

Improving Student Learning in Dissertation Research through Feedback Studies. The Sheffield Hallam Building Surveying Experience

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Key words. Surveying education, student learning, dissertation research, feedback studies, formative learning.

SUMMARY

According to George and Cowan (1999) student feedback is essential to enable lecturers to understand whether attempts to improve learning and educational experience lead to improvement. Current UK practice uses end of module questionnaires to feedback levels of satisfaction (Cowan, 2002). There are inherent weaknesses, namely that it seldom leads to a change for that particular cohort of students, secondly it relies on uncorroborated opinion, and may derive from superficial feedback from a minority of students with the remainder suffering from questionnaire fatigue. Finally the data may not be especially relevant to a particular module, a particular weakness (Heywood, 2000).

Using principles identified by Angelo and Cross (1993), this research adopted a methodology to formatively evaluate student perceptions and levels of satisfaction with the dissertation module. Using a cohort of Building Surveying students at Sheffield Hallam University, in England, views on course materials, the use of Blackboard software, the workshops and the relationships with supervisors were gathered and analysed.

A number of measures were identified as a result of this study, that may, if implemented, improve student learning. Examples are the use of checklists for student for each research / dissertation stage to ensure nothing is forgotten. Provision of additional 'drop in' workshops where students could see the module leader with specific issues. Additional optional workshops for questionnaire coding and review of previous theses for example.

It will not be possible to measure whether this student cohort's learning and performance improves until the summer of 2003 and the final dissertations are assessed. A statistical analysis, comparing their dissertation marks against marks for other topics will show whether there is improvement in marks as a result of this student feedback study. The 2002/3 cohort result can also be analysed against previous cohorts to establish whether any improvement is evident.

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1. INTRODUCTION

Student feedback is essential to enable lecturers to understand whether attempts to improve learning and educational experience lead to improvement (Gibbs, 1993). Current UK practice uses end of module questionnaires to feedback levels of satisfaction (Cowan, 2002). There are inherent weaknesses, namely that it seldom leads to a change for that particular cohort of students, and secondly it relies on uncorroborated opinion, and may derive from superficial feedback from a minority of students with the remainder suffering from questionnaire fatigue.

Within the last decade information technology (IT) (Barker & Yeates, 1985) has become an integral part of the student learning experience. It is a frequently used tool on for University lecturers in Surveying education at degree level (Cuthell, 2002). The academic session 2002/3 saw the introduction of Blackboard into the Building Surveying degree course at Sheffield Hallam University (SHU) on the dissertation module. However, a number of questions arose, such as, what is the best use of Blackboard to meet these student's needs? What types of materials are best suited to the dissertation module? The author extended the enquiry to consider not only the student's needs in terms of Blackboard but sought to ascertain their perceptions and views about the materials and delivery for the whole module, and with it, how student learning might be improved.

This paper sets out the background to the research. The research aims and objectives are stated before the author describes the research methodology adopted for the study. Using principles identified by Angelo and Cross (1993), this research adopted a methodology to formatively evaluate student perceptions and levels of satisfaction with the dissertation module. Using a cohort of Building Surveying students at SHU, in England, views on course materials, the use of Blackboard software, the workshops and the relationships with supervisors were gathered and analysed. The research findings are illustrated in the fourth section of the paper. Finally the paper sets out the conclusions of the research and the lessons that can be learned.

2. BACKGROUND

2.1 Student Feedback and Learning

According to George and Cowan (1999) student feedback is essential to enable lecturers to understand whether attempts to improve learning and educational experience lead to improvement. Current UK practice uses end of module questionnaires to feedback levels of satisfaction (Cowan, 2002).

There are inherent weaknesses, namely that it seldom leads to a change for that particular cohort of students, secondly it relies on uncorroborated opinion, and may derive from superficial feedback from a minority of students with the remainder suffering from questionnaire fatigue (Gibbs, 1982). As Gibbs (1982) noted the use of questionnaire feedback can provide 'a foggy and uninformative view of what's going on'. The data may not be especially relevant to a particular module, a particular weakness (Heywood, 2000). McDowell (1991:5) noted that student feedback may be seen as a paper exercise 'form filling' without direct student benefit and merely a means of complying with quality mechanisms and procedures.

The benefits of feedback studies are well documented. There are a number of issues to consider to ensure appropriate information is generated (Gibbs, 1982). It is imperative to obtain the feedback in such a way that enables students to voice their opinions, in a well considered way so that extreme views do not dominate ((Hounsell et al, 1997). The students need to be encouraged to provide reflective opinions. The views need to be obtained in an atmosphere that avoids a blame culture emerging, that the feedback is constructive as well as negative. This research adopted the best practice guidelines outlined by Hounsell et al (1997).

An important aspect of this project was that the student feedback was to be centred on their learning (McDowell, 1991) and how it might be improved, it enables a 'whole new perspective' to be taken on the process. The process becomes positive and enabling. An advantage is that the student experience can be broadened with an emphasis on understanding how the students perceive and value different aspects of the course, in this case the dissertation module.

A considerable body of research in higher education posits how useful student feedback can be (Marton, Hounsell, and Entwistle, 1984, McDowell, 1991, Gibbs, 1982). There is much to be learned from students about how they approach tasks, their intentions, problems, motivations, and understandings.

Clearly not all students issues can be accommodated and this may be due to outside factors, such as professional body requirement, physical resources of the University, human resources of the faculty and so on. However the important thing is that the tutors are aware of student perceptions and needs and the barriers to learning. Their views need to be considered and evaluated as a whole before appropriate action is taken (Marton et al cited in McDowell, 1991).

There is evidence from previous studies that student feedback does lead to improved performance (McDowell, 1991), though as stated not always to that particular cohort. This study tries to address that issue by undertaking the feedback at the mid-point and implementing some of the findings in the remainder of the semester.

2.2 IT and Learning

Computer based learning is becoming a more widely used tool in education. Computer based learning is known under a plethora of names such as e-learning, computer based learning (CBL), computer assisted learning (CAL), computer managed learning (CML), on-line learning, and Blackboard. Each is different and used by tutors to achieve different outcomes. This paper is concerned with the software programme Blackboard. What use are computers, and what benefits do learners derive from their usage? According to Cuthell (2002) and others (Barker and Yeates, 1985) computers can be used to augment learning, are 'powerful tools' and can make 'good teachers', thus the educational case for usage appears to be strong.

A perceived benefit for students is that the quality of learning is enhanced and the efficiency of instruction is improved (Barker & Yeates, 1985:24). Some of the benefits of IT in learning are; augmenting conventional teaching methods, accelerating the learning process, experimenting with course development, providing remedial instruction, providing individualised instruction, providing enrichment materials, achieving consistently higher teaching standards, and providing on demand instruction (Barker and Yeates, 1985. Joliffe, 2001. Cuthell, 2002). The Blackboard programme can be used in all of these ways. On the surveying course at SHU it has been used in some but not all of the ways identified above.

Another factor to consider is that students now enter tertiary education with educational experience of computer assisted learning from primary and secondary schools. These students are used to using IT in learning and also have certain levels of expectation about CAL and the quality of materials (Barker and Yeates, 1985:324).

Educationally the real potential of the web is as a tool that can be used in an infinite number of ways to deliver learning events, and to provide an archive for the student who is unable to attend (Joliffe et al, 2001). Blackboard was used at SHU on the surveying dissertation module partly for this purpose.

Another perceived advantage is that students can individualise their learning to some degree which leads to a improved student experience (Burke and Rumberger, 1987). Outside of core teaching, IT can lead to the transformation of teacher from subject specialist to a broader director of studies role as student take more responsibility for their learning. In dissertation, the module aims for the supervisor has the role of director of studies guiding the student through the process of a student lead research project.

According to Joliffe et al (2001:2) there are also benefits in using other IT based educational tools such as trouble shooting guides, discussion facilities such as chat rooms, as well as setting up a variety of learner administrative information. Blackboard has the potential to host chat rooms, provide announcements and notices and to set out trouble shooting materials for learners. However there has to be some face to face interaction between the student and lecturer for the maximum advantage to be derived from IT based learning materials (Joliffe et al, 2001:10).

The potential benefits to student learning of IT are manifold, but what of the disadvantages? There are concerns about over reliance on technology and dependency on IT for education (Burke and Rumberger, 1987). This view is substantiated in the imperative to use the IT 'appropriately', to consider the needs of the student group and for there to be a balance in the course between IT based materials and traditional teaching methods (Barker and Yeates, 1985:27).

There can be misconceptions; it can be time consuming to produce the learning materials for use on IT systems and the learning materials are not easier or quicker to develop (Joliffe et al, 2001:2). Therefore if a University is seeking to reduce staff preparation and teaching time, substantial development in CAL may not be the best way forward. Joliffe et al (2001:10) concluded that with all the time and effort involved in development of e learning materials, it may not prove to be an advantage.

Furthermore the teaching materials designer needs IT knowledge as well as subject knowledge to design an effective learning environment for students (Joliffe et al, 2001:12). Further disadvantages that need to be considered are that the teaching materials may be static and will need to be regularly updated. Packages may date quickly. Although this is not the case with Blackboard as tutors use it to make lectures, notes, tutorials, and information available to students via an electronic notice-board.

Other potential problems for students may occur with users having equipment with limited capacity to download graphic intensive materials. Joliffe et al (2001) noted that some learning materials require users to have state of the art PCs and browsers. Finally to make the most effective learning IT based materials and the most effective use of IT, teachers and lecturers need to be trained, as do the students (Joliffe et al, 2001:12). There is a time and a resource implication here.

2.3 Delivery of the Building Surveying Dissertation Module at Sheffield Hallam University

2.3.1 General

The dissertation module has been identified as an example of best practice in linking teaching with research by the FDTL project (ref). The module is delivered over two semesters, with a module leader, holding a series of workshops staged to coincide with key stages in the progress of the dissertation.

There are three components of assessment, a progress report, a viva voce and the submission of the final thesis. All work is assessed by the supervisor, and a second marker appointed by the module leader. The workshops are supported with a course reader and a textbook written for construction students undertaking dissertation research and writing, Naoum (2000).

2.3.2 Formative and summative feedback

The initial written progress report is submitted towards the end of semester 1 to formatively, and summatively assess the initial stages of the research. Students are required to identify a research topic, with a rationale for the project, to establish a research question and to set aims and objectives. The next part of the report is an initial literature review, which is a critical analysis of the main issues in the topic area. The final part of the report is the identification of the nature of the research, i.e. qualitative or quantitative and the formulation of a proposed research design. Students are also required to attend a brief viva voce examination with two tutors, the supervisor and a second marker, to answer questions relating to their subject area and to the research methodology. The written and oral feedback from the progress report and viva voce is used to prepare and support the student into the next phases of the process, namely, data collection, data analysis and writing up.

2.3.3 Use of information technology / software in dissertation teaching

With the introduction of Blackboard, a software programme which allows lecturers to post lectures, tutorials and workshops for students to access, the usage of IT is set to increase. Students can access information either at pre determined times set by the tutor, or at all times during the teaching semester. It is also possible for students to complete self-assessment tasks using this software and for the tutor to post model answers for the students. As the desire to use IT increases, however it is imperative that educators understand the students' perceptions and needs to ensure the IT supported learning is appropriately targeted.

2.3.4 The workshops

A series of three workshops were held in semester 1, Getting Started, the Literature Review and Research Methodologies. The first workshop used examples to demonstrate how to move from a broad subject area to a focussed research question. Furthermore the workshop showed students how to set research aims and objectives and the differences between the two. The second workshop was supported by a session with the learning centre assistant responsible for the built environment who illustrated the new search engines, and databases available to the students to search for sources of information. The workshop lead by the module leader focussed on the potential sources of information available and the nature of those sources. The final workshop examined the nature of qualitative and quantitative research, and the different types of techniques commonly used by undergraduates.

2.3.5 The course reader

The course reader contained a series of explanatory notes relating to each workshop, with some examples of previous students work. The examples were of both good and poor work and each was explained to the students. Further reading on each of the subject areas was provided in the reader, and there was regular cross referencing to the recommended text. Some of the workshop materials contained self assessment questions for the students to use if

required to evaluate their progress. For example in the literature review section, students are asked if they can identify the leading authors / academics in their subject area.

2.3.6 The supervisor

At the end of week 1 in the first semester students are informed who their tutor is, and encouraged to set up a meeting to discuss their dissertation. The supervisors are given a carbon pad to record matters discussed and to set out what the student is required to do for the following meeting, the aim being that no student is left unsure about what to do next. The number and timing of meetings is to be decided between the tutor and the student. Tutors are allocated 3 hours per semester supervision time per student.

3. RESEARCH AIMS AND OBJECTIVES

This research aimed to gain a deeper understanding of the ways in which Building Surveying students learning in dissertation could be improved using student feedback. The research objectives were to evaluate the student's perceptions and views regarding Blackboard, the workshops, the course reader the recommended text, and the supervisor relationship. Finally, to ascertain what changes, if any, they would like to see in the course materials and why.

4. RESEARCH METHODOLOGY

This is qualitative research, sharing the three assumptions of qualitative research posited by Patton, induction, holism and naturalism (cited in Naoum, 1998). The research is inductive, in that the researcher had some ideas about how students felt about certain aspects of the dissertation module, however as the research progressed these ideas developed. The holistic element is derived from examining the whole picture regarding this Building Surveying student cohort and their views and perceptions of the dissertation module materials. Finally the naturalistic aspect of the research comes from investigating the issues in their naturally occurring environment, in this case the students within the University.

The initial stage involved a literature review of primary and secondary sources to establish what had been written about feedback and learning.

In order to generate externally valid research, the researchers had to consider the research population (Naoum, 1998). Here, the size of the building surveying final year at Sheffield Hallam University undertaking the dissertation module was 37. A two stage methodology was adopted; initially the students completed a questionnaire to evaluate what they liked and disliked about the course materials and delivery modes, thus a census was undertaken of the whole population. They were also asked whether they were prepared to participate in further research. Some of these students were selected for the focus groups.

A survey questionnaire was used to meet the objective of ascertaining views on the different modes of delivery and support, what they liked most and least. According to Naoum (1998) questionnaires enable the researcher to ascertain what, when and how something is happening

in the subject area, as well as offering high validity; in this case 16 questionnaires were returned representing 43.24% of the cohort.

Following best practice identified by Naoum (1998) and others (Robson, 1993, De Vaus, 1996) a questionnaire was developed. Simple questions were posed to achieve the highest potential response rate and answers that were easy to analyse. The questionnaire was piloted and examined for bias or leading questions by an independent researcher.

The questionnaire comprised four sections. The first dealt with personal information; gender and age. The second section covered IT and learning generally and asked respondents how far they agreed or disagreed with a number of statements. Respondents were asked to rank what they felt would be most useful in IT support generally. The third section examined the respondents' perceptions about dissertation, asking them to consider a number of statements, relating to the workshops, the reader, the recommended text, and the supervisor. Respondents were asked to rank the ease and difficulty of dissertation activities, and to suggest improvements for the teaching of the module. Section four of the questionnaire examined dissertation and Blackboard. It asked the respondents to rank the best use of Blackboard for dissertation, to consider a number of statements, and to suggest any improvements for the dissertation blackboard site.

Using focus groups in the initial dissertation process from topic selection to research design, the research identified and evaluated student perceptions of the value of the workshops, the significance of the supervisor relationship, the value of Blackboard, the course reader and the recommended text as support mechanisms in the dissertation process. The focus groups enabled the researcher to delve for deeper, richer data relating to students views and perceptions among a wider group than using interviews alone (Robson, 1993). Best practice guidelines for tutors using Blackboard in dissertation modules are identified as a result of this research, along with the findings relating to levels of satisfaction in other areas.

5. DATA ANALYSIS

The questionnaire respondents were from the final year of the building surveying degree, comprised 6.3% female and 81.3% male responses, with 12.5% failing to state gender. The response is representative of the male/female composition of the cohort. The age profile comprises 6.3% over 26 years, 37.5% under 21 years and the largest group 56.3% between 22 and 25 years and is representative of the age profile. The focus groups comprised nine students, just under 25% of the total number, from a range of ability levels, age levels and gender.

This section of the paper firstly examines the results of the questionnaire, following up with an analysis of the focus group discussion where appropriate.

5.1 Use of Blackboard Generally: Student Likes and Dislikes

The Blackboard software was introduced in the University while the group were on a professional placement year, thus none had previous experience. Blackboard was used on all the final year modules (Maintenance and Management, Integrated Project, Building Surveying Practice and Design Issues, and Dissertation) to differing degrees.

Blackboard was used as an information notice board by the tutor. Copies of assignments, module programmes were also loaded on Blackboard for students to access. The workshop notes were available. Thus the students had a variety of information available to them on all Blackboard sites and were using the software in various ways to augment learning. There had also been the provision of enrichment materials and on demand learning all cited by Barker and Yeates (1985) and Joliffe et al (2001) as benefits of CAL.

All students attending the focus groups reported having used Blackboard in semester one in some capacity, though one had not realised there was a site for Dissertation. All reported that the software was easy to use and easy to find on the University web page. The focus groups reported that they used Blackboard to check for notices and announcements, to download lectures, to obtain feedback, and to undertake tutorial exercises.

Usage was recorded on the sites themselves and is available from two of the four modules. The results demonstrate high usage of the Building Surveying Practice and Design Issues (BSPDI) site, with 3841 hits. Lecture content had 92.47% hits, followed by 3.72% to communication areas, 3.486% to student areas and only 0.312% to group areas. In contrast access to the Dissertation Blackboard site was negligible with only 30 hits. 53.3% were to the announcements page, 13.3% to course documents, course assignments and staff information, and 6.6% to course materials.

The hit rate was 99.21% higher for the BSPDI module. More students (57) were enrolled on the module and due to tutor absence students had to complete tutorials via Blackboard, however this is a striking difference. It may be due to the different nature of the two modules, BSPDI is information lead with an end of module examination, and further investigation is required on this issue. In the questionnaire survey all respondents stated that they had used Blackboard, though clearly very few had used the dissertation site.

87.5% either agreed or strongly agreed that IT was a useful aid to learning, with the remaining 12.5% neither agreeing nor disagreeing. There is strong support for IT in learning among the cohort. The questionnaire asked students whether they like IT support for the lectures, i.e. to reinforce knowledge acquisition, and overwhelming support of 92.7% was recorded. Less popular support was recorded for IT being best for skills development (68.8%), though this is still a high figure.

Significantly, only half of the cohort wanted interactive learning materials on Blackboard, and the reasons for this are unclear. Perhaps these students do not want to interact with software. Just under a third of the students (31.3%) thought IT packages were boring, though

25% neither agreed nor disagreed, and 43.7% disagreed; there is nevertheless a large minority who are not engaged by CAL, perhaps this is evidence of IT fatigue amongst some learners? Universities need to consider this when designing courses, and thinking of satisfaction levels. 50% of the students agreed some IT packages are confusing, the need to design materials carefully using subject and IT specialists (Joliffe et al, 2001:12) is substantiated.

The questionnaire asked students about graphics, expectations are high with the indication that learning packages are benchmarked along side other IT products (games), 68.8% agreed or strongly agreed with the statement.

The focus group noted that on Blackboard, they liked the feedback from an assignment that enabled them to evaluate their performance and acquire additional information, again positive aspects of CAL identified by authors previously. This practice may be extended elsewhere.

The students to download notes without having to chase teaching staff or loan notes from other students. Again these advantages of CAL have been noted above.

In the focus groups students were asked about access to PCs and the availability of the web from their term-time home, around 15% of students had no access. Furthermore the PC's in the University were difficult to access, as students arrived early and reserved PCs locking the stations so others could not use them. Issues for other blackboard sites were use of graphic intensive files; some found their PCs unable to download materials, an issue raised by Joliffe et al (2001).

5.2 Student Learning and Dissertation

Dissertation is different to other modules. Students select a topic of interest and carry out independent research. Previously this learning was supported in four ways. There are workshops, a course reader, a recommended text and the supervisor. This year, the module is available on Blackboard. Rather than spend time preparing new materials, the author wanted to investigate what students felt about dissertation, learning support and delivery, and Blackboard. Once this information was known, suitable Blackboard materials could be developed if appropriate.

The questionnaire results show that 75% found the workshops useful to the dissertation process, 93.8% found the recommended text book useful, 81.3% found the supervisor useful, 87.5% found the reader useful. In rank order the results show the text book was highest, followed by the reader, then the supervisor, and then the workshops, though all received high ranking. 46.6% of students were satisfied with the materials on Blackboard which was interesting given that, apart from notices, the materials replicated the course reader and that hits for this site very extremely low. Furthermore the questionnaire did not reveal in what ways the workshops or supervisors had not met their learning needs or expectations.

Significantly these rankings were not replicated in the focus groups where the supervisor was felt to be the most important learning support. Consistently Blackboard was felt by both focus

groups to be the least important; as one student said Blackboard is ‘added value to all the other things provided’. Significantly the supervisor is the most important learning support for these students. The table below shows there is little agreement amongst the three sources about the ranking order except for the most and least important learning support.

Table 1 The ranking order of the usefulness of learning support in dissertation studies

Questionnaire ranking	Focus group 1	Focus group 2
1. Text book	Supervisor	Supervisor
2. course reader	Course reader	Text book
3. Supervisor	Workshops	Course reader
4. Workshops	Text book	Workshops
5. Blackboard	Blackboard	Blackboard

The focus group discussion revealed a consensus that the supervisor was very important, able to encourage and enthuse students. Students were particularly encouraged when supervisors were genuinely interested in their subjects. Availability of supervisors either via email, timed appointments or telephone was very useful and valued highly. Students disliked vague comments and lack of direction from supervisors; some reported being confused after sessions with some supervisors. Further staff training and development may be required in some areas. The note pads were valued as student had a record of the meeting and knew what to do next. On the whole, there is a high level of satisfaction with the supervisors and the system.

The questionnaire asked students what they wanted from materials on Blackboard. Table 2 below reveals the ranked order of materials generally and then specifically for dissertation.

Table 2 Students needs of Blackboard and Blackboard and dissertation in rank order

Blackboard generally	Blackboard & Dissertation
1. Model answers	1. Model answers
2. Case study materials	2. copies of OHP's
3. Self assessment questions	3. Self assessment questions
4. Copies of OHP's	4. Case study materials
5. Provision of reading lists	5. Provision of reading lists
6. Copies of module assignments	6. Copies of module assignments
7. Hosting chat-rooms	7. Hosting chat-rooms

The ranking in the list is not surprising. Where students lack confidence, model answers provide a blueprint, though the potential for plagiarism was a concern to students. The focus groups felt that a mix of different sections from different dissertations would preclude students from plagiarising the work of others. Alternatively locking the system to prevent downloading of materials might work.

The provision of self assessment questions as a higher need contradicted earlier answers in the questionnaire and view of the focus groups. Final year students felt that they had insufficient time to go to chat rooms and this was ranked least for Blackboard in general and in relation to dissertation. Items 5 and 6 were reasonable as students are always given hard copies of assignments and for dissertation in particular student's reading is diverse and subject lead. These are items students feel they can learn least from.

Significantly the students were asked to rank all the units studied on order of the hardest and easiest. Most students found the dissertation module to be the most difficult module they studied during the semester. This is because they have not undertaken any single large research study previously and also the individual nature of research. When asked about levels of confidence in undertaking a dissertation, the group were split equally between who were confident and those who were not. This information surprised the author and it will be noted in her approach to teaching of the subject, especially at the beginning of the process.

The focus groups were asked what they particularly liked about Blackboard for the dissertation module. They liked to be able access information on demand and access to knowledge, cited by Joliffe (2001), Barker and Yeates (1985) as benefits of CAL.

One focus group felt that the use of general checklists for each stage of the dissertation process, i.e. the literature review or the research design, would be useful to ensure nothing was forgotten. This suggestion is under consideration by the tutor; however the balance of allowing final year students to distinguish themselves academically has to be considered. Checklists may enable less motivated students to improve their performance.

6. CONCLUSIONS AND RECOMMENDATIONS

The findings from this study substantiate some of the earlier studies and views expressed in the literature review (Barker and Yeates, 1985. Burke and Rumberger, 1987. Joliffe et al, 2001). A number of lessons can be drawn from this initial research.

Students perceive that Blackboard has lead to;

- efficient communication between lecturers and students
- quality of learning improvement because they access information on demand.
- Augmentation of teaching methods
- provision of remedial instruction
- provision of enrichment materials
- access for students unable to attend lectures or tutorials

These findings are attributable to the dissertation module, although there were specific issues for this module. Table 3 illustrates the main likes and dislikes among the cohort relating to dissertation and Blackboard.

Table 3 Student likes and dislikes about Blackboard for dissertation

Likes	Dislikes
Notices and announcements Checklists Model answers Access on demand	Lack of face to face contact Chat rooms Interactive materials

This study has not measured acceleration of the learning identified in the literature review. To date, the tutors have not experimented with course development on these modules, neither have they sought to provide individualised tuition. Similarly there has been no measurement of teaching standards and it is not possible to comment whether Blackboard has resulted in higher standards posited by Barker and Yeates (1985).

This study concludes that there is no proven case for cost savings in the use of IT because students still perceive the face to face contact as vital. Especially in dissertation learning the personal supervision was the most important learning support, and Blackboard the least important. Furthermore some students PCs and browsers were not sufficient to download some of the materials on Blackboard which may disadvantage the less wealthy students. Around 15% do not have access to PCs and browsers at home. Furthermore, with financial and resource implication is the conclusion that there is an expectation of good quality IT materials, and unless good quality materials are used students may become bored or confused with some of the materials provided. Finally, as Burke and Rumberger (1987) noted Blackboard does not replace other methods of teaching and learning and it not desirable to become IT dependent.

The recommendations for best practice for tutors using Blackboard are therefore;

- Consider the needs of each group when deciding which materials to load on Blackboard and how they will be used
- Ensure students are aware of the availability of Blackboard
- Do not overwhelm students with additional reading lists and information they cannot read or digest
- Do not assume students want interactive learning materials
- Consider student likes and dislikes for IT based learning materials
- Do not under estimate the time required and specialist IT knowledge required to produce good quality IT based learning materials and the need to up date materials
- Use IT as an accompaniment to traditional teaching and learning methods.

Based on this research, with regard to improving student learning in semester two the lessons for the module leader are:

- Communicate effectively the use of blackboard to all students
- Tailor make materials to suit demand – such as checklists

- Use examples of previous dissertations so students understand why some were better than others – an additional optional workshop is to be arranged for this purpose
- Be aware of lack of student confidence for this module
- Do not expect high usage of the blackboard site for dissertation
- Recognise the importance of the supervisors to students
- Arrange some general drop in sessions for students to discuss issues

These items will be integrated into semester 2 and evaluated by the students to assess whether and how, they benefited and their learning improved. The use of IT in education will increase with lecturers and students becoming more sophisticated users over time. Feedback is being undertaken to enhance and improve student learning at SHU, however it is but one tool amongst the many required to provide knowledge acquisition and skills development to shape the surveyors of the future.

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BIOGRAPHICAL NOTES

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Sara graduated from the University of Greenwich in 1984 with a degree in Building Surveying. She practiced in London for several year before joining Sheffield Hallam University in 1991. Sara completed an MPhil in 1996, and attained fellow status of the RICS in 1997. In 2002 she was awarded an MA in Social Science Research Methods. She co-edited the book Best Value in Construction published in 2002. Her research interests include IT and Surveying, IT and student learning, Globalisation and property, commercial refurbishment, and obsolescence of offices. She was awarded a teaching Fellowship from SHU in 2001 to develop learning materials for dissertation.

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