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# Blogging and Online Collaborative Discovery Learning

## Making a case for a successful group-tracking technique

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**Abstract** - *With the surge of digital native students entering classrooms, instructors worldwide have been trying hard to incorporate ICTs into their pedagogy in order to enhance student learning environment and prepare better graduates for the employment market. Among various shifts in paradigms, online collaborative discovery learning (OCDL) has become a coin phrase that instructors want to include in their many attempts at responding to the needs of the digital native students. With the increasing popularity of OCDL, researchers have studied issues related to OCDL such as instructor lack of understanding of OCDL and how it can or should be incorporated into pedagogy; studies have also highlighted issues with actual assessment of collaborative projects. However, few studies have actually studied or even recognized the issue of tracking these collaborative efforts of students, monitoring their progress, reducing conflicts and enhancing students' overall collaborative experience.*

*This paper identifies three barriers to creating a successful OCDL environment in terms and proposes an adaptation and implementation of a blended learning tool, blogging, to help both instructors and students track their groups.*

**Keywords:** e-learning, weblogs, social networking, education, blended learning

## 1 Introduction

Discovery learning allows students to work independently and become active participants in their learning process ([1];[2];[3];[4];[5];[6]) while collaborative learning (OL) is a strategy used by

instructors to increase efficacy and longevity of learning through cooperative strategies between students and their instructors [7]. One such strategy implemented has been to use small student groups for assessment completion [8]. Collaborative discovery learning allows participants to strategize and execute their chosen strategies together while online collaborative discovery learning (OCDL) is an environment that allows students to work together in cyber space and find solutions to problems they have been given independently [9].

However, where instructors have marveled at how fast students learn and retain information when working in groups, be it in a face-to-face classroom setting or online, they have also voiced concerns over issues such as actually managing group work, ensuring fair grading of all members of the group, tracking amount of contribution by each member, and maintaining honesty and harmony within groups.

This paper records the experience of the author in successful adaptation and implementation of weblogs to track student group-work, enhance student learning and increase group homogeneity thus increasing student participation in a computer applications course at the University of Wollongong in Dubai.

## 2 Digital Natives and blended learning

Information communication technology (ICT) is defined as any and every communication and computer software or hardware technology [10]

Due to the rapid growth of ICT [Khan, 2012] towards the end of 20<sup>th</sup> century and early 21<sup>st</sup> century, studies suggest that students in classrooms today represent a new generation who have grown up with new

technology ([11]; [12]; [13]), and fundamentally process information and think differently than their predecessors. This generation is sometimes called the digital natives [14]. Digital natives are said to interact, learn, and communicate differently because they have never known a world without ICTs such as computers, Web, games, smart phones, Internet among others [15].

Studies suggest that instructors have been introducing new systems and tools to their teaching environments in order to meet the expectations of the digital natives ([16];[17]), giving rise to the concept of blended learning.

Blended learning is now a common place in higher education, allowing instructors to combine face-to-face classroom setting and ICTs. These ICTs include computers, the Internet, phones, wikis (technology that allows website to be collaboratively constructed and edited), weblogs (blog is a website that contain dated entries; can be individual or collective entries that can be bookmarked, referenced or commented on by others), and even learning management systems (web-based tools that instructors use to plan and deliver courses) and allow students to engage in various pedagogical fits that suit their learning styles in real-time and sequentially over the Internet [18].

### **3 CDL and higher education**

CDL is defined as a process of learning that is generated by student groups who are interdependent [8] and who work towards solving a given problem themselves [19].

According to some research, CDL helps students develop their skills and knowledge, ultimately shaping a learning community [20].

Studies have shown that there are other benefits of collaborative studies in higher education. One such study suggests that the CDL helps develop critical thinking in students, helps better understand concepts, allows for sharing of information, and even helps develop communication [21].

A shift in educational thinking from teacher-centered learning to student-centered learning environments has also encouraged the use of CDL by instructors ([6];[22]). Research has shown that CDL enhances learner's cognitive processes [14]. Other studies propose that social interactions particularly among students with similar cognitive capabilities aid in enhancing cognitive skills in students [6] further rationalizing the implementation of CDL in higher education.

Another reason educators try to incorporate CDL is in response to "employability agenda" [23]. Research suggests that the connection between higher education and the industry is the graduate employability [23]. Industry expects higher education institutions to instill qualities in their graduates that the corporate world seeks. In this case, although the term "group" may not reflect the term "team", research suggests that CDL environments perhaps help develop communication and teamwork skills that may make graduates effective team players at work [19], and thus preferred would-be employees.

### **4 OCDL and issues in higher education**

With blended learning incorporated more into higher education institutes, and CDL gaining popularity among instructors, studies suggest that CDL has evolved to become OCDL where instructors use, among other tools, online technologies such as wikis, weblogs, and even social networking sites such as Facebook to enhance learning management systems, change the learning process from unidirectional to facilitate self-governed, problem-based and collaborative activities [24].

Kozma and Anderson [33] have defined the impact of ICT in HE as a bridge between classrooms and the real world, providing tools to enhance learning, allowing students and teachers more flexibility and opportunity for communication and collaboration.

Some studies suggest that specific ICTs such as weblogs have been used in higher education successfully to enhance OCDL ([25];[26];[27];28). Similarly, studies suggest that wikis have been effective in OCDL in higher education [29];[30];[31];[32]).

However, literature focuses mostly on ICTs as OCDL tools. Many studies have suggested wikis or blogs as tools to enhancing student OCDL [19], or studies propose types of assessments that can use OCDL ([30];[31];[32]). Some studies have even proposed motivations for using OCDL tools such as weblogs in allowing sharing of ideas, recording ideas and making new contacts [34].

Problems proposed by studies highlight instructors' lack of clear understanding of ICTs and OCDL ([19];[35];[36]) or studies focus on problem of assessing actual work submitted by student groups and so on [37].

Little or no research has been uncovered that discusses the issue of monitoring group-work outside classrooms, whether face-to-face or online. Violet

and Mansfield [38] suggest that students may be inclined to divide the work among them and simply assemble everything and submit as one work. Other studies suggest that CDL or OCDL cannot be guided by instructors [39] and therefore makes both instructors and students apprehensive.

Therefore, this paper presents a case of successful implementation of weblogs as tool to tracking student contribution in group-work and reducing group conflicts, ultimately enhancing student learning and improving student group performance.

## 5 Background: Case Study

University of Wollongong in Dubai (UOWD) is an off-shore campus of University of Wollongong, Australia (UOWA). It is also accredited by the Ministry of Higher Education (MOE) in United Arab Emirates (UAE) where it is located and adheres to standards set both by UOWA and MOE in terms of subject learning objectives, content and assessment.

As part of the MOE accreditation, the university has to offer a variety of freshmen courses such as University Life, Philosophy, Islamic Culture and so on. One such subject is Computer Application which teaches students basic computer applications and software to aid them in whatever degree program they decide to pursue.

Part of the learning objective of the subject expects students to complete a semester-long group project on the evolution of ICT in a particular industry and its impact on that industry eg. Airline or Medicine. For this assessment, students have five modules to complete:

Module 1: a contract they sign as a group indicating their roles in the group,

Module 2: introduction and background

Module 3: current impact of ICT on the chosen industry with a case study

Module 4: future of ICT in the industry

Module 5: a campaign ad created using one of the software taught in the class to promote the ICT used in the case.

The students are also expected to prepare a 10-minute presentation based on the report they submit. This assessment weighs 30% of the subject's internal grades.

## 6 Statement of problem

The subject has been on offer since 2004 and the major problem faced by the students and instructor for the subject has been the group dynamics and complaints regarding the group project.

Based on student evaluations conducted by the Office of Planning and Performance between 2008 - 2010, the identified complaints from student feedbacks include [40]:

1. Instructor has difficulty tracking and monitoring group's progress unless there is a face-to-face meeting. With large class sizes (usually ranging from 150 – 350), it is almost impossible to do so with each and every group, every semester.
2. Some students become unreachable and show up only for the final report submission or presentation. Other group members feel compelled to then help them out. This leads to unfair grading of student contribution.
3. Group conflicts arise as members meet and track decisions verbally or in absentia which are then opposed by other members

Due to these identified issues, the experience of the group project has been described by students as “overwhelming”, “not useful”, “need more intervention from tutor” [40]. The grades for the projects are regularly “disputed” by students or disgruntled group members [40] and the overall grades of the group project have been consistently low at an average of 65% - 78% [41].

The author decided to implement weblogs in spring semester of 2012 in order to try to monitor the groups and test if the four issues identified above could be addressed and the statement of the problem proposed was: *Can innovative OCDL tools enhance group work experience among students at UOWD and increase overall group performance?*

## 7 Method

The author followed the following steps to include weblogs and track the groups:

Step 1: Divided the two hours allocated for computer lab to Lab Hour and Project Hour. Lab hour used to learn new software and practice lab exercise sheets. Project Hour to come together as a group and work on the group project.

Step 2. Chose an easy, free-to-use, website that allows users to develop a free weblog and maintain it.

Step 3. Included a one lab tutorial on how to set up a weblog

Step 4: Included weblog as part of the assessment. Blogging was graded at 5% of the internal grade (making up the group assessment mark of 30%)

In Week 2 of a 13-week semester, students were expected to set up a weblog account in the chosen site after they chose the group members. From the third week onwards, students were encouraged to start posting entries in their respective blogs after each group meeting they had. These entries were then monitored and graded by tutors in the following week's project hour.

Two semesters were chosen to test the method: Spring 2012 and Spring 2013. At the end of each semester, author gathered student feedback using a paper-based questionnaire which was developed to maintain absolute anonymity and conducted by a third-party research assistant to remove any bias towards author as instructor of course. The first section of the survey collected anonymous demographic data. The second section collected data on the frequency of usage of the system, locations used and such. The third section used a five-point Likert Scale to record data on student attitude towards blogging, its usage and effectiveness in managing groups. The last section ended with student recommendations in qualitative format.

## 8 Results and Discussion

The weblogs allowed the author and lab tutors track and monitor the groups, their progress and contributions on a weekly basis. As the frequency of monitoring increased, the average performance of the group increased as illustrated in Figure 1 below.

As the Figure 1 shows, the average group project mark obtained by groups in each semester ranged from the 60s- to 70s prior to the introduction of blogs.

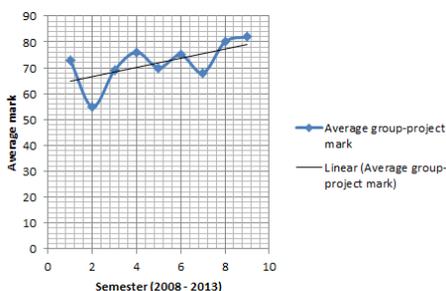


Figure 1: Average group project mark per semester

The two semesters in question, Spring 2012 and Spring 2013 showed a clear spike in the average grade of the class which was well above 80% for the class.

In regards to the issue of *Instructor difficulty tracking and monitoring group's progress*, on an average, each student posted at least one entry to their respective blogs each week for 11 weeks, and read and added comments to group members' blogs as well with a total of over 3000 entries over the two semesters. However, as these posts were checked during project hour within the lab setting and in front of the group members, the author and tutors had enough time to read and grade the blog entries, clarify any doubts, monitor progress of the groups and question groups on specific issues mentioned in their entries within a time frame that reduced the administrative load of the instructor/tutor.

In regards to the issue of *Unfair grading of student contribution*, the weekly reporting of meetings, student attendance in the meetings and individual contributions were now recorded and viewed by the instructor/tutor and eliminated the issue of tracking student contribution and unfair grading.

In regards the last issue of *Group conflicts*, the entries posted every week clearly demonstrated what each student thought was discussed and decided in each meeting. Students viewed each other's entries and corrected any misunderstandings during the project hour.

Furthermore, the student feedbacks on their experience of using the blog revealed the following results:

For the question: How often did you access your blog, over 50% of the students responded that they accessed their blogs once a week and sometimes twice a week. By Spring 2013, over 30% of the students were accessing their blogs daily.

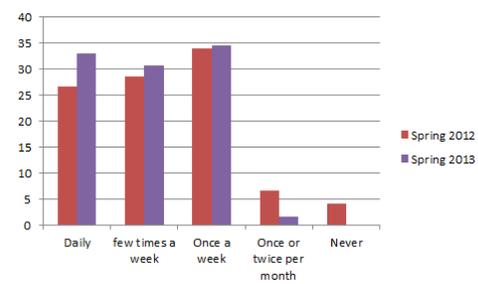


Figure 2: 'How often did you access your blog?'

For the question: From where did you access your blog, students responded a variety of access points, from their own home to university facilities to mobile devices etc as illustrated in the figure 3 below:

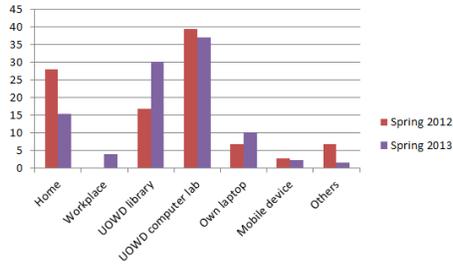


Figure 3: 'From where did you access your blog?'

For the questions on Getting Started, the students responded they were “reasonably comfortable” with blogging as illustrated in Figure 4 below:

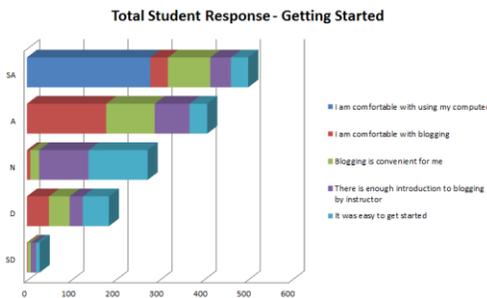


Figure 4: 'Getting Started'

Finally, to the questions pertaining to blogging and groups, majority of the students' responses varied between agree and strongly agree when they were asked if blogging helped reduce conflicts, increased communication between group members, increased access to group decisions and tracking the group's progress as illustrated in Figure 5 below:

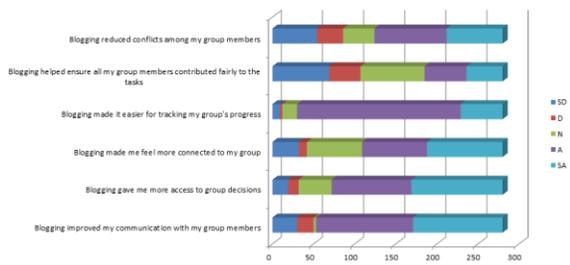


Figure 5: Total student response: Blogging and Groups

## 9 Conclusion

Understanding learning needs of the digital native students in order to enhance their learning experience

has become the driving force behind major shifts in teaching paradigms in the last decade. The process is continuous, ever-growing, ever-evolving [42]. Instructors are trying their utmost to enhance the digital native students' learning through student centered learning styles such as OCDL that incorporates ICT and collaborative discovery learning in order to capture student attention, enhance group environment and ultimately make their graduates more employable.

Literature has suggested many positive effects of OCDL, allowing instructors to achieve substantial results in areas of understanding ICTs, their use in CDL, how, why and when CDLs should be used, how the CDL or OCDL assessments should be graded and used to enhance student learning experience.

This paper proposed some new issues in implementing OCDL and suggested a possible solution to these issues. Based on the group marks and student feedback, it is believed this study successfully demonstrated the adaptation and implementation of blogging as blended learning tool to track and monitor student groups, increase students' over-all experience working in groups, reduce group conflicts, eliminate unfair grading of student contributions in group work and increase student group performance.

Hence it is concluded that, online collaborative discovery learning, if structured and aided by blended learning and tracking tools such as blogs, can enhance students' overall experience working in a collaborative environment and enhance their overall group performance.

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