SOLE Case Study Series

Students'
Online
Learning
Experiences

Psychology

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Acknowledgements

Executive Summary

This is the summary of the preliminary report, which analyses the results of a study of two Psychology modules using VLEs in two different UK Universities. The survey was carried out by the Learning and Teaching Support Network subject centre for Psychology (LTSN Psychology) as part of the SOLE project.

1. Purpose of the study

SOLE is a project funded by the Higher Education Funding Council for England (HEFCE) via the Learning and Teaching Support Network (LTSN) Tranche 2 initiative and the Joint Information Systems Committee (JISC) to undertake an independent evaluation of students' usage of virtual learning environments (VLEs) in higher and further education. The purpose of the study is to draw out the effectiveness of VLEs in supporting different subject areas, different national agendas (such as that of widening participation) and student learning in general.

2. Background

The Psychology case studies were undertaken during January to May 2003. Case Study 5 is set in a Psychology department within the School of Health and Human Sciences of a large post-1992 university. It explores the behaviour of undergraduate students in the second semester of a Cognitive Psychology module. The second case study (Case Study 6) comes from a large pre-1992 university and is based on undergraduates in the second semester of a research methods module. Both case studies focused on a full-time compulsory module taught on campus. Case study 5 (year 2) used WebCT, Case Study 6 (year 1) used Merlin.

The study methodology was based upon the evaluation framework set out in the handbook for learner-centered evaluation of computer facilitated learning projects in higher education (Philips et al., 2000). The research also drew upon the Critical Incident Technique pioneered by Lockwood (Gilbert and Lockwood, 1999). The main elements used were as follows:

	Week	
Method	**Case Study 5**	**Case Study 6**
Student questionnaires	1 and 11	1 and 13
Student diaries	3 and 10	3 and 9
Transaction logging	Throughout	Throughout
Recording of interactions	Throughout	Throughout
Interviews with tutor	1 and 11	1 and 13
Interview with students	11	13

3. Profile of participants

Case Study 5- 80 students were registered on the course and a total of 64 participants (42 females, 13 males and 9 for whom gender data was not recorded) completed at least one questionnaire. All participants who declared their age were between 18 and 21. Of those who responded 48 stated that they were educated in the UK and 4 stated "Other". Out of 55 participants who responded, English was the first language of 51.

Case Study 6 -175 students were registered on the course and a total of 129 (91 females, 22 males and 16 for whom gender data was not recorded) completed at least one questionnaire. Of those participants who recorded their age, 108 participants were aged between 18 and 21 and 5 were aged over 41. Of those who responded 110 stated that they were educated in the UK and 2 stated "Other". Out of 113 participants who responded, English was the first language of 112.

While every effort was made to encourage participants to complete both questionnaires in order to track students' experiences over time, inevitably some participants completed only one. Data was analysed for only those who had completed both questionnaires. In Case Study 5 there were 32 participants (6 male, 26 female). In Case Study 6 there were 40 participants (7 male, 33 female).

4. Learning models – explicit/implicit

Case study 5 - a Cognitive Psychology module, consisted of weekly 1-hour lectures and fortnightly lab classes. The VLE in this module was intended to be used for lecture preparation and self-assessment. It contained links to external resources, self-assessment tests and articles. Students were assessed by a 2-hour exam with multiple choice and essay type questions.

Case study 6 - composed of two parts (with 50:50 credit weighting). The statistics and research methods section comprised of two-hour weekly (non-compulsory) workshops, with the course content presented via the VLE. Students were required to work through tasks related to a different statistical test each week. The other 50% was a Tutorial Based Practical (TBP), which aimed to provide students with practical experience in carrying out an empirical project. It was taught by three 1-hour lectures and 5 hours of meetings with a graduate teaching assistant. Students were assessed by a TBP report and a 2-hour examination.

5. How the VLE is embedded in the pedagogy

For both case studies the VLE was primarily used to access information.

- Students in both case studies reported spending an average of just over three hours per week working on the module. This remained constant over time.
- Time spent using the VLE dropped from nearly 2 hours per week to just over an hour.
- The transaction log data shows that participants in Case Study 5 logged on to the VLE more often than participants in Case Study 6.

Case study 5 - The tutor at Case Study 5 believed that e-learning could be motivating to students. He hoped that they would take more responsibility for their learning and use the VLE to learn as they went along by using the supplementary material and self-tests. He also hoped that students would help each other and use of the discussion board to answer each other questions. However, only a limited number of students used the discussion area and it was often used for exchanging information on suitable textbooks or by the tutor for updates on changes in timetabling.

Case study 6 - The tutor at Case Study 6 used the VLE to help cope with increasing student numbers and so that the research methods component throughout the degree programme could be integrated. The tutor was also inspired by prior experience where she had used the VLE very successfully in other modules.

6. Student preparedness

- 80% of Case Study 5 students had used a VLE previously, compared with only 57.5% of those in Case Study 6
- 84% of Case Study 5 and 95% in Case Study 6 students reported having no concerns about using the VLE
- 65.6% of Case Study 5 students (80% of Case Study 6 students) were very confident or confident about "working and learning online"

- Students were less confident about "taking part in online discussions" 30% of Case Study 5 and 6.3% of Case Study 6 students had little or no confidence in this area

- 65% of Case Study 5 students; (90.7% of Case Study 6) students were very confident or confident about the "subject they were studying"

In general, Case Study 5 students reported being less confident to begin with than those in Case Study 6

7. Motivational issues

- In both case studies all students were motivated by "getting good marks in assessment" 96.9% Case Study 5 and 87.5% Case Study 6 (strongly agreed or agreed).

- 6% of Case Study 5 and 17% Case Study 6 students strongly agreed or agreed with the statement that they were doing the module because they "needed the credits".

- The most noticeable difference was for the statement, "I am interested in the subject matter of the module". More participants in Case Study 5 (84%) than in Case Study 6 (50%) (strongly agreed or agreed).

Case study 5: correlation between confidence and motivation

- Those who agreed that it is "important to do better than others in the group" were more confident in "using the Internet", "working online" and the "subject matter".

Case study 6: correlation between confidence and motivation

- Those "worried that they would not do well" generally rated their confidence about "the subject" and about "online discussions" lower than those who were not worried.

- Those who were "interested in the subject matter" reported higher levels of confidence in the subject as well as in "finding their way around" and "obtaining information in the VLE".

- Those who were doing the module to achieve "personal goals" were more confident in "using the internet", "working online", "finding their way around in the VLE", " and obtaining information in the VLE and the subject itself".

- Those who said that they were "good at the subject" were more confident about the subject in general.

The graph below shows that "personal needs", "the tutor", "support from the VLE" and "working online" were large positive motivational factors for students from both case studies:

6.1. How positive an effect each factor had on each participant's motivation.
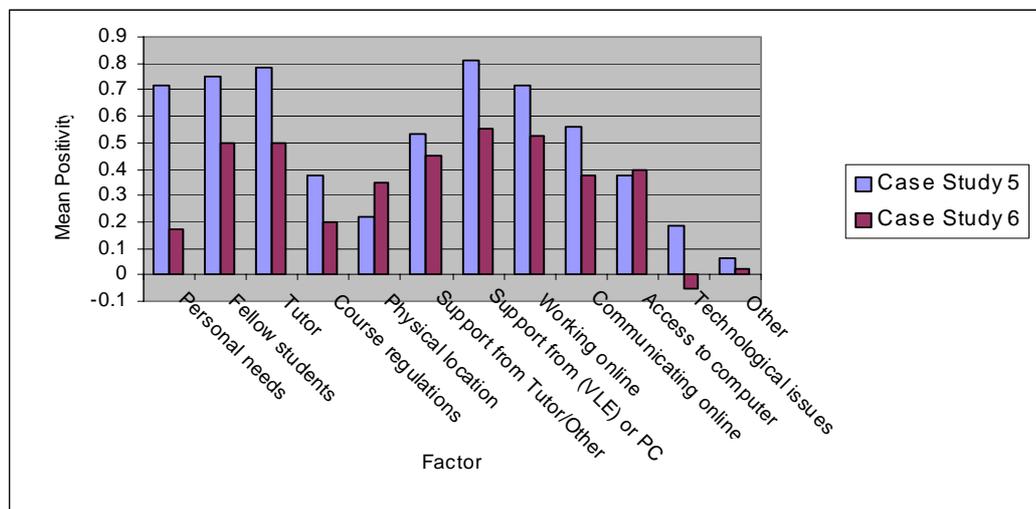
- Students from both case studies felt that support from the VLE or PC had the biggest positive effect on their motivation.
- Case Study 5 students generally gave more positive responses than those in Case Study 6. This was most pronounced when referring to "personal needs".
- The only factors in which those in Case Study 6 were more positive than those in Case Study 5 was "physical location" and "access to the computer".
- The only factor for which responses were negative overall was technological issues for Case Study 6.
- General motivation decreased over time in both case studies.

8. Student and tutor roles and behaviour

- There was a conflict between the tutors and students views of the role of the tutor.
- Tutors see the VLE as an opportunity for students to become more independent in their learning.
- Students whilst appreciating some of the more 'management type' benefits of a VLE still value a traditional student tutor interaction.
- In Case Study 6 the "academic" was reported as being the main source of support in using the VLE.
- In Case Study 5 students reported "textual resources" followed by "support staff" as being the main sources of support in using the VLE.
- The use of "peer support" increases in both case studies over time.

1. Introduction

This report focuses on two Psychology case studies focussing on students' online learning experiences over the course of a semester. These case studies form part of a larger national study, the SOLE project, covering a range of discipline areas. Both case studies reported on here are campus based and focus on students at undergraduate level. Case Study 5 is a first year Cognitive Psychology module and Case Study 6 is a second year Research Methods module.

2. Purpose of the study

SOLE is a project funded by the Higher Education Funding Council for England (HEFCE) via the Learning and Teaching Support Network (LTSN) Tranche 2 initiative and the Joint Information Systems Committee (JISC) to undertake an independent evaluation of students' usage of virtual learning environments (VLEs) in higher and further education. The purpose of the study is to draw out the effectiveness of VLEs in supporting different subject areas, different national agendas (such as that of widening participation) and student learning in general.

3. Background

The term Virtual Learning Environment (VLE) has been widely used over the past five years to describe online learning environments which have emerged and developed over that period in both higher and further education in the United Kingdom. Initially these were defined and conceptualized functionally, for example as 'learning management systems that synthesize the functionality of computer-mediated communications and on-line methods of delivering course materials' (Britain & Liber, 1999). However, the definition itself has evolved alongside these learning environments and the emphasis has shifted from the technological components to a focus on how VLEs may supports learning. This is demonstrated by a more recent definition from the UK Joint Information Systems Committee (JISC), which defines a VLE as 'the component(s) within an MLE [Managed Learning Environment] that provides the 'online' interactions of various kinds, which can take place between learners and tutors, including online learning.' (JISC, 2002).

The potential of VLEs to support new ways of learning and to support the increasing heterogeneity of the student cohort is widely recognized and anticipated (DfES, 2003). Many Higher Education institutions, in order to recruit and retain a growing, diverse range of students are looking to provide increasingly flexible learning opportunities (e.g. part-time, practice-based, distance) and a more supportive environment (e.g. provision of extra resources to support less able students skills). There is now an increased focus on the potential of e-learning, and VLEs in particular, to deliver these objectives (DfES, 2003; HEFCE, 2003). Such objectives have been key to the explosive uptake of VLEs in the UK over the past few years and reflect the drive from government and institutions to fully exploit the potential of these new technologies. A UCISA survey (Armitage et al, 2001) reported a 7% uptake of VLEs in 1997 compared to an 81% uptake by 2001. This survey was updated in 2003 and as might be expected VLE uptake has continued to rise to 86% of returns; that is 84% of pre-92 universities; 97% of post 92 universities and 67% of HE colleges (Brown & Jenkins, 2003).

To date the evaluation, subsequent support and use of VLEs has focused on staff rather than learners. Stiles (2002) reports from a recent survey of 127 HE/FE institutions that the vast majority of institutions have selected VLEs for one reason above all others: 'ease of use by staff'. The 2001 UCISA survey substantiated this finding '…the focus of the impact of VLEs on institutions is on staff rather than students' and concludes that 'VLEs are widely recognised as an important component of an institutional strategy yet is poorly matched by delivery' and 'mature support mechanisms have … yet to be comprehensively developed across the sector' (Armitage et al, 2001). However, according to the more recent UCISA survey conducted by Brown & Jenkins (2003) there is now increased recognition that VLEs are intended to support learning, rather than for example, efficiency gains and they report a pattern of consolidation across the contributing institutions which is more encouraging.

SOLE was funded by the Learning and Teaching Support Network and JISC within this context of increasing use of VLEs and a focus of attention on staff rather students. When the project began in 2002, there were few, if any, studies focussing on student experiences of VLEs. Since then, a few examples have been published (Breen, 2002, Aspden et al 2003) although these have focussed primarily on one institution. Furthermore, whilst there is a growing body of evidence on individual aspects of the student experience of online learning, there has been far less research exploring the total learning experiences of students and student behavior when learning using a VLE.

The SOLE study set out to investigate student experiences across five discipline areas within a range of institutions and contexts in order to gather evidence on student experiences more broadly and to investigate any discipline-dependent issues. A preliminary survey of the use of the Web in Psychology departments (Hammond & Trapp, 2001) revealed increasing use of VLEs to support Psychology teaching, but some problems with the effective use of discussion facilities and mediated communication. Psychology case studies collected as part of the ASTER project emphasised the use of VLEs to support discussion around case based or scenario based materials (Hammond & Bennett, 2002); distance learning and the support of off-campus students are further motivators for the subject to explore the potential of VLEs. For this reason, Psychology was one of the subject areas chosen for the SOLE project.

The key research questions identified for investigation were agreed as follows:

- What are the implicit and explicit learning models and what is the actual tutor and student behavior?

- What factors do students identify as affecting their motivation positively or negatively and can these be attributed to the VLE itself?

- How much time (online and offline) do students spend working on VLE modules?

- What resources are students using and what patterns of use can be identified?

- How do students use the VLE toolkit?

- How do students choose to communicate – how, when and why – and for what purposes?

- What are the roles of the tutor and the student? How do these relate to the implicit and explicit model of learning? How does it relate to student participation in the VLE?

- Is it possible to identify issues around authority, for example, of knowledge, of expertise and teacher-student communications, in relation to VLEs?

- How do students and tutors use and perceive the various forms of support available?

Whilst a range of different VLEs were included, the intention of the SOLE project was not to compare VLEs or their functionality. The main objective was to try to identify what happens when students are working within a VLE, the discourse and processes they undertake, the students' views and perceptions and the identification of common factors and success indicators.

The emerging consensus on approaches to evaluation studies of online learning focuses on the need for a variety of methods, due to the complexities and multi faceted nature of online learning and teaching (Phillips et al, 2000). A shift towards the Constructivist-Interpretive-Qualitative Paradigm is evident (Guba & Lincoln, 1989 and Patton, 1990), however Phillips et al (2000) argue that in most cases an "Eclectic-Mixed Methods-Pragmatic Paradigm" will be most applicable. This acknowledges that no single method can provide all the answers and that an open approach using quantitative and qualitative methods together with triangulation is essential. In this study, we take a holistic approach drawing on illuminative and integrative methodologies and use a range of methods, (Parlett & Hamilton, 1977, Draper et al, 1996, Marton, Hounsell & Entwistle,1984). The study also draws upon a theoretical model of the motivational context for virtual learning (Cook & Timmis, 2002) in order to investigate the ways (if any) in which motivation is affected by students' virtual learning experiences.

Case Study 5 – Introduction and background

This case study was set in a Psychology department within the school of Health and Human Sciences of a large post-1992 university. It explores the behaviour of level 2 undergraduate students in their second semester on a Cognitive Psychology module. The 12-week long module aimed at introducing and developing students' skills in cognition and cognitive systems was delivered by weekly lectures and fortnightly lab classes. WebCT was used to deliver the online component and was mainly used for lecture preparation.

Case Study 6 – Introduction and background

Case Study 6 is also set in a Psychology department within a large pre-1992 university. It explores the behaviour of level one undergraduate students in the second semester of a research methods module. The content of the module was composed of two parts (with 50:50 credit weighting). The statistics and research methods section aimed to introduce students to knowledge and skills. It comprised of weekly two-hour (non-compulsory) workshops, with the course content being presented via the Merlin on-line learning environment. The other 50% was Tutorial Based Practical (TBP), which aimed to provide students with practical experience in carrying out an empirical project. It was taught by three 1-hour lectures and 5 hours of meetings with a graduate teaching assistant.

4. Methodology

A case study design was used with a range of both qualitative and quantitative data gathering techniques. In addition, secondary sources such as course handbooks were consulted. Data was collected primarily from the students; however, tutors were also interviewed. The primary data gathering tools were questionnaires, diaries, interviews, discussion board and transaction log data, and supporting documentation. In order to track changes over time, students were given a questionnaire at the start of the module and a similar one at the end. In addition, tutors were interviewed at the beginning and end of the module.

Students at both Psychology case study sites were initially informed about the SOLE evaluation at their first lecture/workshop at the beginning of the semester. They were briefed by the researcher as to the background of the project and the procedure of the study. They were given a pack containing a consent form which needed to be signed and returned and two questionnaires, one to be competed immediately and one to be completed at the end of the module. The pack also contained two student diary forms and a timetable of activities. A tracking number primed on the top left of each document uniquely identified all items contained in the pack. Students were informed that they could withdraw from the study at any time and would remain anonymous.

The researcher emailed students who had provided email addresses one week before they were scheduled to complete diaries as a reminder. In the first instance diaries were returned in sealed envelopes to the tutor at both case study sites. At the second stage the researcher returned to both case study sites to collect diaries and questionnaires and to interview students and tutors. Students were offered a financial incentive of five pounds to take part in interviews, despite this at both case study sites volunteers were hard to recruit and while we eventually completed six interviews at Case Study 6 we could only recruit 2 from Case Study 5.

5. Profile of participants

5.1.1 Case Study 5

Participants were second year full time undergraduate Psychology students in their second semester. 80 students were registered on the course and a total of 64 participants (42 females, 13 males and 9 for whom gender data was not recorded) completed at least one questionnaire. All participants declared their age were aged between 18 and 21. Of those who responded 48 stated that they were educated in the UK and 4 stated "Other". Out of 55 participants who responded, English was the first language of 51.

5.1.2 Case Study 6

Participants were first year full time undergraduate Psychology students in their second semester. 175 students were registered on the course and a total of 129 (91 females, 22 males and 16 for whom gender data was not recorded) completed at least one questionnaire. Of those participants who recorded their age 108 participants were aged between 18 and 21, 5 were aged over 41. Of those who responded 110 stated that they were educated in the UK and 2 stated "Other". Out of 113 participants who responded, English was the first language of 112.

At both case study sites the first questionnaire was distributed and collected by the researcher at the beginning of the first lecture/workshop. 55 completed questionnaires were returned from Case Study 5 (69% response rate) and 113 completed questionnaires were returned from Case Study 6 (79% response rate). The second questionnaire was distributed at both case study sites at the beginning of the lecture/workshop towards the end the module. 41 completed questionnaires were returned from Case Study 5 (51% response rate) and 56 completed questionnaires were returned from Case Study 6 (35% response rate). While every effort was made to encourage participants to complete both questionnaires in order to track students' experiences over time, inevitably some participants completed only one. Data was analysed for only those who had completed both questionnaires were used. Table 1 shows the breakdown of how many questionnaires were completed in total.

Table 1. The number of males and females in each case study who completed questionnaires

Questionnaires Completed	Male		Female		Total	
	CS5	CS6	CS5	CS6	CS5	CS6
Q1 Only	7	15	16	58	23	73
Q2 Only	No student characteristics recorded				9	16
Both Q1 & Q2	6	7	26	33	32	40

All students were also encouraged to complete diaries of their activities to do with the VLE module during weeks 3 and 9/10. Students were reminded about this verbally and via the message board at both sites by the course tutor. They were also emailed a reminder by the researcher one week before. Participants were told to put the diary in an envelope and return it to the tutor or researcher. In total 7 completed Diary 1's were returned from Case Study 5 and 35 from Case Study 6. Only 1 completed Diary 2 was returned from Case Study 5 compared with 19 from Case Study 6. Towards the end of the module 2 students from Case Study 5 and 6 students at Case Study 6 volunteered to take part in a 30 minute semi structured interviews about the module.

5.1.3 Previous Use

The majority of Case Study 5 students (84.4%) had used WebCT prior to beginning the module and only (47.5%) of Case study 6 had used Merlin. Participants were asked to report how many hours they had spent using the VLE before starting the module. For the purposes of categorising participants into those with moderate versus heavy previous use, all responses were collated together as either 11-15 or over 15 hours. The figure of 15 hours was chosen as it would represent roughly an hour a week for a semester. The breakdown of responses are shown in Table 2.

Table 2. The amount of time participants had used the VLE previously

Amount of previous use	Case Study	
(%)	5	6
None	9.4	42.5
1-15 hours	71.9	25.0
Over 15 hours	12.5	22.5
Did not answer	6.3	10

The results show that of participants who had used the VLE before, most users had fairly limited experience (less than 15 hours of previous use). Although Case Study 6 had fewer participants with prior experience they actually had a greater number of heavily experienced users. 22% of participants in Case Study 6 had more than 15 hours experience with the VLE. These results show that participants began the study with a broad range of prior experience of VLEs. It is interesting to note here that tutors form both case studies were asked in interviews at the beginning of the module if the students has used the VLE before. Both tutors said that they had in other modules during the previous semester.

- Prior to the start of the module, participants differed broadly in their levels of previous use of VLEs
- Case study 6 had fewer participants with prior experience but had a greater number of heavily experienced users

6. Results

6.1 Learning Models

Documentary sources such as module handbooks have been used in conjunction with tutor interviews at the beginning and end of the semester to examine the implicit and explicit learning models and how the VLE was embedded within the pedagogical model of both Case Studies.

6.1.1 Explicit learning model - how the VLE was embedded within the pedagogical model

Case Study 5

Students attended a one hour lecture for this module per week and two hour lab class every two weeks. They were assessed by a 2 hour exam with multiple choice and essay type questions. The VLE in this module was intended to be used for lecture preparation and self assessment, it contained lecture notes, links to external resources, self assessment tests and articles. The course tutor was solely responsible for the teaching on the module.

Case Study 6

The content of the module was composed of two parts (with 50:50 credit weighting). The statistics and research methods section comprised of weekly two-hour workshops, with the course content being presented via the Merlin on-line learning environment. Workshops were not compulsory but attendance was strongly encouraged and a register of attendance was taken. Students were required to work through the "Pathway" which contained tasks devised by the tutor covering different statistical tests. It included "lecture type" notes and online practice exercises with automated feedback on submission of answers. Students were also required to use the "Resource Centre" (containing teaching and learning resources appropriate to the module) as and when necessary. The other 50% was a Tutorial Based Practical (TBP) which aimed to provide students with practical experience in carrying out an empirical project. It was taught by three 1-hour lectures and 5 hours of meetings with a graduate teaching assistant. Three compulsory class tests were given during the semester, these short tests were designed to allow the students to assess their own progress. The overall assessment was a TBP report and 2 hour examination.

Analysis of the module handbooks for each case study show that for Case Study 5 the VLE was intended to be used mainly as a supplementary resource for lecture preparation and self assessment. In Case Study 6 the VLE was used for presentation of course content, self assessment and communication with fellow students and the course tutor.

6.1.2 The implicit learning model and how is the VLE embedded within the pedagogical model

Tutor and student interviews were used to give a picture of how the VLEs in each case study were embedded in the pedagogy.

In initial interviews, tutors were asked why they intended to use the VLE in their course and what they hoped it would achieve. The tutor at Case Study 5 believed that e-learning could be motivating and that the interactive nature of working online might be helpful.

"There just seems to be something about using electronic media that makes it immediately seem appealing to the students, just because its on (the VLE) they more likely to do it." Tutor – Case Study 5

"…. (I'm) just trying to make it more exciting and kind of more hands on so they think about it and probably learn something at the end." Tutor – Case Study 5

For Case Study 6, the VLE was used to help cope with increasing student numbers and so that the research methods component could be integrated throughout all three years of the degree programme. The tutor was also inspired by prior experience where she had used the VLE very successfully in other modules. This course was very structured and the students appreciated the support the VLE gave them:

> " I think its just the structure of it really, that it was step-by-step and you knew what you had to do." Student - Case Study 6

In Case Study 5, the tutors goals at the beginning of the module were not supported by his own views on how the course developed. His initial remarks on what pedagogical approach was intended were:

> "What I am trying to do is encourage the students to take more responsibility for themselves(…..)in particular the discussion board and hopefully to answer the questions, instead of just coming and seeing me all the time." Tutor – Case Study 5

At the end he was unsure this had happened successfully.

> "I think they are finding it difficult generally to engage with anything, it's hard to tell what they are finding difficult and what they are finding easy because I am not really getting much feedback from them in terms of helping them along." Tutor – Case Study 5

Unfortunately there are no access statistics for this case study as it would have been useful to compare these with the tutor's perceptions. It is worth noting that this tutor's responses did not show any expectation that he should manage or support their learning experience with WebCT. His view of WebCT appears to be solely in terms of a resource:

> "WebCT itself is fine you know I expected it do what it was going to do, it's just the students who haven't lived up to my expectations but I think that's just a general point." Tutor – Case Study 5

Discussion

Analysis of the interviews with course tutors for each case study showed that the tutor in Case Study 5 used the VLE to encourage learning throughout the module and to make the topic appear more exciting to students. The VLE was also used to some extent to encourage peer-assisted learning in order to reduce the tutors "non-essential contact time" with students. In Case Study 6 the VLE was used to help cope with increasing student-numbers and due to previous successful experience of using VLEs in other modules. The course leader also wanted to integrate the teaching of research methods throughout the Psychology degree programme at the institution.

6.2 Student behaviour

6.2.1 Time spent online and off-line working on VLE modules

All participants in each case study were asked to complete two activity diaries. One at the beginning and the other at the end of the module, with each diary lasting for one week. Every time participants concentrated on the VLE module they recorded what type of activity they were engaging in, the format of the activity and how long each activity lasted. If participants were using the VLE they were required to note which specific areas or tools they were using. In total 7 completed Diary 1's were returned from Case Study 5 and 35 from Case Study 6. Only 1 completed Diary 2 was returned from Case Study 5 and 19 from Case Study 6. For the purpose of this analysis, the total sets of diaries, across the case studies have been used.

The amount of time students spent working both on and off-line on the VLE modules was analysed by student diaries and VLE transaction log data.

6.2.2 Student diaries

Results from the diaries show that the average time spent working on the VLE modules for both case studies during Diary 1 week was 207 minutes per person per week. Of this 93.5 minutes was spent

online and 113.5 minutes was spent on other activities off line. During Diary 2 week the average time spent working on the VLE module was 209 minutes, of which 77.36 minutes were spent online and 131.6 minutes were spent on other activities off line. The time spent on each activity ranged from 5 minutes to check emails to two hours writing notes. One student even wrote *"Sorry I'm lazy, I did nothing all this week".*

6.2.3 Transaction log data

The VLE at each case study automatically recorded each time a student logged on to it. Unfortunately the VLEs used in this study could not record the actual time spent on line so there is no way of comparing the actual time spent with the amount of time reported by students in the diaries.

Results from the transaction log data recorded by the VLE show that students at Case Study 5 logged onto the VLE between 0 and 382 times. On average, each student logged on to the VLE 73 times over the course of the module. During a 15 week course this is an average of just under five times a week per student. In Case Study 6 the number of times students logged on to the VLE ranged from 1-115 times. On average students logged onto the VLE 34 times over the course of the module. During a 15 week course this is an average of two times a week per student. It can be seen from the log data that those students at Case Study 5 logged onto the VLE twice as much as those in Case Study 6.

Discussion

Analysis of the student diaries showed that students reported spending an average of just over three hours per week working on the module. This remained constant over time. Of this total time spent working on the module, time spent online on the VLE dropped from nearly 2 hours to just over an hour. The transaction log data shows that participants in Case Study 5 logged on more often than participants in Case Study 6. Also:

- Time spent using the VLEs online decreased from Diary 1 to Diary 2 for both case studies.
- Participants at Case Study 5 logged into the VLE more often than participants in Case Study 6.

6.2.4 Use of resources

Students were asked to record in diaries every time they concentrated on the VLE module and recorded the format of the activity they were engaging in.

Table 3 shows the percentage of participants that reported via student diaries having used each format during the module.

Table 3. Percentage of participants that reported having used each media format (both case studies)

Format	Diary 1 (n=42)	Diary 2 (n=20)
	%	%
VLE	95	95
Paper	83	80
Face-to-Face	10	20
Other Electronic	10	15
Other	10	15

These results show all formats used by students. It should be noted that each participant could report having used more than one format. The results showed that of the 42 students who completed Diary 1 at the beginning of the module, 40 reported using the VLE at least once during that week (95%). Of the 20 students who completed Diary 2 at the end of the module, 19 reported using the VLE at least once that week (95%). Of the other formats used the most common was paper with over 80% of

students reporting having used that format at least once in their activities during that week. Of the formats listed as "Other" items such as "Checking the university notice board" (not online) were listed:

- Most students are using both the VLE and paper resources.
- Students continue to use the VLE and paper formats.
- Over time there is an increase in the use of face-to-face contact.

6.2.5 The use of tools and patterns of use over time

Participants who completed student diaries were asked to record when they were using the VLE and which specific areas or tools they were using within it. (Participants could pick more than one VLE tool). Table 4 shows the percentage of participants reporting which of the VLE tools they used in their activities.

Table 4. Percentage of participants reporting using each of the tools in the VLE (for both case studies)

VLE Tools	Diary 1 (n=40) %	Diary 2 (n=19) %
Pathway *(Case Study 6 only)*	40	36.84
Resource Centre *(Case Study 6 only)*	17.5	57.89
Self Tests	17.5	10.52
Mail Box	7.5	5.26
Chat Room	5	5.26
Notice Board	0	5.26
Portfolio	5	5.26
Discussion Board	2.5	5.26

It can be seen from Table 4 that the most commonly used tools were the pathway, resource centre and self tests. The use of the resource centre increased over time, 58% of participants used it at the end of the module, compared to only 17.5% of participants at the beginning.

In Questionnaire 2 (completed at the end of the module) students were asked to record which aspect of the VLE contributed most to their learning. The top two most reported items that contributed most to students learning at both case study sites were VLE related. Participants from Case Study 5 most often stated Quizzes/MCQ's and preparation notes as contributing most to their learning and participants from Case Study 6 most often reported the Pathway, self tests and the resource centre.

- Pathway, resource centre and self tests were the most used tools by students.
- Student use of the resource centre for case study 6 increased over time.

6.2.6 Students activities during the VLE module

The taxonomy of learning outcomes derived from Bloom (1956) and Anderson & Krathwohl (2001) was used to classify activities recorded by participants in both student diaries. Results are presented in Table 5 showing all activities recorded in the diaries and how they fit into the table. Each cell contains the percentage of Diary1 and Diary 2 respondents who reported having completed an action contained within.

Table 5. Percentage of learning activities reported by students in Diary 1 and Diary 2

Learning outcome	Learning activities					
	Low interactivity		Medium interactivity		High interactivity	
	Diary 1	Diary 2	Diary 1	Diary 2	Diary 1	Diary 2
Knowledge	90.24	95	44.18	25		
	Attending lecture, Checking mailbox, Emailing, Reading notes, Printing off information, Note taking, Reading journals, Reading textbook, Checked notice board for information, Reading online, Checked library catalogue		Self test			
Comprehension	21.95	5			26.82	25
	Revision				Group discussion, Tutorial, Communicating with other members	
Application			26.82	25		
			Workshop, Class work			
Analysis						
Synthesis			28.82			
			Tutorial Based Practical			
Evaluation		10			19.51	
		Writing Report			Group work, Small group discussion	
Creation	2.44					
	Making flash cards					

Empty sections show areas of the taxonomy into which no activity was reported by students. Most students reported undertaking low interactivity, knowledge-based activities such as attending lectures, reading articles and studying their notes. Fewer than half of students reported having completed activities in any other cell of the taxonomy. The most common highly interactive activities were comprehension based, such as tutorials.

- Most learning activities that students participate in are knowledge based with low inter-activity.
- Several areas of the taxonomy appear not to be addressed by the VLE modules.

6.3 Student preparedness

6.3.1 Looking forward to

Participants were asked in Questionnaire 1 to report if they were looking forward to anything about the module and if so to state what it was. 9.4% of those from Case Study 5 and 17.5% of those from Case Study 6 reported they were looking forward to something. Inspection of the written responses shows that participants in both case studies were looking forward to the self tests the most. Those at Case Study 5 also reported looking forward to having extra information, extra reading material and additional support. Responses from those in Case Study 6 centred around accessibility as they were most looking forward to items such as; working at their own pace, working from home, and the ease of contacting people.

Participants were asked if there was anything that they were specifically not looking forward to and none of the participants responded.

- More participants in Case Study 6 reported looking forward to things about the module than those in Case Study 5.
- Students at both case study sites were looking forward to self tests the most.
- Participants in Case Study 5 generally mentioned looking forward to additional materials participants at Case Study 6 mentioned items to do with accessibility.
- No participants reported not looking forward to anything.

6.3.2 Concerns

Participants were asked in Questionnaire 1 to report if they had any concerns about the module and if so to state what they were. Very few participants stated any concerns (15% in Case Study 5 and 5% in Case Study 6). There was a broad range of responses, concerns included technical issues (such as "the system will not let me log on"), content issues (such as "understanding materials") and empirical issues (such as "I don't feel it aids learning well".)

Overall, this suggests that participants had very few concerns about the VLE at the beginning of the module although participants at Case Study 5 reported having more concerns than those at Case Study 6.

- Students had very few concerns about working with the VLE.

- Participants in Case Study 5 had more concerns than those at Case Study 6.

6.3.3 Introduction to the VLE

In Questionnaire 1 participants were asked to state what introduction they had to working with the VLE. Open-ended answers were classified into three groups None, Hands-On and Hands-Off groups. An introduction was classified as being Hands On if it was interactive (e.g. a workshop) and Hands Off if it did not involve any interaction with the VLE itself (e.g. a lecture or course handbook).

Table 6. Shows the percentage of respondents stating each type of introduction they had

Type of introduction	Case Study 5	Case Study 6	Total
Hands on	8	25	33
Hands off	11	10	21
None	6	0	6

To investigate the impact of the type of introduction participants had, it was decided to compare groups according to their overall confidence about online activities. Table 7 shows the mean total confidence for participants who had had each type of introduction.

Table 7. Total confidence for participants by introduction type

Type of introduction	N	Mean total confidence
Hands On	33	5.90
Hands Off	21	3.86
None	6	2.83

In order to test for differences between total scores of confidence for those who had either a hands on or a hands off introduction to the VLE an independent samples t-test was computed. To increase the statistical power of the analysis it was decided to compare all those in both case studies with a hands on introduction with all those with a hands off. The t-test shows a significant effect of introduction [$t(52) = 2.16$, $p<.05$] It can be seen from the means that for those who reported having a hands on introduction to the VLE, the mean confidence score was 3.86, and for those who reported having a hands off introduction the mean confidence score was 5.90. These results suggest that participants who had a hands on introduction reported being generally more confident with online activities.

- Just under half of all participants who responded in both case studies reported having a "Hands On" introduction.

- Participants who had a "hands on" introduction were more confident about online activities than those who had a "hands off" introduction.

6.3.4 Students confidence before and after the module

Participants were asked a series of questions about their confidence in using the Internet, VLE, and the module they were studying in both Questionnaire 1 and 2.

In both questionnaires participants were asked to indicate their confidence towards a range of items on a 5 point Likert type scale from "very confident" to "no confidence". When analysing the results of these confidence questions, it was considered preferable to use a matched subjects design to look at changes in participants over time. For this reason, only the questionnaires of those participants who had completed both Questionnaire 1 and Questionnaire 2 were incorporated into the analyses. In order to ascertain that there was no significant difference in the responses to confidence questions between those participants who had completed both questionnaires and those who had only completed Questionnaire 1, an independent t-test was computed for participants mean cumulative confidence scores.

The t-test showed no significant difference between groups [$t(166) = 1.55$, $p>.05$]. This showed that those who completed both questionnaires did not differ significantly in their responses from those who only completed one questionnaire. This means that both groups come from the same statistical population and it is therefore appropriate to generalise from those who completed both questionnaires to those who did not.

To determine if there was any significant difference between respondents who completed both questionnaires in each case study, an independent samples t-test was computed. The t-test shows a significant difference between groups for confidence [$t(70)=2.23$, $p<.05$]. Therefore when computing further analyses we will look at the results from each case study separately.

Figures 1 and 2 show the response to each of the six confidence questions. The full breakdown of percentages of responses is given in Appendix A. Each response was scored on a scale from +2 (very confident) to -2 (no confidence).

Figures 1 and 2 show the response to each of the six confidence questions. The full breakdown of percentages of responses is given in Appendix A. Each response was scored on a scale from +2 (very confident) to -2 (no confidence)
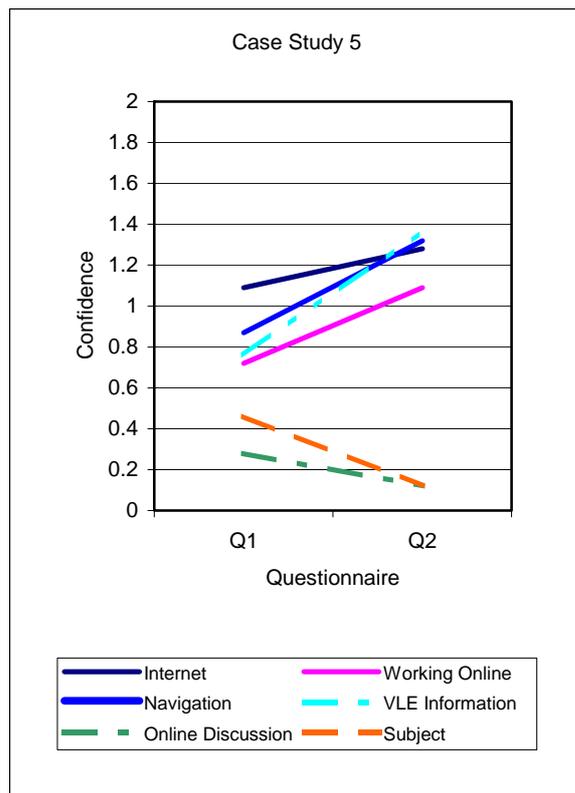

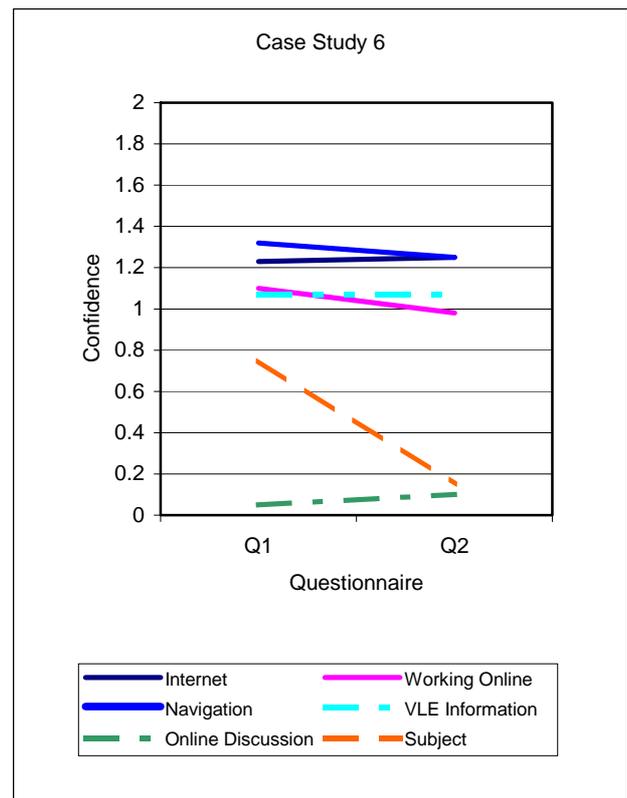**Figure 1. Case Study 5 students responses to confidence questions over time**

Figure 2. Case Study 6 students responses to confidence questions over time

The figures show a striking resemblance between the findings for each case study. There are two factors for which confidence is lower overall "online discussion" and the "subject of the module." In Case Study 5 confidence appears to increase over time for 4 factors. In order to determine if any of these differences were statistically significant and to see if there was any change over time in students' confidence a repeated measures Analysis of Variance with a between subjects factor of Institution (2 levels; Case Study 5 and Case Study 6) and a within subjects factor of Questionnaire (2 levels; Q1, Q2) were computed for each question.

How confident are you about using the Internet?

The results of the Analysis of Variance showed no significant interaction of Questionnaire and Institution for confidence in the Internet [$F(1, 70) = 1.38$, $p > .05$]. There were also no significant main effects of either Questionnaire or Institution.

How confident are you about working and learning online?

The analysis showed no significant main effects of either Questionnaire or Institution for working and learning online. There was a significant interaction of Questionnaire and Institution [$F(1, 70) = 8.89$, $p < .01$]. The means for this interaction are shown in Table 8. It can be seen that participants in Case Study 5 show a large increase in confidence about working and learning online from Questionnaire 1 to Questionnaire 2. This is not apparent for those in Case Study 6. Although it is not possible to perform a post hoc test on a within subjects factor without violating a central assumption of the ANOVA the means suggest that Case Study 5 participants were less confident than those in Case Study 6 about working and learning online at the beginning of the module, this difference is not present in responses at the end of the module.

Table 8. Mean confidence for question C2 by Institution and Questionnaire.

How confident are you about working and learning online?	Case Study 5	Case Study 6	Total
Q 1 (*completed at the beginning of the module*)	0.72	1.1	0.94
Q 2 (*completed at the end of the module*)	1.09	0.98	1.02

How confident are you about finding your way around in (VLE)?

The results of the repeated measures Analysis of Variance with a between subjects factor of Institution (2 levels; Case Study 5 and Case Study 6) and a within subjects factor of Questionnaire (2 levels; Q1, Q2) showed a significant interaction of Questionnaire and Institution [$F(1, 70) = 11.83$, $p < .01$]. The means for this interaction are shown in Table 9. It can be seen that Case Study 5 participants showed an increase in confidence in finding their way around in the VLE from Questionnaire 1 to Questionnaire 2. This is not apparent for those in Case Study 6. Although it is not possible to perform a post hoc test on a within subjects factor without violating a central assumption of the ANOVA, the means suggest that Case Study 5 participants were less confident than those Case Study 6 at finding their way around in the VLE at the beginning of the module, this difference is not present in responses at the end of the module. There was also a significant main effect of Questionnaire [$F(1, 70) = 6.46$, $p < .05$] however this is explained by the interaction. There was no significant main effect of Institution.

Table 9. Mean confidence for question C3 by Institution and Questionnaire.

How confident are you about finding your way around in the VLE?	Case Study 5	Case Study 6	Total
Q1 (*completed at the beginning of the module*)	0.87	1.32	0.82
Q2 (*completed at the end of the module*)	1.37	1.25	1.30

How confident are you about obtaining information via the VLE?

The analysis showed a significant interaction of Questionnaire and Institution [$F(1, 70 = 9.60$, $p < 0.01$]. The means for this interaction are shown in Table 10. Participants in Case Study 5 showed an increase in confidence from Questionnaire 1 to Questionnaire 2. This is not apparent for those in Case Study 6. Although it is not possible to perform a post hoc test on a within subjects factor without violating a central assumption of the ANOVA, the means suggest that participants in Case Study 5 were less confident than those in Case Study 6 about obtaining information (via the VLE) at the beginning of the module, this is not present in responses at the end of the module. There was also a significant main effect of Questionnaire [$F(1, 70) = 9.60$, $p < .05$], however this can be explained by the interaction. There was no significant main effect of Institution.

Table 10. Mean confidence for question C4 by Institution and Questionnaire.

How confident are you about obtaining information via the VLE?	Case Study 5	Case Study 6	Total
Q1 (*completed at the beginning of the module*)	0.76	1.07	0.94
Q2 (*completed at the end of the module*)	1.37	1.07	1.20

How confident are you about taking part in online discussions?

Analysis showed no significant interaction of Questionnaire and Institution [$F(1, 70) = 3.06$, $p > .05$]. There was a significant main effect of Questionnaire [$F(1, 70) = 5.02$, $p < .05$]. Further analysis of the means for each Questionnaire, across Institution showed that for Questionnaire 1 the mean response was -0.97 which equates to "little confidence"; the mean response to Questionnaire 2 was +1.11 which equates to "Confident". It can be concluded therefore that participants reported being more confident about taking part in online discussions when completing Questionnaire 2 than they reported in Questionnaire 1. There was no significant main effect of Institution.

Table 11. Mean confidence for question C5 by Institution and Questionnaire.

How confident are you about taking part in online discussions?	Case Study 5	Case Study 6	Total
Q1 *(completed at the beginning of the module)*	-0.28	0.05	-0.09
Q2 (*completed at the end of the module*)	0.12	0.10	0.11

How confident are you about the subject you are studying in this module?

The results of analysis showed no significant interaction of Questionnaire and Institution [F(1, 70) = 1.91, p > .05].   There was a significant main effect of Questionnaire [F(1, 70) = 25.89, p < .01]. Analysis of the means for each Questionnaire, across Institution, show that for Questionnaire 1 the mean response was .625 and for Questionnaire 2 was 0.138. In terms of the Likert type scale used a score of 1 equates to "Confident" while a score of 0 equates to "Some Confidence". The means suggest that participants reported being more confident about the module they were studying at the beginning of the semester when completing Questionnaire 1 than they reported at the end of the semester when they completed Questionnaire 2.

Table 12. Mean confidence for question C6 by Institution and Questionnaire.

How confident are you about the subject you are studying in this module?	Case Study 5	Case Study 6	Total
Q1 *(completed at the beginning of the module)*	0.46	0.75	0.70
Q2 (*completed at the end of the module*)	0.12	0.15	0.13

Discussion

The results demonstrate that in general, participants were already confident about "using the internet" and "working online"; they were also confident about "finding their way around the VLE" and "gathering information via the VLE".   Participants were less confident about "taking part in online discussions". Participants in both case studies were fairly confident about the subject in general.

There were some differences between the groups from the two case studies. Those in Case Study 5 reported being less confident to begin with than those in Case Study 6 on the questions relating to "working online", "finding your way around the VLE", and "obtaining information in the VLE". These differences were no longer apparent in Questionnaire 2, completed when participants had experienced the module. When the same confidence questions were asked in Questionnaire 2, after having completed the module, there were no differences between the confidence of participants between case study. There was however, a decrease in participants' confidence in the module itself from Questionnaire 1 to Questionnaire 2.

- Participants in both case studies were confident about using the Internet and VLEs at the beginning of the module.

- Participants in Case Study 5 were less confident at the beginning of the module than those in Case study 6.

- Participants' confidence in the subject studied in the module decreased over time in both case studies.

6.4   Motivational issues

6.4.1 Factors affecting student motivation

Participants were asked a series of motivation questions over the two questionnaires. In both questionnaires students were asked to indicate their general motivation towards the module on a 10 point scale from "unmotivated" to "highly motivated" this was known as "general motivation."

Questionnaire 1 contained seven specific motivation questions with responses on a five point Likert type scale ranging from "strongly agree" to "strongly disagree". In Questionnaire 2 participants were

given a list of 12 factors and asked to rate each in terms of its impact on their motivation. Responses to each of these statements were either "positive" "negative" or "neither."

As with the confidence questions when analysing the results of the motivation questions it was considered preferable to use a matched subjects design to look at changes in respondents' general motivation over time. For this reason only the data of those participants who had completed both Questionnaire 1 and Questionnaire 2 were analysed. To ensure that the results were generalisable to the whole population t-tests were computed comparing the results of the motivation questions for those participants who had only completed Questionnaire 1 with those who had completed both. Two sets of tests were conducted, one on the general motivation question and one on each of the specific motivation questions in Questionnaire 1.

Independent samples t-tests were computed comparing the responses of participants who had completed both questionnaires with those who had completed only Questionnaire 1. The results showed no significant difference between the groups on any of the seven Q1 specific motivation questions (nor any trend towards a significant effect). There was however a significant difference between the groups on the general motivation question [$t(166) = 2.43$, $p < .05$]. The mean general motivation score for participants completing both questionnaires (mean = 7.31) was significantly higher than the mean score of those who failed to complete Questionnaire 2 (mean = 6.83).

These results show that participants who completed both questionnaires had a higher level of general motivation towards the module to begin with than those who completed only the first questionnaire. This result was not found however when addressing specific motivational issues about the module, as no significant difference was found between groups for these questions.

As the participants who did both Questionnaire 1 and Questionnaire 2 did not differ significantly in their Q1 motivation scores from people who just did Questionnaire 1 we can assume that both groups come from the same statistical population and it is therefore appropriate to generalise from those who completed both questionnaires to those who did not.

6.4.2 **General motivation**

Table 13. Mean general motivation scores for participants in each case study by Questionnaire.

Case Study	Mean	
	Q1	Q2
Case Study 5 (n=32)	7.53	6.29
Case Study 6 (n=40)	7.12	6.11

To investigate if there was any significant difference between participants ratings of general motivation towards the module a two way Analysis of Variance with a repeated measures factor of Questionnaire (two levels; Q1 and Q2) and a between subjects factor of Institution (two levels; Case study 5 and Case study 6) was computed. The results of the analysis show no significant interaction of Questionnaire and Institution [$F(1, 70) = 0.39$, $p > .05$] and no significant main effect of Institution [$F(1, 70) = 1.08$; $p > .05$]. There was a significant main effect of Questionnaire [$F(1, 70) = 40.34$; $p < .01$]. An inspection of the means (see table 13) for each Questionnaire across Institution showed that that general motivation decreased over time in both case studies.

6.4.3 **Specific motivation for Questionnaire 1**

Table 14 shows the full breakdown of responses to each of the specific motivation questions in Q1. The numbers quoted are the percentage of participants in each case study who responded appropriately to each question.

Table 14. Percentage of responses to each of the specific motivation statements in Q1

Question	Strongly Agree		Agree		Neither Agree or Disagree		Disagree		Strongly Disagree	
	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6
The most important thing is getting good marks in the assessment(s)	71.9	27.5	25	60		10	3.1	2.5		
I am really worried that I may not do well in this module	9.4	2.5	34.4	17.5	34.4	42.5	21.9	35		2.5
I am interested in the subject matter of this module	12.5	7.5	71.9	42.5	15.6	37.5		12.5		
I am doing this module to help me achieve my personal goals	18.8	17.5	56.3	32.5	15.6	30	9.4	20		
I am good at this subject and expect to do well		2.5	21.9	35	65.5	57.5	12.5	5		
Its important to do better than others in the group		2.5	18.8	12.5	43.8	25	28.1	47.5	9.4	12.5
I am only doing this module because I need the credits	3.1	5	3.1	12.5	40.6	25	25	47.5	28.1	10

The results presented in Table 14 give an overview of the pattern of responses given to each question it can be seen that the statements participants are most likely to Strongly Agree or Agree with is "The most important thing is getting good marks in the assessment" (96.9% in Case Study 5; 87.5% in Case Study 6). The statements that students are least likely to agree with is "It is important to do better than others in the group and "I'm only doing this module because I need the credits" only 6% agreed in Case Study 5; 17% in Case Study 6).

When looking at the results between each case study the responses are broadly similar. The most noticeable difference is for the statement "I am interested in the subject matter of the module". For this statement, more participants in Case Study 5 agreed (84%) than in Case Study 6 (50%). This suggests that the participants in Case Study 5 are slightly more interested in the module at the beginning of the semester.

Overall participants generally agreed that it was most important to get "good marks" and neither agreed nor disagreed that they were worried about "doing well". They generally agreed that they were "interested in the subject matter" and were "doing it to achieve personal goals". They didn't feel it was particularly important to do "better than others", or that they were doing it only "for the credits".

To determine whether there was any significant relationship between participants' responses to the specific motivation questions and their original confidence, correlations were computed comparing the specific motivation and the confidence questions in Questionnaire 1. The following tables show all the significant correlations for each case study.

Table 15. Correlations between Questionnaire 1 specific motivation and confidence questions for case study 5. (N=32)

	Using the internet	Working online	Finding way around	Obtaining information	Online discussion	Subject
Good marks in the assessment		.401*				
May not do well in this module						
Subject matter						
Personal goals						
Good at the subject						
Better than others	.376*	.377*				.539**
Need the credits						
General Motivation						

Case study 5 *<0.05 **<0.01

Table 15 shows that there were very few significant correlations for participants in Case Study 5. Three of the four however involved the specific motivation question "It is important to do better than others in the group." The results show a significant positive correlation between responses to this question and participants "confidence in using the Internet", "working online" and "the subject". Those in Case Study 5 agreed it was "important to do better than others", tended to also be more confident in "the subject", "using the Internet" and "working online".

Table 16. Correlations between Questionnaire one specific motivation and confidence questions for Case Study 6.

	Using the internet	Working online	Finding way around	Obtaining information	Online discussion	Subject
Good marks in the assessment						
May not do well in this module					-.328*	-.548*
Subject matter			.370*	.366*		.512**
Personal goals	.321*	.372*	.395*	.507*		.457**
Good at the subject						.554**
Better than others						
Need the credits	-.428**	-.522	-.444**	-.387		-.341
General Motivation			.368*	.314*		.386*

Case Study 6 *<0.05 **<0.01

The results of the correlations for Case Study 6 (see table 16) differ dramatically in the number of significant correlations found compared to Case Study 5.

Neither the "importance of good marks" or the importance of "doing better than others in the group" are significantly related to any of the confidence questions. Those worried that they "would not do well" generally rated their confidence about "the subject" and about "online discussions" lower than those who didn't worry. Participants who reported being "interested in the subject matter" reported higher levels of confidence in "the subject" as well as in "finding their way around" and "obtaining information in the VLE".

The item which had the most significant correlation was "I am doing this module to help me achieve my personal goals" which was positively correlated with confidence in "using the internet", "working online", "finding their way around in the VLE," "obtaining information in the VLE" and "the subject" itself. Those that do the module to meet their "personal goals" tended to be more confident. The same is true of those who disagreed with the statement "I am only doing this module because I need the credits" which was negatively correlated with all the same confidence questions. Those who said that they were "good at the subject" tended to be more confident about the subject in general but not about any of the specific issues.

6.4.4 Specific motivation for Questionnaire 2

Students were given a series of factors and asked to decide whether each had affected their motivation in a positive way, a negative way or not at all. Figure 3 illustrates participates responses. The full breakdown of percentages of responses can be found in Appendix B. Each response was scored on a scale from +1 (Positive) to -1 (Negative)

Figure 3. How positive an effect each factor had on each participant's motivation.
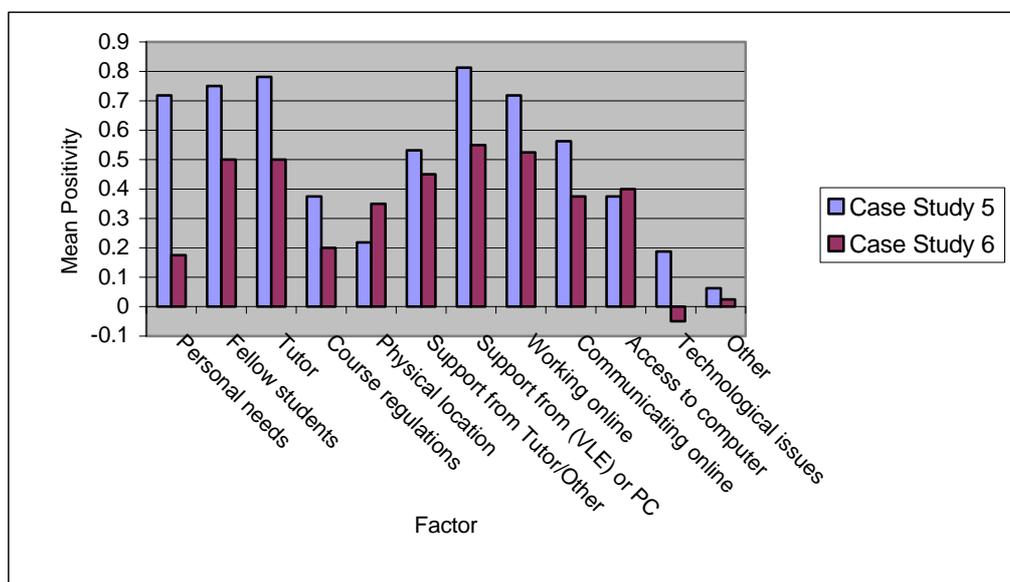
It can be seen form the graph that participants in both case studies felt that "support from the VLE or PC" had the biggest positive effect on their motivation. In general, participants in Case Study 5 gave more positive responses than those in Case Study 6. This was most pronounced when referring to their "personal needs". The only factor in which those in Case Study 6 were more positive than those in Case Study 5 was "physical location". The only factor for which responses were negative overall was technological issues for Case Study 6. Those participants who said "Other" were asked to specify, although only two did so. One participant who responded "negative" said *"SPSS seems confusing and over complicated"*. The other respondent said *"the resource centre, access to useful information and web sites"* was a positive factor.

Interviews with students at the end of the module also highlighted ways in which the VLE could have both a positive and negative effect on motivation.

One student from Case Study 5 felt that the VLE had a positive effect on motivation and states:

> *"It makes me do more work because you have things just to keep testing you and you've always got things to do whereas maybe before if you got another module that isn't on it, like if you haven't got a quiz to keep testing you don't know where you're up to. "… Because those things are on there, you just keep doing it and kind of know where your at with how much work you have done and where you are up to with the module and things and how well you're doing." Student - Case Study 5*

In Case Study 6, which was not supported by weekly lectures, a student identified how not having a class that you have to turn up to regularly can have a negative effect on motivation:

"I don't have the Internet in my accommodation so I come every week [to the workshops] and that makes me actually go on it and go through it and do some work," I think [if I did have the Internet] I might just think oh well I'll do it online when I can be bothered." Student - Case Study 6

6.5 Student and Tutor Roles

6.5.1 Student roles and behaviour

During student interviews participants read a set of statements relating to the module they were studying and the VLE and were asked to rate them from strongly agree to strongly disagree. Table 18 provides a summary of the results.

Table 17. Student perceptions from both case studies of working with VLEs (frequency of participants' responses to each question)

Statement	Strongly agree		Agree		Neutral		Disagree		Strongly Disagree	
	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6
Communicating online with the tutor and fellow students in this module was a real challenge					1	1		2		3
Online discussions were a good way to learn in this module			1		1			1		4
I like having everything for this module available in one place	1	4	1	1						
You have to think for yourself a lot with this kind of learning				3	2	1		1		
We didn't need a tutor for this course						1	1	4	1	
On this module, I have learnt a lot from discussions with fellow students	1			2	1	2		1		
Working in (VLE) is all about working on your own					1	1		4	1	
Working online in (VLE) encourages me to feel part of the group				1		1	1	4		

The results presented in Table 18 show that the statement to which participants most strongly agreed was "I like having everything for this module available in one place." Participants also strongly agreed with the statement "You have to think for yourself a lot with this kind of learning." The statements that participants were most likely to disagree with were "Communicating online with the tutor and fellow students in this module was a real challenge." And "online discussions were a good way to learn in this module". Students also generally disagreed with the statement that "We didn't need a tutor for this course" and "Working in the VLE is all about working on your own". Taken together these results suggest that while students did not experience difficulty communicating within the VLE itself neither did they enjoy it, and that they were still keen to have a tutor led module.

- Students did not experience difficulty communicating within the VLE.
- Students were keen to have a tutor led module.

6.5.2 Tutor roles and behaviour

Tutors from both case studies were asked in their first interview what they intended their role(s) to be and how they expected the students to work together. In both case studies, as previously noted, there was evidence of the tutor aspiring to independent learning and evidence of the role changes.

"I suppose I see myself more as someone who facilitates their learning" Tutor - Case Study 6

"… "I would love my role to be, I give a weekly lecture, I run the lab classes and I just run the VLE and keep that updated. And just sort of managed the module instead of run it in that sense." "I would like them to support each other and share what they had learnt and if they have something to tell each other about…." "…What I expect is going to happen is that they are not going to do that. That they are going to continue to be over reliant on me but they need to be trained, trained to behave!" Tutor - Case Study 5

However, in Case Study 5, it is also clear that the tutor has little confidence that his approach will work. It is also clear from this statement that he sees the students as quite separate to his teaching, over which he has little influence.

In the main, the roles appear to be fairly traditional and static and many students wanted more tutor involvement. They even showed resistance to working more without direction from a tutor.

"They still see it very much as I'm the tutor and they are the students, what they go on there for is to find out what I have put on for them not to share things around or discuss things." Tutor - Case Study 5

"I would say that one of the problems, I mean the discussion board is really good and everything but [the tutor] said we should try and use that instead of coming to see him…. But I would like to see him more - thought it would be another aid, but its like a substitute" Student - Case Study 5

The tutor in Case Study 6 adopted an independent learning model and the course allowed opportunities for both group work and individual tasks. However student responses seem to indicate that it was still the face-to-face support they received from the tutor that was central to their confidence in their work and motivation to go online and work though the tasks. Some of the students interviewed also wanted more face- to- face contact and tutor support as shown here:

"If you went to the lectures/workshops [tutor] is always there to ask questions so I thought that was good. If you didn't go to the lectures I'd imagine it would be a bit harder to communicate with her because it would all be through email." Case study 6– Student

6.6 Communication

6.6.1 Student communication

In both case studies tutors wanted to promote some form of communication through the VLE. Information reported by participants in student diaries was analysed to evaluate the methods they used to communicate throughout the module. Results were grouped into three main categories. Table 19 shows the number of participants using each method of communication.

Table 18. Number of participants at each case study using each method of communication

Communication Method	Diary 1		Diary 2	
	Number of Uses		**Number of Uses**	
	Case Study 5	Case Study 6	Case Study 5	Case Study 6
Discussion Board	0	1	1	1
Mailbox	17	0	4	0
Small Groups Face-to-face	12	1	4	0

It can be seen that students mostly used email and small groups to communicate about the module. During student interviews, participants raised several issues that may have affected their likelihood of communicating using the VLE

"The discussion board is a bit impersonal really. It could answer your question fair enough but then, you know, there's always something else it might not clarify it completely and you might feel a bit silly having to write to him again saying you don't understand it." Student - Case study 5

"..in a way if you did want to say something to someone then your ID shows up so you can't just say anything. Quite a lot of people argue through the email thing on (the VLE) and I don't get involved because its printing your name and everything." Student - Case study 6

It's printed nature and a concern over privacy may indicate that these students were either not very familiar with working online or not well briefed on how to address these concerns.

Discussion

Information reported by participants in student diaries showed that they mostly used the discussion board, email and small groups to communicate about the module. Interviews with students highlighted issues which may affect student likelihood to communicate using the VLE (such as confidentiality).

6.7 Support Issues

6.7.1 Perception of support

Course tutors were asked in the first interview at the beginning of the module what support they anticipated offering students using the VLE. Tutors said that they would provide support face-to-face and throught the VLE

Case Study 5 - Tutor

"Well, the support, the weekly notes I put on provide a little bit of my view of what the stuff means that they are going to be reading so that's a bit of support there. The self evaluation tests, the questions that are used are multi choice questions and I use them on the exam, so it's the providing students with not just with the types of questions they are going to be seeing but the actual questions they will be seeing. Students have a 2 hour lab every fortnight. That time isn't taken up fully with running experiments I spend a lot of time there answering questions. I'm supporting students in groups of twenty in the lab so that's the kind of support I am expecting to have to give." Tutor - Case Study 5

Case Study 6 - Tutor

"The ease of them being able to ask questions online. Apart from that there isn't that much actual support online, the support's actually in the workshop so although they are online they're asking questions directly to us rather than asking online. They sometimes will ask questions online even though they're in the workshop and I'm in the workshop." Tutor - Case Study 6

Students

Participants were asked in Questionnaire 1 what support they thought would be available for them in working with the VLE and in Questionnaire 2 they were asked to report what support was available for them in working with the VLE. Opened ended answers were classified into seven groups. "Academic Support", "Support Staff", "Peers", "Textual", "Little", "Don't Know", and "None". Respondent's answers were classified as "Academic staff" it they involved the course tutor, and "Support Staff" if they referred to library/computing service staff etc. and "Textual" if they referred to internet/use of VLE/handbook etc. Table 20 shows the percentage of their responses. In every case participants only mentioned one type of support.

Table 19. Percentage responses of student's perception of support available at the beginning and the end of the module separated by case study

Type of Support	Is available (Q1)		Was available (Q2)	
	Case Study 5 (%)	Case Study 6 (%)	Case Study 5 (%)	Case Study 6 (%)
Academic support	18.8	47.5	9.4	32.5
Support Staff	25	7.5	9.4	0
Peers	0	0	18.8	5
Textual	40	27.5	0	27.5
Little	0	0	0	5
Don't know	3.1	0	0	0
None	3.1	0	0	0
(Did not answer)	*9.4*	*17.5*	*62.5*	*30*

6.7.2 Textual Support

Table 20. Percentage responses of student's perception support available (VLE and none VLE related)

	Is Available Q1		Was Available Q2	
	VLE (&)	None VLE (%)	VLE (%)	None VLE (%)
Case Study 5	69.2	30.7	83.3	16.67
Case Study 6	72.7	27.3	100	0

It can be seen from Table 20 that several participants in both case studies did not respond to this question in Questionnaire 2. Of those that did, responses were split primarily between academic support and textual support. Another notable finding is that those in Case Study 6 identified academic support more than support staff (library/ computing service staff) etc. This is in contrast to Case Study 5 for whom support staff are cited more often than academic support. The use of peer support increases in both case studies over time.

Students were asked during interviews if they agreed or disagreed with the statement 'Working in the VLE is all about working on your own'. Most students disagreed with this statement, one student stated:

"Although primarily you are working on your own, it's not all about that, there is support there, it's not like you don't see your tutor from session 1 to session 12. There is always someone there to ask. The VLE is there to try and get you the knowledge, but if you have got problems then the support is there". Student - Case Study 6

- The main types of support identified were academic support and textual.
- Most of the textual support came from the VLE.

6.7.3 Contributed most to learning

Participants were asked in Questionnaire 2 which aspect of the VLE contributed most to their learning. 29 participants from each Case study replied and analysis of the responses show that participants at Case study 5 thought Quizzes/MCQ's contributed to their learning the most followed by preparation notes and ease of access.

The VLE tools that respondents Case Study 6 felt contributed most to their learning were the "Pathway" followed by Self-Tests and the "Resource Centre". Similarly to participants in Case Study 5 those in Case Study 6 mentioned the ease of access contributing most to their learning. Items such as

"having the whole course in one place," "*the fact that you could go back to the information as and when"* and *"work at your own pace"* were also recorded by participants.

- VLE tools contributed to most of the students learning throughout the module.

6.7.4 Biggest barrier to learning

Participants were asked in Questionnaire 2 which aspect of the VLE had been the biggest barrier to their learning. 15 responded of whom 3 said *"none"*. A large number of responses were to do with access to computers – *"not having a PC or the Internet*", *"not being able to log into VLE off campus"*, and *"not being assigned (a password) for several weeks", "difficulty in printing off information and having to pay for printouts"*.

23 participants from Case Study 6 responded to this question and over half reported that there had been no barriers to their learning throughout the module. The most commonly reported barriers were the *"poor online explanations"* and *"not having things explained verbally,"* other comments indicated *"lack of actual face-to-face teaching and support," "confusing topics are hard to learn by just reading about them no lectures to back it up".* The next most common problems were PC related.

- The biggest barrier to learning using the VLE was reported to be access to computers and either lack of, or poor quality explanations of materials presented.

6.7.5 Problems

In Questionnaire 2 participants were asked whether they had experienced any problems when working with the VLE and if so what. Only four participants reported having any problems. The participant from Case Study 5 stated their problem was that they "*could not log on throughout December to February due to password problems."*

Participants from Case Study 6 reported such problems as:

"*If you needed to go back to look at something already covered it was hard to find it";* "*difficult to absorb the information on screen and in a room where others talk";* "*no adequate explanation, no-one was willing to explain it to us"; and "technical problems"*

Overall, however, very few participants experienced problems when working with the VLE.

7. Discussion

7.1.1 Theme 1 – Learning Methods

What are the implicit and explicit learning models and what is the actual tutor and student behavior?

Analysis of the module handbooks for each Case Study show that in Case Study 5 the VLE was intended to be used mainly as a supplementary resource for lecture preparation and assessment. In Case Study 6 the VLE was used for the presentation of lecture materials, assessment and communication. Analysis of the interviews with course tutors at each case study showed that the tutor at Case Study 5 intended using the VLE to encourage learning throughout the module and to make the topic appear more exciting to students. The VLE was also intended to some extent to encourage peer assisted learning, to reduce his "non-essential" contact time with students. In Case Study 6 the tutor used the VLE due to increasing student numbers and because of previous successful experience of success using VLEs in other modules. She also wanted to integrate the teaching of research methods throughout the Psychology degree programme at the institution.

Results showed that participants in Case Study 5 logged on more often to the VLE than those in Case Study 6, their usage however, declined over the course of the semester. This may be due to the differences in the overall aims for each VLE. In Case Study 6 it was a core element of content delivery compared to Case Study 5, where it was a supplementary resource.

7.1.2 Theme 2 – Student behaviour

How much time (online and offline) do students spend working on VLE modules?

Participants began the study with broad differences in the range of their prior experience of VLEs. Over 80% of participants in Case Study 5 reported having used a VLE previously, compared with only 57.5% of those in Case Study 6. Of those participants who had used a VLE before, most users had fairly limited experience (less than 15 hours of previous use). Interestingly Case Study 6, despite having fewer participants with prior experience, actually had a greater number of heavily experienced users. It is also worth noting that tutors at both institutions wrongly believed that all students on the course had prior experience of VLEs.

Analysis of student diaries showed that participants reported spending on average just over three hours per week working on the module. This remained constant over time. Of the total time spent working on the module, time spent online using the VLE dropped from nearly 2 hours to just over an hour. There were some differences between the two case studies, transaction log data recorded by the VLEs shows that participants in Case Study 5 logged on more often than participants in Case Study 6. Unfortunately, the VLEs used in this study were unable to record the time spent on-line so there is no way of comparing the actual time spent with the amount of time reported by students in the diaries. Of the other formats used the most common was "paper" with over 80% of students reporting having used that format at least once in their activities during that week.

What resources are students using and what patterns of use can be identified?

95% of students who completed diaries used the VLE at least once during that week. The most commonly used tools were the "Pathway", "Resource Centre" and "self tests". The use of the "Resource Centre" increased over time with 58% of participants from Case Study 6 using it by the end of the module, compared to only 17.5% at the beginning. Although students appeared to be accessing the VLE, it appeared from tutor interviews that they believed that students were not interacting with it as planned.

At the end of the module, participants were asked which aspect of the VLE contributed most to their learning. The top two items that contributed most to students' perception of their learning at both case study sites were VLE related. Participants from Case Study 5 most often stated "quizzes/MCQ's" and preparation notes while participants from Case Study 6 most often reported the "Pathway", "self tests" and the "Resource Centre". In student interviews students most strongly agreed with the statement "I like having everything for this module available in one place."

The use of quizzes and self tests appeared to be a major factor for students' use of the VLE. This relates well to their main motivation being to get good marks for the course. If more aspects of the

VLE are to be used by students then they are most likely to be successful if they are demonstrably helpful towards students getting good marks.

How do students use the VLE toolkit?

Students reported undertaking low interactivity, knowledge-based activities throughout the module such as attending lectures, reading articles and studying their notes. The most common of the limited number of highly interactive activities were comprehension based, such as tutorials. Several areas of the taxonomy appear not to be addressed by the VLE modules. In order to improve the student learning experience it could be suggested that tutors might want to think of introducing new activities that are not being addressed by the current activities offered within the VLE.

7.1.3 Theme 3 – Student Preparedness

Participants in both case studies had a wide range of experience of VLEs at the beginning of the modules. 84.4% of those at Case Study 5 and 47.5% of those at Case Study 6 had previously used a VLE outside of the course, and the amount of time participants had spent using one ranged from 1–100 hours.

Over 80% of the participants had reported experiencing an introduction to the VLE as part of the course. Of these, those who had experienced a hands-on introduction, such as a workshop, tended to consider themselves as more confident about the module than those who had experienced a less interactive "hands off" introduction (e.g. course handbook).

In general, participants were already confident about using the internet and working online; they were also confident about finding their way around the VLE and gathering information via the VLE. Participants were less confident about taking part in online discussions. Participants in both case studies were fairly confident about the course in general.

There were some differences between the groups from the two case studies. Those in Case Study 5 reported being less confident to begin with than those in Case Study 6 on the questions relating to working online, finding your way around the VLE, and obtaining information in the VLE. When the same confidence questions were asked in Questionnaire 2, after having completed the module, there were no differences between the confidence of participants between case studies. There was however a decrease in participants' confidence in the module itself from Questionnaire 1 to Questionnaire 2, suggesting perhaps that the module had proven to be harder than expected. None of the questions relating to the confidence in any of the specific aspects of the VLE showed a similar decrease in confidence over time, so any problem with the module may not have been caused by VLE related issues.

7.1.4 Theme 4 – Motivational Issues

What factors do students identify as affecting their motivation positively or negatively and can these be attributed to the VLE itself?

Participants were asked about how certain aspects of the module affected their motivation towards the module. At the start of the module the results showed that participants generally agreed that getting good marks was the most important thing (over 90% agreement). Most participants also stated that they were interested in the module and were doing it to achieve their personal goals. Participants did not agree that it was important to do better than others on the course and were ambivalent about whether the course would prove a challenge.

To compare whether there was any connection between participants' motivation and their confidence prior to the course, these answers were compared with the confidence questions in Questionnaire 1. The results of this analysis showed little correlation between the two sets of data for those in Case Study 5, but several significant correlations for participants in Case Study 6. The results suggested that participants in this institution who were doing the course in order to achieve their personal goals were also likely to be more confident about the subject. Similarly those who were confident about the subject also appeared to be more motivated towards the module across all the specific motivation questions in Questionnaire 1.

This may suggest that confidence in using a VLE is related to an increase in motivation towards the module. This in turn suggests that as students become more skilled in the use of online interaction, motivation to courses delivered using a VLE may increase.

Participants were also asked about a series of factors in Questionnaire 2 to which they reported whether each factor had a positive or a negative effect on their motivation. The results of these questions showed a broad agreement between participants in both case studies, although those in Case Study 5 tended to make more positive responses. The most positive factor was support from the VLE or the PC followed by the tutor, working online and fellow students. It appears from this that successful communication or help sources are a large positive factor for students. No factors registered as an outright negative effect on motivation, although technical issues were the least positive. This may not have been negative because most participants did not experience any technical problems. This is backed up by the data that showed only 4 participants reported having any problems.

Clearly, the most important motivational issue to students was getting a good grade. The VLE was however, a positive motivational factor as participants reported receiving support from the VLE more positively than receiving support from the tutor. It should be noted that using the VLE to communicate did not rank highly as a motivational factor and that general motivation about the course decreased over time in both case studies.

7.1.5 Theme 5 – Student/Tutor Roles and behaviour

What are the roles of the tutor and the student? How do these relate to the implicit and explicit model of learning? How does it relate to student participation in the VLE?

Is it possible to identify issues around authority, for example, of knowledge, of expertise and teacher-student communications, in relation to VLEs?

In both case studies, there appears to a conflict between the tutors and students views of the role of the tutor. The tutors appeared to see the VLE as an opportunity for students to become more independent in their learning. The tutor at Case Study 6 went so far as to describe herself as a "facilitator." Effectively tutors seemed to see their role as helping the students to help themselves and each other. The students on the other hand whilst appreciating the organisational aspects of the VLE, such as having everything related to the course in one place, appeared to value traditional student tutor interaction. Students' views of the VLE were centred on how it helped them manage rather than help them learn. Most students did not appear to have a have real understanding about many of the ways the VLE could contribute to their learning. While willing to use the VLE, students still desired the opportunity to discuss course issues with the tutor in person. Students considered the tutor to be a primary source of knowledge and expertise.

Both students and tutors in the interviews highlighted this conflict. Students disagreed with the statement "we didn't need a tutor for this course" and the tutor in Case Study 5 reported being disappointed that the students didn't seem to use the VLE in the way he had intended. This issue demonstrates the need to do research into the use for the VLE from both the tutor and student perspective.

7.1.6 Theme 6 – Communication and Support

How do students choose to communicate – how, when and why – and for what purposes?

Throughout the study, participants were asked several questions about communication. Although the VLE is essentially a more remote solution to presenting a course, there was still an ability for a face-to-face interaction between tutor and student for those that desired it. In each case study just over half of participants considered communicating online a positive motivational factor. However, in both case studies students did not often use discussion boards spontaneously. This corresponded to low confidence ratings to the question "how confident are you about taking part in online discussions." Student interviews revealed that most students strongly disagreed with the statement "online discussions were a good way to learn in this module."

It appears that participants did not use the discussion boards much, preferring perhaps to seek an answer directly from another source. A discussion board is of course, little use unless there is a critical mass of people who use it. It appears that in both case studies this critical mass was not achieved and therefore the bulletin board was fairly obsolete. It would perhaps be useful in this case for tutors to encourage more tasks to be completed via bulletin boards. This would have the effect of ensuring many users were using the boards and consequently the board would become a more useful resource for the students.

How do students and tutors use and perceive the various forms of support available?

In the questionnaires, participants were asked about the support that they thought would be available and subsequently what was available. Many participants (62%) chose not to answer this question in the second questionnaire, which may suggest that they did not seek support during the module, but perhaps the fact that it was an open ended question led participants to miss it out. Of those that did answer the question, responses were split primarily between academic support and textual support. Another notable finding is that those at Case Study 6 identified academic support more than support staff (library/ computing service staff) etc. This is in contrast to Case Study 5 for whom support staff are cited more often than academic support. This is an interesting finding as the module tutor in Case Study 5 had stated at the beginning of the module that they had hoped to reduce his non-essential contact time with students. It appears then that the tutor may have successfully passed on the impression to students that other forms of support should be sought rather than simply coming to him.

8. Conclusions

The aim of these two case studies was to explore student online learning experiences. The overall findings from this report would suggest that students were generally confident and motivated by working online. The students' activities relating to the VLE were mostly knowledge based and of low level interactivity. Overall, participants had very few concerns, however reduced face-to-face contact, privacy issues and access problems were drawbacks for some students. Students especially liked having everything for the course in one place, and used the self tests and quizzes a lot. Discussion boards, on the other hand, were not used spontaneously by students.

The study also indicated that the aims of the tutor do not always match the learning activities provided either by the course or the VLE. Tutors in both case studies appeared to aspire to independent learner/constructivist models however their roles appeared to be traditional and static. There may be some element of conflict concerning the perceived role of the tutor by students and tutors. The tutors sought to reduce direct contact time with students, while the students saw this as an unwanted potential decrease in support.

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Appendix A

Question		Very Confident		Confident		Some Confidence		Little confidence		No confidence	
		Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6
C1 - How confident are you about using the internet?	Q1		28.1	42.5	53.1	37.5	18.8	20			
	Q2	37.5	37.5	53.1	52.5	9.4	7.5		2.5		
C2 – How confident are you about working and learning online?	Q1	15.6	32.5	50	47.5	25	20	9.4			
	Q2	25	30	59.4	42.5	15.6	22.5		5		
C3 – How confident are you about finding your way around in (VLE)?	Q1	18.8	45	62.5	42.5	9.4	12.5	6.3		3.1	
	Q2	40.6	37.5	56.3	50	3.1	12.5				
C4 – How confident are you about obtaining information via (VLE)?	Q1	15.6	32.5	59.4	47.5	15.6	15	6.3	5	3.1	
	Q2	37.5	35	62.5	42.5		17.5		5		
C5 – How confident are you about taking part in online discussions?	Q1	10	12.5	17.5	53.1	42.5	28.1	27.5	6.3	2.5	
	Q2		7.5	34.4	27.5	46.9	35	15.6	27.5	3.1	2.5
C6 – How confident are you about the subject you are studying in this module?	Q1	12.5	56.3	52.5	34.4	32.5	9.4	2.5			
	Q2		10	28.1	15	56.3	57.5	15.6	15		2.5

Table 1. Percentages of students' responses to confidence questions over time (separated by case study)

Appendix B

Factor	Negative		Neither		Positive	
	Case Study 5	Case Study 6	Case Study 5	Case Study 6	Case Study 5	Case Study 6
Personal needs	3.1	22.5	21.9	37.5	75	40
Fellow students	3.1	12.5	18.8	25	78.1	62.5
Tutor	6.3	7.5	9.4	35	84.4	57.5
Course admin/regulations	15.6	17.5	31.3	45	53.1	37.5
Physical location	21.9	15	34.4	35	43.8	50
Help and support form Tutor/Other	12.5	10	21.9	35	65.6	55
Help and support from (VLE) or Computer	6.3	15	6.3	15	87.5	70
Working online	28.1	5	0	12.5	71.9	70
Communicating online	3.1	20	37.5	22.5	59.4	57.5
Access to computer	21.9	17.5	18.8	25	59.4	57.5
Technological issues	12.5	27.5	56.3	50	31.3	22.5
Other	3.1	2.5	87.5	92.5	9.4	5

Table 2. Participants' responses to Questionnaire 2 specific motivation questions (%)