

Chapter 8. Teaching as Goal and Guide: the Evaluation of Innovative Assessment Integration by First-year Teacher Education Students on Two Campuses and the Role of Technology in its Integration

Participants: Margaret Fletcher, Brendan Bartlett, Fiona Bryer

Mentor: Carol Bowie

Griffith University

1. Introduction

This project was conducted in an education faculty with first-year students enrolled in an undergraduate primary education degree program. The focus of the study was to evaluate the effects of an innovative across-course assessment item and the use of technology on learning outcomes in a program that was delivered across two campuses. The original concept was trialled in 1999, however the focus of this report is on research conducted in semester 2, 2000. Course delivery varied between a long-established campus and a newer and smaller campus using a technological medium of web-based flexible learning. The model for the semester program comprised inter-course integration of some assessment that required students to analyse relationships between courses (Biggs, 1999b). Three courses offered on both campuses differed in relative emphasis on web-based learning and in academic emphasis on conceptual, pedagogical, and pragmatic aspects of teaching. The fourth course was another pedagogical course that participated only passively in the evaluation. The study involved exploration of changes during the semester in student views of teaching and the role of technology in those changes.

The research design of the 2000 evaluation included pre- and post-testing of teaching text, questionnaires, interviews, open-ended questions, and survey data on learning and technology use throughout the semester. Web forum participation throughout the semester was monitored for active participation and passive observation.

Transformative Perspectives: Student Learning

Recommended practices in the teacher education literature place value on an engaged learner (Biggs, 1999a, 1999b). It is widely recommended that student teachers engage in active (Lunenberg & Volman, 1999), self-directed (Tillema, 2000), and self-regulated (Kremer-Hayon & Tillema, 1999) learning. In teacher education programming, constructivist pedagogies promote the creation of knowledge (Gibbons et al., 1994; Holt-Reynolds, 2000). Reasoned dialogue rather than instructional dialogue mediates knowledge. The student learner needs to transform knowledge rather than reproduce what the teacher says.

It is also recommended that student teachers integrate their perceptions and thinking about their professional identity (Beijaard, Verloop, & Vermunt, 2000) in the course of their undergraduate studies (Anderson, Smith, & Peasley, 2000). Two recent efforts to analyse critical elements of teaching that need to be integrated into a coherent framework have highlighted, in different ways, the three elements of content *per se*, the learning of content, and teaching of content.

There is minimal understanding, however, of what and how teachers integrate knowledge into frameworks that guide their practice (Eraut, 1994, Schoenfeld, 1999). The professional identity of a teacher is poorly researched. For example, Beijaard et al (2000) proposed that teachers derive their identity from how they see themselves as experts in course matter, pedagogy (e.g., how teachers engage with students), and didactics (e.g., how teachers plan, execute, and evaluate lessons). Active and independent learning, moreover, is being promoted within each of these factors

identified as contributors to teacher identity: course matter that is transformed into teachable knowledge, pedagogy that aims to enhance students' learning outcomes, and didactics that facilitate students' knowledge construction and use.

Yet Anderson et al. (2000) argued that graduating teachers should be able to balance how children in their class will learn the content laid down in the curriculum and how the children make sense of the content. However, the initial conceptions of teaching held by first-year students teachers often prevents them from an integrated conceptual framework that does balance complementary factors involved in teaching. Their repertoire of practice becomes unbalanced and inflexible if and when they selectively attend to one or another aspect of teaching. Anderson et al. (2000) found that first-year teacher education students did show quite different and unbalanced ways in which they grappled with the integration of how children in their class learned the content laid down in the curriculum and how the children made sense of the content in their classroom.

Educational researchers have started to argue that these findings need to be incorporated into the preparation of classroom teachers (Ethell, 1997; Ethell & McMeniman, 2000). Ethell (1997) argued that the naive beliefs that reflected passive learning experiences at university required early intervention. She argued that the opportunity to articulate, explicate, and explore one's own beliefs and preconceptions of teaching is essential to facilitate the development of vocational knowledge.

"All student teachers need to be provided with opportunities in their preservice teacher education course to foster the development of appropriate schemata for interpreting new knowledge and experiences from the perspective of teachers rather than students (Ethell, 1997, p. 283).

Similarly, Fletcher (2001) reported that teacher education students appear to defer vocational thinking until they are ready to graduate. She found that many students in their final semester are still thinking as "students" rather than autonomous professionals. For most students, the locus of control of their learning

was externalised to the staff involved within courses. These students continued to study on a course-by-course basis, completing the requirements of specific courses, still depending on lecturer, and passively absorbing knowledge.

Student teachers need to start vocational thinking from the beginning of their professional studies. They should develop early skills in independent learning and to be able to demonstrate that they can articulate a coherent perspective on teaching across courses. They need to start to integrate the different views of teaching presented in discrete courses into their own explicit understanding.

That is, student teachers are likely to benefit from an integrative and autonomous construction of their explicit view of teaching, from the relationships between units of undergraduate work comprising a semester. In order to facilitate an early emergence of an active approach to their studies, moreover, an early semester seems to be an appropriate time to challenge passive within-course thinking and to start fostering an integrative conceptualisation of teaching.

Transformative Perspectives: University Teaching

Changes in university education also raise new barriers to the implementation of transformative practice. It is recognised that the dominant teaching paradigm has fostered transmission of content. Recent political and economic events have added further pressures towards an emphasis on content-based delivery. Moreover, the changing lives of university students inhibit transformative practice: With more part-time work and more family responsibilities, university study appears to occupy a declining proportion of more students' lives (Department of Education Training and Youth Affairs, 2000; Fletcher & Bartlett, 1997).

Expectations of tertiary teaching have changed. In a transmission model of teaching, lecturers performed a didactic role (Burroughs-Lange, 1996; Ramsden, 1992) and controlled what is taught and how it is learnt (Martin & Balla, 1991; Prosser & Trigwell, 1999). An alternative to this teacher-focused approach is a developmental model of

instruction that challenges, complements, or contradicts a learner's existing knowledge in some way (Farnham-Diggory, 1994). In this approach, conceptual change involves a qualitative transformation in personal theories (i.e., the knowledge outcome), and reconstruction of existing knowledge is the mechanism of change.

Moreover, the climate of academic work has changed across systems and institutions. Changing clientele, increased student numbers, and decreased staffing are situational barriers to the implementation of positive changes towards more effective teaching and learning. Coaldrake & Stedman (1999) described the effect of changing student populations:

As student numbers increased, institutions were faced with an increasing diversity in student population, both in academic preparation and in terms of language, socioeconomic background, and other factors. Students can no longer be assumed to be sufficiently gifted to learn for themselves in the face of indifferent teaching. Nor can individual or group differences within the student population be ignored (p.8).

The introduction of information technology has been promoted as one way to overcome these barriers, meet these needs, and to provide cost-effective facilitation of transformative learning where students can manage their learning in a flexible and individualised way. However, increasing emphasis on the use of technology is another demand on academics to review their teaching approaches (Bryant, 1998).

Transformative Perspectives: Teaching, Technology and Innovation

Teaching is a complex task that looks "simple" at first glance (Labaree, 2000). "You can't be a good salesperson unless someone is buying, and you can't be a good teacher unless someone is learning" (Labaree, 2000, p.228). The nature of teaching changes with social-historical conditions, with information technology an emerging feature of teaching (Clift, Mullen, Levin, & Larson, 2001; Hedrick, McGee, & Mittag, 2000). The nature of technology's role in teaching from school to university remains uncertain in its effects on learning outcomes. For example, Bryer &

Fletcher (2000) reported student resistance to the use of computers as a learning tool while others (Andrewartha & Wilmot, 2001; McLoughlin, 1999) suggest the design of software and multimedia programs have a considerable effect on how students respond to learning opportunities.

Technology is being introduced into education at a time when there is increasing emphasis on transformational processes involved in effective student learning. Thus, changes in learning arising from new technology are integral to how teachers view themselves and their work and their beliefs about what they need to be competent in.

The dilemma for the project team was that for the first time, traditionally delivered courses on one campus were to be delivered on a second that emphasised the role of technology as an essential component of teaching and learning. While this was seen as an opportunity for redesigning courses and introducing innovative teaching practices, the convenors had minimal experience in web-based course delivery, design and management. Furthermore, it was important for us to monitor the effects of our innovation and use of technology on student learning. The monitoring was developed as a reflective, evaluation process and formed the basis of this study.

Transformative Perspectives: Evaluating Tools, Tasks and Learning Outcomes

Brown (Brown, 1997) suggested that multimedia should be designed to support the principles that learning involves knowledge and highlighted the importance of evaluation of multimedia within the context of its use.

Evaluation Framework

In this project, evaluating the use of technology and student learning was multi-focused. Therefore, our approach used an eclectic-Mixed Methods-Pragmatic Paradigm (Phillips, Bain, McNaught, Rice, & Tripp, 2000; Reeves, 1997). The learning-centred framework for whole project evaluation (CUTSD Project, 1999), drew on efforts to consolidate this complex field (Alexander & Hedberg, 1994; Bain, 1999) which emphasises learning outcomes as the focus for evaluation. Evaluation seeks to generate information in a way similar to traditional research and to judge

the quality of that information using research criteria for reliability and validity (Ewan, 1998). However, evaluation requires information about “a range of situations, products, and processes” (Phillips et al., 2000, p.1.3) that is then subject to judgement in terms of its worth; hence evaluation exceeds the normal field covered by research.

The sequence of phases in the learning-centred framework was analysis and design, development, implementation and institutionalization (adapted from (Alexander & Hedberg, 1994; Bain, 1999)).

The type of evaluation across these phases shifted from formative evaluation with an aim to generate information, to summative judgement of the value of the project. The present project is concerned primarily with the implementation phase of three courses, as we attempted to establish whether the innovation improves the learning process, the learning outcome and is appropriate to the learning environment. The focus, therefore, involved formative evaluation of the innovation across a range of situations and its impact on the learning process as well as summative evaluation.

Throughout the semester there was an ‘ongoing monitoring of the learning environment’ and its impact on the learning process of students. Response and intervention at the group level was in the form of focussing

questions that were lodged via a notice board, on a forum or in the traditional lecture/tutorial context. Responses and intervention at the individual level was via email or through appointments and face-to-face consultations.

Evaluation Plan

As this project crossed three courses and two campuses, it was essential to develop an evaluation plan that identified who was responsible for what, and when and where evaluative data would be collected. Table 8.1 summarises the plan that guided the evaluation process.

2. Description of the study

Analysis and design

In 1999, the delivery of web-based courses on a new campus resulted in convenors encountering a range of issues related to the use of technology and resulting learning outcomes. The 1999 courses were evaluated using traditional survey-based methods as convenors viewed this initial experience as a necessary trial period accommodating time constraints imposed by circumstances beyond their control. Common experiences and concerns emerged across three courses where like-minded convenors reviewed curriculum and teaching approaches that might better serve learning objectives identified in each of the courses. A consequence of this informal,

Table 8.1. Plan of action for data collection.

	Week 1	Week2	Week 4	Week 7	Week 8	Week 11	Exams	
Course 1 Curric.	Teaching Statement (TS1A) Appendix 1			Focus Groups Learning & Tech. Appendix 3			Teaching Statement TS2 Appendix 1	Course Eval. Appendix 5
Course 2 Psych.	Tech. and Learning Experiences Appendix 2					Quest 2 repeated Appendix 2	Teaching Statement TS2 Appendix 1	I'view
Course 3 School strats.		Teaching Statement (TS1B)	Technology Survey to all students Appendix 2		Tech. Survey repeated		Teaching Statement TS2 Appendix 1	I'view

formative evaluation was the design of an innovative assessment that might facilitate two outcomes. Firstly assessment offered an opportunity to propel student learning beyond a content orientation, and, secondly, assessment provided a means to motivate students to use newly-available technology as a tool to facilitate this learning orientation.

Over two semesters, the three course convenors collaboratively redesigned their first-year courses to support a student-centred approach to learning that was aimed to collectively align learning objectives, teaching strategies, and assessment tasks (Biggs, 1999a). Additionally, these courses were delivered using web technology. The purpose of this study was to evaluate the effectiveness of this approach. Two questions guided the research.

- How does across-course integration develop students' understanding of teaching?
- How does the use of technology facilitate an integrated understanding of teaching?

Development

Four vehicles were used to enhance student learning in this project. First, the main vehicle for transforming student learning was a common assessment item (See Appendix 8.1). Specifically, a 600-word, end-of-semester essay was allocated 30% of total marks in each of the three participating courses. With the use of structural criteria, students were required to transform intra-course content into unique understandings of structural relationships across courses. Their personal task was to think about what they had learned about teaching across the three courses. Therefore, the discriminating criterion for successful performance was not the amount of content learned (Farrell, 1997; Lawe Davies, 1997). The discriminating criterion was the coherence of the links that they identified among course content. Furthermore, as future literacy teachers, they were expected to construct and apply theoretical models of writing as process to their own end-of-semester essay writing (Bereiter & Scardamalia, 1987).

A second vehicle for transforming learning was the integration of technology across the three courses. A common electronic forum that was linked to each of the three course web sites became a space for lecturers and students

to discuss, analyse, and synthesise their evolving understandings across courses over the semester. To facilitate this, convenors placed questions on the forum as a stimulus for discussion. A reflective journal was used in the literacy course as a metacognitive learning tool. Focussing questions on the website prompted students to identify prior experiences that might shape or influence their constructed understandings of topics. The journal was available for students to refer to in their final examination.

Students' uses of technology and specifically the website across two campuses was appraised in relation to their development of an integrated view of teaching. Their uses were assessed also in terms of the perceived instrumentality of technology and the website as mediums for achieving a range of learning goals. Specifically, as outcomes of participation in the website-based technology, students in the courses were expected to gain skills in:

- Constructing understandings of key elements of course-area content within and across courses.
- Working interactively with peers and staff through the forum, and other forms of technology.
- Describing their use of the medium(s) to integrate their knowledge across courses.
- Evaluating themselves as learners and the effect of technology on their learning.

A third vehicle for transforming learning was the use of authentic assessment tasks requiring application of empirical and theoretical knowledge to elements of professional practice. Tasks were designed to reflect "on the job" skills contextualised within the teaching experience. During the course development phase, formative feedback was provided on the assessment criteria for the teaching statement. Students performed tasks involving verbal and visual representation of content (i.e., brief integrative essays and poster generation).

A fourth vehicle was formative feedback on content-based versus relationship-based interpretation of the verbal and visual tasks. This feedback was facilitated by the use of Biggs' (1996) criteria in contexts that were both collaborative and independent. Staff gave feedback on the written work in terms of the structural coherence of the writing. Peers, using the same criteria, provided feedback on

posters according to whether the posters were based on content or on relationships between content. Peers collaborated in making a series of posters culminating in a classroom poster communicating preferred social behaviour. These activities were functional within the course and also provided a teaching mechanism to introduce the creative, constructivist, and integrative approach to assessment. A 1999 trial of these innovations demonstrated that students were able to transform their learning in their teaching statements.

A fifth vehicle was the teaching activities and strategies that were deliberately included throughout the courses to further contribute to and scaffold students' metacognitive learning. Academics modelled ways of thinking about their content beyond the specificity of their fields. Moreover, the Learning Assistance Unit ran workshops that students were encouraged to attend as preparation for the common assessment essay. These workshops offered further scaffolding on the "how" of writing, where processes were explored and approaches discussed.

Table 8.2 shows the inter-course design for constructive alignment by which transformative learning is facilitated through teaching practices and assessment activities (in two courses) and through the learning objectives.

Implementation

Throughout the implementation of these initiatives, ongoing evaluation provided important data related to our research questions.

Role of the Evaluators

Members of the project assumed two roles, as course convenors and as evaluators of the project. As course convenors they were responsible for delivery of their individual courses, and undertaking typical administration requirements of large undergraduate subjects, including working with several sessional staff. As evaluators, they collaboratively worked with the project's mentor to design and implement the evaluation approach for this study. This required regular meetings to establish methods that would capture the progressive experiences of our students. They collected a range of data during the semester.

Data Sources

Data were collected across two campuses and provided a range of formative and summative information about our students' development as learners and their use of technology to facilitate that learning. Questionnaires, interviews and samples of students' work provided an evolving insight into how students were progressing over time.

Data sources were:

- Teaching Statements
- Technology questionnaire
- Technology usage monitored through forum discussions
- Focus group interviews
- Staff meetings and reflection
- Assessment results

These are detailed below.

Table 8.2. Overview of innovative curricular and assessment practices.

Learning is facilitated through:	Teaching practices and assessment tasks across two courses	
Learning objectives	Development	Literacy
<i>Integrated thinking</i>	Common examination essay: Teaching Statement (TS) across courses	
<i>Scaffolded learning</i>	Learning Assistance Unit workshops (writing TS)	
<i>Collaborative discussion</i>	Group work Forum on inter-course website (TS)	
<i>Application of theory</i>	Class posters (at-risk behaviours)	Lesson plans (literacy)
<i>Metacognitive monitoring</i>	Feedback on Bigg's criteria in formative posters and mid-semester examination	Feedback on mid-semester assignment Reflective journal

Common Assessment Task Across Three Courses: Teaching Statements

At the beginning of the semester, students (N= approx. 400) were asked to write a statement about their views of what contributes to effective teaching in the primary classroom. On completion of the semester, students were asked to write a 600-word statement to capture whether and how the three courses influenced their views of teaching. Linkages drawn between students' consideration of the effectiveness of the website, statements of influence on a view of teaching and awarded grade were investigated.

Questionnaire on learning and technology
The questionnaire was administered pre-and post-test to identify change in students' perceptions of learning. (See Appendix 8.2)

Technology survey
Students' use of technology was identified in this survey. (See Appendix 8.3)

Forum
Use of the forum was monitored in terms of which students were using it and in what ways they were using it.

Focus group interviews
Small focus groups were interviewed to provide additional comment on the interpretation of the data collected as described above. (See Appendix 8.4)

Data analysis

Evaluating the use of technology and student learning was multi-focused and an eclectic-Mixed Methods-Pragmatic Paradigm (Phillips et al., 2000; Reeves, 1997) underpinned the analysis of data collected. Quantitative and qualitative methods were used. These are described as they applied to collected data.

All data provided progressive and comparative evaluative information about students' development as learners and the effect of technology in facilitating that learning.

Common Assessment Task across Three Courses: Teaching Statements

The common teaching statement was randomly distributed for rating across the teaching teams in the three courses. A two-dimensional

criterion-based marking scheme was used to rate the common essay task (See Appendix 8.1).. Inter-rater reliability was established through a moderating process to check interpretation of the criteria and application of criteria in rating the teaching statement. The ratings were crosschecked by an independent marker. Student performance across two years and across campuses were analysed using SPSS to compare change in student results.

Questionnaire on perceptions of learning and technology
Quantitative analysis using SPSS was undertaken on the 1999 data to identify evidence of change in student perceptions of learning and technology and is reported here as formative evaluation results.

Technology survey
Descriptive analysis was used to establish change in students' experience of and use of technology.

Forum
Qualitative analyses reporting thematic ways students used the forum to engage with the common assessment task.

Focus group interviews
Qualitative analysis of transcripts provided additional insights into students' perceptions of their learning and their approaches towards technology as tools to facilitate that learning.

3. Results

Results are reported as 'in progress' as the large corpus of data generated in this study are still being analysed.

Development

Learning Concepts

During the pilot study, students completed an 80-item "concepts of learning" questionnaire where 8 items had pre-post difference scores that correlated with success in the psychology subject. The results showed positive change in the following items:

- + Learning consists of thinking about relationships between pieces of information in order to make sense of them.

- + In order to understand material that they read, students should question, paraphrase, or criticize it.
- + The organisation of knowledge is unique in each person.
- + People create new ideas by reacting to other ideas within a community.
- + People can understand an idea from someone else's viewpoint, even when they come from different social backgrounds.

Negative change occurred in the following three items:

- People who can understand any given theory interpret it in the same way.
- A group of learners is only as strong as the strongest member.
- The mind receives knowledge passively.

These items suggest students' perceptions about learning changed in ways to reflect the approaches to learning supported across courses. We had evidence that students were re-thinking their views on learning when they commenced our courses and this gave us confidence to continue and refine our approaches to teaching in the coming year. This formative data guided the project team to review subject content and assessment to support changing perceptions of students across three courses during 2000 course delivery.

Implementation

Learning Concepts

Analysis of interview data during the project revealed students were challenged to re-think their understandings of teaching and learning as they undertook the common assessment task.

Students interviewed described how their expectations of course content reflected a transmission view of learning. "I actually thought you were going to tell us how to teach the sound 'oo'". As students progressed through the semester they realised they were expected to develop their own thinking based on a range of materials, readings and resource used in lectures and tutorials across courses.

"It was the culmination of the assignment that I began to think 'oh I know some things that I didn't know about'. And you showed a couple of videos of classroom situations and I suppose I only latched on to that because I thought, oh now finally

you're doing what I thought you would, but certainly now I can't look at a book the same way now – or ever again and I've got a much better concept of what I'm doing".

Furthermore, student performance in the common assessment item was compared across campuses as described in Figure 8.1. Students' performances across both campuses reveal similar results in the common assessment item. Generally, students demonstrated elaborated responses as reflected in scores within a range from 5 to 8, showing some integration and structure of content across the three courses. (See Appendix 8.1 for description of ratings).

Technology

Students entered the semester knowing that there would be an emphasis on technology across courses. Some students accepted this as a way of university life and learning, "I've had to get used to using computers. They're everywhere"; while others were resistant and became strategic in avoiding using the website, "I just worked from a hard copy of the web site". Students were able to identify particular aspects of the website they found useful. For example, links to other sites were named, "I loved the four blocks website. It was very helpful".

Students consistently evaluated the website as well designed and user-friendly. "Having some readings on the web is good and suggestions for learning journals is also good". However the majority of students printed off material with one student suggesting, "Web materials could be printed out like a Book of Readings with a list of websites to visit. This would be much more economical in time and money".

Use of the forum as a communicative learning tool

At the beginning of the semester some student interacted on the forum as they shared their learning experiences. These tended to be descriptive recounts of things that had interested them during lectures and tutorials rather than a synthesis of ideas across courses. A typical example of forum topics is shown in Figure 8.2.

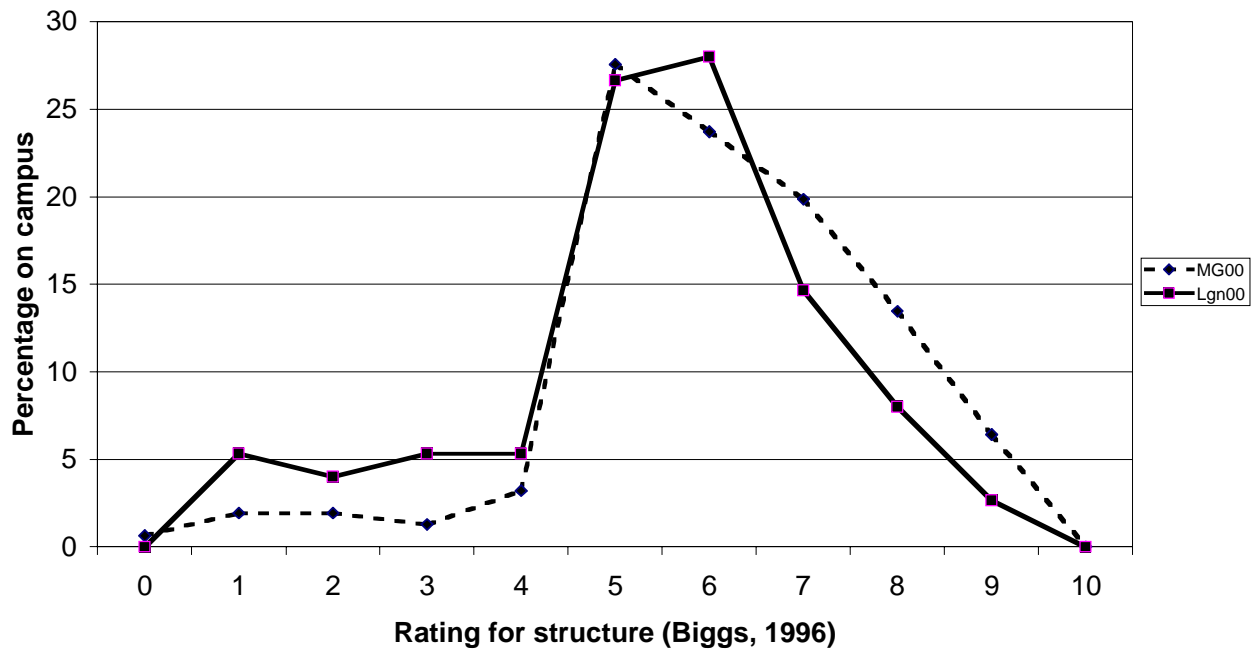
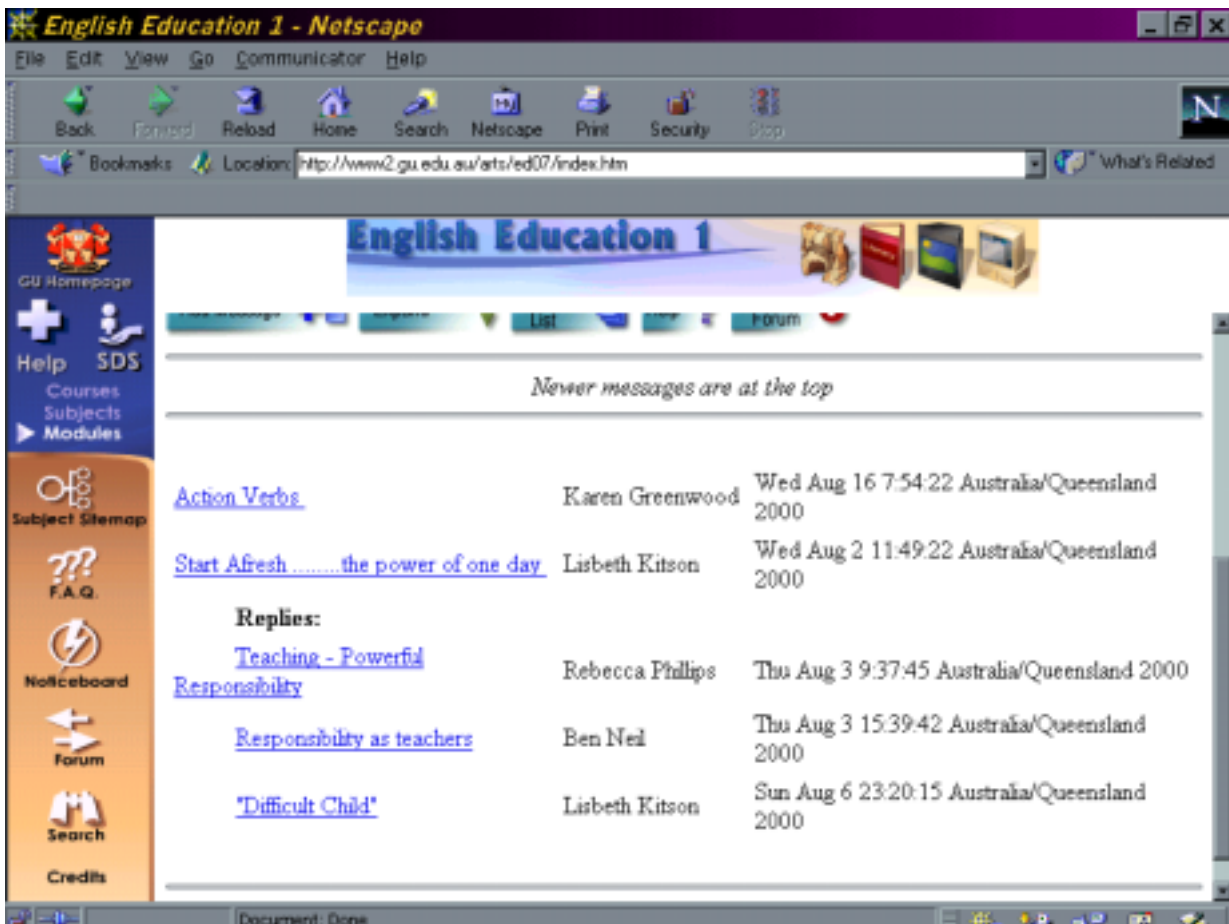


Figure 8.1. Comparison of students' performance using Biggs (1996) ratings across two campuses.

Figure 8.2. Common forum topics.



Students identified their preference for personalised learning experiences and they felt that was not available through using website communication tools. A repeated theme was the need for clarification through face to face interactions. One student interviewed who had English as a second language explained her need for immediate and personalised responses to her questions. She said, “When you are talking to a person and you give them feedback and then they give you feedback and you give them feedback so it’s two way. But when you talk on the forum it’s only one way. You type what ever you think and then you send it off and you wait for someone to reply and so on. It’s very time consuming. I need someone to consolidate my learning”.

Student evaluations of the role the common forum played in facilitating their learning were consistently negative. In one course evaluation, students consistently described the forum as a waste of time. Some qualified this, commenting that they could see value in engaging in electronic dialogue, but they felt tutorial discussions were of more value. For example, one student said, “I can see the benefit of it (forum). I liked the anonymity of the forum, but I don’t like it. It’s a matter of having to. I have a phone and that does me. I don’t need email. There’s a lot of change for change sake”. A second issue was that “it was a waste of time as not enough students used it and it was just the same people on it all the time”.

One student described experiences of forum use during the previous semester and identified the need to link use of technology with assessment.

“I’m a bit irritated that, - I didn’t like the forum and didn’t like being forced to contribute to the forum but I did, and I have to say you shouldn’t be forced to do things but if I’m not forced to use the computer I won’t... So for the sake of students like myself, computer work should be made compulsory and should be assessed using some criteria Because now that it isn’t I’m just not touching it all”

The project team was intrigued by students’ reluctance to take advantage of an electronic forum that was specifically designed to facilitate their thinking across three courses as preparation for the common assessment task.

As a result of our initial technology questionnaire, we decided to re-survey the students with one question to gain further insight into their approach to use of the forum. The question was formulated as a cloze exercise, where students were asked to complete the sentence,

You have to be _____ to use the forum.

Analysis of student responses revealed a difference across the two campuses. Students on campus 1, where N= 72, described the need to be knowledgeable about topics and motivated to use the technology. They also included the need for it to be linked to assessment. Students on Campus 2, where N= 40, were more concerned with time management issues stating you have to be “organised”, “have time”. They emphasised the need to be “confident” about the content and “able to take criticism”. Affective issues emerged as the most common area raised by students. It was interesting to note that in both focus interviews and survey data, students said they needed to be assessed or “forced” to use the technology communication tools.

While the teaching team believes there is considerable value in setting up dialogue with students across courses, we remain reluctant to attach a mark awarded to student interaction with technology. This remains an issue for us to continue to explore over the next semester.

In response to these concerns, the project team deliberately targeted the forum as an opportunity to help students focus their thinking and understanding across courses. Questions and explanations were lodged on the forum in an attempt to stimulate dialogue with students. (See Appendix 8.6). Student responses remained minimal and limited.

Monitoring of student use of the forum revealed its major purpose for students was to provide them with procedural knowledge related to assessment items. Students clarified word limits and referencing requirements but only occasionally explored their interpretation and understanding of topics on the forum. Furthermore, it was the same small number of students who communicated using the forum.

Institutionalisation

Evaluation remains an ongoing enterprise as the project team continues to explore ways assessment and technology can facilitate student learning. Data continues to be collected from this cohort of students as they move through their program, providing longitudinal results about transfer of learning beyond the context of this innovation.

4. Conclusion

This collaborative approach to teaching, learning and assessing has been implemented across three courses. In comparison with earlier years in which the courses were delivered in isolation, students demonstrate in their work evidence of transformation as learners. However, first-year students often cling to a traditional model of learning for content. In spite of deliberate modeling and explanation of the benefits of a transformative approach to learning across three courses to students, some students remain unconvinced until the final moments. The act of writing their own teaching statement becomes the mechanism to overcome the barriers to implementing transformative learning. Furthermore, students remain resistant to the use of technology as a tool for facilitating learning. They value the websites and course content highly. However, they identify a range of reasons accounting for their resistance to use the forum as a vehicle for developing and clarifying their learning across the three courses.

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6. Address for Correspondence

Project Coordinator:
Margaret Fletcher
Faculty of Education
Griffith University
NATHAN Q AUSTRALIA 4111
Phone (07) 3875 5770 Fax (07) 3875 5965
Email: M.Fletcher@mailbox.gu.edu.au

Brendan Bartlett (PhD)
Education Faculty
Griffith University
NATHAN Qld 4111
Phone: 07 3875 5770
Fax: 07 3875 5965
Email: b.bartlett@mailbox.gu.edu.au

Fiona Bryer (PhD)
School of Cognition, Language, and Special
Education
Griffith University, Mt Gravatt Campus
NATHAN Qld 4111
Phone: 07 3848 6475
Fax: 07 3848 5910
Email: f.bryer@mailbox.gu.edu.au

Mentor:
Carol Bowie (PhD)
Griffith Institute for Higher Education
Griffith University, Mt Gravatt Campus
NATHAN Qld 4111
Phone: 07 3875 6823
Fax: 07 3875 5998
Email: c.bowie@mailbox.gu.edu.au

7. Appendices

To conserve paper, the Appendices to this report are only available at
<http://cleo.murdoch.edu.au/projects/cutsd99>

