e-Learning: A means to increase student involvement in research

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Short title: e-Learning: Increasing involvement in research

Abstract
This paper investigates a method for increasing the involvement of marketing fourth year students in academic research, by encouraging greater participation in, and commitment to, their research project in the Applied Marketing IV subject. It is assumed that greater involvement will result in a greater pass rate. The study was initially conducted via action research, which involved the development of an electronic classroom and the testing of this classroom against a brief literature survey and a pilot test with colleagues who have knowledge of the subject (i.e. colleagues who have passed, or teach, on the programme). The findings were that a well-designed electronic classroom could make a significant contribution to a greater pass rate, and thus a greater throughput rate by getting students more involved and participating in their research projects.

Key words: e-learning, research involvement, throughput, online classroom, authentic learning, engagement
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INTRODUCTION

Durban University of Technology (DUT) throughput and graduation rates are below national benchmarks of 75% of students finishing a degree or diploma in minimum time. Considerable pressure is being placed on Universities to improve such throughput rates, while at the same time maintaining acceptable quality levels – the DUT academic plan refers to:
- higher order intellectual skills associated with holding a Higher Education qualification
- knowledge, skills and attitudes associated with their field of specialisation

Numerous activities and interventions are being implemented in the DUT in general and in the Department of Marketing in particular to achieve the goal of increased throughput. One of these initiatives is to “promote learning through ... research ...” via a strategic objective “to create conditions conducive to research” (Academic Plan Working Document, 2006: 24). Students in the Department of Marketing are introduced to academic research via a subject called Applied Marketing IV in the Bachelor of Technology: Marketing degree. They have to design and implement a full research project, culminating in a mini dissertation. This is important training for those intending to progress to the masters level, but is also important training in more general research and decision making for those who will not follow an academic career, but will move into the business world. Unfortunately, the outcomes of this subject are not at the level that we would prefer. Too many students ‘drop out’ of the course. Reasons for this seem to be the fact that they see research as very difficult, because some of the concepts that they have to apply are complex and new to them. The result is that students do not see research as something they are capable of doing, do not become involved sufficiently, fall behind in the work and therefore become depressed, demoralised and give up.

This paper sets out to examine this problem, trying to ‘unpack’ the problem in more detail, to recommend a technique for resolving it, and to discuss an attempt made at implementing such a recommendation and the implementation problems experienced.
UNPACKING THE PROBLEM

As a generalisation, those students who regularly attend face-to-face classes complete the subject successfully – it is very unusual to fail if lectures are attended and all the required work is submitted. However, where students do not attend face-to-face classes they seem to fall behind and do not get emotionally and intellectually involved in their research projects. Why does this happen? As mentioned above, possible reasons could be belief that research is too difficult and because the concepts are complex and new to them, leading to a belief that they are not capable of doing research. However, we also need to try to understand why they might develop these attitudes! Possible reasons could be:

- They lack literacy and numeracy skills, which make them question their abilities
- They feel generally inferior possibly due to previous disadvantages, inferior schooling, and difficulties in coping with diploma level studies
- They do not have the resources to purchase the text book required and so are not able to read adequately on the subject
- They see the research project as an ‘elephant’ – something huge and overwhelming
- The topic chosen may not be something in which they really have a passionate or personal interest
- Access to computer laboratories to do Internet searches for literature and to do data entry and analysis are inadequate on campus, which may discourage students.

Based on the above analysis of the content and context of the problem, the following question can be posed:

“what kind of online classroom would encourage learners to participate actively in research projects?”

THEORETICAL FRAMEWORK

This research was based on the concepts of knowledge management and learning organisations, which can contribute to educational change and transformation (van der Westhuizen, 2002). This approach helps educators to achieve what Kraak (2004) refers to as increased responsiveness to the needs of the community (including business) and to the country’s socio-economic needs (growth and technology). This is necessary because of the increase in market pressure on education, especially for greater access and an increase in adult learners (Sehoole, 2004), which places tremendous pressure on the less experienced lecturer.

As an adjunct to this inexperience and increasing pressure, different learners have different learning styles and therefore respond differently to the standard face-to-face teaching method. Therefore, using only one approach to resolve the above problem may not be optimal. Whatever teaching method is selected, it should be a method that caters for different learning styles. According to Felder & Brent (1996: 46), student-centred learning leads to deeper learning and learners who “have better attitudes toward their subjects and themselves.” Student-centred teaching is a broad method that involves active, self-paced learning, as opposed to lecturer-paced instruction, and as such can deal with different learners’ needs.

Another method that would address the problem is authentic learning, which involves real application of knowledge, skills and practices in a context where they have real
consequences and results (Herrington et al., 2004). To show how the principles of authentic learning could be implemented in this particular problem context, I will discuss the electronic classroom’s applicability according to Herrington et al’s (2004: 11) ten characteristics of authentic activities.

1. **Authentic activities have real-world relevance.**
The project has to be a real world project. Learners with jobs often investigate a real problem from their working environments – such relevance should increase active participation.

2. **Authentic activities are ill-defined, requiring students to define tasks/subtasks needed to complete the activity.**
The learner cannot just do what they are told – they have to engage with the topic to identify what to do and this is facilitated by the e-classroom.

3. **Authentic activities comprise complex tasks to be investigated over a sustained period of time.**
Research is a complex activity, involving managing the project over many months. Therefore, having the classroom and the material always available, enables the learner to continuously have access to help.

4. **Authentic activities provide the opportunity for students to examine the task from different perspectives, using a variety of resources.**
Learners have to examine the project from a conceptual basis when designing it, from a theoretical basis when conducting a literature review, from a practical basis while doing fieldwork and analysis, and again from a conceptual basis when drawing conclusions. The e-classroom provides numerous resources including notes, slides, Internet links, statistics guides, and sometimes connections to human resources such as editors.

5. **Authentic activities provide the opportunity to collaborate.**
Although the subject and all the work is individually based, learners who are doing similar projects are encouraged to share literature and to assist each other in data gathering and entry. They should discuss their projects with, and bounce ideas off, each other. The e-classroom facilitates this via the discussion tool.

6. **Authentic activities provide the opportunity to reflect.**
Since the project requires conceptualizing and conducting a practical project, there is little opportunity for reflection. However, learners are expected to communicate with the lecturer and the classmates, and this forms an opportunity for reflection and comment on their activities.

7. **Authentic activities can be integrated and applied across different subject areas and lead beyond domain-specific outcomes.**
Cross-disciplinary activities are limited as this is, after all, a marketing subject. Nevertheless, opportunities exist to research different aspects of marketing, e.g. pricing or advertising, and different subjects and disciplines could make use of certain aspects of the e-classroom, i.e. those that are process related, rather than content related.

8. **Authentic activities are seamlessly integrated with assessment.**
The project is in fact the assessment. There are no other assignments, tests, etc. Thus participating in the research and using the e-classroom are effectively the assessment.

9. **Authentic activities create products valuable in their own right rather than as preparation for something else.**
The outcome of the subject is a complete research report on a real life project. From a research point of view, merely using the e-classroom is a learning experience, even if no research is carried out.

10. **Authentic activities allow competing solutions and diversity of outcome**
Each project is different. There is no one correct solution. Therefore, there are multiple correct ways of doing the project and the e-classroom acts as a unique guide – every learner will understand and use the e-classroom differently

Since an authentic learning approach is clearly required, it is necessary to identify a relevant methodology for implementing such an approach. Face-to-face teaching alone has been inadequate. The different individual learning styles, together with the ‘causes’ of the problems (specified in the unpacking section), imply that a blended learning approach should be used. Blended learning involves several different, but linked, strategies, in addition to classrooms, to deliver the teaching to learners (Rossett, Douglis & Frazee, 2003). For example, “collaboration software, Web-based courses, EPSS, and knowledge management practices. Blended learning also is used to describe learning that mixes various event-based activities, including face-to-face classrooms, live e-learning, and self-paced learning” (Valiathan, 2002). This latter, event-based approach is a method currently being used, taught and researched at DUT, and thus seems appropriate for the problem defined above.

METHODOLOGY

The method chosen to research the previously defined problem is that of action research, which involves identifying a problem, doing something to resolve the problem, reflecting on the success of the action, and then doing something else if the problem is not solved. It involves studying the problem systematically and suitably informed by theory. A simple model of the action learning cycle, as adapted from O’Brien (1998) is:

**Figure 1: Action research model**

![Diagram of action research model](source: Adapted from O’Brien (1998: 5).

How the action research project was implemented is explained below.

**Overview of the course**

The course upon which this study was based is Applied Marketing IV, which involves a research study culminating in a mini dissertation, for the fourth year B Tech: Marketing degree. The student identifies a research topic, and then develops, implements and reports on their real life research. There are 60 students in the class, both full time and part time, a lot of whom are working. Current teaching methodology involves a classroom
lecture every three weeks, interspersed with one-on-one mentoring. Problems of this approach are:

1. Considering there are only two staff allocated, this becomes very time consuming, as some students can be very demanding.
2. Another problem is that at least 50% of what is said in one-on-one sessions is the same for every session.
3. This is all individual work and therefore students rely excessively on personal input from the lecturer.
4. The concepts and details of academic research is new and foreign to many students.

As a result the course has to teach researching skills, as well as having to teach/change attitudes about self-learning and working independently, and not just doing what the lecturer tells them. It appears, therefore, that all three of Valiathan’s (2002) skill-driven learning, attitude-driven learning and competency-driven models will need to be considered in developing the course.

The objectives of the teaching methodology are to:

1. Enable students to study and progress at their own speed, as hand-in dates are ‘latest dates’ – assessments can be handed in early by a student who progresses quickly.
2. Provide resources (references, notes/articles on how to do research, links to helpful websites, an FAQ, etc.) in order to save having to hand out photocopies.
3. Ensure all students have adequate study material, to avoid reliance on only one textbook, and to ensure those who miss a formal lecture are not disadvantaged.
4. Maintain contact with all students, even those who miss lectures, and thereby reducing the ‘drop out’ rate of students who just ‘disappear’.

The blended learning approach should work, as on-line learning is good for knowledge areas and for handling information dissemination to a group, while face-to-face is better for one-to-one relationships and encouraging student discussions.

I therefore envisaged continuing with classroom lectures every third week for the face-to-face contact, explanation of new material (research steps) and handling more general problems. On-line learning would provide all the detailed knowledge that the students require, as well as opportunities for one-on-one discussions between lecturer and students, and between students themselves via discussion groups and/or e-mail. Submission of assessments could be on-line, as could be feedback. Students would be able to post their assessments in advance and ask for comment from other students prior to their final submissions. The problem of course would be ensuring that they did not copy from each other! But then each research topic should be different.

Assessment

Two assessment methods were selected - multiple choice quiz and an assignment:

Multiple Choice Quiz (MCQ)

Since the learners have to learn the basic principles of research, an MCQ was chosen to
assess their knowledge of these basics, such as the different types of research, when a quota sample should be used, the type of data that requires a chi square inferential test, etc. In other words, the outcome that this test assesses is the acquisition of knowledge about research methodology. According to Wiggins (2004) good assessment requires standards, feedback and evaluation. The MCQ does most of this by specifying what is correct and how many ‘correct’ answers are needed to ‘pass’, i.e. the standards; it provides feedback by giving the results immediate and explaining why the correct answers are in fact correct. This quick, positive feedback encourages involvement and learner participation.

**Assignment**

The assignment takes the form of the research proposal that they have to develop, based on their basic research knowledge and their choice of research problem. This assessment is intended to test their understanding of the basic knowledge and to test their ability to apply it in a practical situation. In other words, the outcome it assesses is the ability to design a research proposal based on sound methodology. Since these assignments will be individually and manually graded, they provide a good opportunity for feedback and evaluation (Wiggins, 2004). This self-testing and the presence of positive feedback again will encourage learners to engage with the material. In addition, the speed of the e-classrooms feedback also encourages engagement.

A further advantage of this type of assignment is that it is authentic (Herrington et al., 2004), as it is a real life research proposal. Furthermore, written (on the script) and personal (verbal) feedback can be given, and positive, supportive evaluation can also be given. As such it can provide a strong motivational role and can provide diagnostic information to help the student improve their proposal - in other words it has both a formative and a summative role (CSHE, 2002), and thus playing a major role in ensuring that the learner improves on previous efforts.

In summary, these two assessments offset each other’s weaknesses, e.g. objective/subjective, recall/application and speed of marking, and together provide the motivational drive to ensure learners continue to engage with the subject.

**Intervention**

In order to implement the action learning project, an electronic classroom was designed, included content, assessment, survey and discussion tools. The structure of the classroom is illustrated in Figure 2:
The long term intention of the classroom is to cover all aspects of the research process, providing complete notes, guidelines, and instructions on the page, in order to enable learners to have all the material needed to fully engage with the research project, without necessarily having to acquire this information from face-to-face contact. Face-to-face contact is intended to be purely for handling problems, explaining aspects that the learner does not understand and providing individual supervision.

The content section of the classroom included:

- A learner’s guide for the subject – the learner has to refer to this to know what the subject is about and when assignments are due
- A number of individual lectures – learners would use this if they have missed a face-to-face lecture, to print out notes, or to revise the lesson
- Each lecture included:
  - Learning objectives of the lecture
  - Instructions for completing the lesson
  - Links to the lesson Powerpoint slides
  - Links to lecture notes
  - Links to formative assessment exercises
  - Links to Internet sites of interest and relevance to the particular lesson

In addition to the lesson material, the site has links to various other websites of interest, and which can stimulate the learner’s curiosity, leading them to become involved with other research web sites. Since ‘surfing the web’ is an accepted activity of learners, encouraging ‘surfing’ of research web sites should encourage the learners to access more research web sites.

An illustration of part of a lecture page is provided in Figure 3, showing the links to relevant research sites.
Work your way through the slides and notes in the links below, browse through the various websites that can also be accessed via the Additional resources links, and then complete Assignment 1 for Lecture 4 by clicking on the Assignment link in the menu panel to the left.

- The link below will take you to the PowerPoint slides used in lecture 4. These are discussed in detail during the face-to-face lecture. Open the slides presentation and read through the slides.

  Link to PowerPoint slides on questionnaire development

- In addition to the slides you should also read through the notes on the link below. These you can use as a manual for your research, or as a reminder of how to design questionnaires.

  Link to lecture notes

- Click on the link below to see an example of a poorly designed questionnaire. Don’t try to do anything with it now, just read through it. We will come back to it for your formative, or practice, assignment.

  Link to self-test - a “bad” questionnaire

- ADDITIONAL RESOURCES
  The link to Survey Tips below takes you to the SPSS booklet on how to do surveys. You can use this in addition to the lecture notes for advice on how to design a questionnaire. You can also go on to the Google link and do some

The assessment section of the classroom included a formative assignment to assess the students’ abilities to use the electronic classroom and a survey to assess the students’ abilities to use the electronic classroom

An example of an on-line assignment is given in Figure 4.

Figure 4: Example of on-line assignment

Assignment: Lecture 4 Assignment 1 Questionnaire design

Assignment Information
Maximum grade: 10
Due date: Unlimited
Instructions: • This is a formative assignment; in other words it does not count for marks, but is intended for you to practice an activity and get some “formative” feedback from me. • Click on the Bad questionnaire link below and follow the instructions on the assignment. • Once you have completed the assignment and checked your work, click on the Submit button below to send the assignment to me.

Assignment files: To view an assignment file, click its filename.

<table>
<thead>
<tr>
<th>Files</th>
<th>Modification date</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad_questionnaire.doc</td>
<td>November 3, 2023</td>
<td>39.0 KB</td>
</tr>
</tbody>
</table>
Wanting to know how well you are doing is a natural emotion! Such self-test assignments appeal to this emotion, enabling learners to find out how well they are doing. Thus learners can be expected to regularly take the formative assessment, thereby regularly engaging with the e-classroom.

A discussion tool was also included to enable students to respond to the lecturer, and to each other, about the work and the assignment. The introductory discussion message is shown in Figure 5. Blogging has become a major communication method for learners. This discussion tool is thus within the realm of the learners’ normal communication methods. It will also help to ensure learners engage with the e-classroom regularly.

**Figure 5: Introductory discussion message**

**Subject:** Lecture 4 - questionnaire development - formative assignment

**Message no. 12**

**Author:**

**Date:** Friday, October 6,

Hi guys

This is where you should post your answers to the questionnaire assignment. Remember the deadline is 31 October. Remember that one of the best ways of learning a topic is by having to teach it to someone else. Therefore take this opportunity to review other people’s postings, and comment on them.

Although the assignment is not for marks, it is an opportunity to test your knowledge of questionnaire development and to get feedback and comment from me and your colleagues. Please note, if you post your answer after 31 October, you will not receive any feedback from me, as we will have moved on to another topic.

Looking forward to receiving your postings.

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1. Material should be presented in words and presented in pictures/diagrams.
2. Use should be made of colour, especially, colour coding.
3. Although material should be presented sequentially, each module should be stand-alone so that ‘global’ learners can jump around according to their interests.
4. Contents outlines should be provided so that ‘sequential’ learners will have a ‘road map’ to follow, while ‘global’ learners will use it to get an overview of material to be covered.
5. Practical activities and assessments should be included for ‘sensors’, while learning and understanding the theoretical concepts should be included for ‘intuitors’.
6. Point 5 above will also be helpful for ‘sensors’ and ‘intuitors’. In addition, some degree of group work should be included for ‘active’ learners, while individually thinking through a problem and providing a ‘plan’ could be helpful for ‘reflective’ learners.
Point 1 above has not been adequately incorporated into the e-classroom, because of time and skill constraints, but points 2 to 5 have been, to a greater or lesser extent. As the classroom is developed, more visual material will be included (point 1).

**Pilot test**

As part of the development process, and in line with the principles of action learning, the on-line classroom was tested with four colleagues, two who lecture on the B Tech: Marketing programme, and two who have completed the Applied Marketing IV subject as students. All four were asked to complete the Lecture 4 assignment as per the following instructions:

**Figure 6: Instructions for ‘dummy students’**

<table>
<thead>
<tr>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Internet Explorer to DUT webpage</td>
</tr>
<tr>
<td>Click on Online Learning Centre in left hand menu bar</td>
</tr>
<tr>
<td>Click on logo just above Login</td>
</tr>
<tr>
<td>Enter your user ID (provided separately)</td>
</tr>
<tr>
<td>Tab to next box and enter your password (provided separately)</td>
</tr>
<tr>
<td>Click on Log In button</td>
</tr>
<tr>
<td>Click on 'Training' link</td>
</tr>
<tr>
<td>Click on Assessment link at bottom of page</td>
</tr>
<tr>
<td>Click on Assignments logo</td>
</tr>
<tr>
<td>Click on Lecture 4 Assignment 1 Questionnaire design link</td>
</tr>
<tr>
<td>Now follow the instructions on this and subsequent pages to which you are led.</td>
</tr>
</tbody>
</table>

Once you have completed and posted the assignment:
Please go back to the assessment page, click on quizzes/surveys, then click on “L4 questionnaire feedback” and do the survey on this exercise - it is very short! Don't forget to click on the Submit button to send it

Now please post a message to me via the discussion tool, ie instead of clicking on assessment on the front page, click on Communication, then on Discussion, then on questionnaire, then on Lecture 4 - questionnaire, read the message, click on Reply, type your response in the message box, and then click Post.

**REFLECTIONS ON THE PROJECT**

In this section of the paper the actions of the four ‘dummy students’ will be discussed, and my own experiences and problems will be outlined.

**Student experiences**

Most of the students were able to adequately access the relevant aspects of the classroom, complete the assignment and post their responses. However, being lecturers in the department, they had other priorities and duties and so considerable expediting had to be done to obtain completion of the various tasks, especially completion of the survey and posting of a message via the discussion tool. Furthermore, the assignments were not completed in the detail required. However, this was not a problem as the main intention
was to test the user-friendliness of the classroom, and not to test their knowledge of the content of the lesson. Being marketing lecturers, it can be taken for granted that they would be able to satisfactorily do the assignment.

There were certain problems, however. For example, one student somehow submitted the wrong file for his assignment, and a second student was incensed at the 4 out of 10 grade allocated, missing the point that it was a formative assignment.

On reflecting on the process, one respondent commented that navigating through the classroom was relatively easy and logical, but would be much easier if it was used on a daily basis. Furthermore, he found the approach novel and therefore it created interest and enthusiasm. Overall the students felt navigating around the classroom was not too difficult and were generally positive about the electronic classroom concept. It would be hoped, therefore, that ‘real’ students would have similar positive attitudes.

My experiences and problems

On reflecting on this action learning project, the problems could be grouped into two broad areas: firstly, those related to developing the classroom and secondly, those related to the application of it by the ‘students’.

Developing the classroom

On beginning the project, I intended to develop the classroom in a stepwise method, staying one step ahead of the class in terms of the subject content, and thus developing the entire on-line classroom during the year. The first problem arose when I realised that I would not gain enough knowledge quickly enough to be able to design the first couple of lessons by the time they were needed by the students. By the time I had the skills to develop a ‘lesson’, we were already well into the academic year and the action research problem had thus fallen behind. This meant that the first e-lesson would be about the third or fourth actual lesson, with the previous lessons having been handled in face-to-face situations. This also did not work because by the time this lesson was developed, the students had completed the relevant work and were moving on to the next step in the research process. In summary, my skills and the time available to dedicate to the classroom development were insufficient.

A further problem experienced was the fact that this was such a large class (60 students) which lead me to realise I would have difficulty in finding a computer laboratory available in the evening to train the students in how to use the e-classroom. Such training was essential as was shown by the difficulties the dummy students had in getting started on the dummy assignment. Although they could navigate the classroom well enough, they needed a lot of guidance and written instructions on how to get started.

Probably the biggest problem experienced was the lack of time available to dedicate to personal learning and practice of the web learning platform, webpage development and development of the subject materials and assessments to be suitable for an electronic classroom. This was because of an excessive workload due to our department taking on numerous new and experienced staff, two senior staff members being granted long leave, the department having to prepare for a departmental evaluation, my having to undergo assessor training, my taking on a number of extra masters supervisions, and my personal commitment to present three papers at international conferences and to publish papers in
a number of accredited journals this year. This abnormally high work load meant there was little extra time to devote to the e-classroom.

A fourth problem was that I am the first and only staff member from my department to attend the e-learning programme. As a result my colleagues do not really understand what I am doing, are not particularly supportive, and as a result I have no-one in my discipline with whom I can discuss and exchange ideas.

From the above paragraphs it can be seen that the project was doomed to fail from the start because of over-optimistic expectations combined with an excessive workload and an infrastructure that was not particularly supportive.

Application problems

As mentioned in the section above, inadequate understanding of, and support by, colleagues was a problem. When it came time to pilot test the classroom with colleagues, I had no problem getting them to agree to help. However, one colleague had to be continually nagged to do it, another did not really understand what needed to be done, and a third only did the absolute minimum. Only one colleague actually did everything asked of him, and that was probably because we discussed the project requirements at some length. This is understandable as these colleagues are also suffering under the same excessive workload. The net result was that the pilot application did not really provide good enough sound information on how well the classroom would work. However, it did show that the e-classroom is a feasible project, that students can find their way around the classroom, and that with a little guidance they are able to complete an assignment.

CONCLUSIONS

Discussion of results of the action research project

Despite the difficulties and problems outlined above, I believe that the full implementation of an electronic classroom for the Applied Marketing IV subject will have a significant impact on the performance of the students. From my personal experience of the programme, the feedback from the ‘dummy students’ and the experience I have had with maintaining e-mail contact with students in two other courses (communication and providing copies of slides/notes) I believe a full electronic classroom would have the following benefits:

- The online option would involve those who are too lazy, or are unable, to come to the face-to-face lectures.
- The lecture option is still available for those who are not "technology enabled".
- There will be advantages, e.g. links to websites that will not be available if the student does not get involved. The uninvolved student can still go their own route, but things should be easier for the involved student.
- Any student who ‘falls behind’, for whatever reason, will have the ability, via the electronic classroom, to catch up.
- Students who have problems understanding in class will have the ability to work through the material a second time at their own pace.
- The electronic classroom will enable personalised messages to be conveyed to students without an onerous load on the lecturer, thereby involving the students
by making them aware that they cannot ‘hide’ in the big class – if they do not participate, they will not be ignored.

- By having easily accessible links to interesting research sites, students are more likely to read further on research and thereby participate more and become more interested – greater interest equals greater involvement.

Recommended changes to the programme

In order to successfully and fully implement the electronic classroom, a number of changes and improvements to the programme, the infrastructure and the context of the course will need to be made.

Improvements to electronic classroom

Firstly the entire classroom must be completely conceptualised and designed before the course starts. This is so that the lecturers know exactly what will be covered, when and where in the electronic classroom. The actual ‘programming’ and creation of each of the lesson pages do not all have to be completed in advance, but they must be ready at least two lessons ahead, i.e. six weeks ahead. This will allow for any developmental difficulties, last minute testing or inclusion of additional material. This process will also allow feedback and additions by other lecturers who might be able to use the classroom (e.g. Applied Promotions IV).

Secondly, as shown in Section 3, different people have different learning styles and the classroom should be designed to allow for these different styles. Unfortunately, due to the time pressures and skill limitations, I was not able to include all the required techniques for catering for different learning styles. In a full electronic classroom, the design must allow for the different learning styles (‘active’ versus ‘reflective’, and ‘sensing’ versus ‘intuitive’), as outlined by Felder & Soloman (1999) below:

1. Material should be presented in words and in pictures/diagrams.
2. Use should be made of colour, especially, colour coding.
3. Although material should be presented sequentially, each module should be stand-alone so that ‘global’ learners can jump around according to their interests.
4. Contents outlines should be provided so sequential learners will have a ‘road map’ to follow, while global learners will use it to get an overview of material to be covered.
5. Practical activities and assessments should be included for ‘sensors’, while learning and understanding the theoretical concepts should be included for ‘intuitors’. In addition, some degree of group work should be included for ‘active’ learners, while individually thinking through a problem and providing a ‘plan’ could be helpful for ‘reflective’ learners.

It should be noted that all people are a mix of the four types of learning styles, and therefore everyone will benefit to differing degrees by such a varied and contrasting design.

Improvements to infrastructure

When the new platform is implemented and it appears as if this will minimise some of the problems or potential problems that have been experienced. For example, it will make the
use of the electronic classroom much easier for the student and will make navigating around the whole programme a lot easier – the easier the programme is to use, the more likely the students will take up regular use. Secondly, the new platform will be much easier for the web designed, facilitator and lecturer as many of the more long-winded ways of doing things have changed. This will enable me to develop my skills quicker and more regularly. Better skills and easier development will help to ensure that the development programme of ‘six weeks ahead’ can be maintained. Furthermore, any time saved here can be allocated to more innovative and creative web and classroom design.

A second infrastructural issue that will need to be addressed is that of Internet access. Without easy access all the students cannot be expected to become fully involved. Currently they have access to an adequate Internet computer laboratory, which is in the process of being upgraded. This, together, with access via library computers and personal home computers should be sufficient. In addition, Internet connections, with a computer and a digital projector, in the physical classroom, will enable me to continually use the electronic classroom in face-to-face situations, thereby training the students in the e-classroom’s use and encouraging them and enthusing them about it.

Improvements to context of the course

The development of such a programme in isolation is not recommended. Working as part of a team of lecturers has the benefit of providing motivational support, as well as spreading the workload. As far as possible a team of at least two lecturers should work on implementing such an electronic classroom. Therefore it will be necessary to arrange for at least one more marketing lecturer to participate in the e-learning programme next year. Furthermore, it would help if the department made a commitment to move towards a more modern (i.e. ICT based) teaching environment. However, this cannot realistically be expected until the university itself makes a declaration, and implements effectively, such as:

“The University…is at the forefront of new learning technologies” (University of Wolverhampton, 2005a).

“ICT (Information and Communication Technology) used in exciting and innovative ways to provide lifelong learners with global access to information, learning and support. Information systems that are seamlessly linked to learning support systems, that are enjoyable to use and which enable management” (University of Wolverhampton, 2005b).

SUMMARY

This paper set out to investigate, through an action learning approach, a method for increasing the involvement of marketing fourth year students in academic research, by encouraging greater participation in, and commitment to, in their research project in the Applied Marketing IV subject. The discussion above highlights that an action research is never really finished. There are numerous actions still to be implemented in a second cycle of the action research process, and which have been adequately explained in Section 6 above. The conclusion that is of particular interest in this paper, is that an electronic classroom, well designed, could make a significant contribution to getting students more involved and participating in their research projects. Such greater involvement, participation and commitment would undoubtedly result in a greater pass rate, and therefore a greater throughput rate. Thus, an electronic classroom could make a significant contribution to the university’s key goal, and at the same time improve the financial standing of the university.
Finally, I would like to point out that no empirical research has yet been done with the actual students, and that that is the next major step. In other words, I recommend a study be undertaken of students’ attitudes and opinions of the electronic classroom approach as part of an action learning study. Furthermore, a study comparing such attitudes and opinions to the students’ actual pass marks and throughput rates would provide stronger empirical support for the conclusion drawn above, namely that an electronic classroom, as part of a blended learning approach, would improve pass rates and thus throughput.

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List of references