mentoring programs use email as the primary communication tool to connect an expert mentor with a student or apprentice. Telementoring has been around for many years with studies reporting that in the late 1970's, when the Internet was in its infancy, programs were

developing to connect school children with experts throughout the country. (Kang, 1999, p. 315-337)

The relationships between participants in online mentoring programs are similar in structure to those in face-to-face mentoring relationships - they can be intergenerational or peer to peer, have a focus on career, curriculum or social development.

The use of mentoring, specifically telementoring, and creation and sustaining of professional learning communities may make this possible.

The goal of an online mentoring program is to improve the academic or social success of a person through communication with a mentor online. The philosophical rationale is that the technology can be used as a communication tool to create an environment where a person can provide another person with individualized academic, motivational and emotional support.

2.4.3 Mentoring and Learning Communities

A community as suggested by Stuckey *et al.*, (2002)

has collaboration as its focus and offers experts and novices varying roles and ways to communicate, contribute, initiate ideas and devise joint projects. (p. 4)

In education circles, the term “learning community” has become commonplace. It is being used to mean any number of things, such as extending classroom practice into the community; bringing community personnel into the school to enhance the curriculum and learning tasks for students; or engaging students, teachers, and administrators simultaneously in learning - to suggest just a few.

Communities, described by Schwier (1999, p. 1) are collections of people bound together by some common reason whereas a learning community, has been described by Fulton & Riel (1999) as

a group of people who share a common interest in a topic or area, a particular form of discourse about their phenomena, tools and sense-making approaches for building collaborative knowledge, and valued activities. (p. 1)

McLaughlin & Talbert (1993) suggests that when teachers had opportunities for collaborative inquiry and the learning related to it, they were able to develop and share a body of wisdom gleaned from their experience.

Adding to the discussion, Darling-Hammond (1996, p. 6) cited “shared decision making” as a factor in curriculum reform and the transformation of teaching roles in some schools. In such schools, structured time is provided for teachers to work together in planning instruction, observing each other's classrooms, and sharing feedback. These and other attributes characterise professional learning communities.

Mentoring has also been considered in terms of being able to demonstrate commitment to the “community” of your organization or professional association.

These definitions tend to vary depending on the scenario and the learning strategy being used. For example, Healy (1990) considers mentoring to be a dynamic, reciprocal relationship in a work environment between an advanced career incumbent (mentor) and a beginner (mentee) aimed at promoting the career development of both. Other literature suggests that the role of the mentor must be fluid and be able to accommodate the demands and possible changing nature of the association. The imposition of external definitions and conceptions of mentoring through formal training and development programs may not be appropriate.

This idea also supports others contentions that the role of the mentor is less about the teaching and more associated with the provision learning facilitation and a context whereby growth is supported. Wildman *et al.*, (1992) suggests that...

Mentoring, like good teaching, should be defined by those who will carry it out (p. 212)

Mentoring has also been described as a state of mind rather than a structured process; and in its most sophisticated form, mentoring develops and supports self directed learning in others by integrating processes of reflection with the pursuit and construction of meaning. (Brookfield, 1985)

2.4.4 Mentoring and Beginning teachers

There are common themes in the types of mentoring that have an education focus. Traditionally, mentoring programs were designed as interventions to address specific risk areas or problems. Mentoring is often seen as one component of the “positive youth development” approach. This is based around the basic needs and stages of a youth’s development. It assumes that addressing basic developmental needs, rather than “fixing” or removing specific problems

In terms of teacher professional development mentoring has become increasingly popular in recent years. This is possibly due to a better understanding of how beginning teachers learn

and 'become' teachers and also the realization of the importance of "practitioners knowledge" in the development of teaching as a profession.

Johnson (1997) suggests that the role of mentors in the process of learning to teach is significant since it is through these colleagues that inexperienced teachers learn to "see" and "frame" teaching experience. She and others support the integration of mentor teachers into teacher education courses. She concludes that making such links can help pre-service teachers link theory and practice and become more integrated into the community. At the same time, mentors or external experts are encouraged to re-examine their own practice and expand their role to that of teacher educator. In this study as part of the course requirements, experts were integrated into the final project.

An alternative view, as suggested by Frost (1993), maybe the focus on mentoring relationships being a 'cost solution' to teacher training and development. Martinez (1994) examining beginning teachers' career entry experiences, argued that mentoring of novices by experienced teachers had contradictory potential. In investigating the conditions of beginning teachers where one to one mentor systems had been used she concluded that they required closer scrutiny and that

it may be more advantageous for beginning teachers themselves and for the system generally to consider alternative professional support systems ... A possible approach for investigation is the establishment of a network of experienced teachers and beginning teachers in a cluster of schools which could provide the support, cross-fertilisation and opportunities for observation and feedback.(p. 181)

She also argues that today, with changed conditions, mentoring persists as both promising and risky in the pursuit of the goal of high quality teachers for all children in all schools.

Teaching may be a stressful and threatening experience for beginning teachers. Many, including Chambers (2000), suggest that the lack of support is a key reason why beginning teachers fail to complete their courses.

In the context of supporting beginning teachers in schools Tomlinson (1995) defines mentoring as "*assisting student teachers to learn how to teach in schools based settings*".

Various studies have shown that the expectations of beginning teachers in relation to mentoring support in some form is relatively high. This tends to be quite distinct from other forms of support provided by their course in terms of educational theory and the support provided by their training institution.

In a study conducted by Hobson (2001) it was found that these beginning teachers found it 'very valuable' or 'essential' to be working with a school teacher/mentor. This study also indicated that these beginning teachers would also like to be viewed as competent teachers rather than be considered as 'learners' and thus accessing *school based* mentors may not be appropriate or even desirable – often because these teachers may also be their 'supervisory' teachers while being on practicum.

It has been noted by Schön (1983) that there is also considerable value in the mentors being able to reflect on their own practice, the practice of others in a similar environment and thus be in a better position to assist beginning teachers.

Teacher mentors have also the ability to challenge the attitudes and approaches of the beginning teachers in a non-threatening manner due to their awareness of their possible conceptions of their environment. As noted by Von Glaserfeld (1996)

One can hope to induce changes in their ways of thinking only if one has some inkling as to the domains of experience, the concepts and the conceptual relations the students possess at the moment. (p. 7)

Mentoring programs often pair beginning teachers with experienced teachers who can explain school policies and practices, share methods and materials, and help solve problems. Mentors have also been used as a guide, for new teachers "promoting reflection and fostering the norms of collaboration and shared inquiry" (Feiman-Nemser & Parker, 1992). They are in agreement with many educators saying that all new teachers need some form of mentoring. In many cases, a mentor is simply an experienced teacher who has been randomly selected by the school principal and allocated to support a beginning teacher. Their comments indicate that after 20 years of experimenting with mentoring as a process for helping new teachers, few comprehensive studies validate its effectiveness and warn that we must be wary substituting 'mentoring' for 'induction'.

The process of inducting new teachers is generally a collaborative process, where the expertise of educators within a system is organized, and hopefully sustained, to support them through their formative teaching years. Mentoring may be used as a part of this process.

Most educational organizations or systems seeking to improve the retention of new teachers are realizing that mentoring is only one component of a successful induction program.

The idea of moving from “learning separately” to “learning together”, is an important factor in which practicing teachers are jointly responsible for the work in classrooms, and their wisdom and experiences are perceived as professional resources.

De Miranda & Lipton (1998) suggest “*comparative analysis provides an empirical basis for speculating about the likelihood that mentoring can challenge the traditional isolation among teachers and improve teaching*”. This mentoring relationship has benefits that may occur both ways.

*As a mentor-mentee relationship matures, many benefits and opportunities emerge for both participants. One result of a successful mentoring relationship, be it formal or informal, is the opportunity for **reverse mentoring**. Developed out of trust and mutual respect between the mentor and mentee, reverse mentoring is a value-added interactive process that complements a professional atmosphere within an academic department. (p. 1)*

In the same article the authors comment that if a successful and mature mentoring relationship is established then this is indicated when “*Both mutually lead and assume the roles of the quiet advocate for each other.*” This concept of reverse mentoring has also been recognised in other areas as being beneficial. In the online article Greengard quotes Linda Phillips-Jones, principal consultant at The Mentoring Group

Instead of viewing it strictly as a way for younger workers to keep their older counterparts informed on technology and trends, she believes that reverse mentoring is a tool for opening the channels of communication and knowledge sharing within an enterprise. “When it’s done right, both parties can benefit. The mentor gains insights into how a leader in the organization thinks while also forging a relationship that can lead to a promotion or other professional gains. The recipient learns new skills and competencies that boost job performance.” (Greengard, 2003b)

Many companies outside education have recognised its value and adopted the process of reverse mentoring.

The following organizations have made reverse mentoring a success.

General Electric: In 1999, former chief executive officer Jack Welch established a reverse mentoring program for himself and other top executives. About once a month, Welch met with the 37-year-old manager of GE's corporate Web site, who helped him learn how to surf the Web and conduct basic research online. GE Plastics and other divisions of the U.S. \$130 billion (2002 sales) firm also have established reverse mentoring programs.

Proctor & Gamble: A pioneer in reverse mentoring, P&G established its first program in the early 1990s. Then, the advertising division was losing twice as many women as men. After the launch of a reverse mentoring program designed to address challenges facing women, the hemorrhaging slowed. By 2000, the concept had hit the radar screens of top execs, including CIO Steve David.

RSCG Life: The 1,000 employee advertising agency, the largest catering to the pharmaceutical industry, turned to reverse mentoring over a year ago. More than 30 senior executives participate in the program. They learn about technology, pop culture, and trendy restaurants so that they can relate to younger clients and boost their computer skills. The program isn't designed to serve as a philosophical make-over, but a way for execs to bridge the generation gap.

Seattle Public Schools: During the summer of 2002, female students in the Seattle Public Schools, a district with nearly 47,000 students, spent the summer educating teachers about computers and technology. The goal of the program, dubbed Generation www.Y, was to integrate technology into the classroom and improve student learning. The students designed the curriculum, rules and lesson plans and collaborated with teachers at South Seattle Community College.

Wharton School of Business: The University of Pennsylvania's Wharton Fellows Business program matches some of the top executives in the nation to MBA candidates and undergrads, who help them gain knowledge in technology and business through reverse mentoring. At present, about 100 fellows participate in reverse mentoring. The program has received positive feedback and continued to grow.

(Greengard, 2003a)

This idea of reverse mentoring may also be a way of allowing current teachers an opportunity to think outside their classroom teaching. For example Smylie & Conyers, (1991) note that this conception has important implications for how schools are organized. They should be considered as places for teachers "to learn as well as to teach".

There is a need to address this situation of classroom teachers' isolation that may be related to their inability to learn and to communicate with colleagues in their school or fellow teachers outside their school.

In California a program was developed, the California Formative Assessment and Support System for Teachers –CFASST- (Storms *et al.*, 2000), to support and assess new teachers. This collaborative arrangement between the California Commission on Teacher Credentialing, the California Department of Education, the regional educational laboratory WestEd, the University of California at Santa Cruz, and the Educational Testing Service was for beginning teachers and their mentors. The trained mentors were provided to help beginning teachers plan lessons, observe their classes, and provide feedback. The beginning teachers were required to reflect on their practice and apply what they have learned to future lessons. They were supported in their lesson planning and were encouraged to reflect on the effectiveness of their classroom management. The practicing teachers, as mentors, found that working with beginning teachers engaged them in reflection about their own instruction practices. The analysis of this program reported that mentoring played a significant role in the professional growth of the new teachers.

2.4.4.1 Using Mentors – Issues to Consider

Selection:

A study conducted by Evans *et al.*, (1996) suggests that the perceived role of the mentors needs to be considered in mentor selection. The authors suggests that mentoring may be viewed as “subordinate” to what they perceive as their primary role of teaching. In line with this it is important to consider this role as part of the juggling act of a busy teachers workload.

There are some teachers who, although effective classroom practitioners, find it difficult to impart new ideas to beginning teachers especially if the context is different from their own classroom. (Maynard, 1996)

Preparation:

In preparing teachers to be a mentor it can be argued that they need to take on a formal preparation program in readiness for such a role. Often mentors have not been trained but maybe are just teachers whose advice and support is sought in relation to teaching and student interaction.

Value of Mentors:

Work conducted in the field of cognitive skill psychology has demonstrated how skill acquisition can be supported through various forms of mentoring or ‘coaching’. It was reported that “real life skills... are usually learnt with the aid of some form of coaching’ and that appropriate feedback on practice is essential to skill acquisition (Sloboda, 1986). This is also supported by Tomlinson(1998) who states that:

the acquisition of practical capability requires a cycle of plan-attempt-feedback-replan, a process which when done with the same action unit tends to produce a gradual tuning... that makes it more accurate, economical and intuitive.

The value of such school based mentors is also supported by the Vygotskian perspectives of socio-culturalism which state that the activities in which we take part are focussed in social participation and that we need the assistance of others to avoid learning in isolation. The availability of these mentors would also allow beginning teachers to be supported, as suggested by Edwards (1996), in the form of a scaffold that would allow:

Listening to students; modeling teaching and general classroom management; analysing and discussing own practice (Borja, 2002) observing students; negotiating with students, their learning goals; supporting students while they teach; provide constructive criticism...

As a result the following were able to guide the design of the mentoring program when considering the teachers as online mentors:

- Be aware of the time demands on the time available for teachers to commit to the mentoring role;
- Allow for adequate preparation of these mentors; and
- Provide the opportunity for the mentors to interact professionally but also in a relaxed and ‘social’ environment.

2.5 Professional Development

The concept of professional development generally is interpreted as some form of activity that leads to improvement in teaching practice. The terms professional development, staff development and in-service are often seen as interchangeable but a number of authors try to make a distinction between them. Bellanca (1995) gives a distinction in the follow way:

Professional development is a planned, comprehensive and systematic program designed by the system to improve all school personnel’s ability to design, implement and assess productive change in each interval and in the school organization. (p. 6)

Staff development is an effort to correct teaching deficiencies by providing opportunities to learn new methods of classroom management and instructions. (p. 6)

In-service is the scheduling of awareness programs, usually of short duration, to inform teachers about new ideas in the field of education. (p. 6)

In contrast Cardno (1992) suggests that professional development is about...

the improvements and growth of professional people which in turn has the positive impact on what happens in the classrooms and in schools generally (p. 16)

In the Australian context the format and success of such professional development has varied considerably and this has led to a growing concern about the ways in which new teachers are being prepared for our schools and also the professional development of existing teachers. Maxwell (1993) comments that...

until recently professional development in Australia has been 'largely ad-hoc provision of brief one-off activities and courses with little or no follow-up to support implementation'. (p. 31)

There have been a number of attempts to create a recipe or a series of elements necessary for successful professional development. Maxwell recommends that the following are essential for effective staff development:

- There is an open attitude to learning
- Access to knowledge is made easy
- Leadership is provided
- Relationships should be supportive and acknowledge individual differences (p. 32)

Rather than listing essential components others suggest different criteria. Sellars (1996) advises...

Teachers, individually and collectively need to own their professional development By collaborating with their peers and the school administration on professional issue, the career-long process of PD can proceed and does happen. (p. 20)

Davies and Bruning (1992) comment that staff development is not static or stop start but

... the best staff development is not "experts" teaching "novices", but rather is an ongoing process of shared dialogue among principals, staff developers and peers. (p. 4)

2.5.1 Professional Development and ICT

For professional development in relation to technology, Rodriguez and Knuth (2000) state:

Lack of professional development for technology use in one of the most serious obstacles to fully integrating technology into the curriculum (Fatemi 1999; Office of Technology Assessment, 1995; Panel On Educational Technology, 1997). But traditional sit-and-get training sessions or onetime only workshops have not been effective in making teachers comfortable with using technology or adept at integrating it into their lesson plans.

Many of the earlier models of related teacher professional development tended to espouse a relatively simplistic approach to the use of technology. They concentrated on short “training” activities, away from the school environment, generally related to learning a specific skill or how to use a particular piece of software. These isolated ‘days’ or after school sessions tended to have little impact due to their sporadic nature and the lack of ongoing support, both from a system level and from the school level.

With the changing of focus – towards the use of a computer as a pedagogical tool, continuing professional development programmes have been expanded to consider many more issues other than skill development.

Teachers do require quality ongoing professional development for ICT integration and this will involve the use of alternate models in combination with appropriate use of existing and future technologies.

There is now an unprecedented willingness in the teaching profession to embrace ICT... However, there are still too many teachers who struggle with an unfamiliar technology and are sometimes apprehensive about using it. These teachers in particular need good professional support to help them move forward. (BECTA: British Education Communications Agency, 2002, p. 4)

Practicing teachers have had limited access to ‘technology related’ professional development courses such as TILT and TILT Plus (Technology In Teaching and Learning), (Watson & Downes, 2000) but these again tend to be delivered in short, unrelated doses.

One of the continuing themes recurring in the literature is that the patterns of systems-level resource allocation tend to favour a training model over alternate models, which the literature argues are more effective in the long term. This is so despite ample evidence that traditional methods are ineffective and wasteful (CERI, 1998; Hawley & Valli, 1999). The

authors claim the effect is reduced by their disjointed nature and the lack of ongoing support.

2.5.2 PD, ICT and Beginning Teachers

As mentioned in Chapter 1.5.4 the MACQT Report (1999) review into quality teaching suggests the following necessary skills of all beginning teachers:

- An understanding of the basic operations of a computer
- Information technology – multimedia, Internet, email
- Evaluation of software
- Pedagogical issues
- Values and ethics

Most teacher preparation institutions are attempting to address these skills in their courses and are introducing pre-service teachers to the possibilities of using technology in the classroom but for reasons such as access, opportunity and the lack of encouragement by their supervising teacher and/or school, on practicum, fail to gain authentic experiences in this area.

The assumption that students come to the interface with adequate skills to even fire up the box is quite wrong-headed thinking. They come with all sorts of backgrounds and experiences which attach themselves to their encounters with new learning generally, and technology specifically. (Brennan & Green, 2000)

In a number of instances institutions were using online technologies to support and encourage communication between university and schools. However, there was little evidence of students receiving the necessary training to become teachers in this medium, and very little recognition was given to this kind of school experience being a legitimate professional experience, in the same way as face-to-face teaching is legitimate. (DETYA, 2002, p. 47)

There is an increasing need for both practicing teachers and pre-service teachers to be aware of the possibilities and have authentic experiences that will prepare them for the integration of technology into their classrooms, and also allow for ongoing professional learning.

The period of initial preparation and entry into the profession is a critical stage in the development of a teacher. It is during this time that the values and practices that underpin a teachers' future professional development will be established. Additionally many

employers are setting mandatory requirements for all teachers including beginning teachers. (NSW Institute of Teachers, 2005)

It has been suggested that various online communities can support professional development but these must not be seen as a panacea for traditional activities.

...neither 'online learning communities' nor 'online professional development' can provide quick fixes for the complexities of continuing professional development. While 'learning communities' come up over and over again as a necessary condition for effective and sustained teacher development, they are not an easy solution, nor one that should stand alone as a major strategy. Rather, they should be an integral part of the sustained school-based teacher inquiry approach where their special contribution is to support and extend the local networks by offering connections and resources from outside the school or district. Similarly, online professional development does not hold any magic. There is no simple or easily affordable answer to the complex matter of designing effective systemic strategies for effective teacher education programmes in this field. (DETYA, 2002, p. 9)

Some recommend that current approaches are not as important as the degree of professionalism of the teacher.

The amount, nature and type of CPD was not the issue, the key factor was the professionalism of the teacher. This leads to the difficult question "How do you develop effective CPD for teachers who choose not to engage professionally?" It also points to the need for forms of CPD that are embedded in teachers' daily working lives, in their schools and in their careers: as an expectation which is both recognised and rewarded. (DETYA, 2002, p. 76)

2.5.3 Professional Development Issues for all Teachers

Many of the issues relating to professional development are common to both pre-service teachers and practicing teachers. Similarly they are generic regardless of the method of delivery. Some of these include:

- Wrong pace – too fast or too slow
- Too much information or too much jargon
- Need for awareness of and access to a wider range of ICT
- Need to be relevant to the programs/resources that are actually used/ available in schools
- Lack flexibility that allows for choice and guidance where appropriate

As teachers get older they are less likely to move from schools in which they are comfortable and this tends to add to their isolated view of teaching by failing to mix with other teachers outside their own school. Technology may assist in virtually bringing teachers together.

Due to teachers' isolation in particular, teachers and trainers need support beyond the four walls of the professional development activity. The medium of technology and its potential for interaction and communication provides a wonderful opportunity for teacher reflection and growth in a supportive and collegial way. (Brennan, 2000, p. 230-235)

Educationalists in examining professional development strategies are exploring new ways of collaboration that may be applicable to the use of information and communications technologies.

A fundamental assumption of the new paradigm is that decisions about professional development and other matters that affect teachers should be made collaboratively by teachers and professional developers...collaboration does not mean that everyone contributes the same amount, in the same way, at the same point in time. Rather it should be viewed over the long haul, with the understanding that different individuals' skills will be called into play at different times. The key is to learn how to use differences in expertise and interest productively. (Stein et al., 1999, p. 237)

Teachers are facing increased pressures and challenges as part of their everyday teaching and hence lack the time and support of others in new ways of teaching. Vinson (2002) expressed teachers' concern that...

there was little or no time to reflect on their teaching practice, to discuss pedagogical issues with colleagues, or to engage in innovative teaching programs. (p. IX)

Mechanisms need to be put in place to ensure that teachers have adequate access to support and technical advice and to ensure that teachers do not feel that they have to become technical experts themselves.

While the support that is needed may be strongly focussed on the technical aspect of ICT, teachers are also aware of the need for an organizational culture that promotes a positive attitude to its integration.

Training alone is unlikely to be effective in the development of ICT skills and knowledge, and enhanced use of ICT in schools. There has been a call for a more holistic approach comprising of appropriate training, ready access to ICT resources and ongoing support and advice to encourage progression beyond formal training.

The provision of a localised, supportive environment that encourages teachers to see ICT as integral to the achievement of their existing goals. (Williams et al., 2000)

In order to look at appropriate models of professional development of teachers that develop ICT integration the problem arises “which focus do we take” – where are we at in this continuum? The authors further argue that the long-term applicability and sustainability of professional development is contingent upon an appreciation of the culture and context of the workplace.

With the ageing teacher workforce there is also a danger of loss of the wealth of experience and teachers are not given the opportunity to share this knowledge.

Anecdotal and research-based evidence suggests that teachers and trainers feel that their skills, their talents and their creative and accumulated wisdom about teaching and learning are not being used in productive ways Brennan cited in. (Brennan et al., 2001, P. 59)

2.6 ICT Integration

The term ICT integration has evolved over the past decade from ‘using computers in the classroom’ to a much wider context. In the late 1980’s teachers were being encouraged to look at the following three main components:

- Using Computers for Learning,
- Teaching with Computers
- Learning About Computers (DETNSW, 1986)

This document was an attempt to address the impact of computers, computing and information processing on society, in relation to the Aims of Primary and Secondary Education in N.S.W. (1977- reprinted 1983), which states that...

Individuals capable of coping with change and entitled to be regarded as mature and educated will be characterised not only by the possession of knowledge and skills but by the independence of mind and a willingness to become involved in the issues each sees as worthwhile.

This document recognised the impact technology would have on teaching and learning, possibly leading to educators making “powerful and personal visions of the learning process”. It was hoped from this starting point that teachers and students would use computers for learning to allow them to ‘work with significant concepts in various curriculum areas in concrete and interactive ways’.

These early approaches focused on technology skills as an end in themselves, and in many schools, and systems, computer science was introduced as a new school subject. At this time few teachers embraced the use of computers in their classroom as it was assumed that students were gaining skills in specific 'technology related' subjects or there was no real need to 'clutter their subject content' with this additional component. During the next decade many teachers took only partial interest in some of these areas because of the limitations on computer access and their knowledge of these new tools.

There was a gradual shift in focus towards the use of the computer as a pedagogical tool that would improve learning. This shift was intended to promote the increased use of computers across the curriculum.

The initial three components have since been expanded and developed to include a much broader spectrum involving:

- The acquisition of ICT skills by teachers
- The use of ICT to enhance student abilities within the current curriculum framework
- The integration of ICT as an integral part of a broader reform of the curriculum in terms of not only what is to be learned but how this can be achieved
- The use of ICTs that may allow for a broader reform and restructure of our approach to school organization.

(ACCE, 1998)

In addition, State departments of education throughout Australia are requiring schools to integrate the use of ICTs as part of their normal duties, both inside the classroom and as part of their administrative duties.

These additional technology related tasks include:

- Electronic assessment and reporting systems
- Departmental e-mails and faxes
- Educational system documents such as curriculum updates, syllabus support and student registration
- Online staff development and job applications

The three key players, individual teachers, schools and teacher training institutions are exploring and experimenting with ICT integration, but often there is little awareness of the directions taken by each other.

To incorporate the many aspects of IT integration is a major task for teachers and school administrators. With barriers such as less time, changing hardware, software, and network structures within the school and school systems, teachers are finding it increasingly difficult to come to terms with these as well as many other changes.

Information and communications technologies (ICTs) are becoming much more of a part of the educational landscape in our schools. Governments are spending millions of dollars on the physical resources and the necessary network infrastructures to allow students and teachers to have access to technology that will endeavour to support their teaching and learning.

In keeping with government accountability and budget demands there are increasing requests to justify this expenditure and to examine the benefits for our schools, of such investments.

Teachers in our schools and the pre service teachers in teacher training institutions are obtaining differing degrees of professional development in relation to the use of ICT and it is unclear whether this is having a marked impact on increasing and improving its appropriate use.

The current professional development activities for teachers and pre-service teachers is seen by some as inadequate, often being in short, unrelated doses, and overlapping or duplicating other offerings.

This duplication of training and awareness of the ICTs, for both practicing teachers and pre service teachers occurs but rarely is each group aware of each other's experiences. There is a definite need for a coordinated approach to the issue of continuing professional development in relation to the use of ICTs.

Both groups also need to be exposed to authentic experiences involving information and communication technology integration in their classrooms and to allow for ongoing professional learning.

It has been recognized by a number of reports that there is a special relationship between effective professional development and the use of ICTs in the classroom. The Commonwealth of Australia (2000) report states:

... where it is identified and implemented within the school context to meet the needs of their teachers and students, for the continuous improvement of professional practice. Central to the

effectiveness of such an approach is “the support provided from educational systems and schools to embed professional development effectively into conventional work practices”. (p. 11)

There is growing amount of literature to suggest that teachers and educational leaders are failing in their efforts to successfully integrate ICT into classroom practice. This also begs the question...

How can we devise and implement appropriate professional development programs for all teachers that will allow this situation to improve?

A number of reports are commenting on this ‘knowledge and skills’ gap and are suggesting ways in which it might be addressed.

The majority of schools wanted beginning teachers to be reasonably proficient in the use of computersthey needed some technical expertise / knowledge. Two areas of computer proficiency identified were the need for greater understanding of using integrated software packages across the key learning areas and more training in computer classroom management. (MACQT, 1999, Section 4.4)

The DETYA report (2002) explores the current state of integration of ICT in our schools and makes specific comments relating to the way in which we prepare our teachers and the ongoing support for practicing teachers. This Australia-wide survey of the use of ICT in teacher education suggests that while pre-service teachers receive considerable amount of awareness of, and experience with, ICTs in their training, they receive limited experience in actual classroom use.

This indicates that there are large differences or gaps in what is learned about ICT in their training and what can be practised in field placements and ongoing as a graduate teacher.

2.7 Conclusion

Practicing teachers need support to renew their professional knowledge and practice and there is a growing emphasis on continued professional development at personal, school and system levels in order to improve student outcomes.

All teachers must be given the opportunity to work with other teachers within and across schools to devise and evaluate new pedagogies, and to explore the possibilities that information and communication technologies provide.

To achieve a holistic approach to an ongoing continuum of professional development there are indications from the literature that this will not be done without a transformation at the system level, which in turn will allow the flow on to classroom.

For beginning teachers, those who are just learning about teaching practice seem to have the least time and inclination to spend on evaluating their practice. An innovation and a change in practice, such as using technology, when accompanied by the learning of new mechanical skills, occupy a lot of space and energy.

How can a strategy or an environment be established that will support such a change?

This period of initial preparation and entry into the profession is a critical stage of the development of a teacher. It is during this time that the values and practices that underpin a teachers' future professional development will be established.

A review of the literature has provided considerable information to guide this study in the development possible mechanisms that might help bridge some of the gaps that occur in the career of a teacher. The four focus areas of partnerships, mentoring, professional development and ICT use in schools have helped establish reference points for how this study evolved.

Further research needs to be carried out into how a beginning teacher joins the teacher workforce and becomes a part of this professional community. This study will provide additional support into how this might be achieved and what strategies might be used to enhance the career continuum of teachers in our schools.

Chapter 3 - The Study Context, Key Players and Places

3.1 Introduction

We might argue that all research may be considered ‘participant research’, in that researchers are incapable of adequately excluding themselves from it, and it is from this viewpoint that this researcher would like to declare possible limitations of the following methodology.

Researchers must always be aware that they have an ambiguous role with respect to the area of study. It is in this area that the subjects may open themselves to analysis and the researcher is entirely reliant upon them for the richness of the data. The researcher is aware of returning something in exchange and to be conscious of the possible sensitive nature of the inquiry.

The best a researcher can give, ultimately, is the benefit of the insight and knowledge gained, and with that new knowledge, perhaps new insight, self-reflection, and perhaps new opportunities and freedom for the subjects based upon a more general and reflexive understanding. (Scott & Silbey, 2000, p. 9)

While undertaking this research I was a member of the teaching profession and therefore had certain professional interactions with some of the participants. Every effort was taken to ensure that these contacts did not influence the data collection or analysis, or that any influence was noted.

3.2 The Study Context

The study took place through a Graduate Diploma in Education (GDE) Course at University Of Wollongong in 2002. This course, to prepare graduate students to become teachers, was contained in a one-year program.

With all compact courses there are problems with getting through the required material but for pre-service training for teachers there are added pressures related to developing an understanding of teaching as a profession as well as the acquisition of practical classroom skills. In the planning of the study and the subsequent implementation of the designed interventions, I was aware of many of the issues of beginning teachers and schools before

the study was implemented, but was not conversant with the complex nature of the course, the university and the resultant interactions.

As mentioned in Chapter 2 the literature suggested that teachers and educators should participate in professional communities and where practical, use information and communications technologies in the process (ACCE, 1998). I was aware of some of the conflicting interests that would affect the study and these are shown in Figure 3.1.

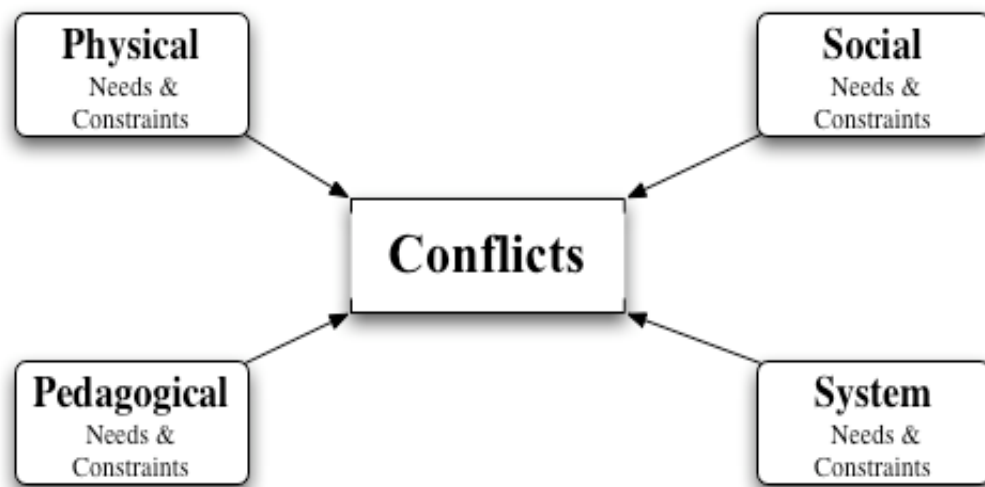


Figure 3.1: Conflicting Interests

In deciding the appropriate methodology for the study a review of the relevant literature was carried out as demonstrated in the previous chapter. A researcher must consider the methodology model that is appropriate to the ‘...phenomenon being investigated’ (Guba, 1981, p. 76) and that the qualitative research being undertaken.

focuses on process meaning understanding, the product of a qualitative study is richly descriptive. (Merriam, 1998, p. 8)

The term qualitative research is mainly used as an over arching term to describe research conducted in a natural setting to investigate a social or human issue. A broad qualitative approach was used in this study as the researcher attempted to examine, from multiple perspectives, the interactions between practicing teachers and pre-service teachers constrained within a one-year snapshot of a teacher preparation course, and how technology might support these interactions.

It was hoped that this study would expand the understanding of how teachers and pre-service teachers can collaborate to bridge the gap between training and classroom experiences, and to provide course designers with recommendations on how a partnership between these participants could be established and supported.

That is, the study was attempting to determine if it was possible to design an environment that would allow the two disparate groups to come together and benefit from each other's experience and knowledge. This designed online environment was intended to integrate with the existing course structures and inform others of the desirable characteristics of a professional learning partnership.

3.3 Why this Design?

The environment under which this research was conducted was constrained due to the course requirements from within the Faculty of Education and the criteria demanded by the various teacher employment agencies. In this authentic case there was little room for flexibility in terms of the various contexts of the study and how I was able to construct the necessary tools required. The initial focus on the impact of the technology on the types of interaction was prompted by:

- the authentic in school experiences of the researcher, and;
- calls for qualitative research to inform pedagogical innovation,

Because technology when used to its best advantage, helps reshape the roles of teachers and learners and encourages new and different types of interactions in the classroom, qualitative approaches should be considered to investigate these phenomena. Windschitl (1998, p. 28-33)

In determining the nature of inquiry for this study and through examination of various research methods I deemed a case study approach as most appropriate for this study. Yin (1994, p. 13) describes a case study as an “empirical inquiry that investigates a contemporary phenomenon within a real life context” whereas Miles and Huberman (1984, p. 28) add to this by stressing that a case study is “... a bounded context in which one is studying events, processes and outcomes”.

Tesch (1990, p. 58) suggested that there are different types of qualitative research approaches of which case study is one of the many coming under this banner. Bogdan and Taylor (1975) offer a description that aligns with my view of qualitative research and helped underpin the design of the study.

Qualitative methodologies refer to research procedures, which produce descriptive data: people's own written or spoke words and observable behaviour. This approach as we see it, directs itself at settings and the individuals within those settings holistically. That is the subject of the study, be it an organization or an individual, is not reduced to an isolated variable or to a hypothesis, but it is viewed instead as part of a whole. The methods by which we study people of necessity affect how we view them. When we reduce people to statistical aggregates, we lose sight of subjective behaviour. (p. 4)

As mentioned in Chapter 1 the aim of this research was to examine the complementary nature of practicing teacher and pre-service teacher experiences where there was a common need for ICT integration especially with the incorporation in the Professional Teaching Standards.(NSW Institute of Teachers, 2005) It was hoped that by using ICT as a stimulus vehicle for engagement, the establishment of a professional learning partnership – a useful synergy may result and possible solutions to bridging the gaps would surface.

The design and implementation of this study involved the collection of descriptive data from the **key players** involved, and the various contexts (**places**) in an effort to examine the interactions that took place.

3.4 Data Collection

The snapshot of the GDE program during 2002 provided a rich data source from the key players that were involved and their associated institution environments. The following summary gives broad description of the types of data collected and processes involved in its analysis. The data used to inform this study was collected from both targeted and spontaneous sources.

3.4.1 The Data

The data used in this study was collected to provide rich descriptions of the people and the places in which they worked and interacted. The data also was collected from sources that were beyond the control of the researcher (not designed), and also from sources that were part of the designed environments.

The people involved in the study were all teachers, primarily pre-service teachers (PST) and practicing teachers (PT). Other key players were a small group of practicing teachers who became online mentors (OLM), academics involved in course design and delivery, and myself as the researcher. The background of these people was investigated and then their

interactions in the various contexts in which they studied or worked was observed. These contexts were the university, schools, school practicum and online.

The data for the study was collected in two stages. The initial data collection stage was based around the setting up of the designed environment and the various components that related to the tasks that the PSTs were required to complete. At the conclusion of the PLP interaction period and the interviews with the key players it was expected that from the resultant interactions I would be able to form a set of recommendations to enhance a professional learning partnership. This was not the case due to the lack of interactions that took place between the teachers and the pre-service teachers. Therefore in response a second stage of data collection was required in order to gain further information as to why this was the case.

Figure 3.2 indicates each of the data collection stages.

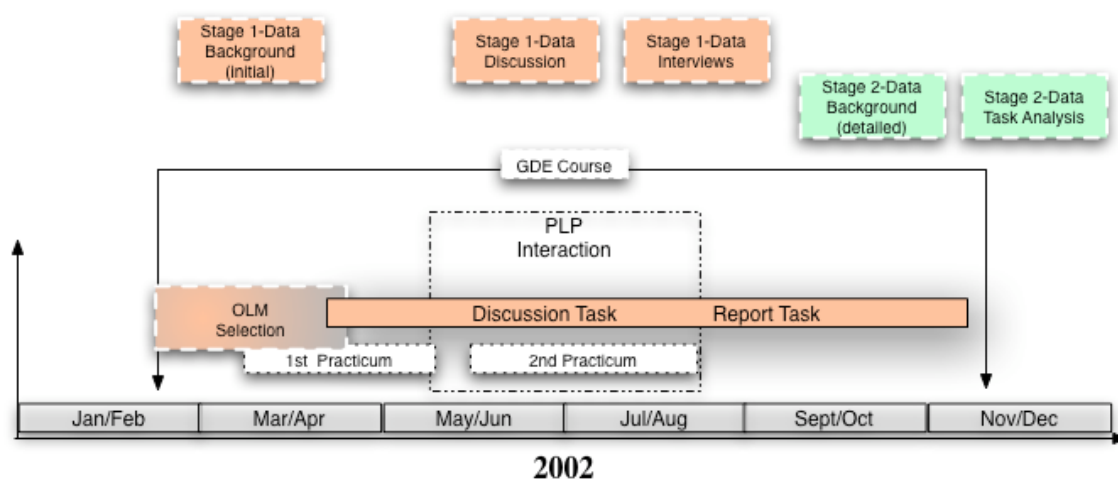


Figure 3.2: Data Collection- Stage 1 and Stage 2

Stage 1 Data Analysis

During stage 1 of the data collection process background information was obtained about the key players, the course environment and the interactions between the PST and OLM.

This was provided by:

Stage 1 – Data – Background - initial

- A survey of the 19 online mentors regarding their ICT experience was collected (Appendix 8);
- A pre-interview survey of 6 pre-service teachers relating to their interactions with the OLM (Appendix 9)

- A review and collation of typical primary and high schools that would be used during the course practicums;

Stage 1 – Data - Discussion

All discussions that took place via the online postings by the 178 PST. These postings were made prior to the practicum period, during practicums 1 and 2 and after their school experiences had finished. This was over the period from April 24 till November 20. During this time the students responded to three set questions as part of an assignment. (Chapter 4.6.1) The numbers of postings per assignment question were:

Question 1 – 293

Question 2 – 101

Question 3 – 118

Totalling 512 postings

There was only one comment by one of the OLM during this discussion period. As later discovered in the interviews with the mentors a number had observed these discussions but felt that it was inappropriate to comment as this was a specific assessment task.

Stage 1 – Data - Interviews

Interviews were conducted with pre-service teachers (PST), practicing teachers (PT) and the academics. Patton (1990) has described the usefulness of interviewing in finding out information, which may be difficult to determine in any other way:

We interview people to find out from them those things we cannot directly observe. The issue is not whether observational data is more desirable, valid or meaningful than self-report data. The fact of the matter is that we cannot observe everything. We cannot observe feelings thoughts and intentions. We cannot observe behaviours that took place at some previous point in time. We cannot observe situations that preclude the presence of an observer. We cannot observe how people have organised the world and the meanings they attach to what goes on in the world. We have to ask people questions about those things. (p. 278)

The interviews used in this study were a combination of the techniques as suggested by Patton (1990) and Denzin (1989) (see Table (3.1))

Table 3.1: Interview Techniques Used in the Study

Interview type	Characteristics	Used with Group
Nonscheduled standardized interview Denzin (1989)	Questions and probes are determined in advance but there is flexibility in the interview, e.g., in the sequence of questions, depending on the responses of the interviewees.	PST, AS
Standardised open-ended interview questions Patton (1990)	The exact wording and sequence of questions are determined in advance. All interviewees are asked the same basic questions in the same order. Questions are worded in a completely open-ended format.	OLM

These techniques were used to ensure that certain themes or issues relating to such complex environments were not missed during the course of an interview. As I was the only interviewer it was not necessary to formally structure the interviews, as would be the case if a number of interviewers were used. These techniques allowed me to apply the appropriate approach for further investigation with follow up questions if necessary.

Interviews With OLMs

These interviews were conducted towards the end of the study when the main interaction had concluded. Due to the disperse location of these busy teachers these interviews were conducted either face to face or via telephone with the audio cassette recording for later transcription. The standardised opened ended technique was used for these interviews to gain an awareness of any issues that may have impacted on the keyplayers. A total of 12 OLMs were interviewed during the week beginning 9th September. The interview questions are shown in Table 3.2.

Table 3.2: Interview with the OLMs - Interview Questions

Question	Type of question			Rationale
	Explanatory	Opinion	Feeling	
Describe your involvement in the PLP project?	X			Introductory open ended question to encourage the respondent to raise issues which may be expanded later
What were some of the problems involved with this phase ?	X			Presupposition question – can elicit useful information about weaknesses (and strengths)
What do you think you, as the OLM, got out of the interaction?		X		To experience an open question that leads to a more detailed response in the following questions
What do you think the pre service teachers got out of the project?		X		Opinion question, which seeks summary comments and reinforcement of previous answers.
Any other comments?			X	Open ended question to elicit additional information

Interviews With Pre-service Teachers

A request for participation in an interview was distributed during a lecture following their practicum inviting any PST to discuss their interaction with an OLM. As a result 6 students completed and returned their survey (Appendix 9). Using a nonscheduled technique these students were interviewed separately in a quiet room, during the week beginning 21st October. Interviews were recorded for transcription. The interview questions given are shown in Table 3.3 below.

Table 3.3: Interview with the PST - Interview Questions

Question	Type of question			Rationale
	Explanatory	Opinion	Feeling	
1.Initial Contact How did you come to be aware of the presence of the mentors? 2.What sort of interaction did you have with the mentors?	X			Introductory open ended question to encourage the respondent to raise issues which maybe expanded later
3. Problems Did you access that from home? Or from your pract 4. You didn't have any technical issues – Were you quite comfortable with the environment.?	X			Presupposition question – can elicit useful information about weaknesses (and strengths)
5. Context How would you categorise the advice you got from the mentors - for example curriculum classroom managementor?		X		To experience an open question that leads to a more detailed response in the following questions
6. What do you see as the benefits of making this contact use of the mentors for you the mentors?		X		Opinion question, which seeks summary comments and reinforcement of previous answers.
7. Interaction What would you like to see as an introduction?. your first contacts with the mentors? Can you describe your approach to the mentors? - a direct contact? - put up a question and then somebody replied?			X	Open ended question to elicit additional information

<p>8. Setup</p> <p>Concerning the “mentor page” details – What sort of information would you like to be aware of would you like to know a little more about them?</p> <p>photograph?</p> <p>favourite saying?</p> <p>A face to face meeting of the group ...</p> <p>Timing - You said it was clustered around a very busy time ...in terms of your prac...would you like to see it available at other times in your courses....in any course?</p>		X		Open-ended question to elicit additional information.
<p>9. The Future</p> <p>Facilitation in this current implementation of the project was virtually “non facilitated”my next version would have a lot more facilitation in the process.... Do you see this as being an issue when interacting with the Mentors?</p> <p>Would you see the mentors being of benefit to you once you are out in a school?</p>		X		Open-ended question to elicit additional information. To support recommendations

Interviews With Academic Staff

A number of academic staff had been involved in the planning and/or delivery of this course or previous versions of similar courses. They were personally approached to take part in a face-to-face interview. Using a non-scheduled standardised technique 5 staff were interviewed during the week beginning 18th November using the interview questions shown in Table 3.4. The interviews were taped on a audiocassette recorder for later transcription.

Table 3.4: Interview with academic staff - Interview Questions

Question	Type of question			Rationale
	Explanatory	Opinion	Feeling	
1. The Course -General All students in this course were required to investigate the use of ICT in schools and the impact that it would have on their teaching. Do you think this course addressed this component of their teacher preparation?	X			Introductory open ended question to encourage the respondent to raise issues which maybe expanded later
2. Expanding on this – what do you think were some of the advantages of this course?		X		Presupposition question – can elicit useful information about weaknesses (and strengths)
3. Can you explain some of the problems associated with this course and/or its implementation?	X			To experience an open question that leads to a more detailed response.
4. The partnership This course was supported online, by WebCT... a) Did you know that such a partnership was established – if so, how were you aware of its existence? b) Can you give examples of how this partnership was used? c) Were you aware of any problems relating to its usage? d) From your perspective as a member of the academic staff, associated with the course, can you comment on its use and overall effectiveness?		X		Opinion question, which seeks summary comments and reinforcement of previous answers.

<p>5. Staff - Impact</p> <p>The online environment was a major component for this course – How did it impact on you as a member of the teaching staff involved?</p> <p>You may like to comment on such issues as:</p> <p>Course content</p> <p>Time involved</p> <p>As being a member of the partnership</p>			X	Open ended question to elicit additional information
<p>6. Conclusion</p> <p>For subsequent implementations of such a ‘professional learning partnership’ do you have any suggestions relating to the establishment & implementation of such a community?</p>		X		Open-ended question to elicit additional information

Stage 2 - Data

After data collection from Stage 1 and partial analysis using a combination of manual sorting and searching with Microsoft Word, it became evident that further investigation into the lack of interaction between the groups would be necessary. This was carried out by:

- The collection of practicum statistics and the history surrounding the GDE program from an informal interview with a long standing member of faculty administration staff; supported by numerical data obtained from a central database systems officer to enable a more accurate description of the cohort.
- A methodical collation and interpretation of the written reports associated with course assessment Task 3.

Both of these data sources were entered into a Filemaker Pro database for analysis and possible clarification of the underlying reasons for the poor interaction with the mentors.

An example of an entry in this database is shown in Fig 3.3

Browse Layout: Layout #1 Record: 160 Total: 178 Unsorted		Sninit BF9929679 School Name Windang PS Task Option Option B PrimSec Primary Subj Area K12 Mentor? Yes Tech Competence ME	Sn 9929679 Gender F DOB 17/6/1980 Citizenship AU Method Primary Method Double	Completed GDE 9929679 Completed GDE2 2002 YR UOW 2001 UOW Qualif BA AnyPG 1 PG Year 0 ANy UG 3 UG Year 2001 AnyTAFE dip 1 TAFE dip Yr 0 Art Drama English ESL French History Italian Japanese Music Primary Science 2 Soc Science 138
Positive The activity I designed was influenced however, by one of the online mentors, after seeing what she had done with her class, I thought of transforming one of the English sheets my class completed into a computer based activity.				
Negative I am unsure of the protocol for use of these computers, as the students did not use them once while I was there. My practicum was extended over many months and I was there only a few days a week, however, I did not see any proof of students work or hear or see of any games. I am unsure of why the students were not given the opportunity to use the computers, I'm sure I saw a word processor and games on the opening screen of the computer.				
ICT resources In my classroom there were 3 computers connected to a printer. There were 2 computers in the library and 1 in the staffroom that were connected to the net. I am unsure how many other computers there were in other classrooms.				

Figure 3.3: Stage 2 Written Report Data entry example

An overview of the data that was collected from these key players and related contexts in both stage 1 and stage 2 is presented in Table 3.5.

Table 3.5: Data Summary

Data Focus	Stage	Data Type and Method of Collection	Method Of Analysis	To inform the research question:
Pre-service Teachers	1	<i>Online discussions:</i> Scheduled course task- from online	Close reading beginning of theme identification through combination	Question 2 What are the features that impact on the formation and/or sustainability of a PLP, with specific reference to: i. Teachers ii. Teacher preparation institutions
	1	<i>Pre-Interview Survey / Interview:</i> <i>Face to face- self selection</i>	Close reading and theme identification	
	2	<i>Pre-service Teacher profiles:</i> from central database	Collation and thematic analysis of online postings	
	2	<i>Written reports:</i> scheduled course task- from ICT coordinator	Text analysis and theme identification	
Practicing Teachers (Online Mentors)	1	<i>Survey:</i> from email/face to face	Close reading for emerging issues	
	1	<i>Online discussions:</i> Scheduled course task- from online	Close reading beginning of theme identification through combination	
	1	<i>Interviews:</i> Face to face- from email / telephone	Individual analysis, collation and theme identification	
University context	1	<i>Interviews:</i> Re course background from long standing academics	Individual analysis, collation and theme identification	Question 1 How do you design a professional learning partnership (PLP) to connect pre-service and practicing teachers in a technology-supported environment ?
Schools context - primary and high schools	1	<i>General & specific snapshots:</i> from teaching colleagues	Review and identification of key characteristics	
Links between University and schools	1	Historical information and Practicum statistics	Review and report formation	

3.4.2 *Data analysis procedures*

The data collected in stage 1 consisted of a survey of the prospective OLM, interviews with the key players, background data about the course and environmental contexts.

The **surveys** were analysed to obtain descriptive statistics about their previous experiences.

- The survey of the OLM provided information regarding their knowledge and understanding of ICT and thus allowed me to be aware of any online issues that may arise including technical or the ability to address classroom experience requests from the PSTs.
- The pre-interview survey for the PST provided me with initial data, which helped determine the nature and focus of the subsequent face-to-face interviews. For example - 4 out of the 6 respondents stated they would have liked some form of face to face contact with the OLM and therefore I was able to include reference to this in the actual interview (Question 8 – Setup)

The **online discussions** were analysed looking for specific factors that may have influenced how they responded. These postings in the learning management system WebCT were compiled and downloaded as a text document and imported into Microsoft Word. This allowed the use of the search tool within Word to analyse the text within each question. For example searching for the term integration in the compiled Question 2 text returned

*My observations of a minimal **integration** of information technology into this science department mirrors my experience as a parent of teenage children attending another local high school, where the content and structure of the topics has not changed since the year 'dot'*

Message no. 364 posted by PST(cwg65) on Wed May 15, 2002 20:00

This therefore was able to give me an insight into the environments in which the PSTs were placed and also for later cross checking of other PST who did their practicum in this same school. This was then further analysed for particular issues and possible requests to the mentors, relating that environment.

Searches of the online discussions of this form thus provided valuable insights into the possible areas where mentoring interaction and support may have been required.

This key word analysis was very useful in the examination of this data and the identification of themes and therefore similar approaches were used with the sets of **interviews** with the PSTs, OLMs and academics.

In each case the individual interviews were transcribed and through close reading, examined separately for key issues. To aid this process a collation sheet for recording key points was used to see if recurring themes emerged. Fig 3.4 is the template that was used for this purpose.

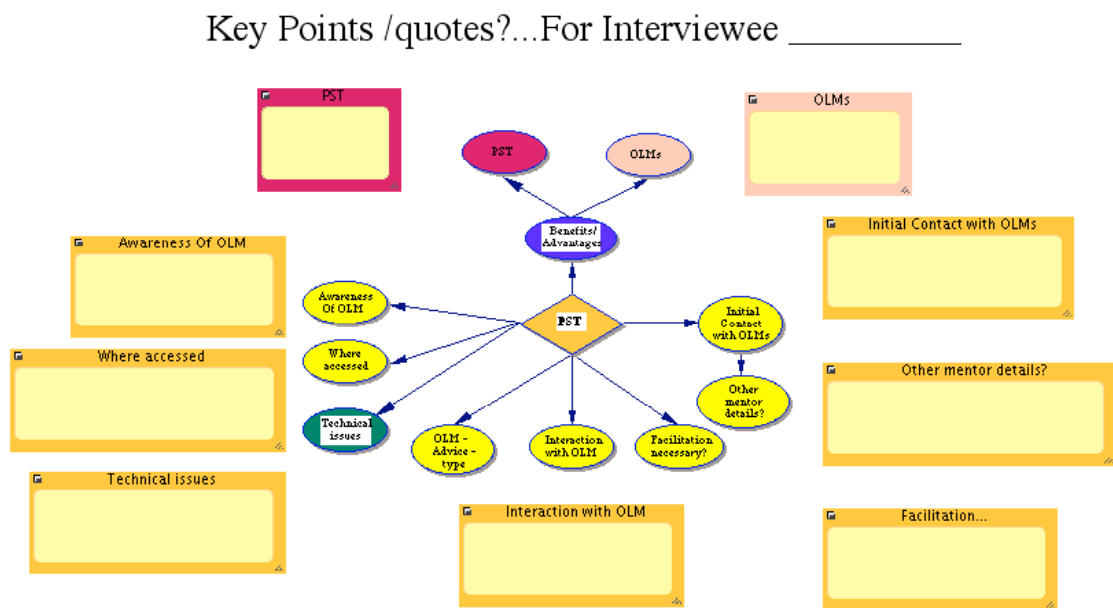


Figure 3.4: Interview Template for theme identification

The individual interviews were then combined and similar key word analysis was carried out in order to see what happened from the different perspectives of these key players.

Additional analysis of practicum statistics from current and previous years was conducted using numerical data manipulated in the spreadsheet Microsoft Excel.

Stage 2 data analysis

Analysis of this data generally revealed little in the form of expected interactions even though the online framework was established to allow this to occur. It was therefore necessary to examine the **PSTs profiles and their written reports** in an attempt to uncover possible explanations as to why this was the case. The profile data was obtained from a University Central database in spreadsheet format and analysis was carried out using sorting and graphing tools of the software. This revealed a more detailed picture of the

PST giving additional profile data such as the average age of the PST in the GDE course had been increasing in the last three years but this was not really an insight as to why there was poor communication online. Hence a more in depth examination of the written reports helped provide a better understanding as to what really happened.

Each of the 178 written reports was closely read and the relevant data entered into a specially designed the Filemaker Pro database. (Fig 3.3). As various themes emerged the fields and reports in this database were modified many times to accommodate the raw data that was provided. Additional PST data provided by the University's central database was merged into this Filemaker file to allow cross checking with the report data. PST experiences while on practicum were grouped under the fields of Positive, Negative and Interesting. The software allowed various filters to be placed on the data to assist in theme identification. Examples of such filters included:

All records showing mentor contact in high schools;

Display records showing level of technology competence and positive

The technique of collating all comments from a particular field was also used to extract common issues and this helped simplify the analysis.

In summary the process of analysis of this data was carried out in three layers. The *first layer* of analysis was based around the **designed** online environment in determining 'what happened' when certain structures were put in place.

The interactions were examined within the groups and across groupings. From this data it was hoped to determine the patterns and trends to inform the design and support required for a professional learning partnership.

The *second layer* of analysis was to expose patterns and trends that may give a clearer picture of the possible components of a professional learning partnership. This was achieved by analysing the **not designed** data components of the key players (not initially visible) to obtain a broad description of their individual and group characteristics and also of the places in which they worked and studied.

The *third layer* of analysis was framed on re-interpreting what happened in the designed interaction with the benefit of group knowledge and hindsight.

3.5 The Key Players and Places

The overall context for the study was formulated around the integration of the people and these places. The expected interrelationships when placed within the time constraints of the one-year GDE course are shown in Figure 3.5.

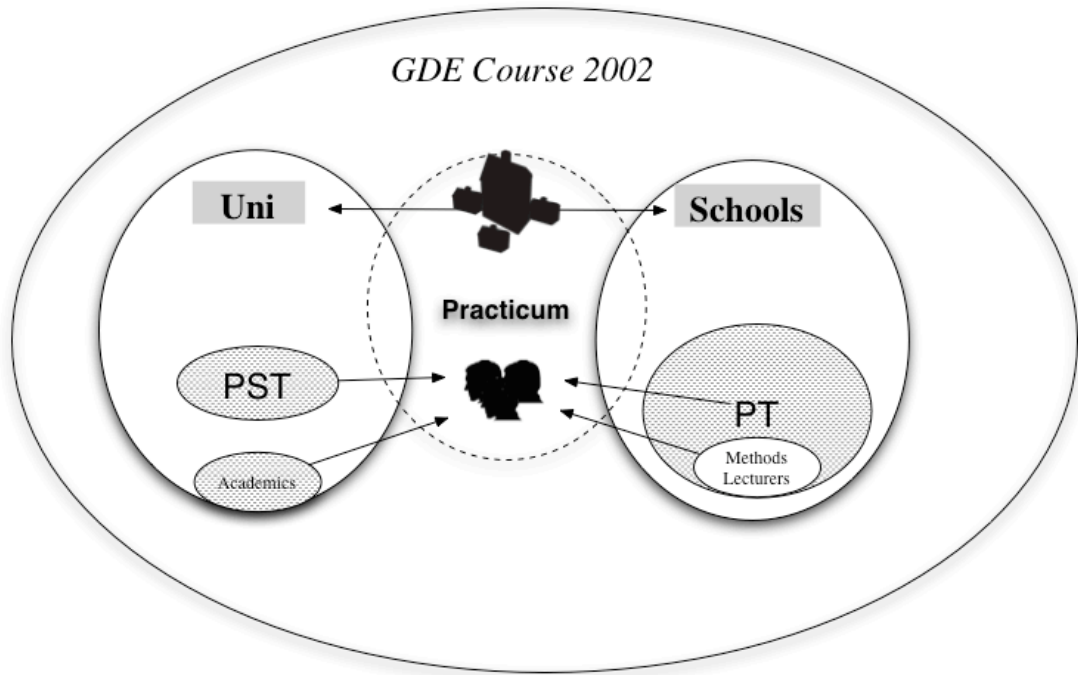


Figure 3.5: Existing ‘not designed’ Context Components

These interrelationships were bounded by course restraints – the main restriction being the requirement for the program to fit into one year. The main interactions between the components were **not designed** as part of the study and were laid down by the course design. The **designed** components using the vehicle of *ICT* were expressed *online* and were focussed on the pre-service teachers’ experience while they were on practicum. The following rich description of the stakeholders and research context are drawn from the data as described in Table 3.1.

3.5.1 The Key Players – the People Involved

The description of the people involved in this study, the pre-service teachers, practicing teachers, academics and the researcher have been drawn from university profile databases, interviews and observations. These stakeholders were able to interact in the various environments that were determined by either the course, the university structure, or the online environment established by the researcher.

3.5.1.1 The Pre-Service Teachers (PST)

Data collected from the central university student database showed that the pre-service teachers for the GDE cohort of 2002 consisted of 178 students, 56 male and 122 female with 109 local students, 63

Canadian students and 6 international students. The Canadian contingent was made up of full fee paying students who had come to the University to complete their final year of teacher training. Analysis of various characteristics of the group was also useful in determining the general background of these key players.

The characteristics examined were:

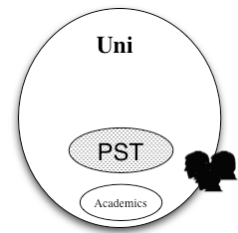
- Academic background
- Initial group structures
- Course structures
- Technology awareness and access

Academic background

The majority of these students had just completed an undergraduate degree – mostly not related to education. Table 3.6 below shows their undergraduate course of study and indicates the range of degrees and previous study patterns that were represented by this group of pre-service teachers.

Table 3.6: Degree Range of Pre-Service Teachers

Degree	Undergraduate	Postgraduate
BA	52	6
BSc	12	3
B Comm	3	-
BCA	7	-
B Eng	6	-
B Maths	5	-
B Info Sys	1	1
Other	2	2
Not available (Degree specialization unknown)	83	



Initial group structures

The course coordinator and other lecturers observed a number of main groupings at the beginning of the course – these largely being dependant on the PSTs previous educational experience and background. These 178 students came from diverse backgrounds and therefore certain group structures arrived with the students. For example, the Canadians, students who had recently graduated from the University of Wollongong or a small group of mature aged students. Many of the non-local students also had established small social units by sharing accommodation – the Canadians tended to combine in small groups of three or four to share living expenses. The mature age students also tended to form little groups – many of whom had families and/or had taken a long break before resuming their tertiary studies.

The coordinator of the GDE program endeavoured to establish some sense of a social community amongst the students by encouraging them to mix in ‘out of class’ activities. These included a special “getting to know you” barbeque during the first week, and various lunchtime seminars that would inform them about aspects of the course as well as giving them an opportunity to relate to each other in a relaxed setting. Historically, these events had been effective in breaking the ice for the disparate groups within the cohort.

The coordinator in planning discussions for the study and other academics in follow up interviews commented that at some of these initial groupings tended to remain throughout the year.

The structure of the course also allowed the formation of subgroups that created both social and professional bonds between the students. These classes provided environments where strong friendships and professional associations were established. A number of these associations extended into the schools where some students, of the same teaching method or specialisation, ended up sharing the same school(s) for their practicum experiences. This tended to be more likely where the specialisation was Primary method. As indicated in Figure 3.6 further examination of the broad categories of citizenship, age, and course of study of the local cohort of students who had previously studied at University of Wollongong showed the diversity of the group and possible reasons for subsequent sub groups that later form within this group of key players.

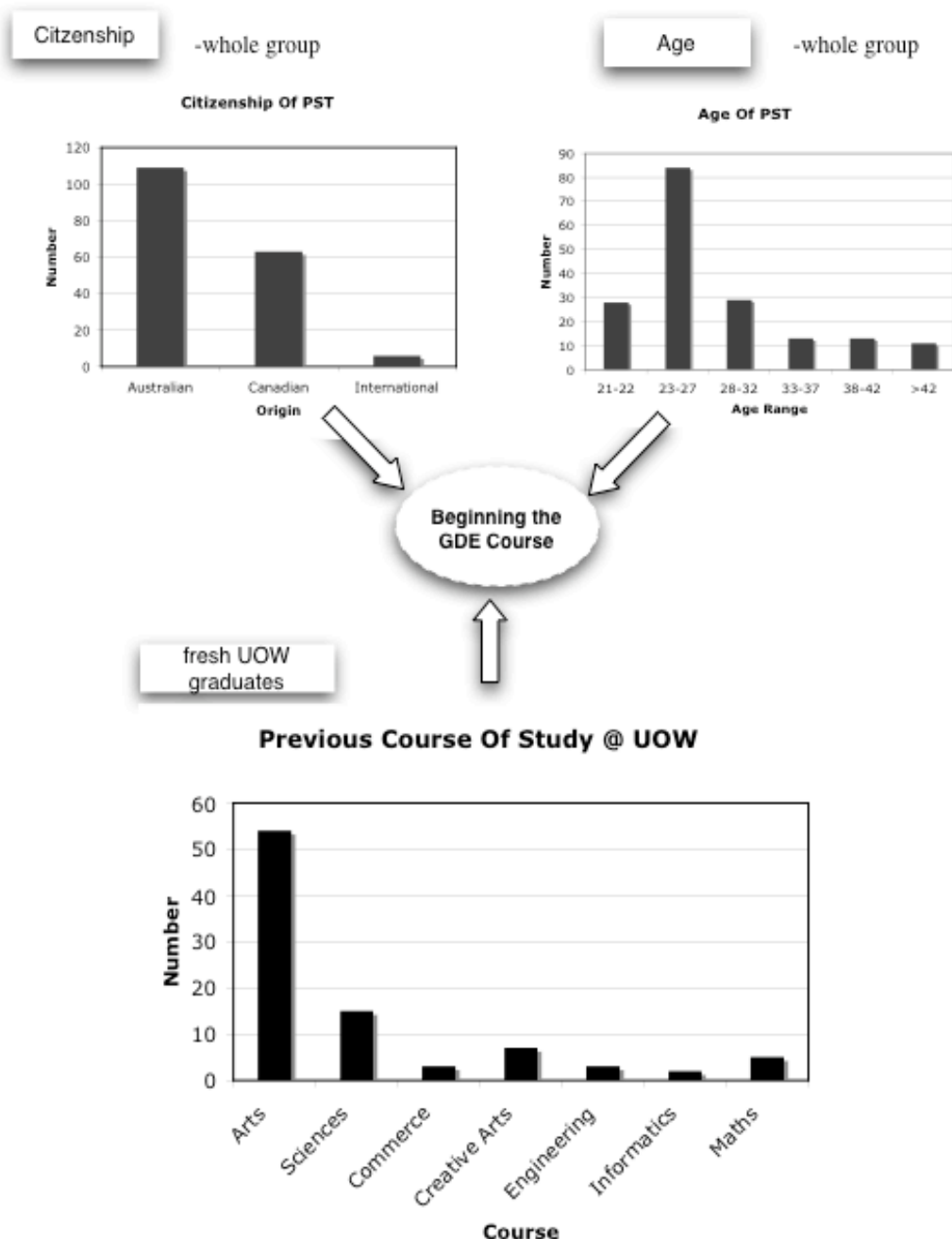


Figure 3.6: PST Groups Entering the GDE Course

Using the characteristic of *citizenship* the students were broadly grouped into Australian, Canadian and other international origin (Figure 3.3). The Australian students had come from all parts of the country and included a small group who had grown up in the local area, and completed their education in and around the University of Wollongong. The Canadian students all came from the same Canadian state but had studied and lived in different towns and cities and therefore were still strangers with only their nationality in common.

Examination of the *age* of the cohort showed there were a high proportion of students that were outside the expected age for tertiary study. Mature aged students returning generally after a long break from study occupied a large percentage of the whole group. (22.5% were 30 years of age or older - Figure 3.3).

Another group entering the course could be referred to as *fresh UOW graduates*. The majority of these students had just completed their undergraduate or a postgraduate degree at the University of Wollongong and had some prior interaction with each other in common lectures and tutorials.

Course Structures

Once enrolled in the course these student groups were affected by the course components of three common strand subjects- compulsory to the whole group, tutorials –smaller groups relating to the common strands, and elective teaching methods – small groups specific to the PST's teaching speciality. The course and subject context of a typical PST is shown in Figure 3.7.

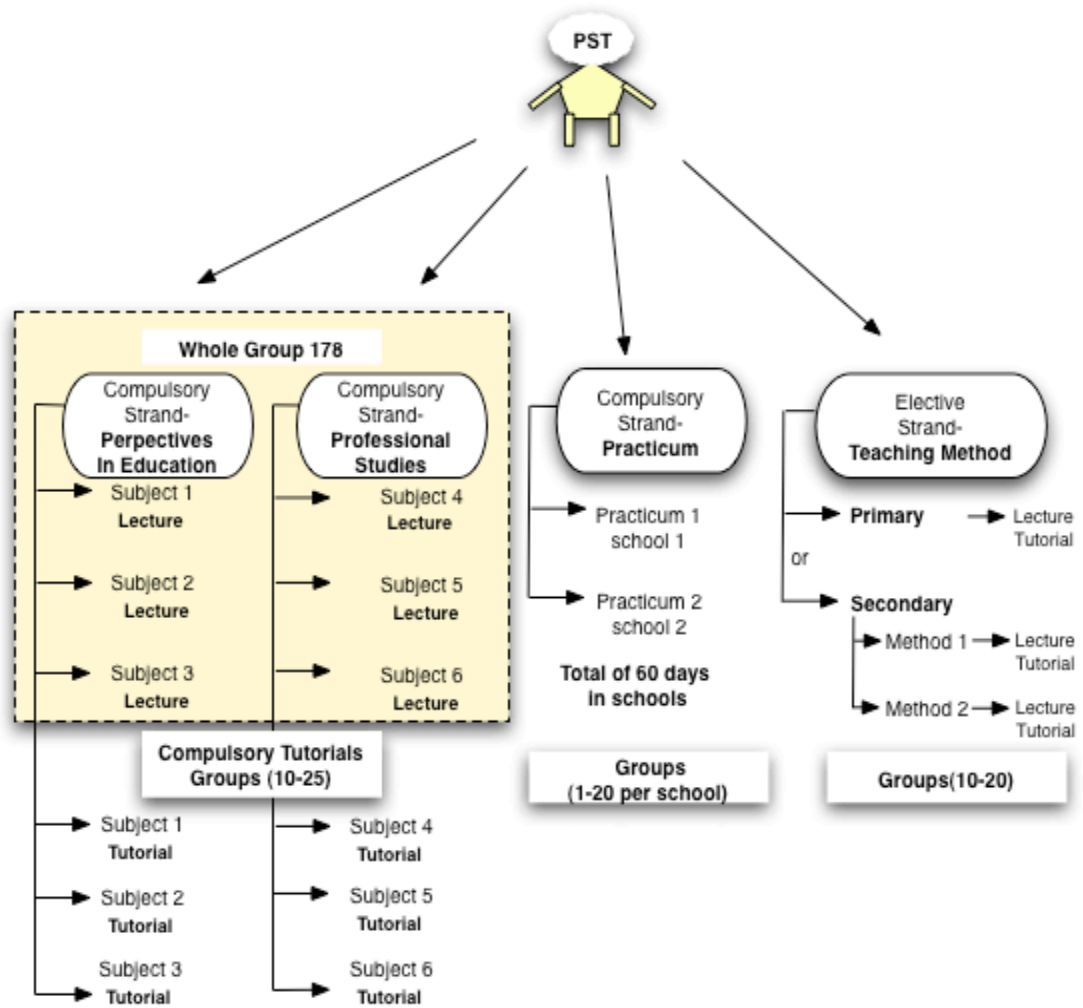


Figure 3.7: Course Context for a Typical PST

The two compulsory subject strands were conducted on campus by faculty staff using mass lectures as the delivery mechanism. These subject strands had associated tutorials and these were presented in smaller class groups. They often consisted of a comprehensive mix of students that were established due to convenience, (time, availability), rather than a course related characteristic such as primary, high school or chosen teaching specialization.

The compulsory practicum strand consisting of two school-based placements -Practicum 1 and Practicum 2, which were generally carried out in two different school settings.

The teaching method strand, was taught, either on campus or in a local school, by a practicing teacher, who was considered a specialist in their particular teaching area. (Figure 3.2). These classes, covering a wide range of teaching specializations, were selected by the students and therefore resulted in further groups being formed. This fourth strand did

allow for the establishment of more homogeneous groups, where the students, approximately 10-20 per group, would learn the skills to become a teacher of a specific teaching discipline. Figure 3.8 shows the range of teaching methods and their corresponding group size.

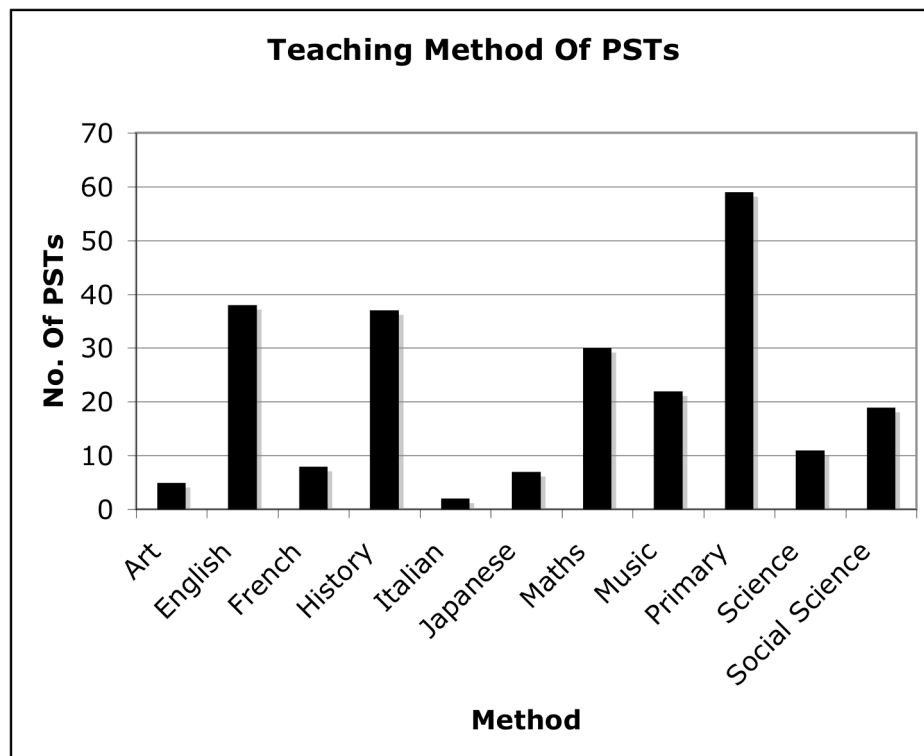


Figure 3.8: Teaching Methods

These methods classes formed the basis of many collaborative groups, both on campus and, for some, during their school practicum experiences. The students were able to choose one, two or possibly three teaching methods and therefore there was an overlap in some of these groups. Some of the larger methods classes were again split into separate classes to allow for more manageable groups. A further breakdown of these groups can be seen in Table 3.7, which gives the gender of the PST's in each teaching method.

Table 3.7: Gender Distribution of PSTs Teaching Method

Method	Number	Male	Female
Art	5	1	4
Drama	6	2	4
English	39	12	27
ESL/French	8	2	6
Japanese	7	0	7
History	27	8	19
Mathematics	29	18	11
Music	22	12	10
Primary	58	14	44
Science	12	2	10
Social Science	19	7	12

Technology awareness and access

The students arrived for the course with a wide range of ability and experience in relation to awareness and integration of ICT. This had been a result of their pathways through their undergraduate degrees and personal experience at secondary school, home and possibly in the work force.

The exposure to the use of technology during their undergraduate degree was generally limited to introductory skill sessions and task preparation using the basic applications of word processing, data bases, email and Internet use, with little awareness of the educational software and its use in the classroom. This range of experiences was historically the case for most students entering this post graduate course and various course modifications had been made in recent years in an effort to raise the skill and awareness level of ICT of these beginning teachers.

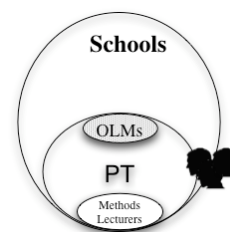
Depending on their previous undergraduate courses they may have experienced an online learning management system (LMS) such as **WebCT** or **Blackboard**, for various course activities. All students as part of this course were required to be familiar with the general

online services provided by the University such as enrolment activity, assessment results and email communication.

They all had access to technology at various locations *on campus* including computer laboratories, the library and resources centres. This access was potentially extensive—approximately 14 hours per weekday and 10 hours per day on weekends during session and sessional breaks. They also had limited technical support available during these times, and often relied on the support of each other in solving technology related problems. Due to the mixed backgrounds of this student intake their technology access *off campus* was variable. The majority of the Canadian contingent did not have their own computer facilities and Internet access at home whereas students with families or living a reasonable distance from campus mostly had their own computer, associated peripherals and access to the Internet. A growing trend also emerged with this group in that many students owned or had access to computer laptops for their course use and personal use while in schools.

3.5.1.2 Practicing Teachers (PT)

In order to provide online support a team of active and experienced practicing teachers was formed. These teachers would be selected by a personal interview to become the **‘online mentors’** who would support the pre-service teachers in a professional learning environment that would be designed to allow interaction between the key players.



All schools have always had a range of experienced and less experienced teachers but this is becoming more evident as the range of ages of teachers in our schools becomes more pronounced (Table 3.5). Education departments are increasingly concerned about this lack of experience.

A large-scale generational change in the profession resulting from expected retirements at unprecedented rates is likely in the next few years. In just fifteen years to 2001, the median age of the teaching population rose appreciably—from 34 to 43 years—with 44 per cent being older than 45 years. Male teachers are concentrated much more heavily in the older age groups. These trends are set to continue. (DEST, 2003, p. 15)

Teachers in schools in N.S.W have not been sufficiently trained – or don’t feel comfortable with technology either outside or inside the classroom. The following comments made by

PSTs while on practicum support this statement and give an indication of the ICT level of confidence and competence of some of the current cohort of practicing teachers.

There isn't a lot of confidence within the staff in terms of IT and therefore computer use is limited. PST (aj235531)

Overall, my supervisor is an excellent science teacher. But when it came to IT she only knew the basics and was very uncomfortable teaching the subject. PST (mg2290960)

I believe my supervising teacher had a very narrow view of technology, her limited knowledge of the computer effected how much she could teach or implement into the classroom. PST (gc2214982)

Many of these teachers will be retiring within the next 10 years and therefore are somewhat reluctant to experience or experiment with new classroom practices. The task of introducing and developing the use of information and communication technologies into schools has been largely carried out by enthusiastic, self-taught teachers, who usually have received minimal formal professional development in this area. This will be an ongoing problem in relation to the supply and demand of teachers in our schools. Tables 3.8, 3.9, 3.10, give current projection data for the supply and demand of teachers in Australia.

Table 3.8: Percentage of Teachers in Each Age Group

***Source:** 1996 data from ABS Census custom tables, projections prepared by the author. The projections assume constant student-teacher ratios from 1999; DETYA school enrolment projections; no substantial change in net separations (resignations, reentry and retirement) for each five year age range from 1996, and that beginning teachers are mostly under 30. The projections assume the continuation of the general pattern apparent from 1991 and 1996 census data that, though about 80 percent of graduates enter teaching, by their early thirties fewer than 55 per cent of those with teaching qualifications are teaching; there is then a slight return to teaching through the late thirties, with almost 60 per cent of those in their early forties teaching; there is then a continuing loss through to retirement age; overall, fewer than half of those of with teaching qualifications of working age are teaching (Preston, 2000, p. 65-66)*

Table 3.9: Australia, *Primary* Teacher Supply and Demand Projections, 2000 to 2005

Table 3.10: Australia, *Secondary* Teacher Supply and Demand Projections, 2000 to 2005

Based on these projections, Preston (2000) and other similar reports there have been a number of suggested strategies to prevent the teacher shortages in our schools. These include (Durbridge, 1993, p. 4-6):

- National plan to address issues of teacher supply
- Raise the status and career paths of the teaching profession
- Improve the resourcing to public education
- Increase coordination and numbers of teachers being trained at university
- Special measures to attract people into teacher training
- Create alternative pathways for entry into the teaching profession
- Special programmes to recruit and support Aboriginal teachers.

- Increase professional development and re-training programs
- Coordinate and increase programs for teacher training for professionals in other fields.
- Improve job security for teachers
- Positively promote teaching and the public education system
- Addressing the shortage of casual, contract and short-term relief teachers.
- Publicly campaigning for new recruits.

More recently others have called for similar strategies. For example ‘The Teaching Commission’ (2004) has suggested the following four closely linked strategies to remedy the problems in the field.

- **Compensating Teachers More Effectively.** To help lure more good teachers into the classroom and encourage the best teachers to stay, the Commission calls for pay hikes for all teachers and for teacher compensation to be linked to student performance
- **Bolstering Accountability in Teacher Education.** ...to revamp teacher education programs and make teacher quality a priority.
- **Strengthening State Teacher Licensing and Certification Requirements.** to raise the passing scores required on current certification exams and to ensure that every prospective teacher passes a rigorous test of both content and essential skills.
- **Empowering School Leaders as CEOs.** ...need to give principals ultimate say over personnel decisions? ...[they] in turn, must provide teachers with more opportunities to become decision makers and to benefit from mentoring and ongoing professional development known to improve classroom instruction.

As shown by the previous tables there is a growing shortage of teachers in both primary and high schools and the current beginning teachers need to be supported in their early years of teaching in order to remain in the teaching service and develop as competent and happy teachers. The interaction with experienced teachers acting as their mentors may play a role in solving this problem. Therefore the selection of these online mentors was approached using the following framework:

- Initial Considerations
- What special attributes would these people need to have in order to fulfil this role?
- What would be their expected role as OLMs

Initial considerations

A *nonprobabilistic* method was used for selecting these teachers, as the researcher was not expecting to answer questions like “how often” or “how much” but to discover what actually happens between practicing and pre-service teachers and the implications of the interactions that take place. Honigmann (1982) refers to this “as discovering what occurs, the implications of what occurs and the relationships linking occurrences”. The researchers’ local knowledge and contacts lead to the choice of an appropriate sampling strategy called purposeful (Patton, 1990, p. 169) whereby this selection was based on information rich cases with the size and specific cases depending on the study purpose.

In this study the researcher wanted to gain an insight into what happens and therefore he must select a sample of teachers from which the most can be learned. As Chein explains, “they are called in precisely because of their special experience and competence”. ‘Purposive’ Chein (1981) or Patton (1990) argues that the logic and power of purposeful sampling lies in selecting “information-rich case studies” for studies in depth. These rich cases provide a great deal about issues of central importance to the purpose of the research, and thus the term ‘purposeful sampling’. LeCompte et al., (1993) use the term ‘criterion-based selection’ in preference to ‘purposeful’ sampling and in this study a broad based set of criteria was used in order to select this sample. The following characteristics were considered in selecting the pool of “enthusiastic teachers”:

- **Teaching area;** - the 2002 GDE cohort covered a wide range of teaching specializations (see Figure 3.5)
- **Sex;** a balance to correspond to the 1(male): 2 (female) ratio of the GDE cohort
- **Primary/secondary** background; cohort; primary (58): secondary (120)
- **Experience with technology** in the classroom; - varying levels to allow for the range of experiences demonstrated by the pre-service teachers.

It was hoped that this community of mentors would cover many of these characteristics and could balance the corresponding ratios of the GDE group. The expected number in this sample was not fixed as the above criteria were used as the main determinant for gaining an enthusiastic cohort of supportive teachers. These teachers would come from both primary and high schools in the area close to the University of Wollongong. The proximity to the University was a consideration as the online mentors would initially be required to meet as a group to discuss and understand the aims of the study and also could be visited by the researcher if necessary.

What special attributes would these people need to have in order to fulfil this role?

In the design of this professional learning partnership the main criterion for selecting these teachers was that they would be *willing to participate* in the study. They would also require empathy with the needs of beginning teachers and the ability to share their expertise that was gained from being competent classroom teachers.

Their use and understanding of educational technologies would also be important but this would be secondary to general classroom experience. The communication with the PSTs would primarily be online and therefore a basic level of expertise in this area would be required. The pre-service teachers involved in the GDE program were involved in a number of different courses ranging from early childhood and primary, to various secondary specializations such as mathematics and history. It was therefore important to acquire teachers with backgrounds that would be conversant with at least one of the issues that may arise in these teaching areas.

In summary these teachers would therefore need to:

- be willing to be involved in the study
- be competent classroom teachers in their area of teaching
- be aware of the possibilities of using ICT in a variety of classroom scenarios
- be comfortable in their subject(s) area
- feel comfortable with using the online means of communication

What would be their expected role as OLMs

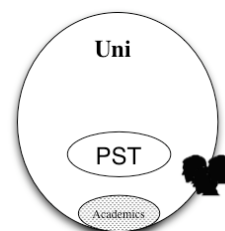
It was envisaged that these teachers would act as mentors in an online environment and would be available to support the pre-service teachers in a variety of communication modes including online discussion and email.

This communication and support may be required as either a reactive or proactive approach. They would be required to react to particular requests by the pre-service teachers as might arise while on practicum, or in preparation for particular course tasks. These requests may be of a general classroom nature or it may have a specific reference to the use of ICT. Through awareness of, or familiarity with, the environment and of the items being discussed, the mentors needed to be able to suggest or make comment about the requested or perceived needs of the pre-service teachers.

The anticipated main form of contact would be online by means of a website that could be accessed by all participants in the “partnership”. They would be required to periodically access the site and respond to any “support requests” from the pre-service teachers. The website would allow for these requests to be directed to a specific mentor or the mentor group as a whole. The pre-service teachers would also be able to contact the mentors by direct email communication.

3.5.1.3 Academics

The GDE program had undergone minor changes in recent years largely driven by the changing needs of the various educational systems that were the recipients of the trained teachers during practicum and also upon course completion. The integration of the ICT into the program was also a factor in the iterative modifications of what and when various components were taught.



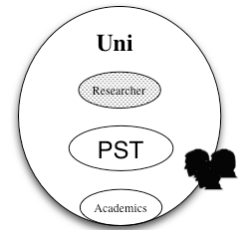
These program changes also had an impact on the number of staff who taught or coordinated various course components. Interviews with the program director, ICT coordinator and other members of staff who had recently been connected in some way with the implementation of the GDE showed that there was a lack of staff continuity in this program and therefore the level of involvement and commitment varied from year to year. The staff involvement during the 2002 GDE instance is summarised in Table 3.11

Table 3.11: Academic Staff and Support – GDE Program 2002

Staff Title	Role
Program Director (1)	Coordination of staff, lectures, timetables, student issues
Strand lecturers (6)	Teaching content for particular strands, tutorial coordination
Method Lecturers (14)	Teaching content for particular teaching methods lectures/tutorials, practicum supervision and coordination
ICT Coordinator (1)	ICT content for lectures/tutorials, online coordination and management of ICT tasks
Program/ICT support (2)	Administration, ICT technical support-lab and online

3.5.1.4 *The Researcher*

I was a classroom teacher with a long-standing interest in the use of technology to enhance learning and teaching before taking on the role as the researcher for this study.



My early teaching background was in secondary mathematics teaching but this developed into a passion relating to information and communications technologies. A period of six years as a computer education consultant with a government education system helped establish my firm belief in the use of technology in the classroom and the increasing need for ongoing professional development for all teachers.

On completion of this role I returned to a school as a classroom teacher in a local secondary high school and taught mathematics and computing studies to all levels but my increased interest and involvement in promoting and supporting ICT in the classroom resulted in me becoming the professional development coordinator for the school. This role allowed me to work at school level, and sometimes across district schools, with staff from all faculties and also administration staff, in developing skills and exploring the ways in which technology could be integrated in the classroom.

For anyone involved in technology in schools it is essential that they are aware of new developments in items of hardware, software and classroom usage and this cannot be done within the confines of the teachers' own school. I made myself aware of these ongoing developments from a variety of sources. These included the numerous sites on the Internet that pertain to technology, intermittent professional development activities provided by education departments and/or computer suppliers but also via local collegial network groups.

I maintained a link with my local school and the educational departmental region by being the schools' Technology in Learning And Teaching (TILT) coordinator. It was this role that allowed me to support regional initiatives by coordinating 'in school' professional development activities and preparing teachers for formal ICT related courses. Whilst I was teaching in local schools I also pursued further academic qualifications in educational technology at the University Of Wollongong. My formal teaching qualifications relating to classroom teaching and the use of ICT, prior to the study, include:

- Graduate Diploma In Education
- Graduate Diploma in Educational Technology (Information Technology)
- Master Of Education (IT)

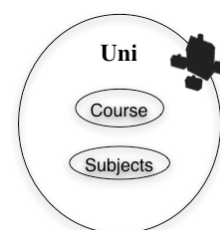
These intervals of study also coincided with short periods of sessional teaching with the Faculty of Education at the University of Wollongong. A combination of these casual teaching sessions and study sessions made me more aware of the disparity of ICT usage of beginning teachers and practicing teachers in our schools.

3.5.2 The Places – Not Designed and Designed

The study was centred on the Faculty of Education at the University of Wollongong, a small university on the east coast of Australia. A number of different contexts were involved in the study. There were some that were fixed and were not able to be modified while others could be changed to suit the purpose of the study. The following section gives a detailed description of these **‘not designed’** and **‘designed’** environmental contexts.

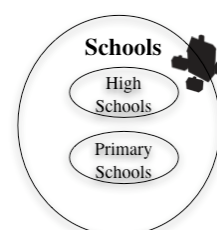
3.5.2.1 The University Context – Not Designed

The University of Wollongong (UOW) consists of many separate campuses or locations but the Wollongong campus was used for this study. The Faculty of Education offers both undergraduate and postgraduate degrees in teaching, specializing in Early Childhood, Primary, Physical Education and a one year ‘end on’ Graduate Diploma in Education course. The pre-service teachers in this study, undertaking the Graduate Diploma in Education (GDE), mainly attended lectures and tutorials relating to specific subjects on this campus but some of these, depending on the pre-service’s specialization, were conducted in nearby local schools.



3.5.2.2 The School Context – Not designed

For the students undertaking a GDE course at UOW the schools in the local area play an important role. The schools that are associated with the Faculty of Education are part of the wider education community including the state NSW Department of Education schools, Catholic Education Schools and a number of independent schools. Within these educational systems the broad categories of primary and high schools are catered for but also there are preschools - specializing in early childhood programs, special education schools for children with physical and intellectual disabilities and central or middle schools that try to bridge the gap between primary and high schools.



The pre-service teachers experience in a variety of these schools would be formed on the basis of:

- Observation days in preparation for their teaching practicum
- Two periods of practicum – Practicum 1 (4 weeks) and Practicum 2 (7 weeks)
- Specialized short term visits as part of individual subjects

The following four school snapshots give a typical description of the type of schools experienced by the pre-service teachers in the GDE program. They also serve as a sample of the environments in which the practicing teachers, as online mentors, teach. These snapshots also provide additional insights into the environments where the PSTs formed new communities. These insights are supported by:

- Staffroom layouts and relative positions within the school
- Practicing teachers (PT) to pre-service teacher (PST) ratios
- Possible interrelationship indications

They also provide a more authentic understanding of the environments into which the PSTs were placed.

3.5.2.3 *School Snapshots during Practicum 1 Experience*

To undertake their practicums – Practicum 1 and Practicum 2, the PSTs were sent to two or possibly three schools usually within one hours' drive of the University. Table 3.12 gives a summary of the attributes of four typical schools in which the students undertook their school experiences during Practicum 1.

Table 3.12: School Snapshot Summary – Practicum 1

Snapshot	School Type	Size	No Of PSTs
A	High School	Large	11
B	High School	Small	20
C	Primary School	Large	9
D	Primary School	Small	1

A brief description of each school is provided to give context to the work and study environments of the practicing and pre-service teachers.

School Snapshot A – “AA High School”

(A large high school)

This school, located within half an hours’ drive of the UOW campus could be considered as typical of a comprehensive NSW government high school. The school, which was established in 1992, had approximately 1100 students and a staff of approximately 80 full time teachers and 10 casual (part-time) teachers. These teachers could be considered representative of the teaching profession in relation to age and classroom teaching experience. The technological infrastructure consisted of three dedicated computing laboratories and a number of ‘access areas’ whereby students and staff could use the technology. Staffrooms were generally well equipped with at least 2 computers and a laser printer. The school has a well-established intranet and the Internet could be accessed from most points throughout the school.

As in most local schools this school had a number of motivated and enthusiastic staff that were willing to investigate the integration of ICT and its application to their overall learning and teaching methodology. Each year this school supported a number of practicum students from the University of Wollongong, from other teacher education courses, and the GDE. The school had a practicum coordinator who liaised with the University in preparing and supporting the PSTs.

During this practicum the school hosted 11 PSTs. These PSTs were associated with six teaching areas but due to the nature of their teaching area and layout within the school they tended to be grouped in four staff areas. This resulted in them mixing with their fellow PSTs, their corresponding supervising teachers and also teachers who may have been outside their teaching area. This allowed them to interact and share experiences within the school possibly without the need to seek support beyond the boundaries of the school. Figure 3.9 shows the various interaction opportunities within this school in each teaching area and across the various staffrooms.

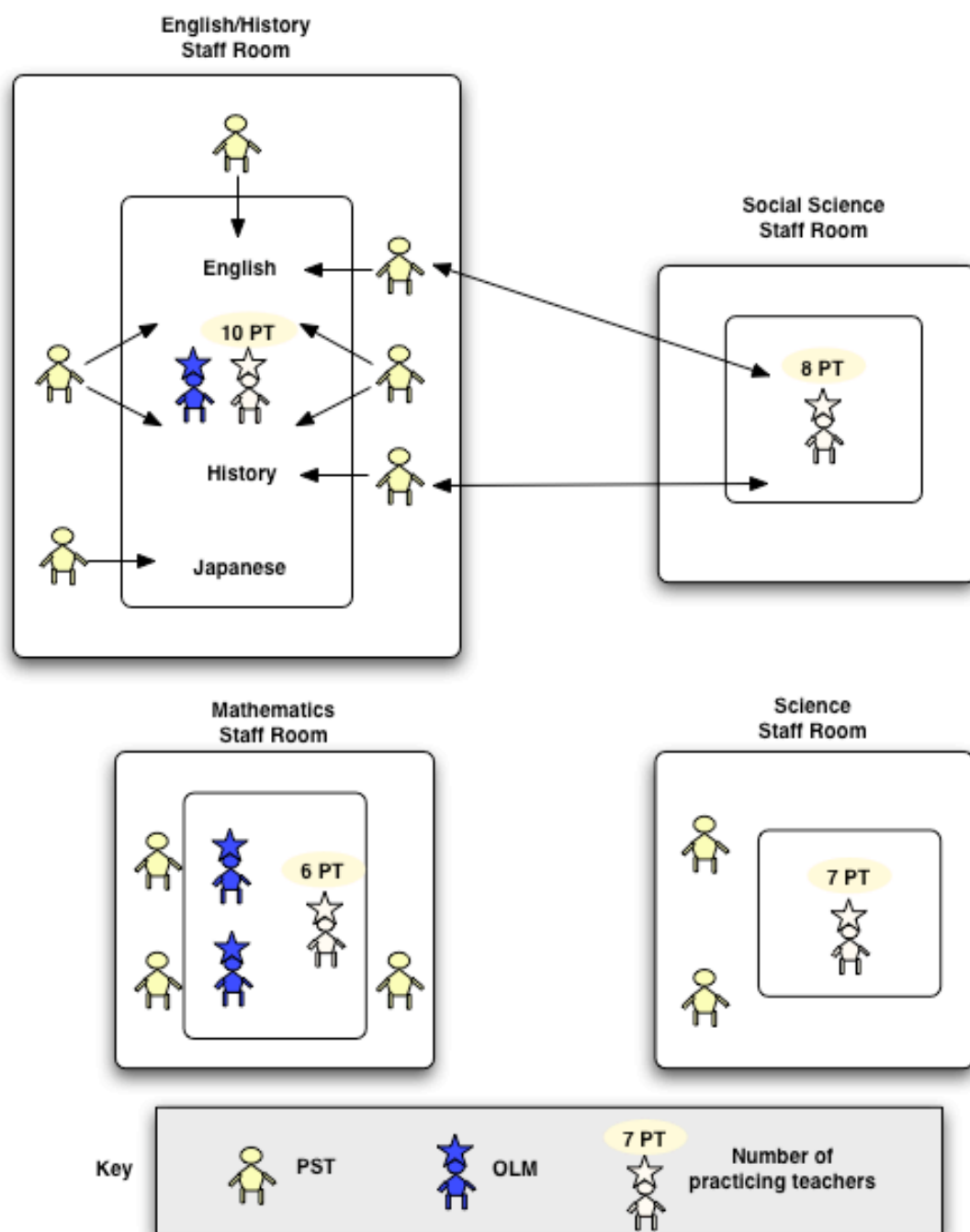


Figure 3.9: School Snapshot A – Staff Room and PST Distribution

This local school was typical of the high schools involved in the practicums but atypical in that it also was the home school of three of the online mentors.

School Snapshot B – “BB High School”

(A small high school)

During this first practicum this small local government high school of approximately 400 students and 30 staff was the school placement for four PSTs. The school was approximately 40 years old with many additions of portable classrooms to cater for the changes in demography. The technology infrastructure had been provided on a needs basis with standard classrooms being converted to computer rooms as required. A few classrooms had stand-alone computers that were infrequently used to support general classroom activities. The school blocks were distributed across a wide area and therefore the opportunity for the PSTs to interact with each other was geographically limiting. Figure 3.10 gives a representation of the relationship between the internal ratio of PST to PT and the individual staff room proximity.

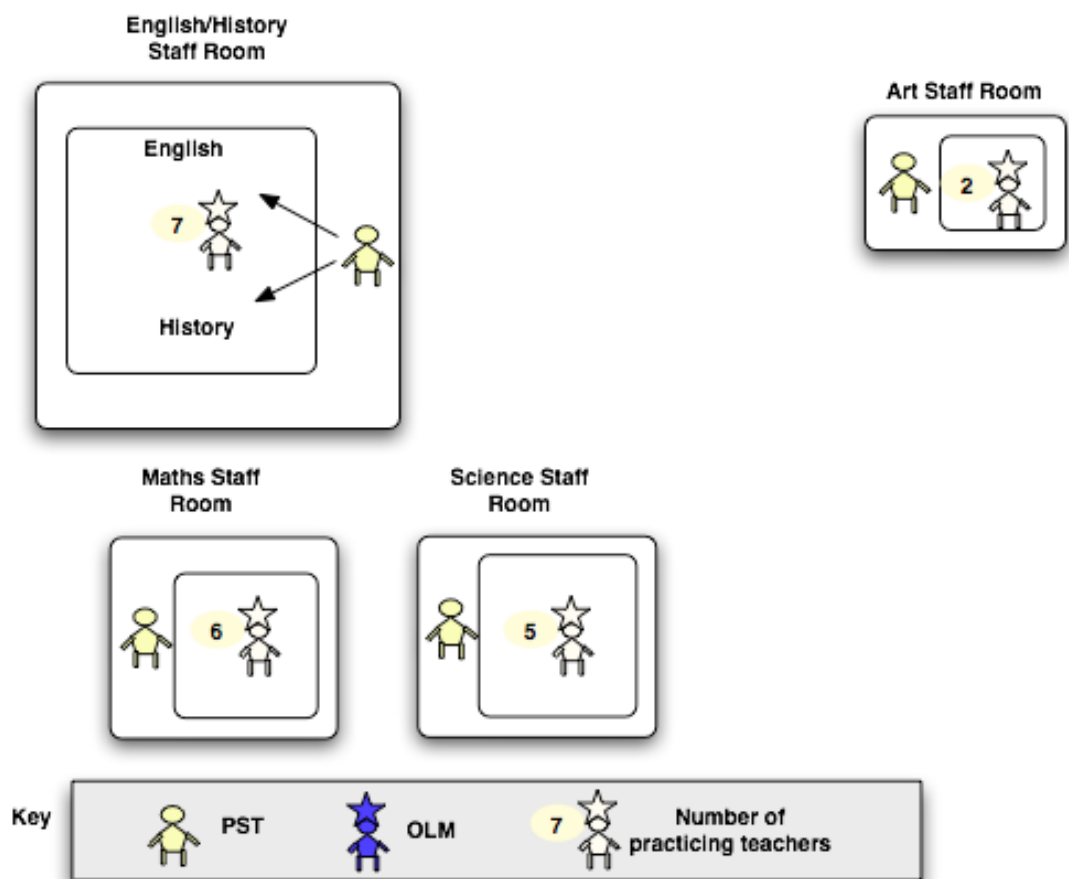


Figure 3.10: School Snapshot B – Prac 1 – Staff Room and PST Distribution

School Snapshot C – “CC Primary School”

(A small primary school)

This was a large primary school of approximately 700 students with a permanent staff of approximately 25 full time and 5 part time teachers. Access to computers was available in most of the classrooms and there was one computer room that was used for computer literacy lessons on a rotational basis. The school hosted a placement for 9 PSTs and provided them with a small “praccies” staff room for their own use while on this first practicum experience. This room was within one minute walking distance of the main staff room and the PSTs were able to interact with their supervising teachers at various times during the day. Lunchtimes and recess breaks were busy times and the large numbers made informal chat and access to everyday staffroom banter difficult due to the relatively small staff room. Figure 3.11 shows the ratio of practicing teachers to pre-service teachers and their relative location in this school.

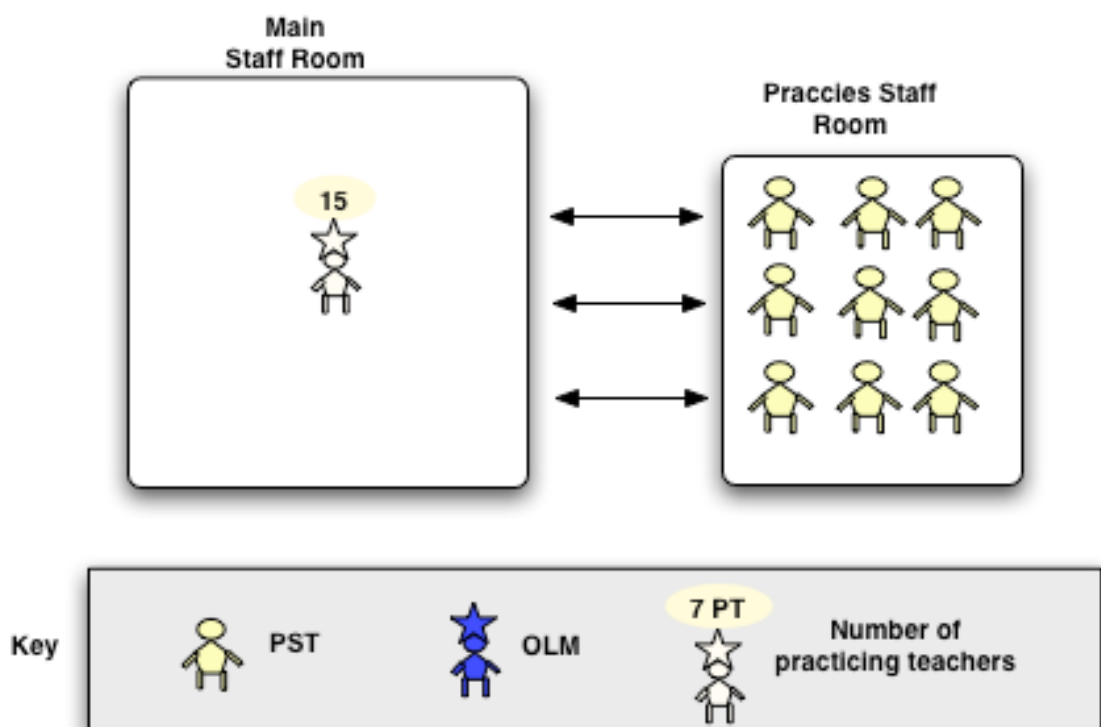


Figure 3.11: School Snapshot C – Prac 1 – Staff Room and PST Distribution

School Snapshot D – “DD Primary School”

(A small primary school)

This small school, located within 10 minutes of the UOW campus was a small comprehensive government primary school with approximately 170 students and 10 staff. The students came from a wide range of non-English speaking backgrounds and the majority of the stable staff had been teaching for at least 15 years. The ICT facilities were representative of a school of this size- a general-purpose computer laboratory and each classroom having at least 2-3 workstations. Most computers in the school had intranet/Internet access. The level of staff ICT expertise was generally low – with the impetus for technology use across the school being driven by one enthusiastic teacher. The school was open for pre-service teacher access as part of the formal practicum and infrequent informal visitation by students and UOW staff throughout the year.

This small school was only able to accommodate small numbers of PST's during the practicum periods. In Practicum 1 there was only one PST for the permanent staff of six and they were all located in a single staff room (see Figure 3.12). This arrangement allowed for direct access to potentially all six staff during the recess and lunch breaks.

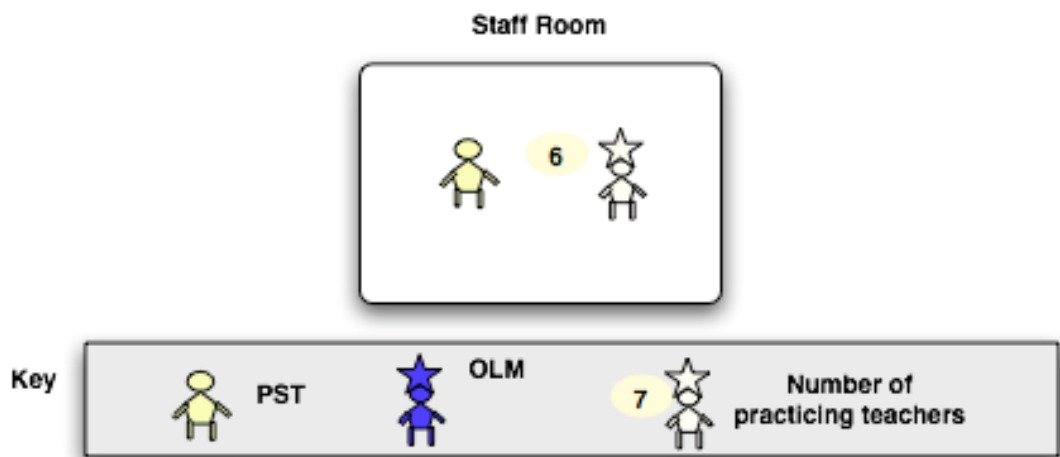


Figure 3.12: School Snapshot D – Prac 1 – Staff Room and PST Distribution

3.5.2.4 The Practicum Context- designed

As part of the GDE course all students were required to successfully complete two periods of in-school experience. The placement of these practicums during the period of the course is shown in Figure 3.13.



Figure 3.13: Practicum Placements During the Year 2002

The initial practicum, Practicum 1, was conducted early in the year to enable the PSTs to experience teaching and authentic school environments in order to help them decide if this was their correct career choice. The second practicum, Practicum 2, was undertaken two thirds of the way through their course at a time when they have some understanding of the theories of teaching and learning and were ready to experience the practicalities of the classroom.

The PSTs had an option to do part of this second practicum in school overseas. The Faculty of Education had a long-term arrangement with education departments in Fiji, Thailand, China and Malaysia whereby the PSTs could teach in their schools for two weeks. The PSTs that took this opportunity were able to combine a holiday (one extra week) with experience of teaching in an environment that was different from their previous Australian school practicums.

3.5.2.5 The Online Context-designed

The University Of Wollongong required all students to have an online presence for administration purposes and all lecturers were also encouraged to use online communications and interactivity for their subject. For this the students required a user name/password and a related email address in order for them to participate in subject and course related activities. Table 3.13 show the range of online activities that all students were expected to use.

Table 3.13: Range of Expected Online Activities

Administrational Issues	Specific Course Related Issues
course enrolment	subject outlines
payment of fees	resources such as readings
session calendars	lecture notes
Students Online Services (SOLS) – including announcements, timetable issues	assignment submission
	assessment results

A number of the pre-service teachers, depending on their previous course pathways, may have been exposed to online activities such as assignment submission, discussion forums and had the opportunity to be in email contact with their lecturers. Depending on when and where they undertook their undergraduate degree the majority of students enrolled in this course, had experienced limited online activities within their tertiary institution. The main online environment across the University campus was provided by the learning management system “WebCT”, with most subjects having a specific site available for use within their course. These sites were generally used as a content conduit, together with limited educational usage such as reference lists, lecture notes, online discussions and surveys. Figure 3.14 shows the homepage that was used for the GDE course.

Figure 3.14: The Online Environment – GDE Homepage

3.5.2.6 Interaction within the Contexts

The study was designed to establish an environment that would support and allow interaction between the key players set in the contexts that were **not designed** (university, schools, course and subjects), and also **designed** (practicum and online),

This interrelationship is shown in Figure 3.15.

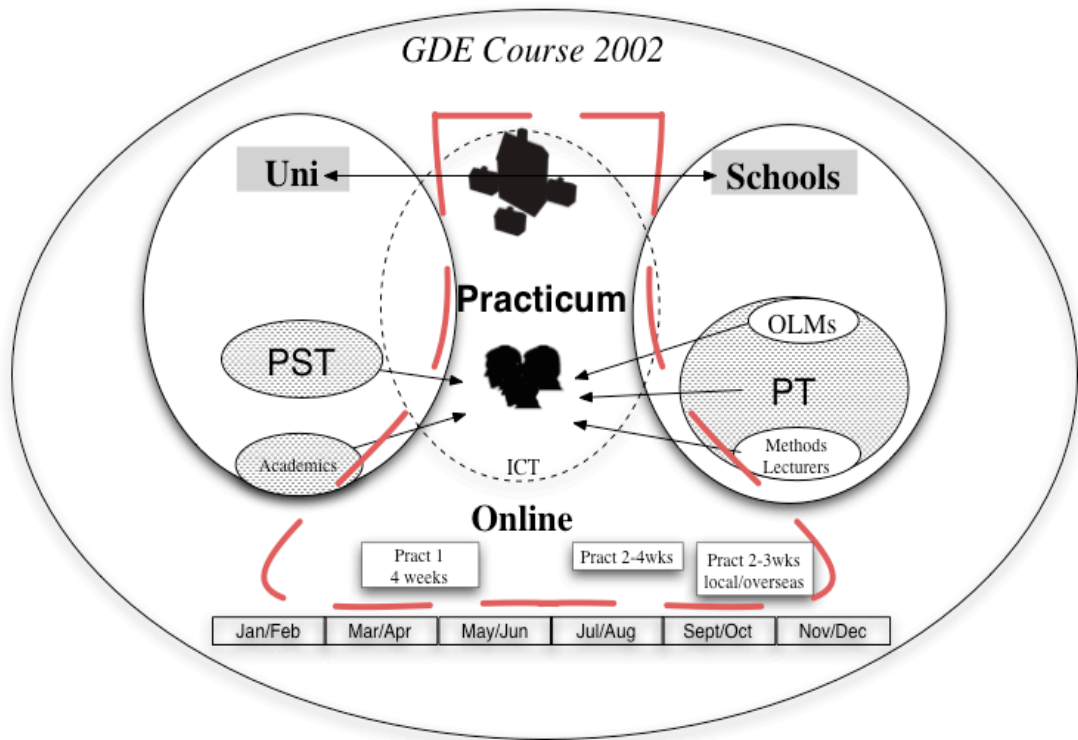


Figure 3.15: Integrating the Context Components Within the Year Course

3.6 The Study Context –My Perspective as the Researcher

Being a practicing teacher with twenty-five years teaching experience I had extensive knowledge of the school environment but had little awareness of the other ‘place’ – the university. Apart from contact with the University’s Education faculty as part of my involvement in previous practicums at school, and as a Post Graduate student, during the completion of a Masters Degree, I had limited involvement with the University.

As a beginning researcher and being unfamiliar with the university environment there were a number of issues that may have impacted on the direction and overall flow of the study.

These included:

- Exposure to and lack of awareness of various university/faculty protocols;
- Awareness of the course structure/subject structure of the GDE program;
 - The GDE course had been modified and restructured over the previous few years in an effort to integrate an ICT component
 - Not aware of the proposed restructuring of the Program
 - The range and diversity of the student cohort
- Limited knowledge of the staff and level of involvement within the course/Faculty–
(only aware of the coordinator and her efforts in integrating an ICT component)

The next chapter will report on the initial analysis of the data with respect to the patterns of interaction with one group of the key players, the online mentors, in various contexts.

Chapter 4 – Mentor Preparation for Potential Interaction with Pre-Service Teachers

4.1 Introduction

In this chapter the development of the professional learning partnership will be described in terms of how this interaction took place with the online mentors, the pre-service teachers and the academics. The main determinant controlling this interaction was the fixed and relatively inflexible time framework set down by the one-year course structure.

The various interactions will be explained in terms of time but also in relation to the location, environment and the overlapping relationships with the other key players.

The interaction between the pre-service teachers and the online mentors occurred throughout the year and the level of this interaction varied as the year progressed, and as the project developed. Figure 4.1 shows the chronological sequence of events that drove these interactions.

4.2 The OLM Selection Process - Interaction between the Practicing Teachers and the Researcher

The selection of the OLM took place in the first few weeks of the school year and prior to the beginning of the semester for the PST. (Figure 4.1)

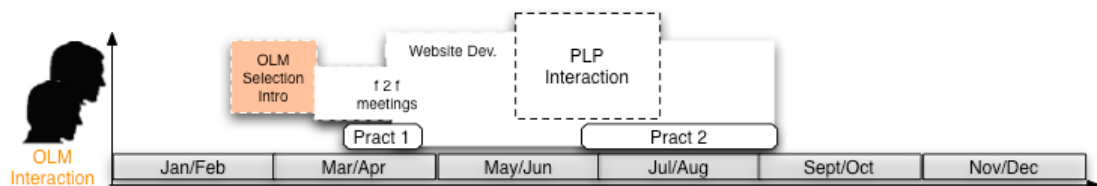


Figure 4.1: OLM – Selection and Introduction

As introduced in Chapter 3 – a team of active and experienced practicing teachers was needed to take the role of online mentors. It was hoped that these teachers would become an integral component of the proposed professional learning environment.

In choosing these teachers, a purposeful sampling approach was taken, whereby information-rich cases could be selected for in-depth study (Patton, 1990, p. 169). The aim was to select teachers who were willing to talk openly, and provide an insight into possible characteristics required for such a partnership. The selection of these collaborating teachers and their invitation to be involved in the study was related to my background and school district involvement. My teaching experience and local contacts in the field of information and communications technologies in teaching had considerable influence on who was approached and how and where these prospective mentors were to be contacted.

This initial contact with the practicing teachers was made in a variety of ways early in the school year. Through personal and professional associations in the local school district I was able to make contact with these teachers and recruit them into the project. These OLMs were drawn through professional associations, via my local high school, and district meetings of the teachers.

4.2.1 Selection – via Professional Association

My Local High School

Part of the role in my school was to professionally develop the staff in the use and integration of ICT. I was often working with members from various faculties, one-to-one, in their classroom and also running and evaluating courses within the school. As a member of a comprehensive local high school with a student population of 1100 and a staff of 83, my professional development collaboration with many members of this staff provided an ideal opportunity to approach some of them to be involved in the study as online mentors. At the beginning of the school year teachers are extremely busy with new timetables, classes, and students and a teachers' time is valuable. Due to the chaotic nature of the beginning of the year it was decided to wait until the 3rd week of term to approach the staff for a possible commitment. The initial approach was based on my perceptions about the teachers who might want to take part. In this school a large proportion of teachers had been teaching for more than 20 years and were approaching retirement. Considering the staff as a whole I had to bear in mind that a high proportion of teachers might be loathed to take on something extra – over and above their already crowded curriculum commitments. In any school there are teachers who, regardless of age, experience or workload are still enthusiastic and willing to entertain new ideas or approaches that may benefit them personally, or the teaching profession as a whole. Through previous dealings

with staff at the school I was able to short list a number of teachers who may have like to be involved.

The characteristics affecting this short list included:

- Approachability;
- Working relationship;
- Extracurricular Involvement; and
- Understanding the needs of pre-service students.

During the following two weeks I approached ten staff to request their participation in the study. This invitation consisted of an informal verbal approach to the teacher whereby each was given an outline of the aims of the study with the anticipated benefits of such a professional learning community. At the conclusion of these brief meetings each teacher was given a study summary (Appendix 1) and a brief biography sheet to complete (Appendix 2).

All teachers that were approached initially responded positively to the need for such a study and the majority agreed, verbally, 'on the spot' to be involved. Three of these potential participants tentatively agreed but needed to consider their involvement based on family and school commitments. I was then informed within a week of their intention to participate.

At the conclusion of this two-week period, seven of the ten teachers had indicated they would like to be involved in the study. The three teachers who declined expressed limited time availability, family commitments such as holidays and long service leave as impediments to study participation.

As a general follow up and to clarify any issues informal meetings were then arranged with the seven participants to further discuss their involvement. These meetings took place in weeks 3 and 4 of the school term - after the initial preparatory establishment of timetables, classes and the 'normal chaos' that occurs at the beginning of the school year.

At least one face-to-face meeting was made with each of these teachers in an informal personal manner. I was conscious that spare time is valuable for busy teachers and therefore these meetings were established at their convenience. These discussions tended to be more efficient in terms of time and the opportunity to share any concerns. Generally these meetings were positive and the teachers showed enthusiasm for the study aims. A few concerns relating to their ability to devote enough time to mentoring the pre-service

teachers and their ability to cope with a new online environment were raised but these did not seem to inhibit their attitudes towards the study. Table 4.1 shows the meeting summary with these seven teachers.

Table 4.1: Initial Meetings with the OLMs

OLM	1-1 Meetings	Small Group Meeting	No of Meetings Prior to Commencement
OLM-D	✓		1
OLM-LT	✓	✓	2
OLM-K	✓✓	✓	3
OLM-F	✓	✓	2
OLM-CA	✓	✓	2
OLM-L	✓✓	✓	3
OLM-J	✓✓✓	✓	4

These teachers did not normally meet as a group, either socially, or as part of their school commitments and therefore interaction between them was minimal. The scheduled meetings took place at recess, lunchtime or after school – generally in the scarce ‘free time’ of a busy teacher. It was in these meetings that the broad concepts, intentions and expectations of the research were introduced. The majority of these teachers in this group were intrigued by the project and were enthusiastic about being involved but a number of concerns such as time available and technological competence were raised at these meetings.

As part of the selection process each of the teachers and to gain an informal comparative level all teachers were asked to self rate their level of expertise with ICT, based on their experience with administrative tasks and use in the classroom. The basis for this survey was adapted from a number of similar surveys that had been used to ascertain the level of technology use by teachers in schools. (Bidner, 1998), (Solmon, 1998). Figure 4.2 indicates the resultant self-rating survey that was used to allow these teachers to rate their technology expertise.

Online Mentor – Self Rating ICT Survey

Your Name: _____

Name of the school _____

1. Comment on your experience in the following areas
 - Computers in general
 - Word processing packages
 - Other Applications such as
 Spreadsheets, Databases, Drawing/Painting,
 Presentation software (e.g. Power Point)
 - Use of the internet
 - Desktop publishing
2. How do students use computers in your classes?
3. How much do you believe that technology has changed or determined the way you teach your classes? (please check one)

___Greatly ___Somewhat ___Not at all
4. Comment on any recent technology-related professional development activity in which you participated
5. Based on the above responses rate your experience and comfort level in using technology in the classroom and for the preparation of teaching materials as either

High, Medium, or Low

Figure 4.2: OLMs – Self-rating ICT Survey

Validity is the degree to which the instrument used enables us to measure what it is intended. The question

"What is the match between information provided by the instrument and what we want to know – the inferences we want to draw from the results?". (Herman & Winters, 1992, p.31)

enabled me to gain a broad view of their technology background and be aware of possible areas especially relating to their online usage that I would need to support. The OLM self-ratings generally supported my professional understanding of their skills and the subsequent activities online did not conflict with the nature of the results of the survey.

Their overall teaching experience was obtained based on the number of years as a full time classroom teacher. Experience was noted as high if they had taught for more than fifteen years, medium for five to ten years, and low, if they had taught for less than five years. From this selection approach Table 4.2 shows details of these OLMs, an assessment of their ICT expertise based on the ICT survey (Figure 4.2) and my professional perception of their teaching experience.

Table 4.2: OLMs from My School

OLM (n=7)	Sex	School	Own perception of ICT Expertise	Teaching Experience
OLM-D	M	High School	High	High
OLM-LT	M	High School	Medium	High
OLM-K	F	High School	Medium	High
OLM-F	F	High School	Medium	Medium
OLM-CA	F	High School	Medium	High
OLM-L	F	High School	Low	Medium
OLM-J	M	High School	Low	High
Percentages at this stage of selection	M=42% F=58%	H=100% P= 0%	H =14% M=57% L=29%	H=71% M=29 L=0%

4.2.2 Selection via - Professional Association

District Support Meetings

To support my role in the school I was also a committed member of the local schools computer coordinators' network. In most educational circles many formal and informal collegiate networks are established to provide a conduit for learning and sharing. In particular relation to ICT, these networks are generally very active both online and with face-to-face meetings. They are also a venue for the cross fertilization of ideas. Teachers from early childhood, primary secondary and tertiary backgrounds are able to meet and discuss their problems and successes. This particular group, consisting of teachers from K-12 schools in the area, had regular meetings to share and discuss technology issues relevant to their schools, and to the district as a whole. The technological expertise of this group varied considerably but their enthusiasm and commitment to ICT integration was

paramount. The extent of teaching experience of the majority of the members of this group was high with many having been teaching for twenty years or more. Thus I was determined that this was a fertile ground for potential online mentors. For many, their involvement in ICT often provided an injection of enthusiasm and a distraction from some of the more mundane and repetitive tasks that are required of teachers.

Being a regular attendee at these network meetings I therefore met formally and often later, informally, with many fellow teachers of this group. This experience and knowledge was an important factor in being aware of the different school scenarios in which the pre-service teachers would undertake their practicum.

The means for supporting ICT in local schools had varied considerably over the past 10 years. This ranged from specific support units, established by government and non-government education departments to coordinate professional development activities in the local region, to informal 'get togethers' of enthusiastic teachers at individual schools.

There is increasing demand for semi formal meetings such as these and teachers at all stages of their career require access to expert assistance, from both para- professionals and other teachers, when they require it rather than from formal professional development activities. With respect to ICT

Work related to ICTs remains the strongest area of self-defined need for both primary and secondary teachers, eclipsing the rest of the priorities. (McRae et al., 2000, p. 9)

At the time of the study the state government New South Wales Department of School Education had been implementing various initiatives and support mechanisms for ICT implementation, but due to restructuring and budget cutbacks many of these structures became less supported by personnel such as computer education consultants. These consultants became increasingly required to support other aspects of ICT usage in schools such as school administration systems and government accountability reports at the expense of classroom ICT implementation. Teachers were forced to look for other means of support rather than the traditional structured professional development activities such as one-day workshops and short tutorial courses.

Regular, semi department sponsored meetings had become a focal point for teachers wishing to expand their technological expertise and keep in touch with developments that may affect their use of technology in the classroom. These meetings generally referred to as "Computer Coordinators meetings" brought teachers together with a wide range of both

in their technical expertise and experience in integrating technology. This mix, often varying from meeting to meeting, therefore allowed for tested and fresh ideas to be explained and shared.

I was heavily involved with this devolved model of ICT professional development activities in the district and this association required regular meetings that were held:

- within the local school community – for example - a high school and its ‘feeder’ primary schools;
- within the wider school region – where many school communities were able to meet and share ideas.

The first of these district meetings for the year was held at a local primary school, after school hours, in the last week of February 2002. It allowed me to approach a number of teachers to request their involvement in the study. The majority of teachers at this meeting were from local primary schools and having already approached staff from the local high school I decided to purposefully select from this ideal environment to obtain potential online mentors from the primary school sector.

The approach used for this selection environment was similar to that used for the local school association scenario:

1. a brief verbal introduction;
2. the provision of the summary of the study; and
3. a request for participation commitment within the following two-week period.

This individual interaction took place during breaks in the formal meeting. The teachers were approached individually and encouraged to participate in the study. Those approached were generally regular attendees at these meetings and therefore were known to me. At the conclusion of this meeting there was an immediate acceptance by four teachers to participate with a tentative acceptance by a further two teachers – these two teachers agreed to confirm their participation in the study by contacting me by phone, the week following the meeting. Table 4.3 shows details of these OLMs, from this selection method.

Table 4.3: OLMs from Professional Association

OLM (n=4)	Sex	School	Own perception of ICT Expertise	Teaching Experience
OLM-W	F	Primary School	High	High
OLM-JC	M	Primary School	High	High
OLM-H	M	Primary School	High	High
OLM-A	F	Primary School	Low	High
Total percentages at this stage of selection	M=45% F=55%	H=63% P= 37%	H =81% M=18% L=1%	H=82% M=18% L=0%

It was hoped that this group, which consisted of highly experienced primary teachers who were generally responsible for the implementation and development of ICT in their individual schools, would be able to make a valuable contribution to the ‘in school’ experiences of the pre-service teachers.

On reviewing the current acceptance by teachers at that stage of the selection process there was an imbalance with reference to the original selection criteria as described in Chapter 3. As can be seen from Tables 4.2 and 4.3 the teaching backgrounds and expertise of the volunteer teachers tended to be quite similar. The majority of teachers had high ICT expertise and many years of teaching experience.

I therefore decided to undertake further *purposeful selection* in order to gain a wider range in both teaching experience and ICT usage. This was to be achieved by contacting a number of personal colleagues in order to complete the group of ‘would be’ online mentors.

4.2.3 Selection via - Personal Association

The remainder of the OLM cohort was acquired by making personal approaches to these colleagues with whom I had associated both personally and professionally throughout my teaching career. An additional eight teacher colleagues were contacted by phone to request their involvement in the study. Later I approached three of this group in an informal social setting to further explain the aim of the study. The phone and face-to-face contact both allowed the teachers to comment personally and to ask questions about their possible involvement. Table 4.4 shows details of the OLMs that were recruited from this association.

Table 4.4: OLMs from Personal Association

OLM (n = 8)	Sex	School	Perceived ICT Level	Teaching Experience
OLM-JA	M	Primary School	High	High
OLM-G	M	Primary School	Medium	High
OLM-R	M	High School	Medium	High
OLM-A	M	High School	Medium	Low
OLM-CC	F	Primary School	Medium	Medium
OLM-GT	M	Primary School	Medium	Medium
OLM-T	F	Primary School	High	High
OLM- RK	F	Primary School	Low	High
Percentages at this stage of selection	M=53% F=47%	P=47% H= 53%	H =32% M=47% L=21%	H=74% M=21% L=5%

At this stage of the selection process a number of the teachers were eager to get started in the project. This was demonstrated by typical comments being made some of the group when they met with me in a social context.

When are we going to get going on this thing – what are we going to get that will tell me how to talk to the students online? - OLM-JA

I'm happy to be involved with these new teachers – I'm feeling a little stale in my teaching and this might give me a lift. - OLM-RK

4.3 Summary of the Selection Process

At the conclusion of the selection process a cohort of nineteen practicing teachers from a variety of teaching backgrounds and ICT experience had agreed to take part in the study and act as online mentors. Figure 4.3 shows the distribution of the final pool of OLMs based on where the selection and recruitment was made.

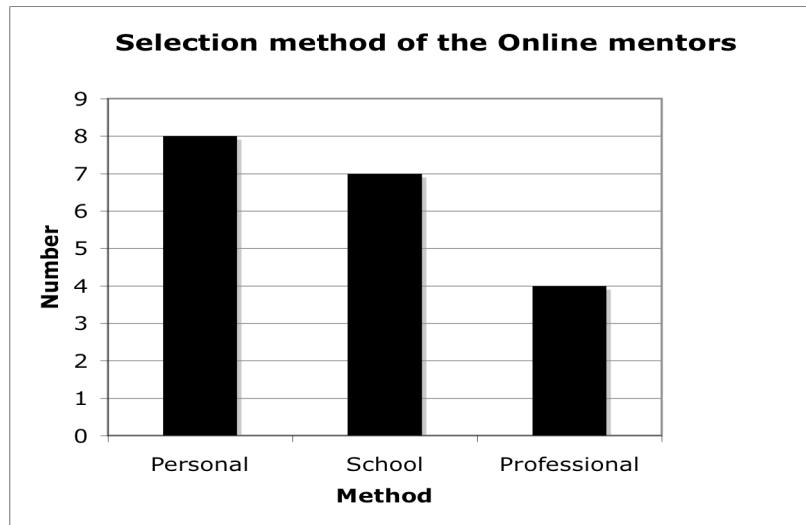


Figure 4.3: OLMs –All Selection Methods

4.3.1 Initial Concerns

There were only minor concerns expressed by the OLMs in their readiness for the study. These were mainly related to technology skill level and available time. Some of the teachers were initially worried about their level of technology skills and whether or not this would impede their ability to provide support to the pre-service teachers. The schools were slowly expanding their level of access to technology across most of the curriculum areas and the majority of teachers had received some form of professional development relating to ICT integration but their confidence with technology varied. This became evident in the questions asked and concerns raised at these meetings. These included:

I have never used email before. OLM-LT

What is an online discussiondo I need special software on my computer to do this? OLM-CA

Do I need a fast link to be able to take part? OLM-F

I can use a word processor and a spreadsheet for my students marks. Will I be able to do this? OLM-LT

I made it clear that I was more interested in their teaching background and their ability to empathize with the PSTs rather than their ICT expertise.

The majority of these teachers were relatively competent and confident in their personal administrative use of technology but were unsure if their experience in using ICT in the classroom was sufficient to be able to offer valuable advice of this nature to these beginning teachers.

I hope I can offer something ... I haven't used computers much in my classroom yet OLM-J

For the other main concern of available time some of the teachers hinted that the pressures of their school commitments might prevent them from providing regular online contact with these PSTs. Further typical comments are shown below.

Will I be able to do most of this from home, as I won't have time here at school? OLM-F

*I hope I will devote some sort of regular time to this – especially around exam marking period
OLM- CA*

4.3.2 Selection Criteria – Summary

The original criteria noted in Chapter 3 were satisfied and the broad range of experience and diverse teaching backgrounds of these teachers is shown in Table 4.5

At the initial face-to-face meetings they were all given a study summary (Appendix 1) and the OLM Brief Biography sheet (Appendix 2), but a number were unable to complete the details on the spot and therefore they were again given the opportunity to do this via email. This email also gave them an approximate study timeframe that would assist them in planning to cater for their involvement around their school commitments. This was also an opportunity to test their online skills regarding the use of email.

At the conclusion of this selection process a follow-up email “Mentor Update 1” (Appendix 3) was re-sent to all the mentors to:

- again confirm their involvement;
- thank them for their commitment and;
- give them a brief overview of the possible dates of their interaction with the PSTs.

This mentor update also included an attached document ‘OLM Brief Biography’ (Appendix 2) for those who had still to complete this form. The email also requested that they were to return the document and also to attach a personal photograph.

Table 4.5: Summary of the Selection Criteria for OLMs

OLM (n=19)	Selection Method	Sex	School Type	Teaching Background	Perceived ICT Expertise	Teaching Experience
OLM-D	School	M	High School	Maths	High	High
OLM-LT	School	M	High School	Maths/ School Admin.	Medium	High
OLM-K	School	F	High School	Maths	Medium	High
OLM-F	School	F	High School	Technology & App. Studies	Medium	Medium
OLM-CA	School	F	High School	English/ Language	Medium	High
OLM-L	School	F	High School	Geography	Low	Medium
OLM-J	School	M	High School	History	Low	High
OLM-W	Professional	F	Primary School	K-3/ Technology	High	High
OLM-JC	Professional	M	Primary School	Upper Primary	High	High
OLM-H	Professional	M	Primary School	Lower Primary	High	High
OLM-A	Professional	F	Primary School	K-6/Library	Low	High
OLM-JA	Personal	M	Primary	K-6 / Technology	High	High
OLM-G	Personal	M	Primary	K-6 / Technology	Medium	High
OLM-R	Personal	M	High	Science	Medium	High
OLM-A	Personal	M	High	PDHPE	Medium	Low
OLM-CC	Personal	F	Primary	K-6/ Technology	Medium	Medium
OLM-GT	Personal	M	Primary	K-6/Admin/ Technology	Medium	Medium
OLM-T	Personal	F	Primary	K-6 / Technology	High	High
OLM-RK	Personal	F	Primary	K-3/ Technology	Low	High

4.4 Selection Complete - The Complete Cohort – A Face-to-Face Meeting

Following the initial approach to the teachers requesting their involvement there was little communication between myself, and the group as a whole. The majority of the OLM Brief Biography sheets were returned in various forms- some as attachments in their original format, others with information in the body of the email and others in parts – for example the mentor photographs sent only as attachments. A few of the mentors contacted me either in person or by telephone to indicate that their information would be coming soon.

At this stage there had been a break of approximately 5 weeks since the initial OLM contacts. Over this time I had brief contact with a few of the teachers in a social context but little project related material was discussed. During this interim period there was an adjustment to the initial commitment of some of the 19 teachers. Two of the teachers had indicated that they were unable to take part due to personal and professional commitments, including a heavy school workload, changes in their teaching roles and overall school involvement.

Of the remaining seventeen teachers some had a professional association either in their own school or at network meetings but the whole group had not met face to face. A combined cohort face-to-face meeting was planned in order to bring the collaborating teachers together to allow them to discuss any project related issues and to meet socially. Figure 4.4 shows the period in which the initial meetings and the subsequent face-to-face combined meeting took place.

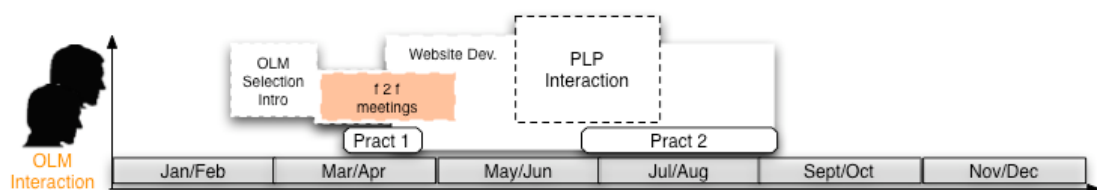


Figure 4.4: OLM - Face-to-Face Meetings

The teachers were all contacted by email with the second of the Mentor Updates (Appendix 4) or by phone regarding this meeting – which was held approximately 6 weeks prior to their planned “PLP interaction” with the pre-service students. This update also gave them details of how to access the course website providing the more active teachers with an opportunity to test logging on and gain some idea what they would be using in their interaction with PSTs.

A follow up reminder email, Mentor Update 3 (Appendix 5) was sent 2 weeks prior to the planned meeting. In the lead up to the meeting the OLMs had an opportunity to observe the interactions that were taking place between the PSTs while they were on their first practicum – Pract 1. Only a few of the OLMs were able to make this observation prior to the meeting.

This meeting was held after school hours at the University of Wollongong, a central location for the majority of these teachers. One member of the academic staff of the University - the GDE course coordinator, attended this meeting. The intention of this meeting was to provide all the committed teachers with an opportunity to come together as a group and gain a joint sense of understanding of what was involved in this project. Even though the majority of the teachers lived in the same city, some even working in the same school district, many had not met prior to the meeting. The agenda for the meeting is shown in Table 4.6.

Table 4.6: Face-to-Face Meeting Agenda

Item	Who
Reiteration of the project aims and plan	Researcher
An overview of the GDE course	Academic Coordinator
Explanation of the expectations	Researcher
GDE Website –going online	Researcher
Concerns and questions	Whole group
Distribution and explanation of the OLM folder (Appendix 6)	Researcher
Informal ‘wine and cheese’ refreshments to conclude	Researcher

Considering the range of IT skills amongst this group a brief demonstration was held to show the process of getting online and the environment in which they would be interacting with the PSTs. I had hoped that it might be possible at this meeting to allow the mentors to actually log in as themselves but it wasn’t achievable due to the procedural and somewhat restrictive nature of gaining online access for non-university personnel. The demonstration seemed to alleviate the initial apprehension of some of the mentors.

This was observed by informal comments through the demonstration session such as:

That's not as bad as I had expected. OLM-CA

Even with my IT skills I think even I can do that. OLM-RK

At this stage of the course the pre-service teachers had started to make use of the site for administrative purposes such as access to electronic versions of subject outlines and also for informal discussions leading up to the specific set tasks. This gave the practicing teachers a real sense of what to expect when they accessed the site as an online mentor. An “online mentors folder” was prepared for each mentor and it was presented at this meeting. The folder contained:

- An Online Mentor
- Online Mentor – Information Sheet
- Accessing the website
- Overview Student Tasks
- Task 2 – Discussion Analysis
- Task 3 – the Report Portfolio
- Mentor Log - recording sheet

(Appendix 6)

As well as providing them with a complete set of support documents and all communication to date, it was an opportunity to formalise their involvement with a hard copy resource. The representation of the mentors at this meeting was distributed relatively uniformly across the range of abilities and experience.

Their interaction and attendance can be seen in Table 4.7

Table 4.7: OLM Interaction and Attendance

OLM	Association	Continuation after Initial Meeting	Attendance at face-to-face meeting
OLM-JA	Personal	✓	✓
OLM-G	Personal	✗	✗
OLM-R	Personal	✗	✗
OLM-A	Personal	✓	✗
OLM-CC	Personal	✓	✓
OLM-GT	Personal	✓	✗
OLM-T	Personal	✓	✓
OLM- R	Personal	✓	✓
OLM-D	School	✓	✓
OLM-LT	School	✓	✓
OLM-K	School	✓	✓
OLM-F	School	✓	✓
OLM-CA	School	✓	✓
OLM-L	School	✓	✗
OLM-J	School	✓	✓
OLM-W	Professional	✓	✓
OLM-JC	Professional	✓	✗
OLM-H	Professional	✓	✓
OLM-A	Professional	✓	✗
n=19		17	12
% of teachers approached		90%	63%

At the conclusion of this meeting the mentors were informed that their individual access would be arranged as soon as possible and their online presence based on their OLM brief biographies would be incorporated. All mentors left the meeting excited at the prospect of being able to ‘go online’ but due to technical and institutional restrictions their access wasn’t available at this stage to allow those to actually experience the online environment.

4.5 Website Development

The focal hub for the intended ‘professional learning partnership’ was to be online and it was therefore necessary to examine and modify the current status of the online environment. Figure 4.5 indicates the period over which the current site was modified to incorporate the characteristics of the study.

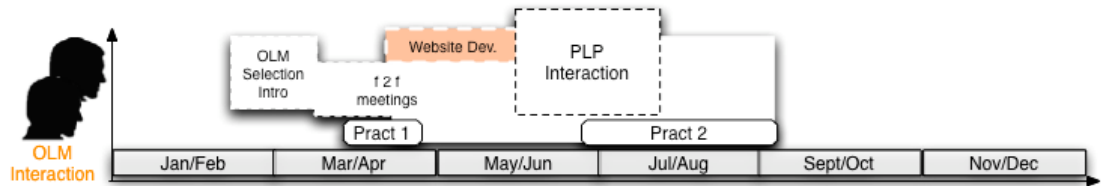


Figure 4.5: Website Development

At the beginning of the academic year all subjects have the opportunity to request an online environment for use during the semester or for the year. The basic layout of a subject site was then established using a specific Faculty of Education template. It was then the responsibility of the lecturer(s) or course coordinator to provide content and make or request any modifications to the site for the current years' course. Historically, the use of an online environment to support this course had encountered varying degrees of success. The course had a number of teaching strands and the ICT component in the year of this study was integrated into the Pedagogy strand. Some of the members of the academic staff involved in the course this year were not confident in contributing “online” and therefore it was only within this course strand that the PSTs has access to any course materials or had any interaction, online. Figure 4.6 shows the format of the online environment for the course before the integration of the online mentor component.

Figure 4.6: Original GDE – Before Modification

This environment used by PSTs prior to the study would need to be modified to provide access to the online mentors. The planned access by the PSTs was based on the flow shown in Figure 4.7.

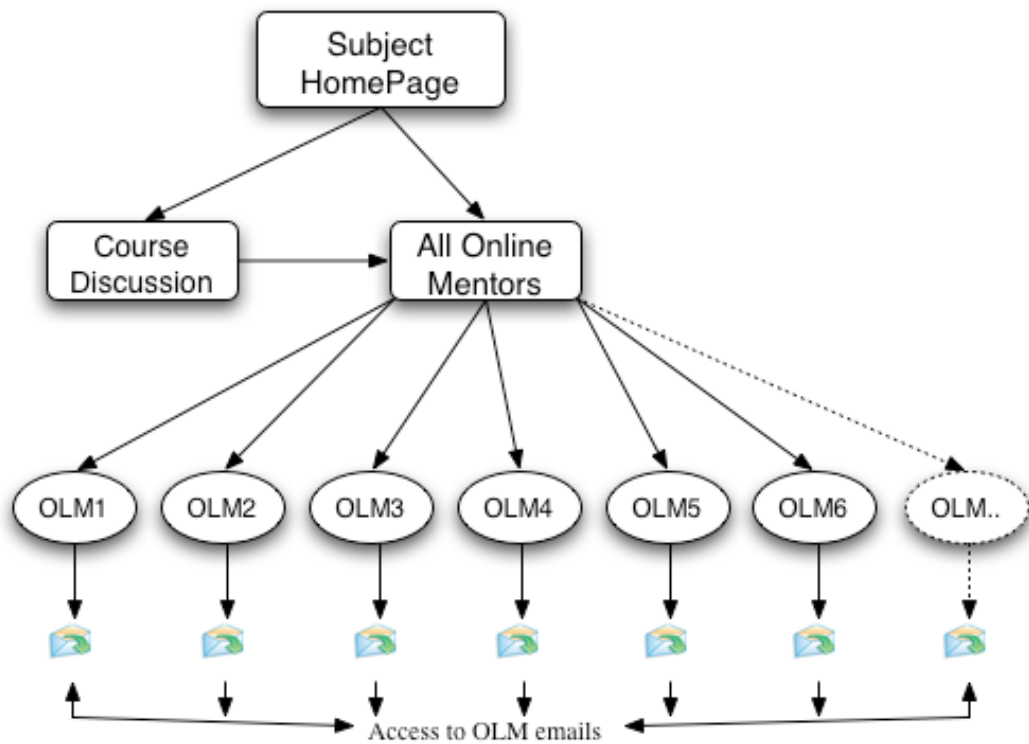


Figure 4.7: Planned Access to the Mentors

Each academic staff member associated with a WebCT course had the ability to change the course content and make links to additional pages. In this case, as non-teaching member of the faculty, I needed access to the course, as a teacher, in order to modify the site. The material obtained from the mentors needed to be arranged in an efficient layout to reduce the cognitive load in terms of navigation but also to provide the PSTs with an attractive overview of who the mentors were and how they could be contacted. An example of the data provided by each mentor is shown in Table 4.8

Table 4.8: Brief Biographical Information Provided by Each Mentor

Name:	Wendy Doors
Email Address:	wdoors@start.com.au
School	HIJ Primary School
Main Teaching Areas	Library/Technology
Interests/Integration of ICT:	Integration of ICT/Information literacy in the primary KLAs. The effective use of the Internet for research
Area of ICT Expertise:	General expertise. (Interested in digital video at the moment) Managing a school network
Favourite Saying	A computer lets you make more mistakes faster than any invention in human history – with the possible exception of tequila.
A photograph (digital if possible (head/shoulders))	

Historically PSTs tended to try and use online resources as efficiently as possible. This was driven by problems such as access to a computer at home, phone drop out, slow connection, a different equipment and limited time. Considering these issues the subsequent design of the web pages was to try and make online access as easy and as fast as possible. This led to the following page design characteristics:

- A single page with direct access to any mentor of choice
- Limited information on each mentor
- To allow the page to load quickly

Various versions of the pages were designed and prepared ready for loading onto the site. Without the appropriate level of access I then approached the academic course coordinator, to upload the pages. Figures 4.8, 4.9, 4.10 show the page development and the various access progressions that were then used to contact the mentors.

Figure 4.8: GDE Subject Site Homepage – with Mentor Link

Figure 4.9: Draft OLM Home Page with Photographs

This version of the OLM page was replaced with a more text based page, without photographs, to enable the page to load faster. The re-drafted page can be seen in Figure 4.10.

Figure 4.10: OLM Home Page – Without Photographs

On selection of a particular mentor the details and background were shown (Figure 4.11)

Figure 4.11: Individual Mentor Details

Considering the design guidelines the various pages were finalised and the resultant access can be seen in Figure 4.12

Figure 4.12: Access to the OLMs

Once the site was modified access permission was needed for the online mentors. They were not PST's or a member of staff at the University and therefore special privileges were required to access the university network and the subject site. The list of mentors was then provided to a central webmaster in order to provide them access to the site. They were given 'visiting academic fellow' access, with a time limited user name and password.

The initial testing of the access and the general flow of the site was done by me and with the support of a school colleague who one of the mentors at my school. This mentor was contacted by email and given his username and password and another copy of the access procedure that had been first demonstrated at the face-to-face meeting. Within a few days the colleague responded via email to confirm that the access was working correctly and that he had tested the navigational structure.

His initial comments included:

This is fine – no problems – the site loaded quickly and it was easy to find my way around.

Re the discussion section - I have already had a look at some of the comments being made by the students in the discussion - this should be fun. OLM-D

All mentors were then informed by a “Mentor Mail Update 4” (Appendix 7) that the site was now available for viewing and they were encouraged to test their username and password and to take a ‘walk through’ the site.

At this stage there was little interaction between the online mentors and the PSTs. The PSTs became aware of the changes to the site and the mentors now had the opportunity to become familiar with the layout and the type of interactions that were occurring between the PSTs. The OLMs could now gauge the preparatory communications that were being made for the set tasks and for the forthcoming practicum.

4.6 OLM - Online Interaction – with PSTs – Task Related

As part of the ICT component of the GDE course the PSTs were required to comment on a number of issues they may be faced with while on their practicum and ultimately when they become full time teachers. To support this component of their pre-service training they were given a series of lectures and tutorials that addressed issues of using ICT in the classroom. Two of their tasks relating to the use of ICT took the form of an online discussion task and a reporting task. (Appendix 6)

Most of the students in the GDE course experienced practicum sessions of up to 10 weeks in a number of schools where they may have had the opportunity to use technology in the classroom or observe its use. This in-school experience was highly dependent on the resources in the schools, the support of the supervising teacher(s) and the availability and operational state of the hardware and software. On campus, depending on their course structure and chosen electives, the students may have also had some awareness and use of technology within their specialisation. This usage mainly revolved around the preparation and presentation of their required course tasks.

During the OLM selection and introduction period the course was well underway and the PSTs were working on these assigned tasks. Figure 4.13 shows the designed period of the task-related interaction between the OLMs and the PSTs.

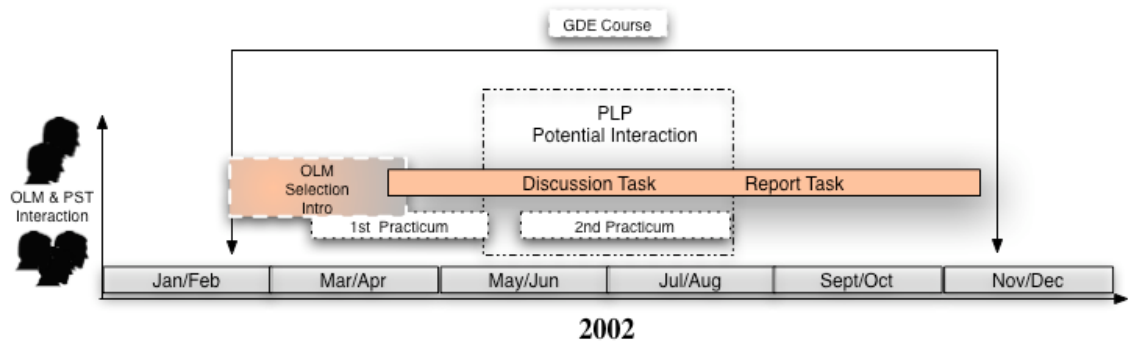


Figure 4.13: Potential interaction period between PST and OLM - task related

4.6.1 *The Discussion Task*

To allow the PST to further explore and share some of these issues that might face in schools they were required to discuss two of the following three questions in a discussion forum on their WebCT site.

- Q1. What range of ICT resources (hardware and software) might you experience as a teacher?
- Q2. What is the essence of activity design that engages the learner and promotes a student-centred learning environment?
- Q3. How can you get to know a range of your students' capabilities?

The PSTs were asked to respond to these questions, drawing on their recent Practicum 1 experience, background knowledge, lectures and reference material, and any web-based resource links. They were also required to give a summary of the key points made by their peers and were reminded to reference them. As can be seen in Figure 4.13 they were allowed to contribute to these discussions prior to their second practicum, while out in the schools and also after they returned to University from this practicum. The responses began April 24 and the last response was posted Nov 20. As commented in the Stage 1 Data – Discussion section (p. 71) there was only one comment by an OLM in relation to these questions.

Figure 4.14 gives an indication over time in which the PSTs responded to these questions and the number of postings.

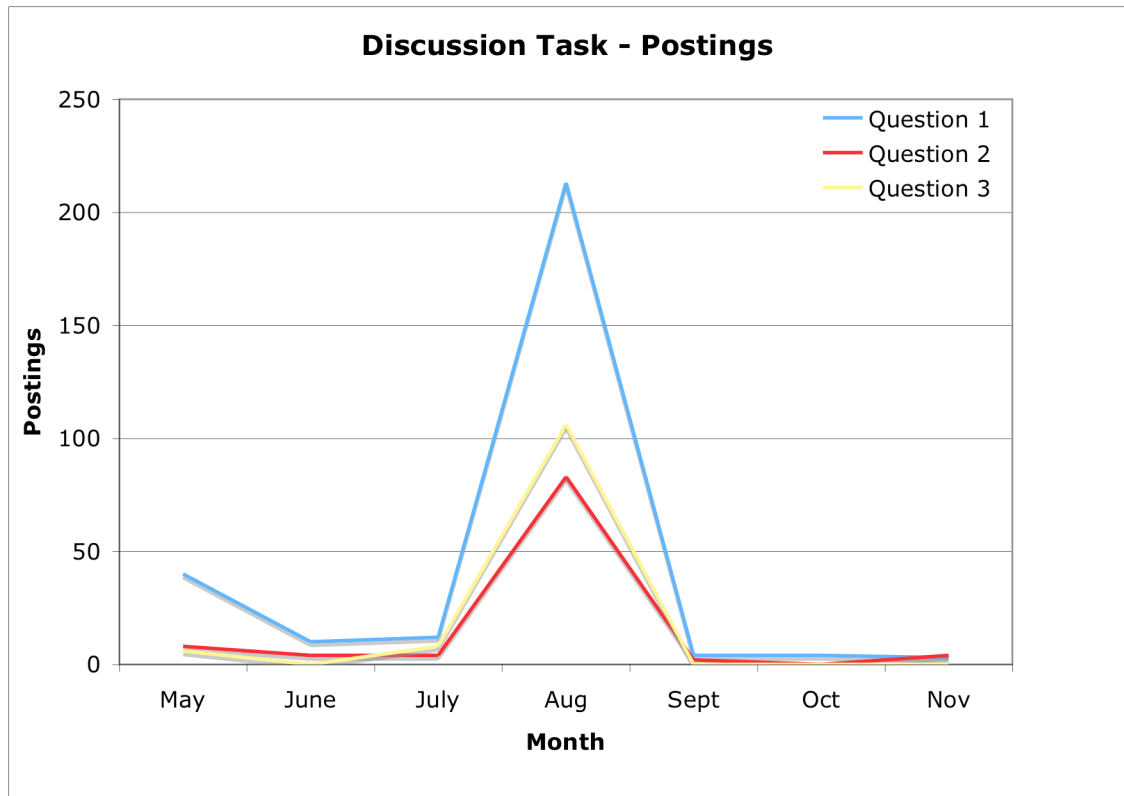


Figure 4.14: Online Task – Discussion Postings Over time

The following tables give a sample of the online responses or partial responses, to the discussion task questions.


4.6.1.1 Responses to Discussion Task - Question 1

What range of ICT resources (hardware and software) might you experience as a teacher?

Prior to and while on practicum this question was a means of getting the PSTs to be aware of, and possibly consider in their lesson preparation, the huge range of ICT resources they may experience while in the schools.


As can be seen in Table 4.9 PST (fgc01) was excited about the possible use of ICT resources in her school but was discouraged by the classroom teachers who seemed to dampen her enthusiastic approach to using these tools.

Table 4.9: Online Task – Q1 – Sample Response

<p>Message no. 354 posted by PST (fgc01) on Sat May 11, 2002 22:38 Subject English/Japanese – Resources</p>	
<p>At first I was surprised at the amount of IT resources at my prac school, as I guess I was comparing it to when I went to school. However, now that I have opened my eyes to IT use in schools, I am surprised at the lack of resources.</p> <p>My school had about 20 computers, which were continuously connected to the internet. These computers were located in the library and had to be booked by teachers well in advance. Students in years 10 and above were able to use these computers at anytime, so long as they were not booked. I taught a lesson on poetry to year 8 and booked the computers so my class could publish their limericks on the word processor. The students thoroughly enjoyed this and they impressed me with their computer skills.</p> <p>There was also a computer in each staff room, however, I did not see any of the teachers in my staff room using it. They seemed to do everything by hand, keeping record of their students' achievements, making resource sheets and writing out their weekly schedule. I was assigned the task to make a sheet with the year 11 students speech results on it, so as they could see where they were. I asked if I could use the computer to do it and I was told 'oh, don't bother just draw it out roughly'.</p> <p>The students obviously benefited from and thoroughly enjoyed using the computers, however, the teachers seemed to see them as a hassle and would rather do things by hand.</p> <p>Did anyone else see this on their prac?</p>	


In Table 4.10 PST (flc97) had been exposed to different levels of ICT resources spanning her two practicum experiences. She expresses some of the difficulties that she encountered while using technology and also the need for better preparation of teachers in the use and integration of ICT in the classroom.

Table 4.10: Online Task – Q1 – Sample Response

<p>Message no. 957 posted by PST (flc97) on Tue Aug 27, 2002 23:25 Subject ICT resources - posting # 2</p>	
<p>It seems that a lot of schools are not using ICT to the best advantage in the classroom. In my class during my last prac ICT was used quite effectively, but from the readings it seems there are a lot of software and application opportunities that aren't being utilised.</p> <p>I think that a lot of teachers are intimidated by technology and do not have the confidence or time to implement programs into their lessons. Part of this problem could be solved through teacher training, but there are other factors that need to be considered. One big factor is time. Time for the teacher to learn, set up and implement IT, as well as the time required for students to get "there turn" At the school where I had my prac, 3 computers were shared between 22 students. Do you know how long it takes a Kindergarten student to type in their stories? I think that in the next few years, technology will have a greater presence in the classroom. Teachers born of the computer generation will revolutionise teaching, and the computer per student ratio will decrease allowing greater opportunities for teaching/learning.</p>	

Another PST (tir01) in Table 4.11, on reflection after being in a school felt inadequate in actively using technology in her lessons and that the lack of encouragement from the resident staff had contributed to this.

Table 4.11: Online Task – Q1 - Sample Response

<p>Message no. 366 posted by PST (tir01) on Sun May 19, 2002 15:18 Subject IT Question One - What resources?!</p>	
<p>During my first practicum I avoided the use of computers, and computer-based activities, due to the organisation required, time constraints and resource limitations experienced at my first school.</p> <p>Although each staff room at this school had at least one computer for teacher use such as word processing and internet access, there was only one computer lab for student use and teacher led instruction. Although lessons were quite long the time it would take to set a class activity based on a relevant program, booking the computer laboratories and the fact that students would be required to work in groups of three or four due to the number of computers available made the whole idea of integrating computers into my lessons scary.</p> <p>Also, I personally did not feel confident in combining IT in my lessons. I have no knowledge of programs and activities related to my subject areas (history and english) and in all honesty, have never actively sought information about this. I was not encouraged to do so by my supervising teacher or the staff at my prac school. The staff actually expressed concern over the growing use of computers in schools and their inability to "keep up".</p> <p>The school was actually in the process of forming a committee to implement a new assessment system based on IT across the entire school and all subject areas. The staff in the English department expressed reservations based on their own lack of training, the lack of facilities, the problem of assessing student abilities, and the issue of time and student abilities - while the teacher is busy helping one group, another is logging on to something else, some groups haven't turned the computer on yet and other students are finished!</p> <p>I guess overall, my experience with IT on my first prac was limited by my own lack of knowledge (and interest) in this area and the lack of concern by those around me that I should actually actively try to include this in my lessons. Also, as far as I can see, not all schools have the resources available for this to be a major focus in subject areas outside of computing and technology studies. However, I do appreciate the importance of using IT and can see plenty of room for great learning experiences, co-operative and teamwork based activities and visual presentation material in my subject area.</p>	

4.6.1.2 Responses to Discussion Task - Question 2

Following on from Question 1 in this task this second question provided the PSTs with an opportunity to assess some of the underlying concepts that need to be considered if they were contemplating using ICT components in their lesson design and delivery.


What is the essence of activity design that engages the learner and promotes a student-centred learning environment?

The following tables show PST responses to some of the issues and concerns relating to being able to effectively use ICT and to actively engage the students in their classroom. These issues were derived from both personal experiences while on practicum and external sources. Some of the issues raised include:

- being familiar with the technology and related software i.e. doubting their level of competence
- “If I use technology – can I make it student centred and interesting”?
- having enough time for the curriculum and being able to integrate ICT
- being able to provide the support when problems arose with self direction and/or the technology

Some PSTs gave generic responses to this question with suggestions of what is necessary if they were to incorporate technology into their classroom strategies.

Table 4.12: Online Task – Q2 - Sample Response

<p>Message no. 792 posted by PST (klo03) on Wed Aug 21, 2002 16:12 Subject Question 2</p>	
<p>The use of computers and other ICT resources generate much more student interest than standard classroom teaching techniques. ICT resources allow students to do something different. It is also a more fun filled way of learning, because it is interactive. Using such resources allows students to be able to work at their own pace, and to incorporate their own creativity and imagination.</p> <p>To keep students actively engaged when using various ICT resources, the programs need to be extremely user-friendly. This generally means that there will be simple step-by-step instructions that are easy to follow. They also need to be attractive to students, interactive, and allow some freedom of choice.</p>	

A number of these responses were based on researched case studies undertaken by the PSTs rather than actual practical experiences or observations.

Table 4.13: Online Task – Q2 - Sample Response



<p>Message no. 386 posted by PST (mcb09) on Sat May 25, 2002 10:45 Subject student centred learning</p>	
<p>I read an interesting article by Maria Zoti (1987, in Independent Learners, ed by J Hancock and B Comber), a primary school teacher. Maria was interested in using programs, which would challenge children to think and create. She wanted to test 'The Bank Street Writer' to see how it could benefit her students and selected two Year 2 students to work together on the program. Maria also hoped that working together on the computer would help encourage both boys to write, to become friends through co-operative learning and develop better self images. The exercise proved more beneficial than even Maria had hoped for. Both boys became more self-confident as their friendship grew and they were able to relate to others in the classroom. They showed respect for each other and were prepared to compromise while working together. Maria concluded that children learn best when they are interested and stimulated, when they are a part of the decision making process, when they share responsibility and are allowed to explore experiment and take risks. Activity Design allows children the freedom to make decisions and experiment in a stimulating way. It is also an excellent medium for student based co - operative learning.</p>	

Table 4.14, posted by PST (jah19), indicates a more comprehensive response based on research and relevant practical classroom activities to support his argument. He seemed to be trying to link his campus experiences to actual examples of strategies he used in an authentic classroom environment.

Table 4.14: Online Task – Q2 - Sample Response

<p>Message no. 699 posted by PST (jah19) on Tue Aug 20, 2002 13:08 Subject engaging the learner in IT</p>	
<p>We are now learning that Information Technology can be very beneficial in the classroom not just as another resource to the teacher's lessons, but as a tool to actively engage the learner.</p> <p>It can help to promote a constructivist approach to learning in which the learner is actively constructing and exploring the world around them. When children are actively engaged in Information Technology, they are experimenting with, producing and experiencing technology. This means that we do not just show children a video about bugs to enhance our science lessons, but rather we engage them actively by having them create their own slide show or movie about bugs! Integrating IT into the classroom in this way requires that teachers have good knowledge of the hardware and software available. Only when the teacher is knowledgeable and actively engaged, can the students become fully engaged too. (Travers, 1999) This requires that teachers receive training and support throughout their careers on how to incorporate this into the curriculum.</p> <p>When teachers are knowledgeable, curriculum changes are made which views technology as a 'medium' for learning, (Richmond) and hardware and software are accessible then learners will be engaged in IT and constructivist learning and teaching will occur.</p> <p>The school I was at used a somewhat constructivist approach to incorporating technology in the classroom. The students in my year 1/2 class were beginning to create their own slide show that related to the topic they were studying in HSIE. Not only were they learning the technology, but they were engaged in presenting the topic through technology, and using the technology as a medium for their learning rather than just learning to use the technology.</p>	

Resources: Richmond, Ron (2000). Integration of technology in the classroom: An instructional perspective. Retrieved from the WWW at <http://www.ssta.sk.ca/research/technology/97-02.htm>

Travers, John (1999). Information technology for constructivist teaching and learning. Retrived from the WWW at <http://www.edc.org/LNT/news/Issuell/feature1.htm>.


4.6.1.3 Responses to Discussion Task - Question 3

When asked to investigate and respond to the third question:

"How can you get to know a range of your students' capabilities?"


the following responses expressed some of the difficulties or perceived difficulties that a pre-service teacher may face when trying to use the technology in a classroom with a wide range of intellectual abilities and ICT skills. They also displayed a degree of frustration in being exposed to situations where there is lack of motivation and willingness on behalf of their supervising teacher in allowing them to try something new to enhance learning.

Table 4.15: Online Tasks – Q3 - Sample Response

<p>Message no. 770 posted by PST (bo03) on Wed Aug 21, 2002 08:58 Subject surveying students</p>	
<p>In order to assess a student's capabilities it is necessary to expose your students to a variety of learning activities, and possibly complete a survey to record what level your child is at. Often teachers assume that a student is at a particular level, which can often result in many students being confused and left behind. When I was on prac I observed a range of capabilities when students used the computers. It appeared that some used computers regularly as they had one at home, whereas others only had access to one while at school. As a result, some students needed more instructions than others. Therefore, a survey would enable the teacher to keep a record of activities students have difficulty with or activities they do well. The teacher would then have a better understanding of where their students are at.</p>	

PST (jh00), in the following response had observed lessons where, in her opinion, there was little learning taking place and the students were not challenged in this technology rich environment. The practicing teacher provided little guidance into how the technology could have been used more productively.

Table 4.16: Online Tasks – Q3 - Sample Response

<p>Message no. 472 posted by PST (jh00) on Thu Aug 01, 2002 20:38 Subject Assessing Students' IT Skills</p>	
<p>After observing my students in the computer lab, it is clear that there are a range of capabilities in the class when it comes to computer skills. Some students sit down and are logged on to the internet or an educational game in 30 seconds while others are still fumbling to find the "on" button 5 minutes into the class. It doesn't take much observation to figure out who uses the computer regularly at home and who only has access to a computer once a week during computer lab.</p> <p>Unfortunately my teacher doesn't conduct any sort of lesson with the class at this time, but rather just lets the students explore the computer on their own. As a result, I think that the ones who are struggling never get the chance to become more proficient and certainly nobody's level is being assessed.</p> <p>One way to not only assess the students' computer literacy but help them improve their skills is to have the whole class focus on one area. For example, the students could learn a word processing program. This would take several weeks, with the first lessons being devoted to teaching the students the different functions, such as how to underline, bold, change the font, etc. For students who already know how to word process, these lessons would serve as practice sessions, while beginners in the class would have the chance to catch up to their peers. Once the teacher feels that everyone is comfortable with the program, students could be given the task of typing up a piece of work in which they would have to include the functions they have learned. Other lessons could focus on showing the students how to use the internet, with assessment tasks requiring students to find specific information. The only way to accurately assess students' IT skills is to start everyone on even ground. This can be done through teacher-directed IT lessons. Of course some students will have an unfair advantage if they have the opportunity to practice on their home computer, but at least the teacher will have introduced everyone to the program and given them the opportunity to gain the skills.</p> <p>Unfortunately what I am seeing in my prac is impossible to assess because the teacher doesn't show the students anything new. The students stick to what they know and like and, as a result, have limited opportunity to develop more skills.</p>	

As part of this task they were also required to examine the postings made by their peers and then use these to show whether or not it had changed their views. This task component was completed with limited peer referencing and the evidence of the extent of the change of opinions varied. They generally preferred to make formal references to comments that were provided in lectures or in the recommended readings rather than based on observations in actual classrooms. Some of the PSTs did formalise their references to include their peers as well as those from external literature. An example from one PST (gac49) posting is shown below.

Bonfield, G. (2002 June 10). Essence of Activity Design [Discussion]. EDUC802 T2 Q2. Available: <http://uow.edu.au/LOL>

Barry, K. and King, L. (1998). Beginning Teaching and beyond (3rd Edition). Katoomba, NSW: Social Science Press.

This interaction was not required by the task criteria and these voluntary responses were an indication their willingness to share comments with each other. In some cases this online interaction amongst themselves was not obvious. A number of PSTs were inhibited by technical issues and by the lack of familiarity of the process of using the discussion space. Examples of this are shown in the following comments.

I tried to read the hundreds of my fellow student's papers only to find myself repeatedly dropped from the university and course site (one of many frustrating complications of IT). PST (ld98)

Subject: Now I really mean it! Maureen's message is actually mine

The ooops message I put on just previously did it again, so I hope this works, through "critical reflection" (ahemmmmm) of my lack of skills in this stuff, I noticed I didn't log in properly, sorry Maureen! hahah Let's try this again! PST (mcb09)

The PST's responses to this task did include references to their experiences of their first practicum, earlier in the year, but they also referenced some of the comments that were contributed by the online mentors. One of the roles of the OLMs was to support the PSTs while on their second practicum but prior to the practicum as the OLMs were then online and able to view the PST discussions, a number of them felt comfortable and even compelled to make suggestions to some of the comments. In the early stages of this task they also made a number of unsolicited postings in the form of general advice, and this, as well as introducing themselves to the PSTs in this environment, gave them practice in using the tools that were used during the practicum period. Examples of such messages include:

Table 4.17: OLM - Sample Response



<p>Message no. 412 posted by OLM-RK on Tue Jun 04, 2002 16:56 Subject IT in Lower Primary</p>	
<p>Hi, What considerations would you need to address before introducing computing skills to lower primary classes? Hint: Flexibility may be your biggest asset! Good luck with your 'Pracs' RK</p>	

Table 4.18: OLM - Sample Response

Message no. 415 posted by OLM-LT on Wed Jun 05, 2002 22:21 Subject Computers in the class room	
Computer technology should be part of all subjects in the school curriculum. Do you agree with this statement? Why? LT (Snapshot A High School)	

One of the PST's requesting help, PST (mdjh99), received a number of replies from different mentors as can be seen by the request and the subsequent reply postings below. These interactions are shown in Tables 4.19, 4.20, 4.21

Table 4.19: PST Request OLM - Sample Response


Message no. 464 posted by PST (mdjh99) on Sat Jul 27, 2002 20:13 Subject Kindergarten question	
<p>G'day mentors,</p> <p>my prac is with a kindergarten class and unfortunately I wont be able to base my portfolio on this class. However, I do have a question regarding their computer activities. To date they have been using KidPix and while I've been there we have been using moopies to do the letter of the week using the mouse to write the letter and then choosing stamps that start with that sound/letter or even typing in a few words that start with the letter. Last week they typed in their names and had some fun and I'll put it together in a slideshow. I guess I'm trying to let you know where they are at.</p> <p>From next week we're going to start touch typing. We have paper keyboards for them to get used to the home keys and to practise the correct fingering in the classroom before we hit the computers. First it will be top line left hand, then top line right hand etc using exercises out of their handwriting textbook. They have the Phonics Alive application at the school but it is aimed at an older more focussed students so we will just use Appleworks (which they have used before). I was hoping that you might be able to point out any tips or pitfalls I may encounter. I think it should be a fun and interesting exercise and I'm keen to see how the children cope with a lesson that will test their dexterity and their knowledge of an alphabet that they are just coming to grips with. I'm hoping I'll learn to touch type at the same time :)</p> <p>Thank you, M</p>	

Table 4.20: OLM Response to this PST Request



Message no. 470 [Branch from no. 464] posted by OLM-RK on Mon Jul 29, 2002 20:22 Subject Re: Kindergarten question	
<p>Hi M</p> <p>Your ideas for touch-typing for Kindergarten are well thought out.</p> <p>The fact that the children have already used 'Moopies'" has introduced them to the idea of letters/sounds and if my memory serves me graphics showing which finger to use on each key. Your next step of using paper keyboards is good as it allows all children to have a go. The pitfalls as you have already flagged will be that not all the children will know the alphabet, therefore you will need to keep an eye on those you feel will fall into this category. Upper case keyboards will also confuse others, so once again this is something to look out for. I have year one at the moment and my strugglers get confused with 'n' and 'h','i' and 'l'. All of these glitches disappear with practise. Enjoy learning to touch type, your kids will love the lessons. Let the kids use the computers as much as time allows.</p> <p>Good luck.</p>	


Table 4.21: OLM Response to PST Request

Message no. 529 [Branch from no. 464] posted by OLM-JA on Thu Aug 15, 2002 22:05 Subject Re: Kindergarten question	
<p>M, My year 6 class works with kindergarten buddies. One of my kids suggested that we put little stickers on the fingers of the kindy kids to indicate which fingers should go on which keys. Haven't tried it as yet but may be worth a shot. JA</p>	

Led/lead

Some of these interactions led to further sharing among other PST's this being indicated by those PST's who had contacted the online mentors and were also peer referenced by the other PST's. A number of PST's made informal and formal references to PST (mdjh99)'s postings. An example of informal reference – contained within the text of the postings is shown in Table 4.22

Table 4.22: PST Informal Referencing

Message no. 1001 posted by PST (dpk02) on Tue Nov 19, 2002 12:36 Subject Some key points!	
<p>The general consensus through most of the discussions relating to student centered learning is that "an engaging student-centered learning activity (environment) should: be relevant to the students and use 'real' problems; give the student ownership and responsibility for the learning, including strategies and selection of resources to use; where possible allow for collaboration; and ignite a curiosity to find the answers" (Student, (mdjh99) 2002.Message 408)</p> <p>I think M was on the right track with the above ideas about student centered learning.</p>	

Some pre-service students also used more formal referencing procedures within their postings. For example

mdjh99, M.D.J. (2002 August 4).. Learner Engagement

[Discussion]. EDUC802 T2 Q2. Available: <http://uow.edu.au/LOL>

4.6.2 The Report Task

In addition to the online discussion task the PSTs were required to prepare a portfolio based on their in-school experience, with specific reference to the integration of information and communications technologies into their teaching. A summary of the requirements of the task is shown below.

EDUC802: Pedagogy (Information Technology)

Assessment Task 3 - Portfolio based on your Major Practicum

You are to produce a portfolio that demonstrates your ability to:

- Research a learning environment and available teaching resources with assistance from online mentors
- Design a series of learning activities that integrate information and communication technologies in an appropriate way
- Manage the classroom environment including the use of ICT, associated student work, and assessment of student learning
- Evaluate your teaching and the use of ICT. This includes suggestions for improvement and acknowledges the input of your mentor/s. (The complete task is provided in Appendix 6.)

This task required the PSTs to reflect on their actual or possible, school experiences in the use of ICT and to comment on any possible support provided by the OLMs. The report had the flexibility in that it allowed the PSTs to choose an option based on their school experience. The report Option A was based on the actual attempts to implement the classroom activities involving ICT whereas Option B allowed the PSTs who did not have the opportunity to try their ideas, to report on what they would have liked to do if they had been given the opportunity while in the school.

The exposure to the OLMs had occurred in the online discussion task prior to the commencement of this task. Some of the mentors had introduced themselves and made comments in relation to the discussion task and therefore their availability and appearance online was apparent before the commencement of this task. Table 4.23 shows the proportions of the PST cohort that undertook each of these report options and where the PSTs had made some reference to mentor support.

Table 4.23: Report Task Choice

Option	Explanation	Primary Teachers	Secondary Teachers	OLM Reference	Total
A	Actual use of ICT in the classroom while on practicum	56 (64%)	64 (71%)	7 (6%)	120 (67%)
B	Unable to use ICT due to a variety of reasons	32 (36%)	26 (29%)	4 (7%)	58 (33%)

An example of one of the references to the OLMs in the report task .

Many of my online mentors, in regards to a student-centered approach to technology in the classroom, emphasized the importance of scaffolding material, giving student's ownership of their work, and encouraging collaborative, interactive and co-operative learning. PST (jh2323898)

4.6.2.1 Example of a Task Report

Using Option A (Access to ICT)

PST (dg2291812) - a pre-service teacher doing primary teaching methods had prepared her teaching unit involving technology but had limited opportunity to implement it while on practicum. The following Figures 4.15 and 4.16 give a sample of a response to this particular task and comments relating to its implementation. They help indicate the scope of the unit in relation to her attempt to integrate technology into her teaching.

Computers Unit Proforma

Unit Title: Art as Chairs					Class: 3										
Strand: Computer skills					Stage: 2										
Outcomes: Using computer-based technologies to locate, access, evaluate, manipulate, create, store and retrieve information. Expressing Ideas and communicating with others using computer-based technologies. Developing an awareness of the range off applications of computer-based technologies for given purposes. Developing the confidence to explore, adapt and shape technological understandings and skills in response to challenges now and in the future.					Indicators: <ul style="list-style-type: none">• Uses computer software programs and associated technology to format a variety of texts.• Stores Information In databases, spreadsheets and graphs.• Produces a variety of texts, using a range of technology, for different audiences, e.g. slide show, digital cameras.• Produces texts with intention to design, layout and graphics.• Consolidates computer skills when using a range of computer software and applications, e.g. tables, borders, graphics, word processors and multimedia presentations• Explores different ways of incorporating photographs into documents.• Evaluates a new piece of desktop publishing software and compares it with an existing package.										
Assessment: <ul style="list-style-type: none">• Students activity/worksheets.• Observe student responses.• Teacher observation of students:<ul style="list-style-type: none">- During Individual work.- During classroom discussion.• Students willingness to engage with the materials and how well their understanding is utilised In their designs.• Appraise students use of decision-making steps.• Final Presentation.					Evaluation: <ul style="list-style-type: none">• Were the students enthusiastic?• Did the students participate?• Did the students enjoy the activities?• Were all the students given the opportunity to share their feelings/Ideas?• Have the learning experiences allowed students to develop a greater understanding of computer-based technology?• Did the students accept the views of others and co-operate in groups?										
Term	1	2	3	4	Week	1	2	3	4	5	6	7	8	9	10

Figure 4.15: PST (dg2291812) - Teaching Unit Proforma

As well as preparing a unit based around the use of technology she also provided sample lesson outlines to accompany the Unit. An example of one of these is shown in Figure 4.16

Computer-based Technology - Powerpoint

Unit Title:	Powerpoint - Opening	Strand:	Science and Technology	Lesson No.:	1
Topic:	Art of Chairs	Class:	Year 3	Stage:	2
Lesson:	<ul style="list-style-type: none"> Assess resources - Does each computer have Powerpoint? Check availability? DEMONSTRATION Have children standing around 1 computer. Introduce software to children. We are going to do a presentation with the pictures I took when you made your chairs. The program will be Powerpoint. I've done a small presentation to show you what types of things you can do... <i>Explain based on children's previous experience.</i> Does this program look familiar to anyone? Does this look like another program anyone has used before? Powerpoint is very similar to Microsoft Word... Take a look at menu bar.. Open a new file - Look at a slide and saving a file. EXPLORATION Let children explore on their own and supervise each child. Every now and then get children to stop and save their work. - Right children we have to save. How do we save again. And where are we going to save our files. 				<p>Encourage good behaviour and award points.</p> <p>Insist on hands up. "I'm not going to ask anyone who is calling out!"</p> <p>Everyone needs to be quiet, sensible and listening, or they can sit and watch while everyone is experimenting on the computers.</p> <p>Insist on Quiet when someone else is talking.</p>
Materials:	<ul style="list-style-type: none"> Computers (8max) Powerpoint (software) Demonstration file 				
Assessment:	Did children understand? Was lesson to fast? Do we need to revisit next lesson?				
Evaluation:					

Figure 4.16: PST (dg2291812) - Lesson Outline from the Unit

The report also allowed PSTs to provide background on the implementation of their teaching unit. For example PST (dg2291812)'s report below indicates that on reflection she needed to review her implementation ICT in the classroom and also possible communication with the OLMs.

I quickly figured out that a lesson using ICT is very hands on and that one needs plenty of preparation time to plan an appropriate lesson especially using web sites. I felt my level of confidence rise as I taught; yet I realize I need a lot of practice before I feel a strong level of confidence in my own abilities with computers. My supervisor was happy with editing task and plans to carry on using it as a regular in the computer class.

She did not contact the OLMs but in hindsight wishes she had:

Unfortunately I was unaware of the online mentors. A question I may have posed to an on line mentor would have been, how would I find a variety of appropriate web site for a year five class doing an exposition?

Another PST (gc2214982)'s comments gave an insight into some of the issues in trying to teach his unit:

I believe my supervising teacher had a very narrow view of technology, her limited knowledge of the computer effected how much she could teach or implement into the classroom.

When it comes to technology I have very much a teacher-centered approach to learning. These include:

- Not to assume too much
- Management strategies are crucial for effective teaching/learning
- Small groups are necessary

The support structure was the main observable difference I encountered. This school had an I.T. manager contracted to develop and maintain the computers. Library time (I was informed by my supervising teacher) is allocated for research time ONLY, and computers DID NOT fit into the regular classroom timetable.

His contact with the OLMs was affected by time available.

I did not seek mentors advice because of the limited time I had to implement such a topic.

4.6.2.2 Example of a Task Report - Using Option B – (No access to ICT)

PST (jab2355346) – a high school geography methods pre-service teacher did not have the opportunity to implement her class activities that involved ICT. Figure 4.17 shows the screens of a Powerpoint presentation that she would have delivered if the resources and opportunity had been available in her practicum school.

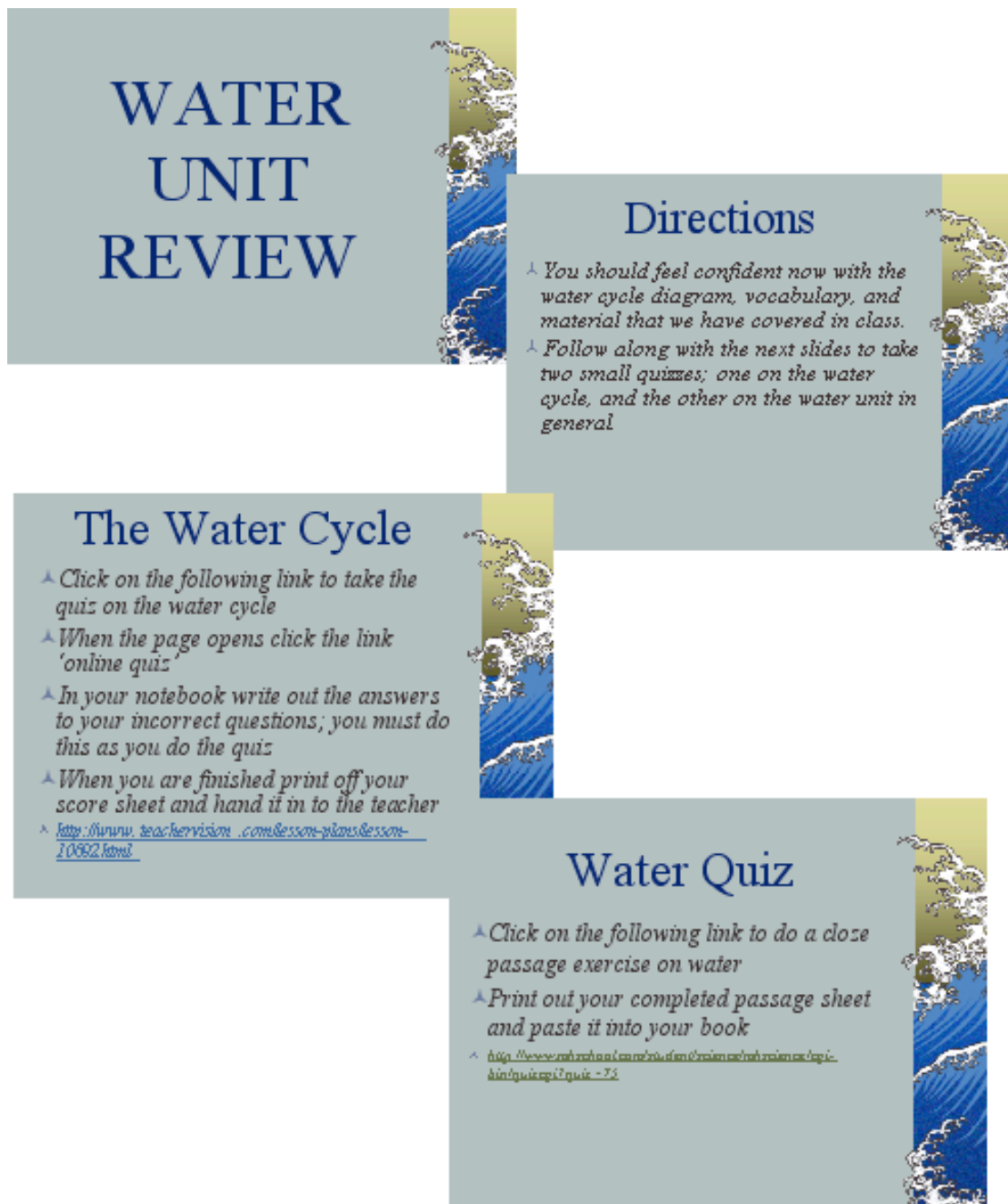


Figure 4.17: PST (jab2355346) - Presentation – Intended for Classroom Use

She was discouraged from implementing her activities as shown by some of the comments in her report.

My supervising teacher and staff were not very supportive of the idea of using IT resources. I did try to plan one lesson that was to incorporate doing some research on the computers with the class that I saw three times a week.

I did consult with my supervising teacher, and the “IT” person in my faculty over the four weeks that I was there - not one person in my faculty ran a lesson that incorporated extensive use of ICT resources. Therefore the one class that I did observe that had some computer use is quite minimal.

This PST acknowledged the availability of the OLMs but did not require their support

I didn’t have the opportunity to use ICT resources in my classes therefore I didn’t require any help from the online mentors.

Of the “Option B” PSTs, 33% of the total group, many commented that they did not seek the support of the mentors due to the fact that they were unable to formally implement their task/unit but a number still commented on their potential support.

Navigating on WEB CT I was able to explore and gain different ideas from online mentor/s and approach my unit of work in an objective manner. (PST (sl2304260)-report- Primary)

One of my online mentors suggested that I try to obtain a projector so that I could actually demonstrate the activities on the projected screen for the class, which always makes learning ICT easier to grasp. (PST (jw2304314)-report-Primary)

What I gained from my online mentors was a better knowledge of the steps to take to avoid unnecessary hassles. I learned what to focus on and became aware of certain problems that I could run into. I often talked to the teacher in charge of computers. (PST (cs2340380)-report-Primary)

Due to the inaccessibility of ICT resources for my classes, I did not seek any support from my peers or mentors, online, during my practicum. (PST (ctm2396749)-report-Primary)

Although I did not directly email any online mentors, I was able to gain a wealth of information/resources and help from various curriculum (teacher based sites). These sites offered computer classroom management tips and strategies. (PST (cc2402300)-report-Primary)

4.7 Online Mentor Interaction - Summary

There were various forms of interaction that revolved around the OLMs. The tasks gave an insight into the wide range of scenarios that were observed and experienced by the PSTs regardless of the time or the opportunity to actually implement any ICT activity in the classroom.

The inclusion of the OLM’s in the tasks’ set criteria was another means of making the PSTs aware of their availability and it was hoped that it would provide a stimulus for interaction between the two groups over the duration of the tasks and beyond.

It also suggested to the PSTs that they could be mentored and supported in these tasks while on their practicums. It was hoped, as suggested by (Furlong, 1995) that the mentors would help the PSTs.

learn to “see” and “frame” teaching experience

The integration of the OLMs in the tasks was a conduit through which I was provided with a rich source of data including:

- Individual school scenarios
- PSTs comments in their chronological sequence
- Levels of interaction during the year

4.8 Conclusion

This chapter has provided evidence of the interactions that took place with the online mentors within the framework of the designed environment but these were minimal considering the number of students, the availability of the mentors, and the course directive that required the PSTs to contact the mentors. The study was set up to create a partnership but limited interaction resulted and therefore it was necessary to look at other factors that may have contributed to this.

Figure 4.18 provides a summary of the themes that emerged from these potential interactions and initial examination of task report data. Further analysis was required to examine reasons why the PSTs obtained little support from the OLMs.

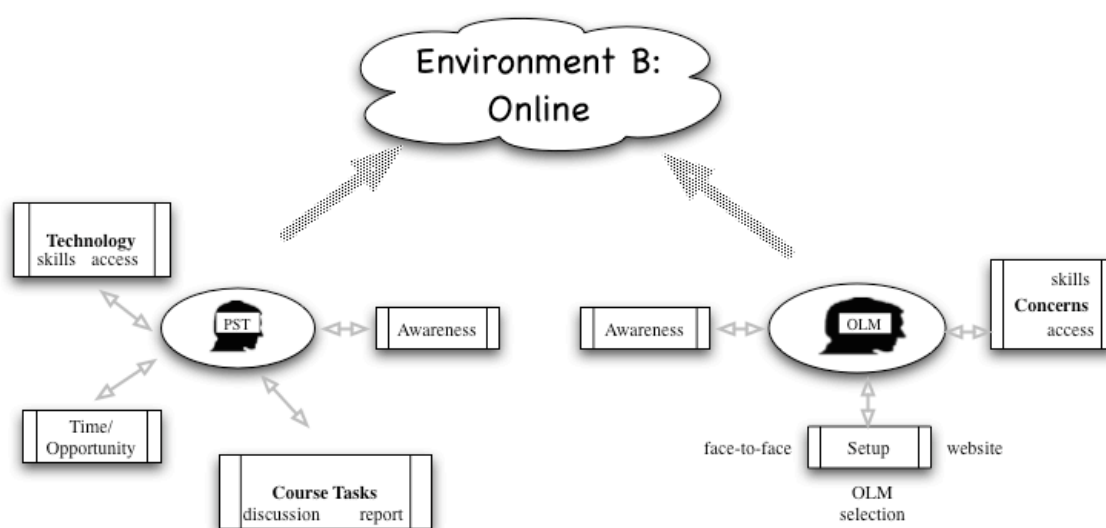


Figure 4.18: Environment B: Online - Emerging Themes

The next chapter will endeavour to show that there were other concerns that contributed to or inhibited such interactions through group evolution, additional support structures and spontaneous mentoring.

Chapter 5 - Group evolution, additional support structures and spontaneous mentoring

5.1 Introduction

It was hoped that the design and establishment of this online environment would provide a focus for the development of a support community for both preservice and practicing teachers. This expectation was not realised and factors such as group evolution, additional and unforeseen support structures and spontaneous mentoring emerged. This chapter explores elements of the expected interactions by examining these factors.

There were various group structures that were established during this GDE course, but these were often fluid or transient in nature depending on the time of the year and the scheduled and non-scheduled activities. These groupings would have an impact on the formation of the professional learning partnership. The broad, expected groups are shown in Figure 5.1.

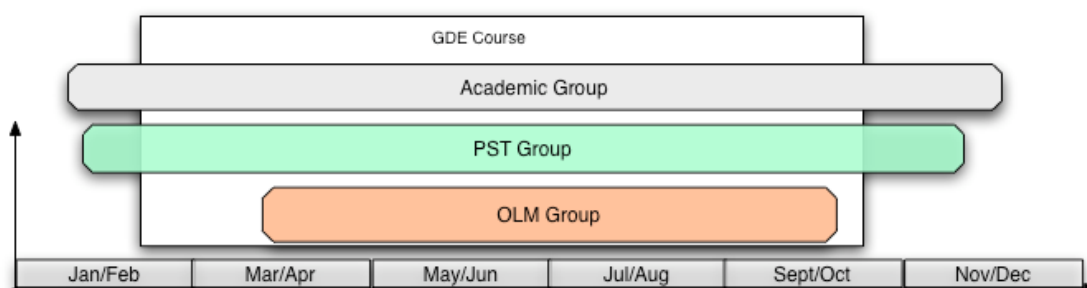


Figure 5.1 Broad Groupings of Key Players

On the surface these were the main group structures but as the year progressed various subgroups were formed. The numerous face-to-face meetings within the key players throughout the year had considerable impact of the formation of these groups and their stability. These meetings were generally within but occasionally across the groups.

5.2 Group Evolution

The various groups began their course involvement in differing states of group cohesion. The ways in which these groups evolved throughout the course tended to have an impact

on various interactions within the group and also that with other groups. The impact of the different school and online environments on the participants varied considerably often depending on the levels of activity required by the course or the practicum schools. The following sections look at the ways in which the roles and activities of the OLMs and the PSTs evolved throughout the year.

5.2.1 Online Mentors (OLM)

The group of OLMs, as discussed in Chapter 4, was developed from three main sources – the researchers’ school, the local school district meetings and the personal associations of the researcher. The drawing area for this group was mainly the local geographical area and a few of these teachers had at some time been in contact with each other – either personally or professionally, but in general, the group had not had face-to-face contact. The face-to-face meeting at the end of the selection process (Chapter 4.4) was an opportunity for the majority of the collaborating teachers to come together and gain a better understanding of the project. For those who attended this meeting a number commented that it was the first time since their training that they had returned to a tertiary institution. The meeting, held in an older part of the campus was originally part of the Region’s Teachers College and this seemed to stir old memories of when they were trainee teachers, in a similar stage of development to those currently undertaking their pre-service training in this course. Comments such as

“I remember when...” and “I used to have my lectures in a room similar to this” (OLM-F)

were common throughout the evening. This sense of relating to the current PSTs’ situation allowed the teachers to gain a better understanding of the environment and helped them appreciate some of the characteristics and features of current pre-service training.

The course coordinator also attended this meeting and she was able to provide a context for the course in terms of its history and current foci, a broad description of the current PST cohort and an explanation of how the school practicum was an integral component of their training. This overview provided the teachers with a coherent picture of the course and contributed bringing the group together. This ‘social interaction’, away from their school environment allowed them to move closer to the zone of the PSTs and prepare them for the ‘project interaction’ ahead.

The OLMs attending this meeting had a range of teaching experience and were from differing school backgrounds and this was an opportunity to gain a common purpose in the provision of support to the PSTs. In the early stages in the project the online mentors generally considered that the process would generally be ‘one-way’ with the collaborating teachers helping the pre-service teachers. This focus allowed the teachers to be aware of the needs of the PSTs and there was a sense of realization that they would be able to ‘give something in return’. Often these teachers in their individual schools were alone in their efforts to provide support to the other members of the school staff but this meeting and subsequent online meetings via the discussions provided a gel to bring them together as a more unified group. Some of the members of this group did meet with each other at various times throughout the year at the same locations where original selection was made i.e. same school or coordinators meetings but the group as a whole did not meet face-to-face at any future stage in the project.

5.2.2 *Pre-Service Teachers (PST)*

The PSTs started the year as a disparate group with the continuum ranging from a large social and active group, to smaller groups with common characteristics such as married with children and then to a few PSTs who did not belong to any such group.

The two practicums provided many different environments that allowed for further group evolution and the scene for interaction both face-to-face with colleagues and teachers in schools, and also online within and beyond the groups.

5.3 Practicum – Setting the Scene for Interaction

The course practicum structure, as shown in (Figure 3.4), consisted of two separate school based practicums. The PSTs commenced their initial practicum, Pract 1, of 4 weeks in March, and their second practicum – Prac 2, of 7 weeks in July.

Figure 5.2 indicates the placement of the practicums in relation to the set assessment tasks – Discussion (online) task and the Report (Portfolio) task.

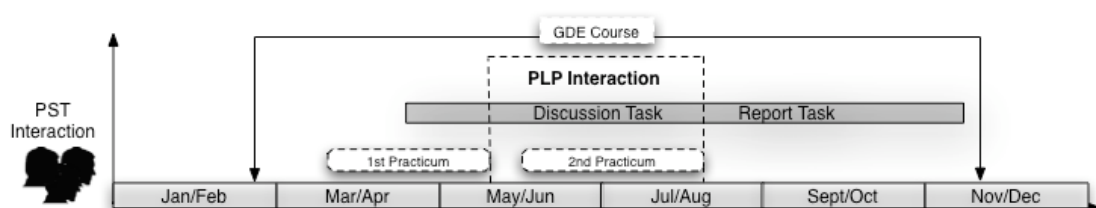


Figure 5.2: Practicums and Given Tasks

With the onset of each of the practicums (Figure 5.2) other groups formed due to the fact that they were brought together into schools. These groups varied in size from one or two PSTs in small primary schools to groups of ten to fifteen in some of the larger high schools. The placement of PSTs in their practicum schools was generally based on proximity to their home base but this was complicated by the availability of places in some schools, especially in relation to high school teaching methods.

While on practicum various levels of associations were formed between the PSTs and teachers in the school, either with their own supervising teacher(s) and/or other teachers. These teachers may have been in the same staffroom and teaching area, but informal groups were also formed with teachers outside the PST's teaching areas via association

- In mixed staffrooms
- With duties such as playground supervision
- With other school events such as sport, excursions, musical performances.

Figure 5.3 and Figure 5.4 give an indication of the size of the maximum school groupings of PSTs that may have formed during both Practicum 1 and Practicum 2.

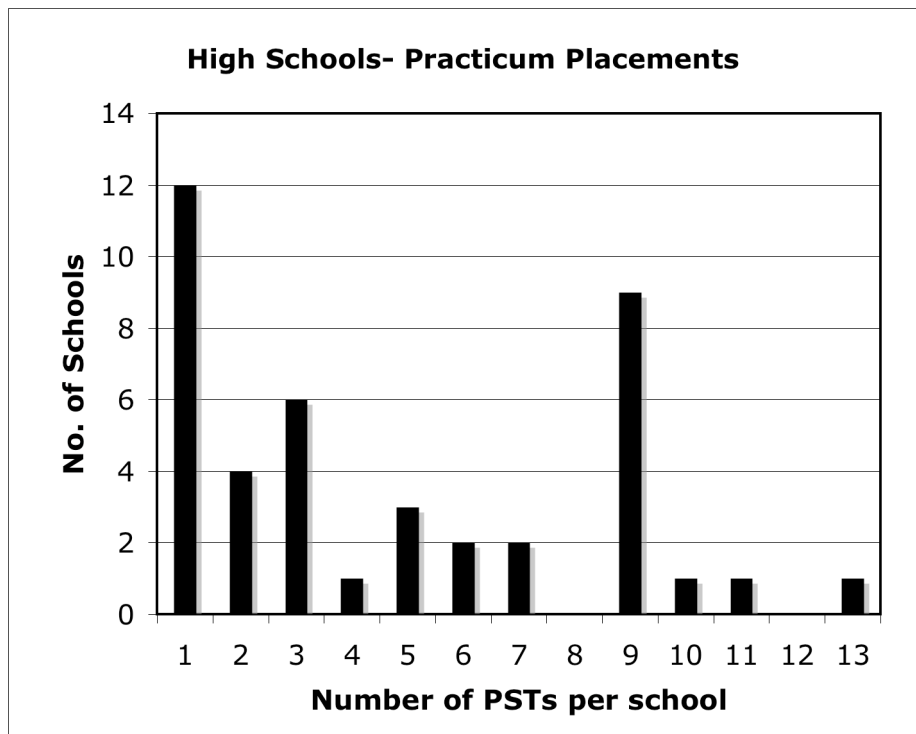


Figure 5.3: Number of PSTs in High Schools During Practicums 1 and 2

The above graph indicates out of the approximately 86 different high school placements over the two practicums 48% of the PSTs were in schools where they were the only or two beginning teachers.

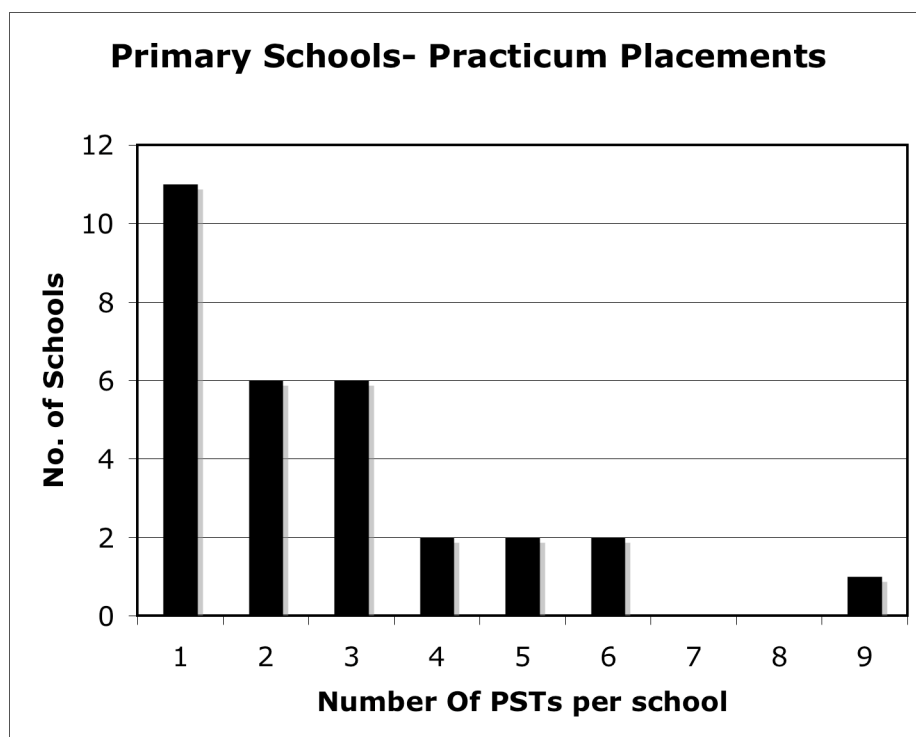


Figure 5.4: Number of PSTs in Primary Schools During Practicums 1 and 2

Considering both high school and primary school groups over the two practicums it could be assumed that group collegial support in most schools would therefore have been minimal.

A small proportion of the cohort took the option of an overseas placement for the first 3 weeks of Prac 2.

Table 5.12 shows the distribution of the PSTs during this 7-week period.

Table 5.1: Practicum 2 Distribution

	Local	Fiji	China	Malaysia
First 3 weeks	147	12	9	10
Second 4 weeks	The complete cohort of 178 attended local schools			

For the PSTs arriving in a new school as a beginning teacher the reception varied considerably. Each school had a teacher who acted as the practicum coordinator to welcome and initiate the PSTs into the school. They were allocated to various supervising teachers and given their staff room location for the practicum period.

The levels of interactivity varied over these 2 periods - the initial prac not requiring any online presence whereas during the second practicum an indication of their activity is demonstrated by the frequency of their discussion postings.

For the first three weeks of their second practicum the interaction between all PSTs was mainly limited to their own practicum school groupings as they settled in to their new schools. The activity online relating to dealing with the set discussion questions was also reduced as can be seen from the relative number of postings in Figure 5.5.

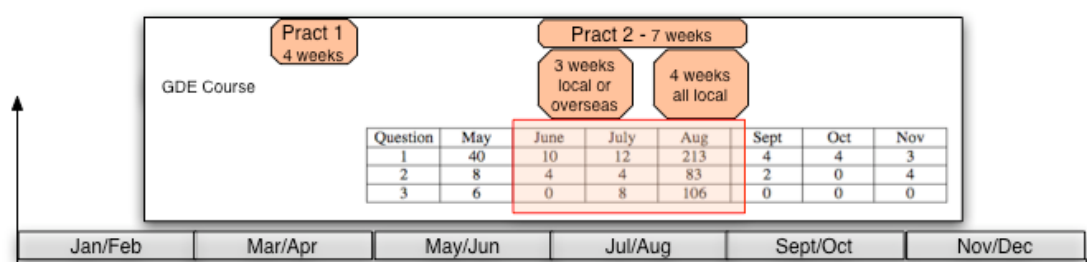


Figure 5.5: Online Activity Practicum 2

5.4 Interactions and Support While On Practicum

With the evolution and reformation of groups, due to practicum placements, there became numerous opportunities for PSTs to interact with teachers and each other in their practicum school. The mentoring approach was thus widened from the original concept of PST \leftrightarrow OLM, and gained new perspectives. There became opportunities for mentoring through the following interactions:

PST \leftrightarrow PST

PST \leftrightarrow school supervising teacher(s)

PST \leftrightarrow other teachers

The degree and value of the support that was part of this interaction naturally varied from school to school as the variety and nature of the practicum placement affected how, when and where support emerged.

This will be explored in the context of:

- In Schools - face to face
- Online

Figure 5.6 outlines the four main combinations of key players and environments that emerged as having some impact on the support and mentoring that took place.

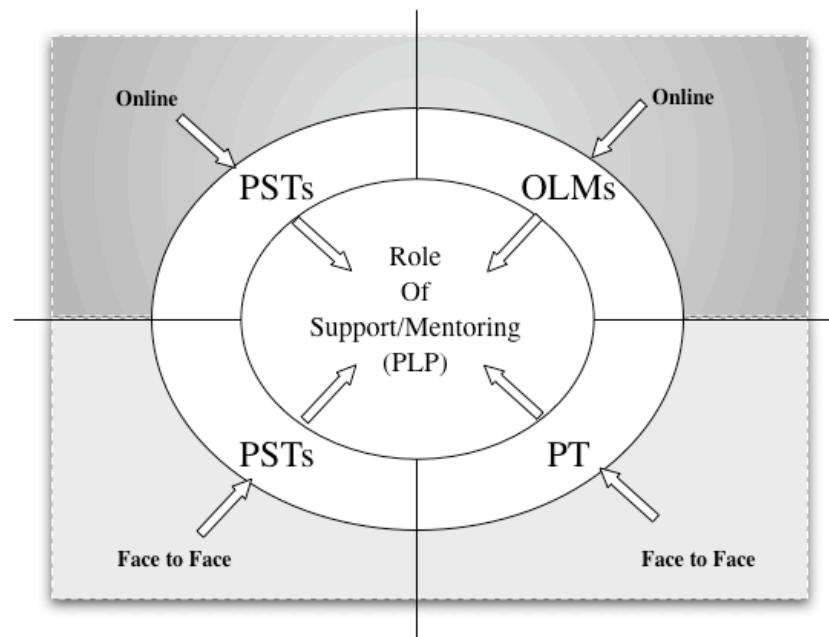


Figure 5.6: The Medium and Group Elements Affecting Support/Mentoring

These school encounters allowed the PST's to experience different environments in which to trial teaching strategies and get a better understanding of the role of the classroom teacher. Allocation to these schools was based on the availability of school placements and to a minor extent, the proximity to the PST's home base.

5.4.1 Interactions and Support - In Schools- Face to Face



While in schools the opportunity for these PST's to mix, share stories and frustrations, and assist each other varied considerably. This was often dependant on the size and physical layout of the school. In the smaller schools the PST's were physically isolated and cut off from their peers. In the larger high schools the PST's were distributed throughout the school in the various faculties' staff rooms. In these larger schools the PST's were either physically located in a room with practicing teachers or were placed in a breakout room nearby. In some cases they were quite removed from their supervisory teachers, depending upon space in overcrowded staff rooms or room availability across the

school. Even in these schools where there was a critical mass of pre-service teachers, some may still have been isolated. For example in one school with only one Art practicum PST, the student was in a remote part of the school and therefore did not come in contact with other PSTs while on practicum. Some schools also placed the PSTs together in the one “praccies” staffroom, allowing them to gain social and collegial support from each other but removing them from frequent contact with the practicing teachers.

For some of the PSTs the preferred means of contact was face-to-face in their practicum schools rather than online with each other or the OLMs. In her task Report this Primary PST who had undertaken Option A (access to technology in the school) chose to access help directly from others in the school rather than online.

I found it helpful to verbally consult someone who was able to see samples of my work and my ideas when I had difficulties, rather than communicating with online mentors. (kmm2304156 - Report-P-Opt A)

Similarly this PST preferred the support close by.

I didn't have much time on prac to contribute online to mentors. I preferred to communicate with the people around me to gain support. (kla9257047 – Report-S-Opt A)

In summary the form of interaction in the schools came from a variety of sources including:

- Within their group– dependent on numbers in the practicum school
- Supervising classroom teacher(s)
- Teachers in their staffroom
- Other teachers around the school e.g. computer coordinator
- possibly an OLM(s) who coincidentally may have been in the school

5.4.1 Within the PSTs

Depending on the school situation in terms of location, geography and the number of PSTs, support was provided by fellow beginning teachers.

I did not need to use an online mentor as I gained support from a fellow prac student and from the classroom teachers within the school. (elo9832211 – Report-P-Opt A)

The teacher I was observing during the ICT lesson reminded me that the majority of what students learn is from their peers. If my teaching style does not adequately allow for this to occur, then I'm doing my students the gravest of injustices. (ka2323874 – Report-P - Opt B)

5.4.2 *With Others in the School*

Some PSTs received support from the local staff in their school. The following comments demonstrate the range of people in the schools that were willing to support the PSTs.

Whilst I did log-on to Web-CT and read many of the discussions that arose between the mentors and my fellow Dip Ed students I didn't contribute to these discussions because I received lots of support and assistance from the staff at my school. (jlm9340017 – Report-S- Opt A)

I did not use the online mentors at anytime throughout my project because the vice-principal in our school was excellent with technology and he helped when I ran into problems. (BH2173074 - Report –P – Option A)

I did not use my online mentor, as I really had no issues to discuss with them, my Prac supervisor was an excellent resource for me in this area and in all other areas. (clb2303978 – Report S-Option A)

I found it helpful to verbally consult someone who was able to see samples of student work and my ideas when I had difficulties, rather than communicating with online mentors. (kmm2304156- Report – P - Option A)

I chose not to use the online mentors for this project, because I didn't understand how it was supposed to work, but primarily because I had support from the IT teacher at Oak Flats, and it is always easier to be able to deal with problems face to face, rather than through emails, and he was quite accessible. (kb2316262 – Report –S- Option A)

At one school the PSTs were looking for support from within the school but they found in school expertise lacking and relied on the support of each other

At my high school the staff were somewhat backward when it came to technology. Mentors did not exist. More often than not it was the other prac teachers or myself who showed our colleagues the potentialities of ICT. (rv2402208- Report S- Option A)

The classroom was also another source of support for these beginning teachers.

My own ignorance with regards to computers, and the class task which I found myself supervising meant that a lot of the questions that came up were answered by able students who discovered solutions for themselves, and then showed to me, my supervisor, or directly to a classmate. There was a genuine sense of camaraderie in the classroom. (sjc9242724 –Report-S- Option B)

For some PSTs their practicum school was also the home school of one or more of the online mentors and therefore face-to-face interaction with these mentors was made possible.

As one of the PST's commented...

The on line mentoring system was developed in association with a member of the staff at my school, and therefore we had direct access to some of the mentors. This was not intentional, however on general talking to these mentors as they were in the same section as I was the computer [online] at the university was essentially by-passed. Suggestions were received from OLM-K on the use of graphics calculators, when we were booking the computer laboratory, along with reference books, which she considered to be of benefit The mentors at the school gave ideas on the types of technology available at the school for the co-ordinate geometry topic. Both OLM-K and OLM-L had used the graphics calculators on many occasions and found them to be beneficial. (akb2384309-Report S- Option A)

There was only one school that had more than one online mentor as a teacher in that school. These mentors were able to discuss with each other their online experiences with the PSTs and share their strategies for support.

We had an opportunity to talk with the other teachers in the mentoring online program and that was good because we could support the students in the same way. (OLM-D)

The two groups were informed of the general awareness of the nature of the other group – in terms of the size, background of each other – but they did not have the chance to get together at any time during the project. This could be likened to the relationship between 2 people – there was no personal contact – no opportunity for small talk - before getting down to the business at hand. The resultant interaction between the groups may have been enhanced if they had been able to connect to “real” people.

I made an effort to bring these groups together but this did not happen. The main restriction was to find a convenient time that would allow these groups to meet. The OLMs were all full time teachers and many were a reasonable distance from the University and therefore ‘escaping’ from the classroom to meet the PSTs for even a short period of time was difficult. The OLMs were spread over a wide geographical area, some being at least 45 minutes from the PSTs ‘lecture base’. In the initial face-to-face meeting I suggested a “getting together” session but for reasons outlined above this was not possible.

5.4.2 *Interaction and Support - Online*

The online environment provided a mechanism for all to communicate before, during and after the practicums. Once online, the PSTs could interact with:

- The OLMs – directly or indirectly
- Each other – the whole cohort
- Their course ICT lecturer

or other resources on the Internet

Although I did not directly email any online mentors, I was able to gain a wealth of information/resources and help from various curriculum sites (teacher based resources). These sites offered computer classroom management tips and strategies. (CC2402300 – Report-P – Option B)


The PSTs were able to access support either **directly** or **indirectly** from one or more, of the online mentors.

Direct interaction was considered to be where PSTs actually made a formal request to the mentors and there was some form of feedback either by a response to the request by email or a reply to the discussion message. This form of interaction took place by the PST being able to post discussion messages to the general discussion space and then waiting for a mentor(s) or other PSTs to reply. It was also possible for the PSTs to contact the mentors by a direct request to their email address.


Indirect interaction was where the PSTs made mention of the other mentor/PST comments.

5.4.2.1 *Between PSTs and OLMs*


The interaction between these two groups varied throughout the year. The concentration of activity was mainly around the practicum period even though they had online access before and after their school experiences. Examples of this **direct interaction** can also be seen from the following online discussion postings relating to Task 2 and the subsequent mentor replies.

Message no. 461 Posted by (brw04) on Thu Jul 25, 2002 22:33	
<p>Dear On-line Mentors,</p> <p>I'm doing a prac with Year 7 French classes, so the level of language is very basic (a house, lounge room, bedroom etc - the week's vocab! 10 words at the most). Any suggestions on how to incorporate ICT (esp. computers) into my lessons (I have 4 x 37min classes/week with each group)? Any good websites you can recommend? Any CD Roms? Thanks in advance for your help! B.</p>	

Reply1: From one of the online mentors – who did not teach languages but was willing to offer advice even though it was outside her teaching speciality

Message no. 488 Branch from no. 461 Posted by OLM-K on Fri Aug 09, 2002 17:57	
<p>I've just discovered some software that allows you to create your own multiple choice, crosswords, close ex., short answer qns (needs to be identical match) and save them as html files so you can use them as online quizzes. This is a great way to review a topic.</p> <p>You need to visit www.halfbakedsoftware.com This is free to people who agree to share resources on www. There are already quite a few French ones linked there. The Powerpoint sounds good. There are CDs available. I have an Italian one that came through Ashton Scholastic. Our school has an Indonesian one that's well used. Have you tried a websearch or browsing company catalogues</p>	

Reply2: Another reply to the same request but this online mentor did have a background in the teaching area of Languages Other Than English.

Message no. 514 Branch from no. 461 Posted by OLM-K on Wed Aug 14, 2002 13:10	
<p>Dear Bev-I hope that I am not too late with some 'help'. I have just read about an interesting site to use with English and LOTE / Languages which may be of interest to you now or in the future. Through my window.</p> <p>http://www.curriculumsupport.nsw.edu.au/learningtechnologies/window/index.htm</p> <p>Hope all goes well</p> <p>Chris</p>	

Both replies were posted within a three-week period after the original request and the suggestions were not directly used during the practicum. The ideas however were not wasted and were used later as demonstrated in this PST's Task 3 - Report response.

The online mentors didn't respond soon enough for me to be able to use the comments they made into an activity. However, they made good suggestions that I would like to try to implement in the future. I have looked up the websites mentioned and the "Through my window" site. (<http://www.curriculumsupport.nsw.edu.au/learningtechnologies/window/index.htm>)

(OLM-CA Wed Aug 14, 2002 13:10 Any Ideas for French Teaching? Online discussion, is great, and I plan to promote it where ever I can. (BW9925451-Report- S-Option A)

The option to **directly email** the mentors was not used extensively by the PSTs. Examples of this form of contact and some of the associated usage issues can be seen below.

Usage: As a follow up to a general request

and then I fired off an email to John [Online Mentor] at his private email to say thanks for being interested and to ask him how it went with him in his class. (mh8801215-Interview)

Usage: Some tried but ran into problems

I actually emailed her from here (Uni) and she replied back by email and then I tried to email her twice from the school I was at but I got no contact and I also tried to email her once from here too and I also had the same problem ... I couldn't get in touch with her...so I am presuming there was a fault somewhere along the line. (jm2316250 - Interview)

Usage: Some PSTs mentioned they would have liked to have used this facility

I didn't have the dialogue I would of liked to have had ...I would of liked a bit more 'back and forth'... and I think it would also be good ...I don't know how the mentors would feel to actually have some face to face or even some.. sometimes email .. when you put in the delays ...five minutes on the phone .. or a week online ...so that's just the type of communication it is. (mh8801215-Interview)

The PSTs also showed that they **indirectly** received support from the online environment through observation of the postings of their colleagues rather than being an active participant.

Navigating on WEB CT I was able to explore and gain different ideas from online mentor/s and approach my unit of work in an objective manner. While I found the conversations between the online mentors and students interesting, I did not access them for any support concerning the activity. (ts712412779 – Report –S- Option B)

Action was later taken through others' online suggestions.

The support I received from on-line mentor largely been vicarious and retrospective. Although I used only one message (no 435), the website reference provided here by OLM-J has been the basis of my activities. This is the website that was recommended by this online mentor.

Message no. 435 posted by [OLM J] on Sun Jun 30, 2002 09:58 Subject How do I do that? A good site on how to use a number of programs in the classroom is <http://www.schools.ash.org.au/revesby/how.htm> Happy Hunting [OLM-J]

(jm9562400-Report P- Option B)

These interactions with the OLMs also varied with the teaching focus of the PST – primary or secondary, and also in relation to the opportunities to implement their planned activities in the classroom i.e., the assessment 3 ‘Report Task’ with either Option A or Option B. The numbers of direct and indirect interactions across these characteristics can be seen in Table 5.2. Primary PSTs required more direct and indirect contact than secondary PSTs and the need for direct contact was considerably higher where the PSTs had access to the technology (78%).

Table 5.2: PST Contact Characteristics with the Mentors

Type Of Contact	Of cohort	Primary PSTs	Secondary PSTs	Option A (access to technology)	Option B (no access to technology)
Direct	8	56%	44%	78%	38%
Indirect	12	54%	46%	22%	62%
Total	20				

Of the observable contacts only 11.23% of the complete cohort had made contact with the mentors in some form

Apart from the initial direct messages posted by the course lecturer there was little online contact with her while the PSTs were on their practicum or later during the preparation of their set tasks. One PST after task clarification with the lecturer then made use of the OLMs

Initially I did not envisage that the ICT work I had done with kindergarten to be sufficient to do option A but after talking to [lecturer name] I have since changed my mind. Still, I was able to avail myself of the online mentors experiences when it came to touch-typing. I was sure teaching kindergarten to touch type would have its own set of challenges and by referring to the mentors I

was able to get some advance warning on what to expect and what to prepare for. This was invaluable as I had missed a number of the issues that could arise and also it gave me confidence in my approach. (MH8801215-Report-P- Option A)

The ability to be able to observe as well as email the mentors was well received as can be seen by the following.

I think it is good to have the option ...cause once again its not that you are up for ridicule or embarrassment ... but if you ask a question that you feel might be ...basic .. you might not want a wide audience to know that sort of thing. (MH8801215 – Interview)

Other PSTs were not concerned about the lack of face-to-face contact with the mentors – the knowledge of their background was more important than actually meeting the mentors.

I'm comfortable ... I know if they are mentors for a university then I'm comfortable doing just e-mail ... some people might rather have face to face conversation or by phone but for me I'm comfortable with e-mail ...it's always good to know their credentials... You are not just asking some faceless person. (pdv2292129 – Interview)

A number of the OLMs indicated that this form of contact was different to other forms of mentoring or support where you were face-to-face or had some sort of control or awareness over the environment in question.

So I guess the boundary is going to be working in someone else's environment and how much change you can make... however in online mentoring where you are in your own environment you have a bunch of teachers who want to be mentored in their own environment that could be a completely different scenario because they have the ability to make a whole lot of change ...that's where I see the difficulty ... being removed from the nature from the site. (OLM-G)

This lack of face-to-face contact also had an impact on the OLMs and their sense of fulfilment.

The only problem I guess... I would have liked to be more involved in sort of with the teachers themselves.. I didn't get to the face to face meeting ... that probably would have helped because that way they new who they were talking to. (OLM-F)

I know it's a time thing and a computing thing but I think a sit down face-to-face contact might be useful. (OLM-F)

A number were concerned that they did not do what they thought was expected of them and fully undertake the role as an 'online mentor'.

I thought it was a good way of contacting but Not that I really wanted to sort of get in and help a lot or that sort of thing but I sort of felt that the students weren't really asking that much of us. I don't really know from their side as to whether they really didn't need the help or they just didn't post their problems. (OLM-R)

5.4.2.2 Within PSTs

A number of PSTs made use of the discussion area of the site by viewing the contributions of other PSTs.

I've spoken to other people...and they say "Oh I saw your bit on the web and they get to see it and they can sit back and watch that... but they are still getting the ideas... (MH8801215 - Interview)

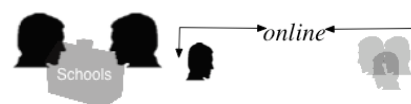
I did not need to use an online mentor as I gained support from a fellow prac student and from the classroom teachers within the school. (elo9832211- Report-P - Option A)

5.4.2.3 Within the OLMs

There was no interaction between the OLMs that was visible online during the study. In the early preparatory stages when the OLMs were testing their access interaction was made on an informal basis where they were able to meet face to face ie the schools where there was more than one mentor. A number of the mentors commented on the lack of time to participate and therefore communicating with each other became a low priority.

5.4.3 Interaction and Support

In schools and Online



Depending upon the opportunities afforded the PSTs in their practice teaching a number made use of the appropriate source of support. In some cases this meant using both online and, 'in school', contacts.

As I was involved with this class over a 2-week period I was able to improve the way I presented new material and managed activities with the guidance of my supervising teacher and my on-line mentor. (KMD2356284 Report-S- Option A)

Others sought alternative sources of support.

I didn't have much time on prac to contribute online to mentors. I preferred to communicate with the people around me to gain support. I have a fair bit of contact with teachers outside of

university that teach both primary and secondary in different subjects. (kla 9257047 – Report-S - Option A)

5.5 PST Experiences of Use of Support

There were many interpretations of support and the type of interactions that took place. Both PSTs and the online mentors gave examples of the interactions that took place and often tried to explain their nature. The following themes emerged from the data are used in an effort to categorise these comments.

- Help not needed
- Technology related
- Opportunity/Time
- Awareness of the support
- Other support

5.5.1 *Help Not Needed*

The following comments from PSTs during this practicum indicate their level of comfort with the environment and thus there was little need to seek outside support.

My supervisor was very reluctant to bring or integrate any areas of ICT into the classroom so he found it great and very rewarding that I created a unit on WebPage design focusing on the HSC syllabus outcomes. Also self-realization that 'I can cope' I learnt that I could adapt myself to any situation and I was very versatile in terms of the many problems that arose out of using ICT. (DMR9937063 Report-S- Option A)

the Deputy Principal and self proclaimed computer expert was the epitome of support and encouragement, to the point where I felt confident enough to conduct classes under my own steam without contacting online mentors. (kh9155554-Report-P-Option.A)

Others related their concerns to local staff and fellow prac PSTs

I did not use my online mentor, as I really had no issues to discuss with them, my Prac supervisor was an excellent resource for me in this area and in all other areas. (clb2303978-Report S-Option A)

I chose not to use the online mentors for this project, because I didn't understand how it was supposed to work, but primarily because I had support from the IT teacher at [OF HS], and it is always easier to be able to deal with problems face to face, rather than through emails, and he was quite accessible. (kb2316262-Report-S-Option A)

Some students made changes to the topics or strategies they used in the classroom and therefore did not require specific support in relation to ICT.

I did not ask for support from my online mentors, as I did decided to use library books and change the students' research project, as opposed to computers. (AP2372708-Report-S- Option B)

5.5.2 Technology related

There were technology issues that had some impact on the use of the support provided. An example of the frustrations experienced by a number of PSTs is shown below.

I tried to read the hundreds of my fellow student's papers only to find myself repeatedly dropped from the university and course site (one of many frustrating complications of IT).Well I have only partly succeeded in posting my discussion, or really only part of it. I can imagine just how an inexperienced teacher can arrive in class with teeth gritted and up tight after trying to deal with IT, let alone trying to teach it. (ld98 – Interview)

Some PSTs decided not to seek support due to constraints within the school that prevented them from trying to integrate technology as part of their lesson structures.

Therefore, planning English lessons with IT components became problematic, since there was no guarantee that lab time would become available. (MC9652140 –Report-S-Option A)

The pre-service teacher's level of confidence in using ICT may have also been a contributing factor to not seeking support.

Practicum for me was more about learning the syllabus content and judging my classes to decide on the best way I could convey this content using the methods I felt confident with. ICT did not come into this equation at all. I felt I had to perform and preforming with ICT would let me down. (mbo019936944 – Report-S- Opt B)

Other PSTs made conscious decisions that they would not include a technology component in their practicum experiences.

I learnt that my own teaching style is quite relaxed and informal. I believe that I would need to distort this somewhat when utilising the ICT equipment with my students. (KV9942062)

For PSTs in an overseas placement the access to technology for both classroom use and their online course tasks was severely limited as can be seen by a posting made by this PST on her return to Australia.

In Beijing, China for example, the extent of it was one overhead projector, that worked if you were lucky, and one cd player, that was shared amongst the 20 odd classrooms. Access to

computers was non-existent, and if you did manage to find an internet cafe around, you were lucky. (aj98-Discussion-P)

5.5.3 Opportunity / Time

On practicums generally the PSTs find the lack of opportunity and time often impinge on certain tasks they wish to undertake within the schools. Depending on the school and the pre-service teachers' awareness of the demands of teaching these issues are a real problem for the majority of PSTs.

The following comments from this study shown in Table 5.3 indicate that during these practicums these issues were also a restriction to interact online.

Table 5.3: Opportunity and Time Constraints - PSTs Contacting Mentors

Time	Opportunity
(sorry on-line mentors, but I barely had time to remember your existence!)	I never had a chance to converse with an online mentor. When I took the lesson it was very late in the practicum due to the timing of the topic.
I did not seek mentors advice because of the limited time I had to implement such a topic.	I didn't have the opportunity to use ICT resources in my classes therefore I didn't require any help from the online mentors.
I did not contact an online mentor because I knew, within the first week, that the time available for an IT component during this practicum was unlikely and not encouraged.)	I didn't consult with any online mentors simply because I wasn't in contact with computers very much.
In designing the unit of work support from my on-line mentors was limited. As this activity took place during the first two weeks of prac there were few contributions to the Web CT discussion panels	Unfortunately, I never had the opportunity of gaining any online help from the mentors as I only ever had the chance to do one activity.
	I didn't have the opportunity to use ICT resources in my classes therefore I didn't require any help from the online mentors. I did consult with my supervising teacher, and the "IT" person in my faculty.
	Due to the inaccessibility of ICT resources for my classes, I did not seek any support from my peers or mentors, online, during my practicum.
	The labs were not available for use due to the size constraints and priority given to other disciplines.

5.5.4 Awareness of Support

The PSTs were told in lectures about the online environment and the support mechanisms that were available, during on campus lectures, but some were still not aware of this facility.

The availability of the online mentor was not realized until a survey was passed in regards to their usefulness. (DHW2231323)

I did not receive any advice or help from online mentors because I did not no that the help was available, I am not sure if I would have used it any way. (SM9835964)

Extraction of data from the Task reports and online discussion postings shown in Table 5.4 gives an indication of the possible barriers as to why the PSTs did not seek support from the OLMs.

Table 5.4: Possible Reasons for Non-contact with Mentors – Directly or Indirectly

	Total	Primary	Secondary	% Of Cohort
Help Not Needed (Own ICT Skill/other methods)	10	3	7	5.6%
Technology related (Problems,, Lack of, Discouraged in the use)	23	12	11	13%
Time/ Opportunity Issues (Stage of Prac)	20	13	7	11.2%
Awareness of Support	4	2	2	2.2%
Other Support (other PST and in school Teachers)	7	5	2	3.9%

Issues relating to the technology and time/opportunity seem to be common for many PSTs regardless of their school situation.

5.6 Perceptions of Support

The pre-service students and the online mentors both had their own perceptions of support in this community. The themes relating to perceptions of support that emerged included:

- Mentors as a friend
- Support from a distance
- Only ICT focussed
- Broad Range of support
- After the course – post practicum

5.6.1 *Mentors as a Friend*

A small number of the PSTs commented that they interacted with the OLMs on semi personal basis.

... john [OLM-J] actually gave suggestions... he actually gave suggestions after the pract – I actually emailed him after .I didn't get a reply ..he said that his children ... his 6th class thought that if they put stickers on the children's fingers so they would actually know each one...unfortunately I had finished the pract by then and I couldn't give it a go ...but it was just nice to have the support ...saying ...you know that your approachthis is a good idea...it was definitely positive and it was prompt. (MH8801215)

5.6.2 *Support from a Distance*

Many PSTs were quite comfortable in using the suggestions of the OLMs and their peers by only observing the interactions that were taking place on the subject website.

While I found the conversations between the online mentors and students interesting, I did not access them for any support concerning the activity. (ts712412779)

Support was also received from areas other than online and from within the school.

I didn't have much time on prac to contribute online to mentors. I preferred to communicate with the people around me to gain support. I have a fair bit of contact with teachers outside of university that teach both primary and secondary in different subjects. (kla9257047)

5.6.3 *Only ICT Focussed*

Many interpreted the only reason for contacting the mentors would be if they need help with the use of technology in the classroom.

I did not gain any support from the online mentor/s, as I am very computer literate and felt that I didn't need any help. (BJZ8312674-Report-S-Option A-Maths)

I thought it was just IT but I think if they were willing to say they would just be a mentor that would be a lot more helpful. ... Well if I had know about it earlier .. like say they had come into one of the tutorial session and say what they can do to help out....I really wouldn't know what ... I don't really know all the computer terms and it wouldn't sound right.. but if they came in and said we are here to do thisemail me if you need help ..or you need help with this or this ...just some sort of examples of what they can do to help you out ...you know when you get to that problem. (JW2304314)

5.6.4 A Broad Range of Support

The support gained was not only related to the use and integration of ICT but covered a much a wider range of issues.

What I gained from my online mentors was a better knowledge of the steps to take to avoid unnecessary hassles. I learned what to focus on and became aware of certain problems that I could run into. (CS2340380)

5.6.5 After Their Course – Post Practicum

A number of PSTs commented that they regretted not having the chance to use the mentors or put into practice some of their suggestions while on practicum.

The online mentors didn't respond soon enough for me to be able to use the comments they made into an activity. However, they made good suggestions that I would like to try to implement in the future. (BW9925451)

The on-line mentors were not consulted with regards to this activity. (However, I think it was an excellent idea to have them available. I hope they were not disillusioned by the lack of dialogue with us). (RNM2396142)

I did not access support from the online mentor/s, however in hindsight I wish I had, as they may have had useful ideas regarding class management and appropriate activities for such a young age group. (KFM9668780)

In designing the unit of work support from my on-line mentors was limited. As this activity took place during the first two weeks of prac there were few contributions to the Web CT discussion panels. (TR9827722)

In response to the interview question...

“would you, next year, ...like to have that sort of support available to you?”

one of the PSTs replied...

As a beginning teachers....Yesfor sureWe have talked about it. ...actually the Principal at my second prac at Stanwell Park ..she said that the first 3 years when someone comes out there should be someone there to bounce ideas off.. because it is such a learning process and it can be so overwhelming and having that extra support. (MH8801215–interview)

5.7 Interactions - Expected and Actual

At the beginning of the project there were certain expectations about what would happen when the online environment was established. The following section gives an outline of what was expected and what actually occurred, from the perspectives of both the PSTs and the OLMs. In some cases there were suggestions made for future interactions.

5.7.1 PSTs-expected and actual

What was expected of the PSTs?

The interactions were expected to take place in this environment around the technology. This online community was expected to bring together these groups to provide support that could not be obtained in other ways. Evidence of this support indicated that it was mainly focussed around the use and implementation of ICT in the classroom.

What happened?

The PSTs did share experiences on prac while the details were still fresh but they used a variety of structures to support what was happening at that time. They were able to connect with the OLMs or other colleagues when no one at the school could help to discuss and share issues not only centred around ICT. The support gained from the OLMs seemed to stimulate others into gaining support from other sources.

Some responses suggested that PSTs were reluctant to contact the mentors if they didn't have some prior personal contact.

And I probably would have gone through her anyway because I knew her personally ... rather than trying to email someone that you don't know.. so that's probably why it started off with me ... but I was just thinking of other people ..they wouldn't have had the opportunity to meet the person they might not have emailed them. (jfsb98 - Interview)

The PSTs also commented that they would have welcomed the face-to-face contact. This was suggested not only for the visual connection but also as an avenue of appreciation.

I think that would have been nice just an informal gathering sayingI think it is pretty impressive ...now that we know how much teachers actually do.... to actually volunteer to do

anything extra so I think just for an appreciation of their efforts ...but just to put faces to emails and things like that is always good. (MH8801215– interview)

A number of the PSTs found the lack of personal contact a disadvantage.

but to email some person that you can't put a face to was difficult for me anyway... I guess if they had come in and talked a little about themselves a bit ...how they got into computers...what they do with their primary or secondary students - computers in their classroom ...some ideas ...It just seems very abstract... even if you had them come into a lecture.. ...bring them into a class.. maybe just one tutorial.. and have the mentor just for that tutorialsit and talk and get to know someone ...because if you say you have problems with IT or how you are implementing it ...and hear .. "this is what I do in my classroom". (JW2304314– Interview)

The PSTs were not aware of the circumstances of the OLMs in terms of their classroom teaching and general school commitments and therefore did not understand the difficulties associated with bringing the groups together but they still lamented the fact that they were unable to meet their mentors.

I guess from the beginning it might have been better to try and introduce the mentors and this would have exposed them to us. (jfsb98 – Interview)

The financial situation of some of the PSTs may have also been a factor in accessing the partnership. With the accessibility problems that arose in the schools many of the PSTs tended to try and contact the mentors from home – but for some this was a problem.

Yeh, hopefully I will have a bit more money then and I will be able to buy a proper computer and actually get onI realise the benefits of it but it is frustrating when you can't practice. (jfsb98- Interview)

5.7.2 OLMs - Expected and Actual

What was expected of the OLMs?

It was expected that once the OLMs were brought together online they would be able to professionally contribute to the needs of the inexperienced PSTs mainly in reference to using ICT.

What happened?

A number were excited about being given the opportunity to be able to see what 'young teachers' were doing in their pre-service training.

It has been a long time since I did my training – it will be interesting to see what they are doing now. (OLM-K)

The OLMs generally made contact in a variety of ways with the predominant mechanism being online. All the OLMs approached their involvement in different ways. Some accessed the site while at school – depending on their school workload but most were able to go online at home to check the discussions and their email.

I basically jumped into WebCT and checked out if there were any questions that I could answer...often people had already answered themso I didn't really say anything ...but occasionally I did. (OLM-C)

Not as they would have liked

I checked semi regularly I wouldn't say it was like once a week.... I did check.. I guess I was sort of feeling my way from my end and didn't contribute as much as I could have.. Maybe if I had been more consistent with my logging on that would have changed it was inconsistent .. so when I did get in I was taking it in rather than offering anything. OLM-G

They found the lack of formal structure relating to interacting with the PSTs a minor problem together with the time constraints of fitting in this extra task as well as their normal teaching duties. When asked how they interacted with the PSTs some commented that they worked with small groups of students.

The effective involvement....um.. was probably addressing three students' concerns ...I did regularly check over that time there were three that I felt I was able to address from the my point of view as an English language teacher..... one or two were French in a primary school - one was an English oneI felt I was involved in those three. (OLM-CA)

Some of the OLMs regretted not having the opportunity to meet with the PSTs. Soon after going “live online”, a number of the OLMs noticed the lack of ‘personal awareness’ of who was there – from both the other OLMs and also the PSTs.

“I would have liked to be more involved in sort of with the teachers themselves.. I didn't get to the face to face meeting ... that probably would have helped because that way they new who they were talking to”. (OLM-F)

What might make it easier to mentor is actually sit with someone face to face as opposed to online.... So that I could get immediate feedback and they might be able to think of questions on the spot as opposed to reading something and then sending it off and waiting for someone else to respond to it ... so perhaps some more direct contact. (OLM-F)

It was also suggested that more of a combination of both face-to-face and online might have been more conducive to establishing and developing the ‘partnership’.

A number of the OLMs had noted that even though they were online and observing and commenting on the student requests there tended to be intermittent feedback to inform the OLMs of their effectiveness.

I would be interested to hear what their response was about ... my perceptions are that those that did use it must of got something out of it ...this form of communication..... I didn't see the responses..."Ah this was great" (OLM-L)

One of the OLMs became frustrated with the website interaction due to connection problems and preferred to communicate with the PSTs via email.



Had little contact with the students' online - found access to the site very slow and tedious. As a result was not keen to check it on a regular basis. The one aspect I did find of value was the emails that I received from a number of the students. I had a number of requests for help with a management task had been set. I found this form of contact much more preferable. In these instances the students contacted me directly and were obviously after some help. Whereas by posting a general request I found it a little more difficult to become personally involved in their requests. I also check my emails everyday and therefore any requests for help were answered immediately. Without a few reminders I was less likely to logon to the Webmail and check the online requests for help. 'Email the mentors' was a much better idea. (OLM-J)












5.8 Interactions - Conclusion





The extent and the means of interactions between key players varied throughout the year and there were many things that influenced their frequency, location and impact on the formation of a professional learning partnership.

The following comments in Table 5.5 illustrate many of these issues and support the conclusions and design recommendations that will be addressed in the following chapter.

Table 5.5: Issues Affecting Interaction and Possible Solutions

Factor	Comment	Key player
Flexible Contact "More face to face"	...you know if you teamed up with a mentor and some how the mentor got to visit the site(school) before or during or even if was just for half an hour or just to see the site OLM-G	
Flexible Contact Assigning mentors to groups	.maybe it could be broken up intothis is the section for the maths teachers...this is the section for the HSIE...So therefore I might be more inclined to just tap into the maths people even though I guess... I might have a better understanding of what they're thinking about. OLM-L	

Flexible Contact Homogeneous groups	because there was a good spread of us over different faculties and different levels I guess we did kind of cover it ... but there was a spread right through to year 12 and I thought that was good OLM-R	
Flexible Contact Homogeneous groups	I preferred it that way because the people that were interested in the question could answer the question and the people with experience in that ...the wider the net the better the chance of an answer...PST	
Course Design <i>Facilitation</i>	“if they are getting what they wanted out of it throughout the actual 12 week period but I think there should be follow up sessionsevery 3 or 4 weeks from perhaps the coordinator ...regular contact with them ... if they are being facilitated in a way they thought they would be and if not ...how we might go about we go about rectifying it . AS-G”	
Setup <i>Face-to-face</i>	Maybe even going to a handful of mentors - going to one of their lectures or something whether they could be considered OLM-F	
Setup <i>Awareness</i>	it probably wasn't advertised enough during the course so that people could know and I suppose it is difficult for people like myself that are not that good with ... jfsb98. PST-John	
Setup <i>Awareness</i>	If you sell it as that [general support] then people would probably use it a lot more.... Because I didn't really need help ...but I definitely needed help as far as techniques in the classroom are concerned...giving ideas of how to use it and stuff...PST-J	
Awareness <i>Initial training</i>	I was only limited by my own familiarity of using that site really and at times.... You know you could put something there ... you know go out on a thread.... And saying "I can't find anything new here" So I think "Am I spending enough time looking" ...Are there other places I could have gone? I didn't spend hours and hours on thereso it could be that the second time around I could be a little better at using it ...OLM-L	
Awareness <i>Initial training</i>	that was my own learning and comfort zoneNot so much the comfort zone of the tool ...the tool doesn't worry me at all ...the environment ...getting a comfort zone within the environment ...the learning environment that was taking place OLM-G	
Course Design <i>Timing</i>	Having been placed at the beginning of the year it was too early for them too even have their heads into a mindset being a teacher..... it was best balance we could achieve in the situation, stuck with the model of a separate IT subject AS-C	
Course Design <i>Integration</i>	There is a continual struggle of making the IT subjects pedagogically relevant ... with the dip ed AS-L	
Course Design <i>ICT integration</i>	the IT aspect from a program level to be almost an afterthought ... so seemingly lots of planning went on about the whole program ...but IT wasn't necessarily involved in the planning AS-L	

Course Design <i>Connectivity</i>	I think that there are always some limitations to it but finding ways of combining that real life classroom real teacher perspective input is vital and needs to be something that we continually look at AS-L	
Course Design <i>Teaching standards</i>	that it wasn't a sustainable model, it was a very unrealistic model, because of the load that was on us[teaching staff] AS-C	
Course Design <i>Authentic/timing</i>	... the current way we are doing it is not related to the practicum and I think the course has suffered in some ways because of that ...because the students don't really see the application of the technology in the school .. I'd prefer to see the course structured around a period of time when they are involved in the delivery of these things in the classroom - AS-G	
Course Design <i>Teaching standards</i>	One of the other positives that came through about the course was that they had to be such self regulated learners, I think they appreciated that. The subject offered that degree of flexibility. AS-C	

Each group had a different perspective on the needs and the support required for themselves and of the others. The academic staff that commented on this study had been involved with various implementations of this course in the past few years and gave different perspectives depending on their level of involvement and how recent this was. Most were concerned by the need to connect the PSTs with authentic school experiences and this was inhibited by many factors. It was evident that there was a considerable range in the skills of the PSTs and the academic staff noted this.

The original way that course started and I can remember that the people running it were intent upon ensuring that all the students reached a certain level of competency and for some students they soon realised that that level of competency changed overtime as different cohorts went through and the degree changed ...more and more students were becoming more and more competent in IT but at the same time the bottom group was still there just as great so the gap was getting greater. (AS-B)

Course design also impacted on how, when and where they could integrate ICT and with the introduction of the Professional Teaching Standards continued to be pressured to ensure that these would be attributes of a beginning teacher.

5.9 Interactions – The Researcher's Perspective

I observed these interactions from two different points of view. From the personal perspective the direct interaction with the OLMs, both face-to-face and online, was

effective, with all of them happy to contact each other and communicate with me to inform and suggest improvements. Professionally as the researcher, I wasn't required to interact or intervene with the design during the course of the year. Once the year had begun with the course structure and the online environment established facilitation was not obviously required. I monitored the online interactions between PSTs and the PTs and resisted the temptation to comment on the support requested and on that being offered. During periods of inactivity, as a experienced teacher, I was tempted to offer comments to the PST' requests, not being aware of the extent of the support that was being offered face-to-face, by other sources such as peers and other in-school teachers.

Through group evolution and spontaneous mentoring there were other themes that were now emerging that were having an impact on the design and implementation of a PLP. With the addition of themes emerging from the face-to-face (Environment B) -(shaded), Fig 4.18 can now be expanded to include *support* and *flexible contact*. These extended themes are now shown in Figure 5.7

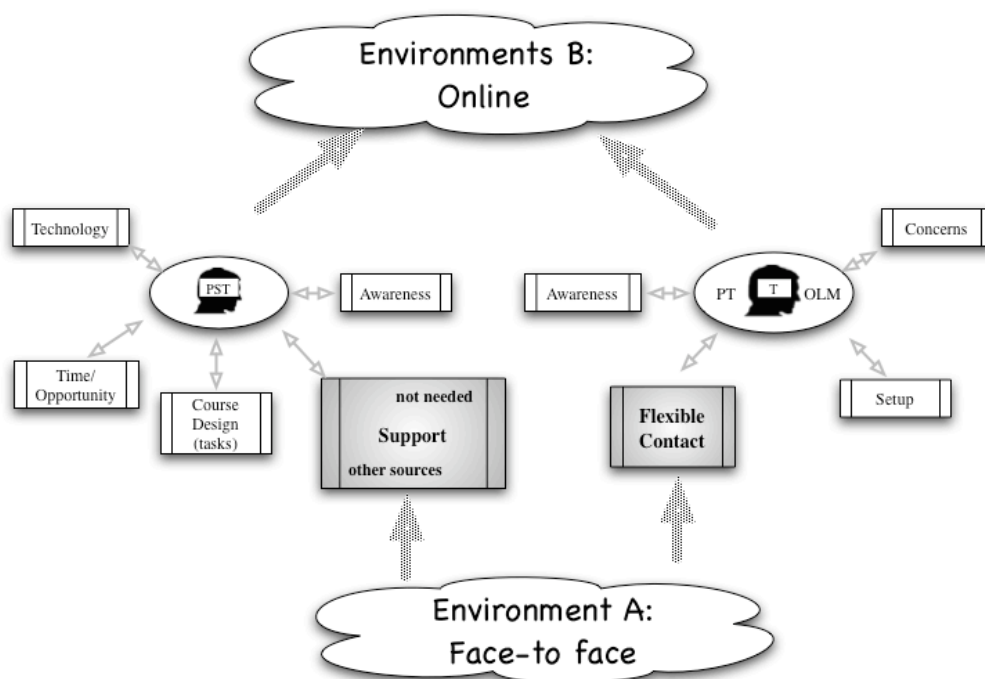


Figure 5.7: New themes to consider in the Design and Implementation of a PLP.

Chapter 6 will review the aims of the study, comment on these emerging themes and interactions, and conclude with a set of recommendations for the design of a professional learning partnership.

Chapter 6 - Conclusions and Recommendations

The intention of this chapter is to review this research in light of the initial research questions. The previous chapters have unpacked themes that inform the design and formation of a partnership that would connect pre-service and practicing teachers. This chapter gives a review of the aims of the study, summarises the findings, and provides recommendations for the design of a professional learning partnership and suggestions for further research.

6.1 Aim / Purpose Of the Study - Review

The purpose of this research was to determine how a ‘technology supported’ professional learning partnership (PLP) could be used as the means to bridge the gap in professional skills and knowledge between beginning pre-service teachers (PST) in training, and experienced practicing teachers (PT) in schools. An environment for this partnership was created within the bounds of a fixed course structure using an online mentoring relationship.

The study occurred within the constraints of this course environment and it attempted to understand the characteristics that were required to establish and kick-start a professional learning partnership between these two disparate and evolving groups.

The study was initially guided by course requirements with a focus on the examination and integration of ICTs in the classroom and the use of a mentoring support relationship, online. It used ICT as the vehicle to examine what interactions might be possible among the key players – pre-service teachers (PST), practicing teachers (PT), academic staff and the researcher, in the different contexts of university, schools, practicums and online. As the study evolved the course and ICT became less important and the design and other influences became the focus.

6.1.1 Rationale for Limited Use of Online Environment for Mentoring

There was an expectation that the teachers and pre-service teachers would grab the chance to use this medium to support each other for similar purposes for the duration of the program but the interaction with the online mentors was replaced with other means of

support and these influences impacted on the direction and overall outcome of this professional learning partnership. This expectation was guided largely by initial understandings of aspects of the key players, mainly the practicing teachers and the school environments but as shown in Fig 5.7 the face-to-face environment exposed the importance of additional *support and flexible contact* that was provided in the schools by supervisors, other classroom teachers and the fellow PSTs.

I was fortunate to have a supportive, knowledgeable teacher and did not seek advice from the online mentors. PST(kj2304004)

Whilst I did log-on to Web-CT and read many of the discussions that arose between the mentors and my fellow Dip Ed students I didn't contribute to these discussions because I received lots of support and assistance from the staff at (my school). Both my supervising teacher, Ms X, and the head of the History Department, John M, were excellent sources of information. As were the IT staff who advised me as to the appropriateness of the tasks I was setting, the abilities of the students, and the usefulness of particular applications. PST (jlm9340017)

The pre-service teachers noted the advantages of *flexible contact* with others close by.

I didn't have much time on prac to contribute online to mentors. I preferred to communicate with the people around me to gain support. I have a fair bit of contact with teachers outside of university that teach both primary and secondary in different subjects. PST(kla 9257047)

This case study took a detailed snapshot in time around a unique pre-service teacher preparation program and it examined the interrelationship between the expected and unexpected variables. I had little control over many of the events that occurred during the study and I allowed my background as an experienced classroom teacher and extensive involvement in the classroom use and support of information and communication technologies to guide the planning, setup and broad expectations of this evolving partnership.

6.2 Study Relevance to Current Context

The characteristics and formation of such a partnership that would connect pre-service and practicing teachers is relevant to the current Australian context in 2006 where a number of organizations are developing structures and guidelines to view the career of a teacher as an ongoing professional development process rather than a set of often, discrete, stages.

One such organization- the NSW Institute of Teachers has provided a set of Professional Teaching Standards to establish a sequence and a framework for all teachers throughout their career. It is hoped that these standards will

describe what teachers need to know, understand and be able to do, as well as providing direction and structure to support the preparation and development of teachers. (NSW Institute of Teachers, 2005, p. 1)

Figure 6.1 builds on the initial focus of the study as shown in Fig 1.4 and shows how this relationship between the various key players in the sequence is important in connecting teachers at different stages of their career continuum.

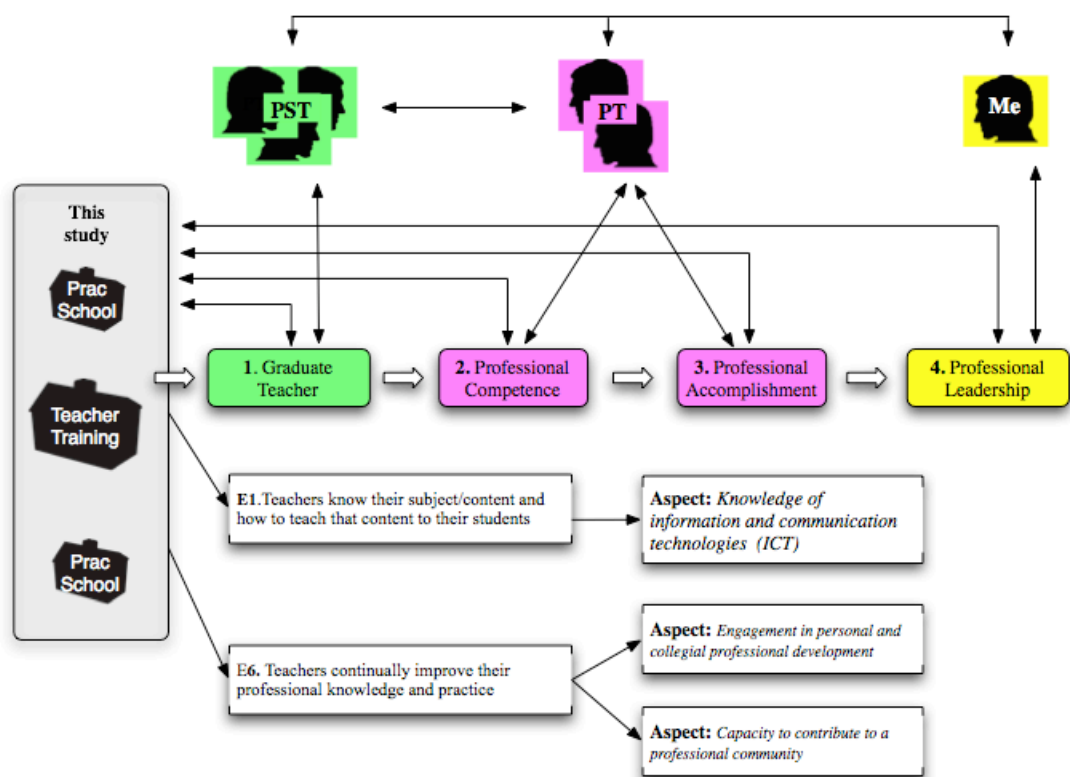


Figure 6.1: The Study and NSW Framework of Professional Teaching Standards

These standards will affect all teachers and organizations that are involved in preparation of new teachers and have an impact on the professional competence and accomplishment of all teachers throughout these four stages. As a consequence all teachers should be supported by some form of a professional learning partnership.

6.3 Conclusions and Recommendations

The focus for the study was the initial design and establishment of an environment that would allow teachers to connect. This resultant environment would inform the research questions

How do you design a professional learning partnership (PLP) to connect pre-service and practicing teachers in a technology-supported environment?

What are the features that impact on the formation and/or sustainability of a PLP, with specific reference to:

- Teachers
- Teacher preparation institutions

Given the set conditions of the course and the diverse nature of the existing and evolutionary group structures this research showed that the PLP offered extensive opportunities for cooperation and collaboration between these groups, both predominately face-to-face and with an alternative online. It also helped to draw out the features that would be necessary to establish such a partnership and the ensuing benefits for the key players who participate. There were obvious examples whereby

teacher professional learning arises from the interaction of theoretical knowledge and the knowledge constructed from practice and experience. (Carter, 1997, p.3)

and to support the claims of Hargreaves and Fullan (2000) who propose

there is increasing commitment to the idea that all teachers are more effective when they can learn from and be supported by a strong community of colleagues. (p. 52)

There were various levels of connectedness during the study and the following aspects emerged as having an impact on the interactions between the key players.

- Course Design and Structure
- Setup/Preparation
- Technology
- Time/Opportunity
- Patterns of Interaction

From each of these perspectives there were a number of additional themes that influenced the establishment of the PLP. These are summarised in Figure 6.2

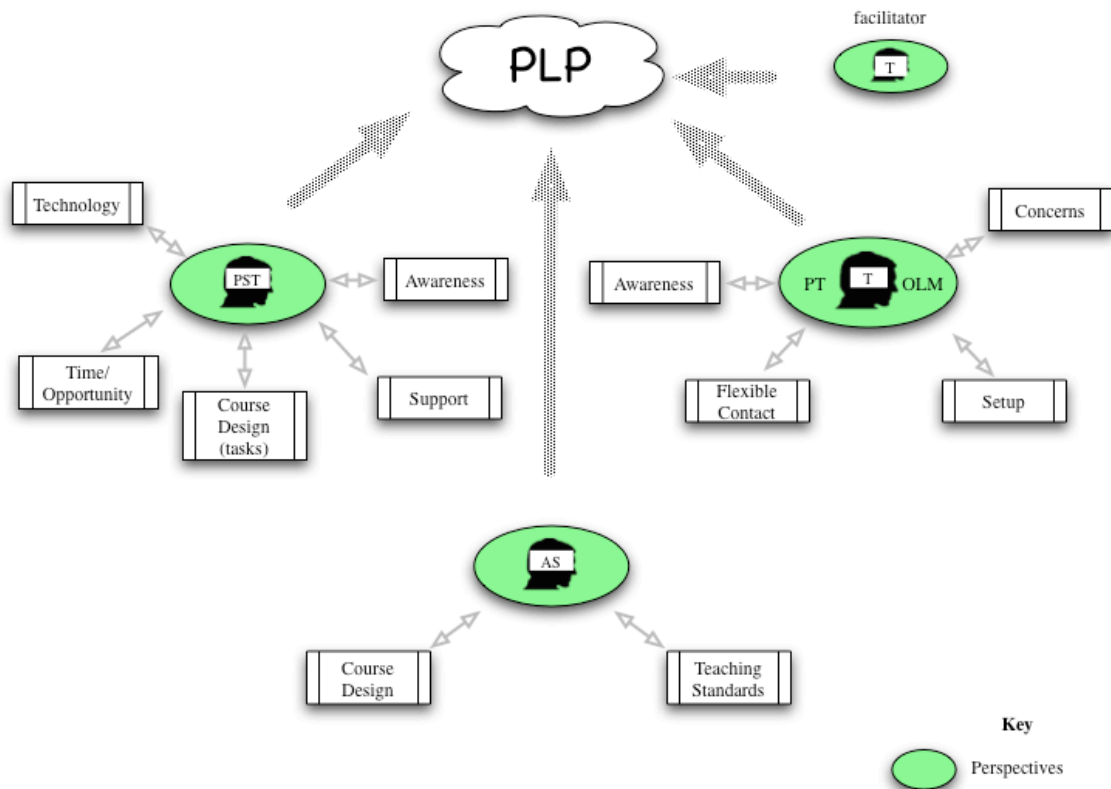


Figure 6.2: Themes Emerging that Influence the Design and Impact of the PLP

The following section will expand on these aspects and provide a set of primary and secondary recommendations for the establishment of a PLP.

6.3.1 Course Design and Structure

The overall design of the Graduate Diploma in Education course was fixed prior to the commencement of the study and therefore there was not an opportunity to re-design in order to accommodate a professional learning partnership. The concept of a supportive environment with online mentors was introduced as an overlay associated with the separate ICT component of the course - not as an integral component of the whole course.

The study demonstrated that support was sought by the pre-service teachers across all areas of teaching and was not limited to ICT. All members of such a community should be prepared to assist where possible across subject and school level boundaries. Academic staff in other components of the course could include this online community as part of their strand structure to allow infusion of authentic experience and advice throughout the year.

The Faculty of Education undertakes extensive planning and communication with schools prior to the PSTs undertaking their school experiences. This would be an ideal opportunity

to make school personnel aware of the mentoring arrangements being established and the online environment that would be available. This would also be an opportunity to include other PTs in this community and for the inclusion of the method lecturers (practicing teachers) as they were not involved as part of the study and were quite separate from the practicing teachers who acted as online mentors.

Table 6.1: Recommendations Relating to Course Design and Structure

Aspect	Course Design and Structure
Primary Recommendations	<ul style="list-style-type: none"> • Involve the key players in the design, function and awareness of the partnership • What ever the type of PLP to be designed – it has to be designed across the whole course
Secondary Recommendations	<ul style="list-style-type: none"> • Provide full flexibility for all teachers to make use of the support for the duration of the course and not be restricted to specific periods based around the practicums. • Co-ordinate with practicing teachers and their schools in relation to the practicum environments prior to the introduction of the mentoring and interactive online components.

6.3.2 Setup/Preparation

Many of the outcomes were dependant on the setting up of the study and in the preparation of the active participants. This environment, once established, was generally self-generating and interaction occurred where it was needed but my involvement, as the researcher, initially played a background role in the setup of the OLMs and the coordination of the online environment. As the facilitator of the PLP, I had certain expectations of what would happen when steps were taken to bring these groups together within a supported online environment. These expectations were guided largely by my initial understandings of some of the characteristics of the key players, mainly the teachers and the school environments. This case based research was centred on a snapshot of a particular pre-service teacher preparation program and its unique characteristics were important considerations throughout the study. This ‘design and support’ approach was beneficial to outcome of the study in that it allowed certain interactions to evolve without specific directions.

The various groups had their own priorities with their course or school and it was important for me to inform and support where necessary.

The academic staff provided the impetus and the official acceptance to allow the various components of the existing courses to be integrated and provided the ongoing awareness of the support that was available.

The selection and preparation of mentors in any situation is extremely important and in a setting where an online environment is available there is an added dimension. This study has shown that there are certain characteristics of the mentors that need to be considered in this process. While relationships emerge from the personality, sensitiveness and expertise of the mentors,(Carter, 1997), they are also the result of effective communication which Hine (2000) suggests plays a significant role in effective mentoring

The OLMs in this study eagerly accepted the challenge to be involved and required little ongoing help to support others in the community. This group of experienced teachers came from diverse teaching backgrounds and were able to provide a balance of experience, ICT expertise, and ability to communicate online in a professional but non-threatening manner. The provision of a face-to-face meeting for the group allowed the OLMs to meet, discuss and prepare for their engagement and interaction with the PSTs. The online interaction within the group of OLMs was limited during this study. A number of the mentors suggested that further communication at various intervals throughout the year would have been valuable to 'touch base' and get an idea from each other of the effectiveness of their support strategies. Some of the OLMs did discuss their role with others in their own scenario but there were others that should have been included to widen the scope of support.

The study did not prepare and support the inclusion of other key players who could have taken on a support role within the partnership. These include school-based methods lecturers, in-school practicum coordinators, executives in schools, a practicum coordinator on campus and other academic staff not directly linked to the course. These people should have been alerted and briefed as to what was happening with the PSTs while they were on practicum and this could have widened the base of the active and future online mentors.

Table 6.2: Recommendations Relating to Setup/Preparation

Aspect	Setup/Preparation
Primary Recommendations	<ul style="list-style-type: none">• Select enthusiastic and committed mentors who are capable of supporting others in their profession.• Provide regular opportunities for the OLMs and PSTs to meet face-to-face throughout the study.
Secondary Recommendations	<ul style="list-style-type: none">• Provide a person(s) that would act as coordinator(s) to bring together the key players both on campus, in the schools and online.• Facilitate the involvement of committed and enthusiastic members of the academic staff to include and promote the use of such an environment.• Select OLMs from a range of different teaching situations.• Provide the OLMs with a clear understanding of their role and level of commitment in the mentoring process.• Establish an effective mechanism to allow key players to share their experiences with the wider teaching community.

6.3.3 Technology

The technology was initially considered as a major component of the study as this was the vehicle upon which the PSTs were required to conduct their investigations while in schools on practicum. Its impact on all key players was variable depending on the point of access to the partnership. Apart from minor problems associated with access privileges in setting up the website, the key players were not greatly hampered by the technology. Once established, all players had little difficulty either accessing, or navigating the site with only a few commenting on connection problems from home.

There was a lack of encouragement by some supervising teachers to incorporate and generally use technology that resulted in PSTs not interacting online with each other and the OLMs. Outside these practicum periods access to technology while on campus or at home resulted in few problems. The PSTs were able to link to the website for discussion postings and course materials without any reported difficulties.

For the practicing teachers there were few comments relating to the technology. Most of the PSTs interacted with the site either from school or from their home computers.

The subject website - the main mode of communication was generally integrated successfully but issues relating to expertise and confidence with technology proved to effect how, when and where this was achieved.

The technology background of all key players was not known prior to the study and this, for some, inhibited their interactivity. For the PSTs the focus on technology decreased as the year progressed as other issues such as classroom management emerged as a result of their experiences in schools.

Table 6.3: Recommendations Relating to Technology

Aspect	Technology
Primary Recommendation	<ul style="list-style-type: none"> • Provide effective access to technology for all teachers – PST and PT, and the necessary skills to utilise the online communities.
Secondary Recommendations	<ul style="list-style-type: none"> • Adequately prepare supervising teachers to be aware of the technology needs of PST for teaching and access to online support mechanisms. • Adequately prepare PST to efficiently use the technology tools, within and associated with, the different environments.

6.3.4 Time / Opportunity

The introduction and awareness of the study was hurriedly organized due to the pressures of orientating and preparing a new cohort of pre-service teachers for the year. Unlike other courses at the University the courses offered by the Faculty of Education are aligned with the local school terms and therefore enrolment and commencement of the programs are always rushed at the beginning of the university year due to changes in staff and course structures. The main activities with the intended interaction were focussed at certain times throughout the year and improved awareness and the inclusion in other parts of the course would allow for less concentration at busy times and allow for more *relaxed* rather than *hurried* communication. As suggested by the course coordinator consideration of the appropriate timing was important.

I don't think we let them know soon enough. I think it was a timing thing, I think we were flat out with the time frame, and you can't tell people about something until you know it's definite, you can't give them false expectations and then once we have got it ready they didn't have a lot of time to find out about it. (AS-C)

This realization that such a support mechanism was going to happen did not sink in for many of the PST. They were informed that it was going to happen but when they were actually out in the schools other pressures came into play.

I suppose basically right from the word go I think there should be somebody there and available to advise you. (PST (jm2316250))

I think it was a good idea if the mentors were available earlier in the year before we got into the schools/prac... I think if part of the initial basic bit could be done right at the beginning of the year or as part of the orientation week ... when you haven't got the pressures of the assignments or trying to find out where you were. (PST-(ld88))

Table 6.4: Recommendations Relating to Time/ Opportunity

Aspect	Time / Opportunity
Primary Recommendation	<ul style="list-style-type: none"> Establish regular communication channels between PST, PT and academic staff and remove deadlines and other barriers that inhibit interaction.
Secondary Recommendations	<ul style="list-style-type: none"> Remove focus of support related to assessment tasks and practicum commitments and encourage broad contact. Establish clear guidelines at the beginning of the year outlining availability of the support.

6.3.5 Patterns of Interaction – Face-to-Face and Online

The interaction between the groups was difficult to monitor and promote. Various groups were formed prior to the course and others evolved depending on the situation at University and in the schools. Natural communication occurred both socially and professionally via face-to-face and the online environment both being extensions of the boundaries of the groups.

There were issues that promoted interaction and others that inhibited this interaction *online*, *face-to-face* and in the *schools*.

These included

- Freedom to discuss any topic rather than being limited to designated areas such as ICT
- OLMs were keen to interact with the PST and often initiated suggestions without responding to a particular request
- The opportunity for reverse mentoring (as discussed in Chapter 2)

This discussion prompts an aging high school teacher to ask

... if this is Kindie what will they be doing in Year 10?!!!! and how will the monolith that is high school move fast enough to keep up? (OLM-K)

Issues inhibiting these interactions

- Lack of awareness of the features of the support available and intent of the online mentors
- Lack of efficiency and use of the email facility for contacting the OLMs

I tried to email her twice from the school I was at but I got no contact and I also tried to email her once from here too and I also had the same problem ... I couldn't get in touch with her...so I am presuming there was a fault somewhere along the line PST. (jm2316250)

- Confidence level of some PSTs to make use of the technology

Because I know as time goes on you tend to get less people like me who haven't had technology through their lives and this will become less of a problem.... because at the moment we have a lot of people over the age of say 35.... I have had no work of that kind... (PST (jm2316250) – Interview)

You would know the hands on - But I do know that there are a lot of students [colleagues] that do know.. they know what to ask - but I'm kind of feeling my way. (PST-(ld88) – Interview)

- Inability to meet face-to-face - Some of the PST and OLMs preferred to have had some personal contact with each other prior to, during and after the practicums.

What might make it easier to mentor is actually sit with someone face to face as opposed to online So that could get immediate feedback and they might be able to think of questions on the spot as opposed to reading something and then sending it off and waiting for someone else to respond to it ... so perhaps so more direct contact. (OLM-F)

I guess face to face would have been nice ... yes methods would have been nice... but I guess when we were doing IT .. but I know that is difficult when they are teaching ..yes but probably having a face to face to start with ... probably a small group. (PST-J)

6.3.6 Implications for Design to Promote Interaction

The above-mentioned factors inhibiting interaction need to be considered when providing a more flexible and functional environment. The accessibility of the technology, awareness of the facility, the constraints imposed by timing and the specific tasks all needed to be addressed. However the website remained static in its design throughout the study. If it had changed to meet needs a more accessible and useful partnership may have resulted.

Teachers in schools who provided spontaneous mentoring to small groups in their schools could have been included to support the wider group. Ongoing awareness of the community by regular announcements/emails online and additional face-to-face meetings throughout the year would provide stimuli to encourage interaction.

The following recommendations have been derived from these ideas and observations.

Table 6.5: Recommendations Relating to Interaction

Aspect	Interaction
Primary Recommendation	<ul style="list-style-type: none"> • Provide and maintain ease of access in all channels of interaction – both online and face-to-face (when and where it is required).
Secondary Recommendations	<ul style="list-style-type: none"> • Provide PSTs with support from a variety of sources - including the OLMs. • Ensure that there is provision for interaction between the OLMs and PSTs regardless of teaching speciality and/or school type – cross boundaries. • Allow for spontaneous interaction – both OLMs and PSTs are able to respond to the requests when and where they are able.

6.4 Suggestions for Further Research

Whilst this study must be considered as a unique snapshot of a one-year teacher preparation program in a small Australian university, issues have been raised relating to the design of such programs and how pre-service teachers interact with teaching colleagues in schools.

This study investigated some of these issues relating to the *establishment* of such a partnership within the bounds of the year. Further research to investigate the ongoing maintenance and sustainability of such a relationship on the schools, the university and the personnel involved would offer a longer term view of these interactions and lasting effects.

Teacher preparation institutions are being encouraged to strengthen their links with schools. Additional examination of their involvement in such a partnership would provide all parties with a better understanding of a much wider range of school environments and associated issues, and its impact on the design and implementation of current and future programs?

In my position as teacher and lecturer, since the completion of the study, I have personally and professionally experienced considerable change in the culture of pre-service and practicing teachers both in their awareness of and access to online technologies. With the advent of new technologies such as voice and video conferencing, blogs and wikis there is a need to investigate how today's online environments could be established and how the new generation of teachers would interact and communicate?

The practicing teachers gained from the experience and welcomed the strategy to be able to also learn from the PSTs. This subtle form of professional development needs to be investigated further to ascertain the immediate and long term benefits and needs for practicing teachers, online mentors and pre-service teachers.

Perhaps the best way to take advantage of the opportunities available through technology-mediated professional learning is to integrate e-learning into a balanced professional development program that combines formal face-to-face learning experiences optimally followed by online and one-on-one support, "just in time" training and development, and collaborative work on those tasks that most directly influence the quality of teaching and learning (Doubler et al., 2003)

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Appendices

Appendix 1 – Online mentor Project –Study Summary

An Online mentor?

I am currently undertaking my Doctor Of Education (IT) at University Of Wollongong and I am seeking your help as part of my research.

My area of research involves pre service and practicing teachers and the use and integration of Information and Communications Technology (ICT) in the classroom.

My project relates to the setting up of a “Professional Learning Partnership” between these two groups.

One part of this “partnership” is supporting them, while they are preparing for, and while on practicum.

This support would be in the form of a “mentor online”, where the mentor would be available to answer questions, in an “open discussion space” or via direct email.

Examples of such questions could be:

‘My class is doing a unit on, How could I use the one computer in the classroom as part of this unit’

‘What classroom management issues should I be aware of when using a computer room with my Year 9 history class while they are researching the Egyptians’

Can you suggest some useful Internet sites for my class unit on Health & Nutrition’

If you are willing to take part in this project your commitment would be:

Over a period of 3-4 weeks (May/June), every 1-2 days:

- a) Checking your email & responding to questions
- b) Logging onto a University Of Wollongong site and responding to questions directed to you, as one of the 10-15 “online mentors”, in this “open discussion space”
- c) Completing a survey and/or interview by me at a later date to review the process.

Taking part may

- a) Give you ideas for integration of technology in your classroom
- b) Give you an insight into directions of teacher training and technology
- c) Allow for a professional learning partnership between the ‘online mentors’

(As well as helping me with my research)

If you would like to take part (or want to know more) please contact me before the end of Feb so I can give you a few more details.

Looking forward to working with you and keen young aspiring teachers

Regards

Ian

Home: 42297231/Mobile 042 526 9140
School – Albion Park HS – 42571 744
Email – ian_olney@uow.edu.au

Appendix 2 – Online Mentor – Brief Biography - handout

Thanks for offering to help me in my research.			
Can you provide me with the following details for display on the “online discussion space”			
Name:			
Email Address:			
School		Primary /Secondary	
Main Teaching Areas			
Interests/Integration of ICT:			
Area of ICT Expertise:			
Favourite Saying			
A photograph - digital if possible (head/shoulders)			

Appendix 3 – Mentor Update 1 – Sent via Email

Hello “marvellous mentors”

Thanks again for offering to help me with my research.

This is just a quick note to check your email addresses and request a copy of a digital photo of you (for use on the Uni discussion space) – If you have problems getting a photo – please let me know & I will arrange to get one taken .

Here is an update on the approximate timeframe for your “act of mentorship”

The Graduate diploma students will be starting a block of ‘information technology in education’ lectures from the 22nd April – 27 May (6 weeks) – Prior to and during this time you will be able to view the Uni WebCT site to get familiar with logging on process, & to observe the students ‘discussing’ ideas relating to their lectures.

Around 3- 10 June they will be told their placement for their pract.- It will probably be from around this time you will become involved with answering some of their requests.

They have 7 weeks of pract – beginning 17 June for 3weeks, then 2 weeks of Uni recess, then another 4 weeks pract at the same school (some will have this second block at a different school).- their pract experience finishing 16 August.

It will be during this time you will need to check your email and also log on to the Uni site to see if they have asked for your help – about every 2nd day if possible.

I hope this is clear – please let me know if you are not quite sure of the process. I will give you further updates as the time gets closer.

This should be fun for all – looking forward to working with you and the students

Please drop me a quick note to confirm your address & any other info from the list below(and return a photo - please)

Name:

Email Address:

Main Teaching Areas

Interests/Integration of ICT:

Area of ICT Expertise:

Favourite Saying

& A photograph (digital if possible (head/shoulders)

Ta

Ian

PS

Maybe as a practice – save this email – in a folder on your computer - in readiness for saving the emails from the students – I will be collecting these as part of my research data.

Appendix 4 – Mentor Update 2 – Sent via Email

Hello all

We are now getting to the first stage of the “Online Mentors” Project.

I will enclose below, a LOGON and PASSWORD and a WEBSITE ADDRESS for you to logon to a University Of Wollongong website.

This will allow you to explore the WEBCT discussion space where the Grad. Dip students doing the subject EDUC 802, can gain information, resources and have a chance to take part in ‘online discussion’ relating to a task given to them by their lecturer Christine Brown.

At this stage I would like you to LOGON and have a look around & get the feel of an ‘online student’.

Please let me know how this goes - any problems, queries, or general comments.

Accessing the Learning OnLine (LOL)

In your browser type the following URL (web address)

<http://www.uow.edu.au/lol/>

Name	Logon	Password
------	-------	----------

As part of the “conditions of access” can I remind you of the following?

* The students will be commenting about real people & schools. Please treat the information professionally.

* Also please don’t share your LOGON & Password with others.

Good Luck – you have basically the same privileges as these ‘pre service teachers’ preparing for their practicum

Also, can you let me know if you can make the ‘in the flesh meeting’ on Monday 13 May around 7.00pm

‘Mentors are marvellous!

Ta

Ian

Appendix 5 – Mentor Update 3 – Sent via Email

Mentor Update 3 – Online _ Now What ???

Hi All

Glad to hear most have had a chance to test your name & password & are able to access the Learning On Line (LOL) site.

A few people have asked me what do I do now?

Just going through the steps for accessing:

1/ Using your browser Log in to the uni site at <http://www.uow.edu.au/lol/>

2/ Log in "To My 2002 subjects"

3/ Log in to Web CT with your name and password

4/ On the My Web CT page click on the Course EDUC 802 Pedagogy

5/ This is the home page for your subject

6/ You can now explore each of the sections Outline, Resources, Discussion.

The discussion section is the main one to look at - Here you will see how the students have used this space for their previous unit on Communication. Have a look at some of the discussions & just observe at the moment.

Christine - their lecturer, has posed some of the Task questions for the Info tech section of their work - this discussion should grow as the weeks progress.

So at this stage all I am asking is for you to:

- a) Go online & observe
- b) Write down on your "Mentor Log " - impressions, ideas, items of interest, suggestions, feelings etc.
- c) Let me know if you have any concerns

Could those who have not let me know - are you able to attend the meeting " in the flesh" on Mon 13 - 7.00pm at the uni - (Actual venue - TBA)

Ta

Professional Learning Partnership

*A professional learning partnership
(PLP): connecting pre service and
practicing teachers in a technology
supported environment*

Contact Ian

Home: 42297231 , 42879140

Mobile 042 526 9140

School – Albion Park HS – 42571 744

Email – ian_olney@uow.edu.au

Contents

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– An Online mentor?

I am currently undertaking my Doctor Of Education (IT) at University Of Wollongong and I am seeking your help as part of my research.

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- c) Completing a survey and/or interview by me at a later date to review the process.

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- d) Give you ideas for integration of technology in your classroom
- e) Give you an insight into directions of teacher training and technology
- f) Allow for a professional learning partnership between the ‘online mentors’

(As well as helping me with my research)

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Online Mentor – Information Sheet			
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Email Address:			
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Main Teaching Areas			
Interests/Integration of ICT:			
Area of ICT Expertise:			
Favourite Saying			
A photograph - digital if possible (head/shoulders)			

Accessing the Website

“Learning On Line”(LOL)

1/ Using your browser Log in to the uni site at

<http://www.uow.edu.au/lol/>

2/ Log in "**To My 2002 subjects**"

3/ Log in to Web CT with your **name** and **password**

4/ On the My Web CT page click on
Course EDUC 802 Pedagogy

5/ This is the home page for your subject

6/ You can now explore each of the sections:

Outline

Resources

Discussion. – this will be the section you will mainly access to observe, and comment on students threaded discussions.

Overview - Student Tasks

During this part of the course, the students will be required to complete 3 tasks relating to Pedagogy & Information & Communication Technology (ICT)

Assessment Task 1- Resource Development & Skill Demonstration

Assessment Task 2 – Discussion Analysis.

This will be in the form of responding to a series of questions posed by Dr. Christine Brown.

“What range of ICT resources (hardware and software) might you experience as a teacher?”

“What is the essence of activity design that engages the learner and promotes a student-centered learning environment?”

“How can you get to know a range of your students’ capabilities?”

Assessment task 3 – Portfolio – Based on the Practicum

You will be involved as Online Mentors for Tasks 2 & 3

EDUC802: PEDAGOGY (INFORMATION TECHNOLOGY)

Assessment Task 2

Discussion Analysis

Out of **20** marks.

A series of questions will be posed that relate to the lecture series:

- “What range of ICT resources (hardware and software) might you experience as a teacher?”
- “What is the essence of activity design that engages the learner and promotes a student-centered learning environment?”
- “How can you get to know a range of your students’ capabilities?”

You are required to *contribute* to **two** of these questions, drawing on your recent practicum experience, your background knowledge, lectures and reference material, and web-based resource links.

Choose **one** of the questions you have contributed to and submit an analysis of the key issues of that question. You need to include:

1. Copies of at least two of your contributions to the discussion thread (showing header information)
2. A summary of the key points made by your peers (remember to reference them)
3. Additional material you consider relevant to your KLA (secondary) or stage of primary practicum experience (stage 1, 2, or 3) **or** an analysis of the impact of peer input.

Since the discussion tools allow you simply to export all the threaded discussion items, the compilation of material and appropriate referencing and acknowledgement of your peers should not be a major concern. Please refer to the Faculty Handbook for referencing protocol (p32).

Your document should be submitted electronically, along with the perforated submission form in the back of this booklet. It should sit in folder “Task2” in your master folder. Your resource activities for Task 1 should be submitted at the same time in folders within folder “Task1”.

Criteria

Quality and depth of your contributions – Out of 8 marks

Analysis of key issues from your peers – Out of 8 marks

Relationship back to your teaching area – Out of 4 marks

In each of these areas, higher marks will represent the range of ideas, writing clarity, logic and appropriate referencing of ideas. Quality is prized over quantity.

Due Date: End of week 12 (May 27-31)

Weighting/Value 20%

Length: Approximately 600 words (not including referencing or your contributions)

Feedback: marks available on your return from practicum.

Portfolio based on your Major Practicum

Out of **50** marks.

You are to produce a portfolio that demonstrates your ability to:

- Research a learning environment and available teaching resources with assistance from online mentors
- Design a series of learning activities that integrate information and communication technologies in an appropriate way
- Manage the classroom environment including the use of ICT, associated student work, and assessment of student learning
- **Evaluate your teaching and the use of ICT. This includes suggestions for improvement and acknowledges the input of your mentor/s.**

OPTION A – You have access to a range of technology tools and resources on your practicum.

You are to present 4 items for your portfolio:

1. Your Report
2. The resources you discovered (includes the ideas from your mentor/s)
3. The activities
4. Sample student work (your feedback)

Item 1: Your Report

Research the Environment

(Out of 6 marks)

- Briefly describe the school context and the class you have chosen for your report.
- What ICT equipment or facilities are available in the school?
- How often can students use them? What is the protocol for use?
- What unit of work are you focusing on?
- Describe any support you gained from your online mentor/s.

Design an Activity Series

(Out of 6 marks)

- What ICT related activities have you designed? (Refers to your collection of activities)
- Show how these fit in the “flow” of your lessons, and how you will assess them.
- What follow-on work are students doing to value and build on the activities?
- Describe any support you gained from your online mentor/s.

Manage the Activities

(Out of 6 marks)

- How did you organize the students to use the technology?
- What issues arose you had not foreseen? Discuss.
- How did you capture student work/ideas?

Evaluate the Experience

(Out of 6 marks)

- What did you learn about your teaching style using ICT?
- Evaluate the activities you ran. Draw on a number of perspectives here, including that of your supervisor and that of your online mentor/s.
- What would you do differently “next time”?

Item 2: The resources

(Out of 6 marks)

This can be a Word document that simply lists a range of resources you have found as you researched the topic. It could also be a web page with annotated links to excellent web sites. These annotations may relate to possible activity ideas for each link. This way, you can return to those other ideas in future. You need to present this resource list in a manner that is appropriate to your class and the student work at the time.

You should also include a download of any support you received from online mentor/s.

Item 3: The Activities

(Out of 15 marks)

For the activities that use some form of ICT, you need to present these in a manner similar to a lesson plan. Imagine someone else should be able to pick up your activity sheet and “run with the idea”. Alternately, your activity sheet could be the document the students get to work with. If you have designed a web page worksheet, or a HyperStudio stack, or a database they complete, these should be the files you present, along with any explanatory document the students may receive. Your report puts these activities in their broader context.

Item 4: Feedback

(Out of 5 marks)

You need to present some of the student work. If they worked on paper, perhaps you could photocopy some of this material. If they worked electronically, you can collect copies of their work to present. If they discussed issues and presented material to the class using ICT, you can present your notes on what happened. You could also ask your supervisor to give you comments or take notes here.

OPTION B – You have minimal access to technology tools and resources on your practicum.

In this instance, you may not be able to incorporate ICT in your practicum class activity design, but you should be able to access and observe another class where there is some technology use during your practicum period. Your activity design using ICT will occur back at university, but will relate to the class environment of your practicum. For your portfolio, you will present:

- Your Report (slight modification of questions – see below)
- The resources you discovered (you should still research what is available)
- The activities (you have designed and produced back in the University labs or at home)
- Feedback from student or peer testing of your activities.

Item 1: Your Report

Research the Environment

(Out of 6 marks)

- Briefly describe the school context and the class you have chosen for your report.
- What ICT equipment or facilities are available in the school?
- How often can students use them? What is the protocol for use? Explain why they may not have been accessible for your practicum.
- What unit of work are you focusing on?
- Describe any support you gained from your online mentor/s.

Design an Activity Series (With hindsight)

(Out of 6 marks)

- What ICT related activities have you designed back at university that you *could* have run with your class if you had the use of ICT facilities? (Refer to your collection of activities presented separately).
- Explain how the design of these activities was influenced by the management observations you made in other classes while on your practicum or the comments of online mentors.
- What follow-on work would the students do to value and build on your activities?

Observe Management of ICT Activities (Another class)

(Out of 6 marks)

- How did the teacher organize the students to use the technology? What was the impact (if any) on class layout?
- What issues arose that you had not anticipated? Discuss.
- How was student work/ideas captured?

Evaluate the Experience**(Out of 6 marks)**

- What did you learn about your teaching style watching students use ICT? (How did you react to what students did?)
- Evaluate the activities you designed after your practicum. You need to test your ideas on a small group of students. (Younger family members may be ideal activity testers.) Explain why the activities you designed after the practicum may or may not offer students more opportunity to construct a deeper understanding than the lessons you conducted on your practicum.

Item 2: The Resources**(Out of 6 marks)**

This can be a Word document that simply lists a range of resources you have found as you researched the topic. It could also be a web page with annotated links to excellent web sites. These annotations may relate to possible activity ideas for each link. This way, you can return to those other ideas in future. You need to present this resource list in a manner that is appropriate to your class and the student work at the time.

You should also include a download of any support you received from online mentor/s.

Item 3: The Activities**(Out of 15 marks)**

For the activities that use some form of ICT, you need to present these in a manner similar to a lesson plan. Imagine someone else should be able to pick up your activity sheet and “run with the idea”. Alternately, your activity sheet could be the document the students get to work with. If you have designed a web page worksheet, or a HyperStudio stack, or a database they complete, these should be the files you present, along with any explanatory document the students may receive. Your report puts these activities in their broader context.

Item 4: Feedback**(Out of 5 marks)**

You need to present some feedback on your activity design. You will not have class data here, but data from a few students or peers.

Criteria

Item 1: The Report Higher marks will represent the range of ideas, writing clarity, logic and appropriate referencing of ideas. Quality is prized over quantity.

Item 2: A resource list. Higher marks will reflect a greater range of resources, and the quality of annotations giving ideas for possible use.

Item 3: The activities. Higher marks will reflect the sound pedagogy of the activities, and the quality of presentation of ideas or directions.

Item 4: Sample student work or feedback. Higher marks will reflect clear organization and analysis of student work or feedback.

Due Date: Range from week 8 (9/9) through to week 11 (14/10) of session two

Weighting: 50%

Length: you must answer the questions in the report; other components as suit the situation. Check out submission protocol later in this booklet

Mentor Log

Date : _____ Time: _____

What occurred during this contact:

Positives:

Any Problems:

Comment

Date : _____ Time: _____

What occurred during this contact:

Positives:

Any Problems:

Comment

Appendix 7 – Mentor Update 4 – Sent via Email

Hello all

We are now getting to the first stage of the “Online Mentors” Project.

I will enclose below, a LOGON and PASSWORD and a WEBSITE ADDRESS for you to logon to a University Of Wollongong website.

This will allow you to explore the WEBCT discussion space where the Grad. Dip students doing the subject EDUC 802, can gain information, resources and have a chance to take part in ‘online discussion’ relating to a task given to them by their lecturer Christine Brown.

At this stage I would like you to LOGON and have a look around & get the feel of an ‘online student’.

Please let me know how this goes - any problems, queries, or general comments.

Accessing the Learning OnLine (LOL)

In your browser type the following URL (web address)

<http://www.uow.edu.au/lol/>

Name	Logon	Password
------	-------	----------

As part of the “conditions of access” can I remind you of the following?

* The students will be commenting about real people & schools. Please treat the information professionally.

* Also please don’t share your LOGON & Password with others.

Good Luck – you have basically the same privileges as these ‘pre service teachers’ preparing for their practicum

Also, can you let me know if you can make the ‘in the flesh meeting’ on Monday 13 May around 7.00pm

‘Mentors are marvellous!

Ta

Ian

Appendix 8 – Online Mentor – ICT – Survey

Online Mentor Survey

Your Name:

Name of the school

Personal e- mail Address _____

1. What classes do you teach? (please check all that apply)

K -2

2- 4

4-6

All Primary

7-8

9-10

10-12

All secondary

2. What **subject areas** do you teach? (please check all that apply)

Junior Primary (all subjects)

Senior Primary (all subjects)

English

Mathematics

Science

HSIE

PDHPE

Creative Arts

Information Technology

Vocational education

Special education

Other (please specify _____)

3. How do you classify your main **position at the school?**

Regular full-time teacher

Regular part-time teacher

Itinerant (you teach at more than one school)

Other (please specify _____)

4. As of the end of the last school year, **how many years** had you been teaching? _____

5. Your **access to technology**:

Where do you mainly access computers?

staffroom

computer Laboratory

at home

If in your classroom

If so, how many?

6. **Internet Access**

in your staffroom At home

In your classroom Computer Laboratory

7. Give on examples of technology-related **professional development** activities you have in participated in the last 2 years

8. How much do you believe that technology has changed or determined the way you teach your classes? (please check one)

___Greatly ___Somewhat ___Not at all

9. Rate your **experience** and comfort level in the use of Information and communications technologies in the classroom

Thank you

Ian

Appendix 9 – Online Mentor (OLM) - Interaction Survey

Student Number _____

Current program _____

☐ Primary ☐ Secondary

1. Did you have any Mentor Interaction? ☐ Yes ☐ No (If not go to question 8)

2. **When** did you access OLM? (you may tick more than one box)

☐ Before pract ☐ During pract ☐ After pract

3. **Where** did you access the OLM ?

☐ at home ☐ at your school ☐ Uni ☐ other _____

4. **What** form did this interaction take?

☐ directly on the WEBCT discussion ☐ email to/from the mentor

☐ Just viewing the online discussion

☐ Other _____

5. What perceived benefits did you receive from this interaction?

6. Briefly comment on any problems you had with the interaction ?

7. Do you have any suggestions that would improve this form of communication?

8. You may not have taken part in this instance – but what would have encouraged you to interact with the OLMs ?

9. Would you be willing to take part in a short interview to expand on these comments a little? ☐ Yes ☐ No

Contact: First Name: _____ Ph(H) _____

Email: _____ Ph(M) _____

Thank you for your time

Ian

Ian Olney

E-Mail Ian_Olney@uow.edu.au