A Rural Bridging Course for Women and Problem Based Learning

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Abstract

One of the criticisms levelled at Universities by various institutions and the business sector is that universities are not teaching the students how to translate theory into practice. Taking as a case study the English subject of the Women into Science and Technology (WIST) course, an examination of the concepts of problem based learning will be examined. The benefits of using problem based learning in a rural bridging course will be discussed to show how this technique is beneficial for adult learners returning to study.

Introduction

While there is an abundance of educational facilities available to the population in large urban centres in Australia, for the people living in the rural sector access is still limited. One solution to this problem is to develop distance education courses that give these people access. Putting these courses on-line on the web also theoretically gives more options to people living outside the large population centres. It is one of the declarations of the Queensland state government that all children now have access to computer technology because all schools have Internet access. However, there are also mature aged people in the remote areas of Australia who have neither the access nor the ability to use the new on-line technology. One answer to this is bridging courses to give potential students the foundational tools that will give them these skills. Bridging courses, however, are useless unless they also link the content to practice. The diversity of the students' life experiences and the promotion of problem based learning (PBL) needs to be addressed within the curriculum of these programs to link those life experiences to tertiary educational requirements. Using the study skills section from the literacy subject, *Communication Pathways into University* offered by the Women into Science and Technology (WIST) course, a distance education bridging program for women, an examination of how problem based learning has been incorporated into the curriculum will be undertaken.

Problem based learning

Why problem based learning? Many of the students entering WIST have not been at school for some considerable time. When they went through their Primary and Secondary years, they were taught in the traditional manner which was teacher oriented. Tertiary study has always been more directed to student centred learning in that students, while still attending lectures were expected to go and do research as directed by the lecturer. With the advent of on-line learning, the responsibility has shifted even further towards students controlling their own education. Distance Education as a mode of study has always forced the students to operate very much alone.

The traditional mode of delivery for internal students was usually the lecture where the teacher was the expert who directed the students' thinking and who then evaluated what the student thought. In this model, according to Trop and Sage (1998, p.25), the student was inert, inactive and empty. While this has always been a problematical belief many of the students were studying not for the joy of learning but to meet what they perceived to be the marker's expectations. In other words, for some students, this meant just a regurgitation of what the lecturer, as expert, presented to them as facts. This resulted in, as Trop and Sara (1998, p.22) suggests "The guessing game of, "What's the right answer the teacher wants me to find" A view that is held also by Ann Sefton (2001, p.53) when she states that the "'empty vessel' model of education prevailed in didactic classes passive heads were 'filled' with isolated facts and students were rewarded for recalling them. Students thus saw surface learning as essential for survival". As Paul Ramsden (1992, p.68) suggests for students then, the grading system is all-important and the strategies adopted to gain high marks is at the cost of understanding. Ramsden was quite critical of tertiary education where the focus is on content and assessment rather then enabling students to understand the concepts and the use of deep approaches. He (1992, p.81) advocated "a problem based curriculum – one where the focus of student learning is on problems of the type met in professional life rather than on academic disciplines". In the main this focus was the same for distance education students. They may not have had a lecturer but they did have a paper based study guide that was perceived as the voice of authority particularly as they had little or no contact with other voices.

One of the criticisms levelled at PBL is the lack of a clear definition or a single definitive model. As Chen et al. (1994, p.9) states the field embraced is so broad that it is really inappropriate to try to find one meaning. One of the advantages of PBL is its diversity. It can be used across all disciplines with strategies being put in place in order to address all needs.

While PBL takes on different forms Bridges and Hallinger (1998, p.3) suggests that there are five defining characteristics. According to them the starting point for learning is always a problem and one that the students could face in life or their chosen careers. The subject matter is organised around that problem rather than a discipline. The students assume major responsibility for their own instruction and learning and that most learning occurs in context of small groups rather than lectures. The benefits of this type of learning are said to be deep level thinking, an increase in motivation and active students.

According to the Problem based learning Assessment and Research Centre (PROBLARC) there are three cycles that encompass problem-based learning. These are metacognitive, reflective and activity cycles. Working in conjunction these three produce strategies for learning how to learn. The metacognitive cycle promotes critical analysis: the reflective, an evaluation of learning needs, strategies to meet those needs and the ability to test assumptions. All activities need to be designed to incorporate all three cycles.

The retrieval and the appropriate use of new information according to Schmidt (1983 in Bridges and Hallinger, 1998, p.4) is linked to information theory. The students' previous knowledge is firstly activated in order to process the new information. This they can then apply to real-life situations in their chosen professions. Because it is perceived to be pertinent to their own aspirations, retrieval of the information and the application of the principles and concepts are better remembered. (Bridges & Hallinger (1998, p.4). The concepts of PBL can be used to help the mature aged student cope better with this form of learning by preparing them to deal with and devise their own learning strategies.

WIST

The Women into Science and Technology (WIST) course commenced in 1989. In 2000 the 2000th student entered the program. WIST is an external bridging program offering introductory English, Mathematics, Biology, Chemistry, Physics and Computing. It is Austudy and QTAC approved. The course is self paced, designed to give rural women time to complete without the additional pressure of deadlines. This flexibility is attractive for women who lead very active and diverse lives.

During the 80s concerns were raised by the government about the lack of women entering Science and Technology courses, at the same time there was an increasing awareness of the lack of access to educational facilities for women in the rural sector. Across the Australian states various initiatives were undertaken to address these issues. One of the universities to take advantage of this was the then University Collage of Central Queensland (now Central Queensland University), located in Rockhampton, which is the service centre for Central Queensland. A committee, established to address these issues, applied for and received a grant from the federal government to commence what is now known as the WIST course. The history of this program and its establishment and administration will be published in the 2001 SPERA Conference proceedings.

When the designers of the WIST literacy subject *Communication Pathways into University* undertook research, including travel to remote areas, to assess the needs of rural women, for whom the course was designed, they discovered several problems. Of major concern was a lack of study skills as in most cases their clients were returning to study after a number of years. These women needed a reawakening of those skills. There was also difficulty with the mode of study as distance education meant that the students were studying in isolation. The pedagogy and curriculum, therefore, was designed to incorporate elements of the way to study in order to empower students to direct their own learning. While a bridging program seems an unlikely place to introduce a basic course using PBL some of the defining characteristics could be utilised.

As an access and equity program WIST accepts all women who wish to empower themselves through education. There is no test, interview, assessment of skills or prerequisites. While this does give access to every woman, it has consequences particularly in the literacy area. As some of the women have been away from the education sector for some time, they have forgotten many of the rules of English that they were taught at school and need a refresher course. Consequently, I am in the process of producing a small basic grammar book in order to meet those needs. Not all students need this extra assistance but a number of them do.

The literacy subject, *Communication Pathways into University* consists of seventeen modules and four pieces of assessed work. A Study Guide together with a Resource book containing a number of readings is sent out to the students. There are interactive activities in each of the modules. The first five modules are devoted to study skills and the students receive a certificate on completion of those modules. The rest of the modules are devoted to preparing the students for essay writing at university level. The four pieces of assessed work come at the end of these. Students can resubmit any of these if they do not meet requirements. On successful completion of the four assignments, the students are issued a graded certificate. Each module has feedback sheets that are submitted for comments.

WIST and problem based learning

As WIST students are mainly mature aged women, varying periods of lapse from study have occurred. The starting point for these students is to re-awaken those skills that they were taught during their primary/secondary years. In this instance then the problem is really their forgotten skills. Sometimes their experiences with previous schooling act as a barrier to these students returning to study. These barriers need to be faced. In the second module of *Communication Pathways into University* the students are given a series of myths that could have been generated unintentionally and have resulted in abhorrence in some cases or a genuine dislike in others, for writing. The myths exploded include: you always get your writing correct the first time; writing is a clean practise; writing and your personal states do not influence each other; and writing is speech on paper. While all students do not have problems arising from beliefs like these, a large percentage do and this problem for them needs to be faced in order for them to become independent learners. They have to realise that they do have the ability to write, that writing is not a clean practise, that you certainly do not get it right the first time and that writing is not speech on paper but something entirely different.

To improve writing abilities the women are encouraged to keep a daily journal. In the initial telephone interview when they apply for entry into the WIST course, as well as the reader/writer profiles students are asked to submit, it is evident that today many of them do not read or write very often. The television is an alternative to reading. Even in the most remote areas of Australia some form, though limited, of television reception is available. For people working and running rural properties, reading is sometimes seen as a waste of time. The telephone is used as an alternative method of keeping in touch with family and friends. Anecdotal evidence suggests that for some, e-mail is impacting on writing and though the pen is not being used grammar skills are now becoming important because of the necessity to communicate.

The subject matter, in the first five modules, is organised around not so much problems as basic study skills requirements. The problem becomes the student and their system of beliefs, expectations, ideology, vague remembrances of a traditional school system and their own busy life styles. Students get quite surprised when they are firstly asked to consider their study environment and the difference that can make to their ability to study. For example the sitting position is discussed since an incorrect sitting position can cause later health problems. Students are also made aware of sub vocalisation and are given strategies to overcome this problem.

The internal focus on the students, while threatening to some, is designed specifically to raise awareness of problems within themselves. Such problems could impact on their future as students undertaking a university degree, in other words the metacognitive cycle. As Marshall and Rowland (1993, p.1) suggest in order to become a student there needs to be an awareness of individual learning styles. This knowledge, then, can help to make learning more effective and satisfying. If issues of time management, lack of self esteem, a distrust of their own skills and the ability to study are not addressed at this re-commencement of study, they could certainly impact on the failure or success of the students in degree courses. At the same time the students are asked why they had these assumptions about their abilities and how they derived them. They are shown how to turn negative attitudes into positives by thinking about incidents and beliefs from different perspectives.

Lateral thinking is also introduced to make the students aware that they need to look at topics from a variety of different perspectives. Workshops focus on de Bono's *Six Thinking* Hats to encourage these students, who have minimal contact with others, to extend their questions, to ask "how, when, where, what, and why". As these workshops are only held in larger centres where there are a number of students, those living in remote areas of the state and interstate do not have the opportunity to attend. In one of the study skills modules students are asked to give five good reasons why it would be beneficial to leave clothes lying around the floor. While this may appear to be a ridiculous question to ask it does make the students develop broaden patterns of thought.

By making them focus on themselves, reflection, thought and analytical skills can be activated because what they are doing is looking past the surface, the face that they present to the world and sometimes themselves. Participants are asked to remember an activity from the past, to analyse how they felt, what they saw. In this way these skills are triggered. This self evaluation is useful, not only to make them aware of their own learning styles but also the problems that they could have returning to study. Many students, unknowingly, start to reflect, think and analyse because of the activities- all skills necessary for essay writing and study. The combination of the skills acquired then meet the criteria promoted by the PBL cycles.

List making, even if it is only on what they do daily, is one of the required activities. They are asked to examine how they determine the order or the time frames for these tasks- how they prioritise them. They are then asked to extend on these lists and to link each of the tasks together into paragraphs. The tools they use are reflection and thought. By asking them to do this activity the students are taking what they know and placing it into a practical academic situation, ie study skills. This knowledge will be of use when brainstorming for essays.

Active reading is encouraged within the course. Examples are given to the students, within the modules, in the form of a text with questions inserted. In formal on campus tutorials the lecturer is the one who tends to ask questions. These distance education students do not have a lecturer; therefore, they must be encouraged to learn to ask their own questions. This is an important skill to acquire. They need to analyse, criticise and evaluate what they are reading as well as their own writing.

The students are required to sit down and write a personal contract. This is an extremely useful tool that enables the student to clarify what she wants and then to determine what strategies she will need to implement in order to fulfil the contract. This exercise introduces them to the skills necessary to problem solve. They can then take those skills to university study.

As distance education students they will always be responsible for their own instruction and learning. One of the major problems for distance learners is to remain motivated. Without the formal lecture schedule or tutorial sessions that have to be attended by internal students, it is hard for them to keep to a study schedule. In the first module they are requested to make a timetable and to keep to that as much as possible. By adhering to a set time, it then becomes regimented into their daily routine. As the WIST students are all women, it is usual for them to have domestic responsibilities, a large number are single parents, and some have jobs, either casual or full time. Problems can arise for these women from outside sources. They need to be flexible in order to cope with external forces that impact on their time.

The work within the Study Guide is very interactive with activities throughout. The students are given open-ended tasks which are designed to make them think. The feedback questions force the students to reflect on the work in each module. One of the major criticisms I receive is that they do not really know what is required as answers and whether or not their responses are right or wrong. The students get told that there is no right or wrong, that the questions are so designed to make them think and reflect. Many of them are used to the traditional method of learning and some do have difficulty changing to this new style of teaching.

For some women working in isolation is no problem but for others it is. Lack of contact with other students can result in the women having difficulty in keeping motivated. The personal contract is useful here, as once they have clearly identified what they want, that goal will keep them on track. The students are also asked initially if they want to go on a student contact list. They are encouraged to make contact with other WIST students in their area. In this way the students do have others engaged in similar study so that they can exchange ideas and hear other perspectives.

Conclusion

The use of PBL in an enabling program prepares the students for study at university level and also gives them the skills to be lifelong learners. The metacognitive and reflective cycles activate the students thinking patterns and the activities within *Communication Pathways into University* complement and reinforce awareness of those skills. Those students who embrace this style of learning have succeeded in the transition to university study and do achieve. Engagement with and completion of this course has resulted in a number of women going on to do post graduate study, for others, the completion of undergraduate degrees that have led to interesting and fulfilling jobs.

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