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Geoffrey Crisp, Di Thiele, Ingrid Scholten, Sandra Barker, Judi Baron

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INTRODUCING GROUP WORK AND COMMUNICATION SKILLS FOR EXTERNAL STUDENTS: AN ANALYSIS OF THE USE OF ASYNCHRONOUS ONLINE TOOLS

Sandra Barker
School of Accounting and Information Systems
University of South Australia, AUSTRALIA
sandra.barker@unisa.edu.au

Abstract
This paper examines the impact of the introduction of group learning and communication tasks for external students in an undergraduate and postgraduate course. The use of a series of asynchronous discussion boards for these students has impacted not only on their ability to work in a team but also on their ability to attain other graduate qualities such as problem solving, lifelong learning and body of knowledge.

Keywords
Collaboration; communication; graduate qualities; asynchronous discussion board; external studies

Introduction

This paper investigates the introduction of external student collaboration tasks into courses in an undergraduate and postgraduate business degree program using an asynchronous discussion web board as the primary mode of communication. The introduction of these tasks was prompted by the course coordinator who noted that, with the emphasis being placed on graduate qualities in the University, there appeared to be an inequity between course delivery to internal and external students. It is relatively easy to implement and control collaborative tasks with internal students as they are attending regular sessions on campus and have the ability to discuss issues relating to these tasks in a face-to-face situation with their peers and instructors. This, however, is not normally the situation for external students as they are commonly isolated from their peers and instructors either by distance or time commitments.

Steven and Fallows (1998, p1) identified that the transition from being a student to being an employee is not a straight forward one and that "in the past many students have been ill-equipped for this transition". The Department of Education, Training and Youth Affairs (DETYA) commissioned a report into the employability skills expected by employers when recruiting University graduates. DETYA (2000, p7) found that the research identified a number of skills were considered essential but often lacking in new graduates. These skills were identified as being: academic achievement in a suitable discipline, literacy, numeracy, basic computer skills, time management, written and oral communication skills, interpersonal skills, teamwork and problem solving skills and the comprehension of business processes. The University of South Australia (UniSA) has interpreted these skill requirements and developed a set of seven generic Graduate Qualities that they believe encompass the main requirements of employers of new graduates.

Graham and Scarborough (1999, p20) define collaborative learning as the 'acquisition of knowledge, skills, or attitudes, that take place as a result of people working together to create meaning, explore a topic, or improve skills.' They go on to state that collaboration 'emphasises the cooperative efforts between students and the generation ... of knowledge.'

UniSA (2002, p1) defines collaboration in its graduate qualities statement by stating that a graduate will develop the skill of collaborative work by:
- "using logical and rational argument to persuade others, to negotiate with others
- working collaboratively with different groups, identify the needs of others and build positive relationships
- working in a team (cooperate with all team members, share ideas, forgo personal recognition, negotiate solutions when opinions differ, resolve conflict, recognise strengths of other team members, share responsibility, convey a shared vision for the team, display a commitment to make the team function effectively)."

The Courses

Course 1 is a first semester, second year undergraduate course which is core to a Bachelor of Business program and is offered in internal, external and offshore modes. The course concentrates on data management, systems development theory and small-scale database construction using Microsoft Access. Course 2is a first term postgraduate course available to students in a Graduate Certificate, Graduate Diploma and Master of Business program and is offered in internal and external mode. This course concentrates on the design and implementation of database application systems with a particular focus on the management and technical issues experienced in relation to the end-user development of databases. Issues relating to the use of data and databases by business managers are also covered.

Students in both courses are not Information Systems specialists. The undergraduate students will have completed an introductory information systems course, whilst for the postgraduate students this is often their introduction to information systems. Both cohorts of students will undertake a project to design and develop a small-scale database using Microsoft Access as the end-user application generator. Students are required to use only the wizard-based features of Microsoft Access as, based on feedback from recent graduates, this emulates what is happening in the business environment. These database projects are presented as case studies based on real life business situations and alternate between service and manufacturing industries, as this is where most of the students eventually find employment. The contents of the case studies centre on the information needs of a small business, or one department of a larger organisation. Students are required to understand the information needs of the department being studied and must also be aware of the corporate structure in place, and an outline of the information needs of the organization as a whole to understand the context of the database they will develop.

Assessment of the students in relation to the database task takes place as outlined in Table 1.

Assessment Component	Course 1	Course 2
Data Modelling	20% (two techniques actually used)	25% (debate of different techniques)
Design and Implementation of database	30%	25%

Table 1: Comparison of database task assessment

Students taking Course 1 also undertake an examination worth 50% of their overall mark. Course 2 students produce a research report on an issue related to end-user development of databases (25%) together with a reflective report on group issues (10%) and participation in online activities (10%). The final 5% for this course was allocated to a plagiarism task to highlight to students the need to understand how to avoid plagiarism. As part of the assessment criteria of the assignments, students are assessed on their development of the graduate qualities. For these 4.5 unit courses, the graduate qualities are introduced and assessed according to the weightings outlined in Tables 2 and 3.

Graduate quality	1 body of knowledge	2 lifelong learning	3 effective problem solving	4 work autonomously and collaboratively	5 ethical action and social responsibility	6 communicates effectively	7 international perspectives
Point weighting	1.2	0.5	1.0	0.5	0.2	1.0	0.1

Table 2: Graduate Qualities statement (Course 1)

Graduate quality	1 body of knowledge	2 lifelong learning	3 effective problem solving	4 work autonomously and collaboratively	5 ethical action and social responsibility	6 communicates effectively	7 international perspectives
Unit weighting	1.0	0.7	0.7	0.5	0.3	1.0	0.3

Table 3: Graduate Qualities statement (Course 2)

Although the intent of this paper is to investigate collaboration tasks (GQ4) it has been identified by that collaborative learning can bring about improvement in problem solving (Bonk and King, 1998, cited in McLoughlin, 2002) as well as fostering communication skills. Collaborative work impacts quite considerably on other graduate qualities being developed through the course. Over the duration of the course, students will be introduced to quite a large amount of new knowledge (GQ1), learn how to adapt previous knowledge to the learning of new software (GQ2), work towards a positive solution to the case study problem, learning new problem solving techniques as they do (GQ3), students will be required to be responsible for their portion of the projects in group situations and therefore act in an ethical and socially responsible manner (GQ5). During the semester oral and written communication is fostered through group work and presentations (GQ6), whilst the inclusion of many international students in these courses allows the introduction of perspectives from other cultures and countries (GQ7). (Monday, 2003)

The Database Project

The most recent offering of Courses 1 and 2 were both allocated the same project. Students were given the task of developing a database for a local Podiatrist. The business was interested in centrally locating all patient details together with referral information. It was also a requirement that the database be able to produce invoices and receipts, reports based on last visit dates and a reminder letter for the patient's 12 monthly checkup.

The development of a database within an organisation is a task which is regularly undertaken in a group environment and as the aim of both courses is to introduce students to a real-world situation the database project in both courses is naturally undertaken in this way. This view of undertaking projects in a group setting is support by Baskin (2001, p265) who identified that

> ... groups accomplish tasks that cannot be done by individuals alone; they bring multiple perspectives to bear on a single problem; they capture the dynamic of real world complexity; they provide a vehicle for decision making and taking, and they impose an efficient means of organisational control over individual behaviours.

Students are given copies of the reports currently being used by the case study business, currently used methods of data collection (eg index cards, forms) and a basic outline of the business function. They are then required to ask questions of the business, through the asynchronous discussion board, to determine any information that they believe may be missing from the materials given to them. This simulates the conversations that would normally take place between business representative and project team. These questions are posted by the students to an asynchronous discussion board to which all students in a

particular cohort have access, regardless of their study mode. The course coordinator assumes the role of the business and allocates 1 hour per working day to answering these questions. Students are advised of the answering times to ensure that they have their questions posted to avoid delays in obtaining answers. At specified periods during the project the "business" will answer questions twice per day to ensure a dialogue is maintained.

The Asynchronous Discussion Board

Hoadley and Linn (2000, p840) identified that online discussions "...can potentially make students' ideas visible and support collaboration or competition." Interactions through the asynchronous format have been found to provide opportunities for the development and exchange of ideas (Baskin, 2001). This has been supported by Lawson et al (1997, p5) who found that the Web is "... one of many active systems that can be used to develop critical thinking skills and teamwork."

Traditionally, communication, teamwork, critical thinking and problem solving skills have been developed through face-to-face methods such as role play, group reports, tutorial participation and group projects. However, with external delivery this is not always possible and therefore other methods need to be identified. Lawson et al (1997, p5) found that by using the Web "...students can work independently as well as in groups. Pedagogical strategies that use computer technology effectively can promote active learning."

There are a number of positive applications of this technology to the student learning process including:
• adding value to a discussion to make it meaningful to the student;
• perceiving it to be a 'safe' environment in which students are free to express opinions without recriminations from other students;
• the ability to achieve reasonably quick feedback from teaching staff;
• the ability for students to receive encouragement from teaching staff and fellow students;
• the ability to set more authentic tasks for students (Northover, 2002)

The introduction of an online discussion board allows students the opportunity to participate in collaborative sharing and creating of knowledge which they have indicated to be simulating in both an academic and professional way (Reushle et al, 1999). Students who use this medium may:
    reconsider prior views, distinguish among alternatives, develop new insights linking prior and introduced ideas, seek new information, promote some ideas over others, coalesce previous distinct notions, or restructure ideas to enhance connections. (Hoadley and Linn, 2000, p840)

It has, however, been noted that "participation will only be genuine and willing if students believe in the worth of their efforts" (Northover, 2002). It is due to this seemingly obvious fact that marks for participation in online tasks were allocated in the most recent offerings of these courses.

As internal students have wide choice within their degree program it is quite possible that students know very few people in their tutorial class. These students are given the opportunity to interview three other students during the week 1 tutorial session and then introduce one of these people to the remainder of the class. This gives all students in the class a chance to find out a little about their new classmates. These students then choose to work with 2-3 other students from this class by the end of the second week. External students have the opportunity to introduce themselves to other students within the course by using an asynchronous discussion board set up on the course web page for their exclusive access. They are encouraged to tell the other students something about themselves that may assist in the formation of the groups. This facility has not been used by all students and therefore at the end of week 2 students are formed into groups of 4 by the course coordinator. Groups of this size are chosen particularly for the external students to take into account some natural attrition during the first weeks of the semester. This has proven to be justified in the two years that external group work has been undertaken.

Student Attitudes

Group tasks for external students were introduced in 2002 for both courses. Students were given access to a general external discussion board through which they could leave messages for all external students and the teaching staff. In 2003 this was extended to include not only the general discussion board but a separate discussion board for each external group.

External undergraduate students are accustomed to working on their own. Many of these students will have been studying for 2-3 years prior to taking Course 1. It was therefore not surprising that many students contacted the course coordinator on receipt of their group allocation stating *"I think you have made a mistake. I am an external student, I don't do group work."* In fact, in past offerings of this course it was common to find students, who would normally study in internal mode, transfer to external mode to avoid the group work tasks. The postgraduate students, however, have welcomed the introduction of group tasks as this is one of their first courses and they generally have no expectations.

Student feedback during the courses varied dependent upon the commitment of the students to the study process. The Course 2 students have all appeared to work well together once the first couple of weeks passed in which there was approximately 5% attrition. All groups in this course commented favourably about the process allowing students to form effective study groups as well as interact with others in the course. Since the recent offering of Course 2 students have contacted the course coordinator stating that they have formed good group dynamics which have allowed them the opportunity to work on other courses effectively in a study group situation. The most common comment from the students in this experience has been *"I never thought that, as an external student, I would have this much contact with my fellow students. It has been extremely valuable-I could not have done this project on my own."*

Students who undertook Course 1 had mixed experiences with this project. Attrition rate over the first 2 weeks of the course in the past two years has been 14%. However, it is not known if this was caused by the introduction of group work or other external factors. Students in this course were required to submit a reflective report on the project and their involvement in group work. Of those students who remained in the project, 75% reported in their individual feedback report that it was an excellent experience. *"My group members helped to keep my focus on the task at hand and gave a different perspective which helped us to come up with a good database"* stated one student, whilst another member of the same group commented that *"Although apprehensive about group work in the beginning, I now respect the need to undertake such a project in a team environment. It has really simulated what I have experienced in my work place"*. The remaining 25% stated that the biggest problems were time management and commitment of their fellow group members.

Both cohorts of students did note that there were some problems with the reliability of the link to the Web. The university in question regularly undertakes maintenance on the online learning environment and the servers that support it at around 5.00-5.30pm on a weekday afternoon and this maintenance could continue for some hours. As many of the external students work full time and are located somewhere in Australia, the timing of this maintenance is quite frustrating as many of the students negotiate to use work Web facilities after normal working hours. Given these study schedules, it is important that the teaching staff are aware of any major downtimes that could affect students and advise them as early as possible to avoid this frustration.

Outcomes and Improvements

Barker (2002) identified that
> [t]he Web is a fount of information and therefore contributes significantly to a student's body of knowledge. It assists students in obtaining lifelong learning and problem solving skills by the very nature of the constant upgrades to software.

Students in both courses have experienced both the positive and negative issues related to group work. On the negative side students noted the frustration of conflicting time schedules, infrequent communication

and the problems associated with technology not being available at the times required. However, students have communicated their experience of joy at the sense of achieving a suitable solution to a complex problem, making new acquaintances and study partners, and the 'mastering' of different software and technology. By using asynchronous discussion boards, external students are now able to undertake tasks in a similar way to internal students, therefore giving more equity to the learning experience, regardless of study mode.

Sherry (1996, para 38) identified that success in distance education could be achieved by
> ... developing appropriate methods of feedback and reinforcement, optimising content and pace, adapting to different student learning styles, using case studies and examples which are relevant to the target audience, being concise, supplementing courseware with print information, and personalizing instruction.

The successful integration and attainment of graduate qualities in distance education in both courses has been, and will continue to be, achieved by the personalisation and adaptation of course materials to the Web learning environment.

Another major experience of the use of the discussion boards was the increase in confidence gained by students. It was quite apparent from moderating the discussions that some students gave little or no input early in the course however by mid-way through the semester/term most students were actively involved in the discussion process either within the group or on the general board. The external students in course 2 all contributed in some way; however this can be attributed to the fact that a participation mark was awarded to contributions placed on the discussion board. Students in this course had 4 tutorial tasks and a debate assignment, all of which were to be posted on the discussion boards, as well as the database project. It has been previously identified that by assigning a portion of marks to online discussions, students are more willing to learn and participate using this forum (Barker, 2002). Conversely, the students in course 1 were not assessed on contributions and therefore some groups chose not to use the facility at all but, in its place, used email. This lead to some major problems with these groups as Microsoft Outlook 2002 has a blocking facility which has been implemented by the University in question which does not allow students to directly email databases for fear of introducing a virus. On assessment of these students' marks it was found that they did significantly worse than those who used and contributed to the discussion board.

On reflection the introduction of the assessable components into course 1 will contribute to increased participation and therefore a better experience for all students given the success of this in course 2. Improvements are still possible in the area of communication. The task has already been upgraded from the initial offering by including the facility of a separate asynchronous discussion board for each student group, thus allowing them a communication space that only the group has access to. Teaching staff are able to moderate the discussions taking place on these boards and therefore guide the group as they would an internal group meeting with them in a tutorial session.

Students in both courses were very complimentary regarding the timeliness of feedback on student work. The implementation of the discussion board allowed the teaching staff to comment on online discussions as well as post assignment feedback to individual groups allowing them the opportunity to act upon this feedback without having to wait for assignment feedback to arrive by 'snail mail'.

The unexpected outcome of the introduction of the group tasks was the camaraderie. Feedback received from the students identified that 70% of the students in course 1 and 95% of the students in course 2 have reported they found it much easier to communicate ideas with fellow students and formed effective study teams most of whom they have continued to work with in subsequent courses.

Conclusions

Many researchers are identifying the usefulness of asynchronous discussion boards in the education of external students, particularly in the area of collaborative work (Graham and Scarborough, 1999; Hoadley and Linn, 2000; McLoughlin, 2002; Northover, 2002). The students in both courses have identified the usefulness of asynchronous discussion boards and commented on the improvement of their skills in terms of collaboration and communication. The realisation by students that the discussion boards have also been used to assist in problem solving and lifelong learning is an added bonus to the external student cohorts and allows the teaching staff the opportunity to implement tutorial tasks that emulate the internal student experience.

The feedback received from the students has encouraged the staff of both courses to continue with the implementation of the discussion boards as a medium for developing the graduate qualities of the external students together with fostering a learning community which will assist the students in the future studies.

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