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DISTANCE EDUCATION A PROACTIVE APPROACH

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Abstract

This paper focuses on the introduction of a proactive approach using electronic technologies to address the disparity between the internal and distance education students learning outcomes. Typically the approach of university lecturers to distance education students in computer programming subjects is reactive, responding to queries via email or asynchronous discussion forums.

By adopting a proactive approach to contact with the students, the lecturer/tutor can enhance the students' engagement with subject materials, encourage the distance education students to join in discussions with their peers (on and off campus), and break the sense of "isolation" suffered by distance education students.

The research undertaken used targeted (individual) email and discussion forums to improve the quality of the learning experience for the distance education students. Qualitative and quantitative feedback, in the form of a questionnaire, as well as historical comparison, was used to measure the overall success of the proactive approach.

Keywords
proactive approach; distance education; retention; student support; communications;

Introduction

The subject CSC10059 – Internet Programming and Scripting was introduced by the School of Multimedia and Information Technology of Southern Cross University in 2002. In each semester the subject has been offered it has been available on-campus and as a distance education subject. The author of this paper has been the unit assessor since its inception, and observed a disparity between the learning outcomes of on-campus (superior performance) and distance education students (inferior performance).

The Internet Programming and Scripting subject was designed using constructive alignment, where all parts of the teaching; the teaching mode, climate, curriculum and assessment are aligned in a student-centred manner (Biggs, 1996; Biggs, 2003).The structure that is used to cover the content of this subject is the problem-centred structure as described by Rowntree (Rowntree, 1994).

Each topic in the subject provides the student with a skill-set, then engages the student in deep-learning (Biggs, 2003) with the content through a series of problem-based (Toohey, 2003; Dunn & Morgan & O'Reilly & Parry, 2004) self-assessed activities. This problem solving approach is then taken to a higher level by tasks required in the formally assessable activities. Following is a quote from Toohey (2003; p.102) that describes the concept of the topic structures and the entire subject as a whole:

> So developers of problem-based or project-based courses usually select or develop the problems or projects for students within a clearly defined structured framework that will help them consistently develop their abilities. The most likely to be used are those provided by a performance analysis of the discipline or profession such as would be done in developing a competency-based course of framework based on the logic of the subject material.

All the student support materials for the subject; PowerPoint presentations, study guide, sample programs, WWW links, additional readings were fully available via the on-line courseware (Blackboard Academic Suite) site to both the distance education and on-campus students. This material was written to be flexible, as it is delivered in multiple modes (on-campus, distance and overseas). Care was taken in authoring the student support material to comply with suggestions given by Rowntree (1994; p.13). Some of these are:

- Clearly stated objectives
- User-friendly, "You and I" style of writing
- Short manageable chunks of learning.
- Plenty of helpful examples.
- Illustrations used where they are better than words

As all students were provided with the same materials regardless of mode of delivery, it was determined that something else must be causing the disparity.

The formal assessment items set for this subject are a website (in two stages) live on the WWW and an exam. The website assessments incorporate programming in several different scripting languages. Students are assessed on their competency with the following content areas: XHTML, JavaScript, PERL, and PHP.

Could the disparity be caused by the tools the students had to perform their assessments? The environment that both sets of students (distance & on-campus) authored their programs in was identical (programmers file editor), as it is provided by the University, the server that the students mounted their programs on is also provided by the University. Even the software to access and upload, web pages and programs, to the server are standard freeware telnet and FTP clients, downloadable from the courseware site. In fact the on-campus students program their code and upload to the server in an identical manner to the distance education students. Therefore this was eliminated as a cause to the disparity between the two sets of students.

The only real advantage on-campus students had that the distance education students lacked was in access to lecturer/tutor and communication with peers (undertaking the same subject). This therefore, was determined to be the cause of the disparity in learning outcomes.

This supposition was confirmed as the subject was also run in overseas mode. Southern Cross University's overseas partner ran the subject on their own campus, using the same support materials, same tools and even the same server. The overseas students learning outcomes were on a par with the on-campus students in Australia.

Looking for answers

In an attempt to address the disparity between on-campus and distance education students, the author pursued contemporary literature for previous research. The lack of contact between the distance education students and their lecturer/tutor & peers is a well documented problem.

Distance education students feel isolated (Teaching and Learning Centre, 2003; Lake, 1999; Mason 1994; Peters, 1992; Rogers 1990) from their institution and peers, hence developing a sense of belonging in the institution/subject can be difficult. Literature suggests that a sense of belonging will increase student's likelihood of continuing and succeeding in their studies (Lake 1999; Hipp, 1997; Cuskell & Danaher & Purnell, 1997; Peters 1992; Rogers 1990).

Cuskell, Danaher and Purnell (1997; p.89) state in their paper “Just which technology do distance students really want? Results of a focus group research”:

> Participants in this study wanted contact with their lecturers/tutors to clarify academic issues, but also to maintain motivation and to develop collegiality with fellow students.

This study also highlighted the fact that the telephone was not particularly a good communication method for distance students to access their lecturer/tutor citing problems with cost (STD rates), and contact hours. Email offers a timelier and cheaper solution to contact with the lecturer/tutor in situations where the distance education student has access to email (Lake, 1999; Western Cooperative, 1999; Mason, 1994).

Much of the research into breaking the sense of “isolation” distance education students experience recommends using discussion forums (bulletin boards, chat rooms etc.) to encourage communication with peers undertaking the same subjects (Bang & Dondi, 2000; Toohey, 1999; Lake, 1999; Western Cooperative, 1999; Mason, 1994).

Yet all of suggested solutions for distance education students were in place. The very environment the student support materials were available on (Blackboard Academic Suite) has facilities to allow email generation between lecturer/tutor and student/student. The author, as a lecturer within the University has a strict policy of two day turnaround in all email. As well, the author, as a matter of course, always creates an asynchronous discussion forum available to all students, distance and on-campus for each subject under his supervision.

If all of the recommended support is in place, why then is there still a disparity in learning outcomes? Perhaps the answer lies in how the support is used. The School of Multimedia and Information Technology at Southern Cross University funds a lecturer (casual or full-time) ½ hour per 5 students per week to support distance education students. Typically the lecturer’s funded time is spent on responding to questions raised by emails, and checking the discussion forums. This can be considered to be a reactive model; when a problem is raised by the student it is handled by the lecturer/tutor.

The answer to reducing the disparity between distance education students and on-campus students might lie with being proactive (Bird & Morgan, 2003) in communication/support with the distance education students rather than just reacting to problems raised by the students.

Proactive not Reactive

Approximately 50 per cent of our students at Southern Cross University are distance education students (Teaching and Learning Centre, 2003). Many are balancing work, family and study commitments or are returning to study after long absences. Several studies (e.g., Brown, 1996; Parr et al., 1996; Grace and Smith, 2001) on discontinuation of distance learners revealed that the most common complaints were about time pressures and problems contacting staff.

In the past, email with distance students has been limited to responding to a problem raised by the student via email or discussion forum. This is a reactive approach, reacting to a problem rather than seeking the student out and attempting to find if there is something that can be done to assist them prior to a problem becoming apparent.

The author decided to change this manner of contact and take a more proactive approach. Rather than waiting to for a student to email a problem with the materials, email would be sent to the distance education student fortnightly checking their progress with unit material. This personal contact with each student was designed to put the student at ease with the lecturer and encourage communication and motivation.

Rather than a group email (addressed to all students) each email was individually addressed and targeted at the individual student, this was done to personalise the contact with each student. Preparation for these emails involved seeking information to "know my learners" (Tait, 1995; Rowntree 1992, p.38).

The records of each student were examined, to discover academic experience, age, gender and location. This review allowed an email to be generated to each student with some knowledge of the student's circumstances. Some details follow:

- Age – Average 31.4 (oldest 50 - youngest 23)
- Gender – 2 female, 9 male
- Locations – 5 North Coast, NSW, 3 Sydney, 2 Gold Coast, 1 Cairns
- All enrolled in Bachelor of Information Technology (9), Master of Information Systems (1) or Associate Degree of Information Technology (1).

This data gave an ice-breaker to open a dialogue with the student (typically "How's life in … Yamba, Sydney, Cairns etc. … treating you?"). The targeted emails were sent to each student on a fortnightly basis. Each email concentrated on how the student was going, feedback (advice) on portions of the assignment they had completed (the assignment was a large website – using multiple technologies) and whether the student was having any problems with concepts or assessable items within the scope of the unit.

In the first email to the distance students they were informed that an external only MySCU on-line discussion forum had been created for them. Each student was informed that this forum would be available to them in addition to the all-student forum. They were also informed that the lecturer would be available to answer questions twice weekly (Mondays 8:30-10:30 PM and Thursdays 9:30 – 11:30 AM) on the external only discussion forum.

The all student forum was designed to allow all students to communicate with their peers undertaking the same course (regardless of mode); the external only forum was designed to increase access for the distance education students to the academic during differing times of the week. The Monday session (8:30-10:30 PM) was set as this provided access to the lecturer in real-time for those students that were working (Bird & Morgan, 2003).

Both the email campaign and the discussion forums were an attempt to break the "isolation" of the external students and encourage a sense of belonging resulting from participation in contact with peers and lecturer (Teaching and Learning Centre, 2003; Lake, 1999; Mason 1994; Peters, 1992; Rogers 1990).

Results of the Proactive Approach

To measure the results of using a proactive approach to communications/support with the distance education students in the "CSC10059 – Internet Programming and Scripting unit" three methods of review were used. These methods were: student questionnaire (seeking quantitative and qualitative data), a historical comparison of raw results 2002-2004 and reflection on the success of the trial, by the author.

Questionnaire

All external students were requested to complete a questionnaire about their experience with the unit (response rate 72%). This provided quantitative data (on a 10 point scale) that indicated students:

- found the fortnightly email useful, although some considered it to be placing undue pressure upon them;
- found the email to be beneficial in establishing a lecturer/student relationship;
- email contact with lecturer was better and more often than any other unit undertaken;

- found the external only discussion forum useful, and that it contributed beneficially to the student/lecturer relationship;
- did not use the discussion forum more than any other unit undertaken;
- were very satisfied with the on-line materials for this unit;
- were very satisfied with the staff members teaching in this unit;
- were clearly informed of what was required to achieve success in this unit.

The author was pleased to receive these survey results from the students, as it demonstrated the project had been successful in reducing the "isolation" (Bang & Dondi, 2000; Toohey, 1999; Lake, 1999; Western Cooperative, 1999; Mason, 1994) of external students.

However, some anomalies were present.

How could the email have been useful, yet place undue pressure on the student? This was perhaps answered by one of the students who rated the undue pressure at 9 on the 10 point scale. This student added the comment "but, I needed it" to the survey form.

Perhaps the most confusing anomaly was that the students indicated they found the external discussion forum useful and beneficial in establishing a lecturer/student relationship, when it was virtually unused. In the weeks that the author was available to answer questions on the forum only seven posts from four individual students were made. Perhaps the answer lies in the responces the students gave to the qualitative questions.

The student questionnaire contained two questions seeking qualitative information about their experience in the unit. The first of these questions sought to examine why students had not extensively used the MySCU discussion forums (all-student & externally only). Some results were:

- "… felt intimidated"
- "… I know my questions would seem stupid to other students"
- "… quicker to email the teacher directly"

This feedback indicated (in the author's opinion) that external students in this type of unit (computer programming) don't particularly want to expose themselves to the criticism of their peers. It must also be noted that the percentage of internal students posting to the discussion forum was lower than the externals, perhaps for the same reason.

The second qualitative question asked the students what other support could be supplied to external students. Some results were:

- "… face to face, i.e. a workshop"
- "Other units I have studied the lecturer personally rang …"

The author had discounted the use of the telephone due to the problems with timing (students working etc.) but, in retrospect perhaps the first contact with students could have been by telephone. This would have further personalised the contact been lecturer/student. Of the additional support suggestions made by students, telephone calls would be the most cost effective as the cost of running a workshop(s) would be prohibitive.

Historical Comparison

The author of this paper has been the unit assessor of "CSC10059 – Internet Programming and Scripting" since its inception, and had observed a disparity between the learning outcomes of on-campus and distance education students. Therefore an examination of the raw results should demonstrate whether using a proactive approach to communications/support with the students has reduced this disparity.

The unit was introduced in 2002, and upon its introduction nearly all third year students elected to take the unit. This resulted in the marks for 2002 being skewed to the high end (particularly the assignment marks). Following is a table of raw results of the Lismore on-campus students and the distance education students (2002-2004).

Year	2002	2003	2004
Assignment raw result (internal students) %	81%	71%	78%
Assignment raw result (external students) %	70.5%	57%	73%
Total raw result (internal students) %	76.5%	67%	71%
Total raw result (external students) %	72%	58%	69%
Failure rate (internal students) %	0%	7.69%	0%
Failure rate (external Students) %	11%	33%	0%
Total Number Students (internal)	20	24	20
Total number students (external)	9	14	11

Raw Results (2002-2004) CSC10059 – Internet Programming and Scripting

As can clearly be seen in the above table, distance education students learning outcomes have improved in comparison to on-campus students. Assignment results show the greatest improvement, in previous years (2002-2003) the average difference between the on-campus and distance education was 14.25% (2002 - 10.5%, 2003 - 18%). The use of the proactive approach has seen the difference in results reduced to a 5%. There are several factors that could have influenced this result. They are:

- quality of the students;
- difficulty of the assignment;
- additional resources available to students;

The author has been unit assessor of this unit since its inception, and can categorically state that the assignment was not easier than it was in previous years. Nor were additional resources available to the student that would have affected the overall result so dramatically.

Even if the quality of the students was higher than in previous years (doubtful) the proactive approach to student support must have influenced the results and therefore has been effective. The results appear to reflect that rather than using the surface approach to the unit's material the distance education students had been motivated to use deep learning approach (Biggs 2003, p.17) and this has enhanced their learning outcome in the assignment.

The raw total also, shows an improvement for distance education students with only a 2% difference between distance students and their on-campus peers. The failure/attrition rate for distance education students was reduced to zero when the proactive communications/support for students was offered. The author does not believe this will always be the result; however a reduction failure rate should be expected when using the proactive approach. This supports the studies (e.g., Brown, 1996; Parr et al., 1996; Grace and Smith, 2001) on discontinuation of distance learners. By providing timely access to the lecturer/tutor pressure on the distance education student can be reduced.

Reflection

The last process of review for the introduction of the proactive approach to distance education communication/support was self-reflection (Biggs, 2003). The following questions were asked:

What worked? Overall, the entire project was a success. The email campaign was particularly successful in motivating students to use the deep-learning approach to the unit. More emails were generated between distance students and the author than any other unit. This in and of itself was a rewarding experience. The isolation that the external students experience was reduced if not completely broken during the course of this unit. By involving them in an email dialogue that clarified the assessment criteria, provided timely feedback and encouraged them to challenge themselves, the learning outcomes of these students has been enhanced.

What didn't work? Over the course of the semester, the author spent a total of four hours each week (52 hours total) waiting to answer questions on-line in the MySCU discussion forum for this unit. During this time a total of seven posts from four individual students were received.

Whereas, the students consider the discussion forum to be an important part of the student/lecturer relationship, the result was mostly wasted time. Perhaps in a different unit or for a large group of students this would be a more valuable tool.

What should have been done? The telephone as a communications tool should not have been written off so quickly. Some of the literature (Cuskell & Danaher & Purnell, 1997) recommended it not be used due to cost/timing. In the case of distance education students contacting the lecturer/tutor, email offers a cost effective and timelier solution than the telephone. However, the tutor/lecturer could "humanise" the relationship between themselves and the distance education student by using the telephone for the first contact with the student.

What will be done in the future? Using the proactive approach with the distance education students has proved to be a success. Therefore this approach will be used again, with the following modifications:

- first contact with the students will be via a personal phone call;
- a discussion forum for distance students will be set-up again in addition to the all student forum however, no specific times will be set for the lecturer/tutor to be available rather the forum will be checked intermittently (at least weekly) for postings and responses generated accordingly.

As well, argument must be raised with the administration for an increase to the funding model for distance education students. Using a proactive approach with the students takes time. The current model of ½ hour per five students per week is insufficient to adopt this type of an approach.

Conclusions

Being proactive instead of reactive to student communications/support has proven to be successful. A proactive targeted approach to email contact with the students was taken. Students were encouraged to open a dialogue with their lecturer/tutor. This was done to break down the sense of isolation typically experienced by distance education students. By involving them in an email dialogue that clarified the assessment criteria, provided timely feedback and encouraged them to challenge themselves, the learning outcomes of these students has been enhanced.

The students themselves found that the amount of communication between lecturer/student was greater than any other subject undertaken and was beneficial to their studies. The learning outcomes of the students, using historical data, show measurable improvement, including an improvement in the retention and attrition rate. This supports the studies (e.g., Brown, 1996; Parr et al., 1996; Grace and Smith, 2001) on discontinuation of distance learners. By providing timely access to the lecturer/tutor pressure on the distance education student can be reduced.

Less successful was the introduction of the synchronous forum for the distance education students. The forum was seen by the distance education students as being useful in establishing a lecturer/student relationship, however, the forum itself was however not utilised enough by the students to justify the cost in number of hours of lecturer time. This type of support would probably suit a much larger cohort of students.

Even discounting the hours spent on the synchronous discussion forum, the amount of hours the author spent using the proactive approach to student communications/support exceeded the hours allocated to this task by the School of Multimedia and Information Technology. The standard arrangement for distance education support is ½ hour per five students per week. To provide proactive support to the students this funding model will have to change. The reduction of attrition in distance education students is a major benefit of the proactive approach and is a strong selling point in the argument to change the funding model. To determine the extent of this change to the funding model will require additional research to be undertaken.

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