

**INTERVIEW REPORT OF THE YEAR 2003-2004 FROM
STUDENTS OF CS1022B**

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Acknowledgements

The author wishes to acknowledge that this interview report was supported by grants from the Learning and Development Unit (LTDU), Brunel University. My thanks also go to Dr Willem Paul Brinkman and Dr Andrew Rae for their able guidance. I would also like to thank all students who participated in the interviews.

Disclaimer

The information and opinions contained in this report should not be taken as representing the views of the author and those who supervised this study. The findings and suggestions presented in this report are solely based on the views and opinions obtained from interviewed participants. Therefore, no liability will be accepted from the author.

SUMMARY

This interview report forms part of a project entitled “Encouraging Deep Learning With E-learning” supervised by Willem-Paul Brinkman and Andrew Rae. This part of the project involved interviewing 10 students of the Year 2003-2004 of Foundations of Computing (CS1022B) module. The aim of the interview was to understand what factors encourage or discourage students to apply a deeper learning approach. Therefore, nine telephone interviews were conducted in order to obtain in-depth information from experiences, views and opinions of former student of the Foundations of Computing (CS1022B) module.

Although the interview was the main focus of this study, the overall study was conducted in the following two phases: (1) in the first phase a postal questionnaire was sent to all of the previous year’s students of foundations of computing module. The questionnaire included all questions from the Revised Study Process questionnaire (R-SPQ-2F) (Biggs, Kember & Leung, 2001). The aim of this survey was to examine the students’ learning approach (i.e. Deep approach or Surface approach). Following this survey we then conducted the interview over phone. This interview examined the chain of events in learning, starting from: teacher’s approach, students characteristics, context characteristics; and linking them with the student’s approach to learning which eventually determines the learning outcomes.

Findings suggest that students that apply a deep approach to learning regarded the continuous study across the year as more important. Students who had math background, were generally good with statistics and therefore they found attending lectures not very important. Videos were generally regarded as a very good facility but needed improvement in off-campus accessibility. Students suggested the following improvements:

- Self-tests should be more randomised and the number of questions should be increased. Initial test should be more difficult.
- For the purpose of seminars and the lab students they should be split into two sections; lower and higher bands on the basis of their background and knowledge.
- Video quality is good, however problems of accessing online videos off campus should be resolved.
- There should be 5-10 minutes breaks in between one and half hour long statistics lecture.
- More time should be devoted on the later part of statistics lectures and seminars e.g. regression, correlation and probability. It will be useful to have more working example of regression analysis. Also there should be an extra statistics lecture on introducing or providing hints on excel or SPSS use.
- One more lecture in first semester would be helpful particularly on solving difficult problems. Just illustrate to students how to solve tricky questions by providing working example.
- At the beginning of the year students should be given a demo of WebCT. Student should be provided with demonstrations about what the facilities available on WebCT and how to access them.

1. INTRODUCTION

1.1. ENCOURAGING DEEP LEARNING WITH E-LEARNING PROJECT

This interview report forms part of a project entitled “Encouraging Deep Learning With E-learning” supervised by Willem-Paul Brinkman and Andrew Rae. This part of the project involved interviewing 10 students of Foundations of Computing (CS1022B) module about their perception and experience last year. The Main aim of this part of the project was to understand what factors encourage or discourage students to apply a deeper learning approach. Interviews were conducted in order to obtain in-depth information from experiences, views and opinions of former students of this module.

1.2. FOUNDATIONS OF COMPUTING (CS1022B) MODULE

The Foundations of Computing (CS1022B) module aims to provide a breadth-first overview that introduces students to a wide range of topics related to mathematical foundations of computer science such as discrete mathematics and business statistics. Furthermore, the module aims to develop the ability to look for significance in data, to apply appropriate tests to establish confidence in results, to estimate probabilities of outcomes in a variety of conditions, using appropriate information technology. By the end of the module students are expected to demonstrate the ability to interpret, express, and analyse formal systems and applications, which means, students should be able to explain and use mathematical concepts that are related to computing, including predicate calculus, sets and functions. The module assumes no background in computer science, programming, statistics, or discrete mathematics, and is a core component of all of the undergraduate courses offered by the Department of Information Systems and Computing (DISC) (Study Guide, 2003-2004). This module is organised in the following two parts:

1.2.1. Autumn Semester (Discrete Mathematics)

During the first semester the material is delivered by self-paced, online learning supported by lectures on the practical applications of the theoretical material. There will also be seminars at which an instructor is available to answer individual questions and take diagnostic tests, and labs where you get interactive tutoring delivered on the web. In addition there are videos giving the solutions to the exercises and summaries of key points (Study Guide, 2003-2004).

1.2.2. Spring Semester (Statistics)

During the spring semester the focus would be on statistics. The material is delivered by lectures supported by seminars, labs and computer-based learning. It is important for students to attend all lectures, seminars and labs, since they are closely related. Each week, the lecture will provide an overall introduction into the material. In the seminars, students work under the supervision of the instructor on questions given in the *Problem sheet*. In the lab sessions, students work with computer applications (Excel and SPSS) to solve statistical problems. Students can work at their own pace, however they are advised to complete the weekly exercises, before the next lab sessions. Again instructors would be available to answer individual questions. During the lab session students can also test their knowledge by taking self-diagnostic tests in Mathematics. Again these self-diagnostic tests are not an assessment and there are no formal marks for this. However, there are 2 more Mathematics tests, which students

have to take individually to form part of module assessments (Study Guide, 2003-2004).

1.3. DEEP AND SURFACE APPROACHES TO LEARNING

Deep learning involves the critical analysis of new ideas, linking them to already known concepts and principles, and this leads to understanding and long-term retention of concepts so that they can be used for problem solving in unfamiliar contexts. Deep learning promotes understanding and application for life (LTSN Engineering 2000-2004). This approach of learning arises from a felt need to engage the task appropriately and meaningfully, so the student tries to use the most appropriate cognitive activities for handling it. Students who adopt the deep learning approach often have positive feelings and interest about the course; they possess a sense of importance for the course and take the learning as a challenge (Biggs, 1999, Biggs et al 2003).

Factors that encourage the deep learning approach include: (1) an intention to engage the task meaningfully and appropriately. Such an intention may arise from an intrinsic curiosity or from determination to do well; (2) appropriate background knowledge; (3) the ability to focus at a high conceptual level working from first principles, which in turn requires a well structured knowledge-base; and (4) a genuine preference and ability for working conceptually rather than with unrelated detail (Biggs, 1999).

In contrast, surface learning is the tacit acceptance of information and memorization as isolated and unlinked facts. It leads to superficial retention of material for examinations and does not promote understanding or long-term retention of knowledge and information. Low-cognitive-level activities are characteristics of this approach. These include rote learning selected content instead of understanding it, listing points instead of addressing an argument and memorization (Biggs, 1999, Biggs et al 2003, LTSN Engineering 2000-2004).

There are several factors that encourage students toward adopting the surface approach of learning. These are: 1) an intention only to achieve a minimal pass i.e. if the course is just a requirement and irrelevant to the students programme; (2) non-academic priorities exceeding academic ones; (3) insufficient time due to high workload and involvement in other modules; (4) misunderstanding of requirements such as thinking that factual recall is adequate; and (5) a genuine inability to understand particular contents at a deep level (Biggs, 1999).

In addition to introduction this report consists of following three sections. Section 2 provides brief information about how interviews are conducted and who were the participants. Following that findings are presented in section 3. Finally conclusions and suggestions are provided in section 4.

2. METHODOLOGY

This study was conducted in the following two phases: (1) in the first phase a postal questionnaire was sent to the previous students of foundations of computing module. The questionnaire included all questions of the Revised Study Process questionnaire (R-SPQ-2F) (Biggs, Kember & Leung, 2001). The aim of this survey was to examine the students' learning approach (i.e. Deep approach or Surface approach), which formed the basis of selecting participants for the interview. We also requested students to inform us the marks they obtained in this module if they are willing to participate in the interview. The participants profile is depicted in Table 1, which

includes a score of the deep approach, surface approach, coursework marks, exam marks and total marks.

Following this survey we selected the interview participants who fulfilled the criteria. Participants contacted via email to confirm the timings of interview. This is followed by telephone interviews from the 10 participants. This interview examines the chain of events in learning, starting from: teacher's approach, students characteristics, context characteristics; and this links them with the students approach to learning which eventually determines the learning outcomes. The survey questionnaire, questions for the interview and interview transcription can be found in the appendix A, B and C. The following sections will present the major findings, discuss them, and suggest improvements.

3. FINDINGS

3.1. STUDENT APPROACH TO LEARNING

The approach to learning of students who participated in interviews was estimated using questionnaire data. From 9 participants 5 was deep learner (Table1) since their score of the deep approach was much higher than the score of surface approach. One participant was a surface learner by scoring 35 for surface approach and 18 point for deep approach. The remaining 3 students scored equal or approximately equal points for both surface and deep approach. When each student's total marks were examined, it suggests that performance in the exam does not necessarily relate to the learning approach. Student with surface approach (Participant 7, Table 1) obtained overall **A** grades with 70.12% marks. From 5 deep learners; 3 students (Participant 1,2,14, Table 1) achieved **A**, one student (Participant 13, Table 1) **B** and one **D** (Participant 3, Table 1) grade. From 3 participants who scored almost equal scores for surface and deep approach, none of them obtained **A** grades: - two of them (Participant 8,9, Table 1) obtained overall grade B and one (Participant 5, Table 1) obtained a **C** grade. Therefore it can be concluded that the learning approach does not reflect the performance directly.

Table 1: Profile of Interview Participants

PID	DM+DS=DA	SM+SS=SA	Approach	C-Marks	E-Marks	T-Marks
1	17+20= 37	8+6= 14	Deep	42.5	33.75	76.25
2	17+21= 38	7+6= 13	Deep	44	41.25	85.25
3	14+12= 26	7+11= 18	Deep	30.6	15.25	45.85
5	12+13 = 25	9+12= 21	Deep	36.3	22.25	58.55
7	6+12 = 18	13+22= 35	Surface	42.25	27.875	70.12
8	16+16 = 32	15+17= 32	DA=SA	34.9	29.625	60.52
9	17+13 = 30	11+19= 30	DA=SA	33.45	29.5	62.95
13	11+17= 28	5+8= 13	Deep	41.95	20.00	61.95
14	16+12= 28	13+14= 27	DA=SA	41.5	32.625	74.125

DM= Deep Motives; **DS=**Deep Strategy; **DA=** Deep Approach

SM= Surface Motives; **SS=** Surface Strategy; **SA=** Surface Approach

The comments made by the students in the interview suggest that deep learning students did like the lectures, but had problems with the labs and seminar sessions. They regularly attended lectures but did not attend seminars and the lab. They were

able to solve the question sheet by help of supplementary reading materials such as books. They studied and prepared modules across the year rather than just a few days before the exam. The motivation of a deep learner was to gain knowledge and understanding of the module, so they can perform better in other modules as well. Take for instance the following comment of three students:

Participant 1 (Deep Approach): *I was reading and studying slowly. I have attended most of the lecture but not the lab or seminar. It was a core module therefore I felt it was important to attend all the lectures to get good understanding of the subject. However I did not attend the lab and seminars, as I did not need to discuss or clarify any of my problems. We had a book that was really good and all the problems could be easily solved using that book so I did not need to attend seminars and the lab. I prefer to study on my own than going to seminars. My motivation was my interest in computer science and this module provided the fundamentals of computer science therefore I was really motivated to understand it well. I would like to become a programmer and I am aware that it needs a good knowledge of mathematics, which was covered in the first semester. So basic motivation was to understand this module very well so I can do well in future modules as well. I do not know how much time I spent on this module but it was definitely more than the other module. In other modules we had only one or two exams so I usually studied them near to exam but this module was well organised and had several assessment tasks so I studied them from beginning to the end, therefore I spent more time on this module than other. (Sic)*

Participant 2(Deep Approach): *Especially for the first semester I went to every lecture and seminar. Before I move to new topic I tried to understand previous topics very well. A lot of students just do enough to pass exam but for me this is not important. My approach is to understand the topic so I can able to do any question I get. It requires more time but this is the best way for me to study. My reason to regularly attend the lectures and seminars is to maximise my opportunity to learn the subject. The reason of having this module in the first year was that the foundations of computing module provide foundations for the rest of the degree. So if I don't learn this module well then I wont able to perform well in the rest of the degree. Therefore, even the first year marks are counted for the degree, therefore it was very important for me to learn this module well. I spent a lot of time studying this module. On a weekly basis I spent around 12 hours per week studying on my own. In the first semester math was a bit hard/tricky so I spent more time on that than the second semester. (Sic)*

Participant 3(Deep Approach): *I was regularly attending most of the lectures but lab and seminars only when I had any problems to resolve. The reason I was attending the lectures was to enhance my theoretical knowledge and to understand the subject more thoroughly. I spent a lot more time studying this module than other modules as I found it challenging, however it's not possible to measure how long I spent especially on this module. (Sic)*

Participant 5 (Deep Approach): *I attended most of the lectures, seminars and labs but not all. I did study across the year to understand the topic. I was spending around 5 hours/week and sometime even more than that when I had to do coursework. (Sic)*

Participant 13 (Deep Approach): *At the beginning of the course I first read the study guide thoroughly about lectures, coursework etc. It helped me to plan my time and manage my study. Since I did not know which lecture, seminar, and lab session*

was important and which not. I decided to attend all lectures, lab sessions, and seminars regularly which I followed until the end of the course. I did not miss out anything important which might affect my performance. I used to study most of the time in the library including this module but I never counted how much time I approximately spent. At home however I spent around ½-1 hour everyday. Everyday working helps me to learn and understand all topics covered by lectures and seminars.

Comments obtained from a student with the surface learning approach suggest that both the learning approach and motivation of this student was different from the deep learners described above. This student with a surface learning approach only attended those lectures, which they perceived to be difficult therefore they knew they would need help. For this student their motivation was not to gain understanding but to get a good job in the second year. However, because student did plenty of self-study (5-10 hours/week), manage to achieve over all 'A' grade. The self-study approach of this student was similar to deep learner students described above. Student comment on learning approach is:

Participant 7 (DA=SA): *I was regularly attending lecture since the beginning of the first semester. Actually the first semester math was new for me so I attended regularly all lectures in the first semester. However most of the statistical stuff in the second semester was not new for me, therefore I only attended a few lectures in the second semester. I did not attend any of seminar or lab sessions, this is because I get the answers for questions from our friends who attend the seminar if I need them. I first try to solve the problem sheet on my own but if I get any problems then I asked my friends therefore I did not attend any seminar and lab sessions. My motivation to study this module is to get good job in the second year. I was planning to apply for a job in second year and if I get a good grade in the first year modules then there would be a better chance for me to get good job and therefore I started working hard. Otherwise I would not have put much effort in, as I know the marks of first year are not counted for the degree. In the first semester I was studying this module about 5-10 hours per week because the teaching material was new for me but in the second semester as I studied most of things before I spent much less time than first semester. (Sic)*

The analysis of comments obtained from those students who scored equal or almost equal points in both the deep and surface approach suggests that the majority of them only attended the lectures if they perceived a particular lecture would be difficult and they needed help to understand them. They only attended seminars and the lab if they were not able to solve any particular problems. The motivation of this category of students were varied they included to get good grades, to get good return of their time and money they spent on study and to learn new things. Comments of these students are following:

Participant 8 (DA=SA): *I did not attend lectures, seminars, and lab sessions, and the reason for that was that I preferred to learn on my own. When you go to a lecture there seems to be a lot of people with a lot of questions with different levels of learning, therefore I prefer to work with my own pace so I get the work sheet and do the work at home. I work harder when I have exams and not as hard when I do not have exams. I went to the first few lectures and then I started studying on my own which fits more with my learning style. I only went to seminars if I got stuck sometime.*

This module provides basic knowledge, which would be needed in the second year and the third year module; this motivated me to study this module. The total time I spent was around 15 hours in a week, mostly on comprehension learning the topics from different sources, mostly from books. (Sic)

Participant 9(DA=SA): *Yes, I was attending the lecture, seminar and labs regularly. This is because I found the module interesting. I spend around 5 hours/week studying this module. These 5 hours include everything including lecture and work at home. (Sic)*

Participant 14 (DA=SA): *I found the first semester challenging in terms of content (logic) therefore I regularly attended lectures and seminars. I attended only 70% of the lectures in the second semester, as I had a good knowledge of most of the statistics from GCSE and As level. In the second semester there were a few lectures on one topic and I only attended the first lecture on each new topic and if I found the topic difficult then I followed up with rest of lectures on same topic otherwise I did not. My motivation to attend lectures in the first semester was mainly to learn new things but the overall reason was to get a good grade in the module. Furthermore I am spending a lot of time and money in fees, accommodation and in other activities whilst studying so both my parents and myself expect me to obtain good grades in return and that was my secondary motivation to study the module sincerely. If I do not perform well then it's just a waste of time and money and so no point to continue my study. In the first semester I spent around 6-7 hours per week. I have spent a lot of time learning new topics and doing the project work. The topic was new and therefore learning and doing the project demanded a lot of time. However it was not the case in the second semester, since I knew most of the topic as I has studied statistics before so I did not spent much time studying it. (Sic)*

To summarise the aforementioned student approach to learning, it can be said that although the performance is not necessarily reflected by the particular learning approach, the way the students approach their study differs among deep learners and surface learner.

3.2. TEACHERS APPROACH

A teacher's approach descript as transmitting knowledge has been related with students applying a surface approach where deep learning is associated with teachers adopting an approach more centred on students and on changing their conceptions. In the first semester approach was aimed to improve the students' effectiveness of learning. Since discrete mathematics is best understood by solving problems instead of being taught in a lecture, the module was centred on lab sessions and seminars. A major aim of the lectures was to motivate students and raise their interest for the subject matter by giving examples where discrete mathematics has been applied in computer science. The findings from the interview suggest that this approach had been successful and appreciated by majority of students. However students perceived that the lab and the seminar sessions especially for second semester were not very useful. The comments made by students in an interview suggest that the students did like the lectures, but had problems with the labs and seminar sessions. Take for instance the following comments of interviewed participants:

Participant 1(Deep Approach): *Overall it was a good approach, the first semester was fine but in the second semester it would have been better if an extra lecture could*

of been added to cover hint on use of software i.e. excel and spss. Most of students did not even attend the lab therefore such an approach would have helped many of us. Also in the first semester one lecture is enough but it would be better to have one more lecture that would cover the technical solution to exemplar problems. Just to give some problems and show how it can be solved. It is a very good approach of assessment and unfortunately we do not have the same approach in other modules. The reason is if 50% marks were allocated to coursework then students would keep themselves busy by doing coursework throughout the year in contrast to 100% examination where students only study at the end. This is an incentive in the fact that the project's based approach motivates students to learn constantly across the year. 90% of the time I was clear what I needed to do for each task, except the statistical report. In the statistical report I was not very clear how I should answer a few of the questions. It would be helpful if an example questions were provided together with an example answer so students can follow that path. (Sic)

Participant 2 (Deep Approach): *Adopting two different teaching approaches for math and statistics module was appropriate. It should be like this since both modules are different from each other. I found that overall this approach of teaching the module very good. The only comment I have is two-hour lectures are too long. I personally prefer to have one-hour lectures twice a week than the current system where we have two-hour long lectures once per week. This will help to utilise our time more efficiently. I like the overall assessment process very much. This is because it fits with my way of learning and hence its affected my performance positively. For example my performance was better in modules, which assessed via coursework and exams in comparison to those, which assess only via exam. This is because when I have to do coursework I learn the things in depth but for taking exam I would just focus on a particular topic or whatever is going to come up in the exams. I like to have coursework assessments as it keeps me busy across the year. It the assessment process was clear. The study guide provides all information about course works and how it should be carried out. After reading the study guide I knew exactly what I had to do for each task. (Sic)*

Participant 3 (Deep Approach): *The teaching approach was good, I liked it because it was organised to provide both theoretical knowledge and practical hand to problems. However I feel that statistical lectures needed some improvement as it is two hours long and concentrating, therefore it was a long time without break, which is difficult. In the first semester lectures should be more than once, this will be helpful to understand the subject better. Like the teaching, the assessment procedure was very good as it evaluates both theoretical and practical knowledge. Also it's good because it necessitates students to work constantly. I was very clear about the assessment process before I undertook them. I received assessment information from WebCT and also from the study guide and in lectures. (Sic)*

Participant 5 (Deep Approach): *I think it was pretty good approach of teaching. For this subject this approach was very much appropriate because lectures provided theoretical knowledge and seminars and lab provides helps in solving problems and gives practical hands. However it's not necessary to have such an arrangement for other modules as well. I think it was very good approach of assessment as it kept us involved the whole year by giving different tasks. It made us learn whole courses not just a part and it helped to focus on my study for whole year. Yes I was clear about the assessment process. Most of the information about the assessment process I got*

from WebCT and I was completely aware of what I had to do in each task before I undertook them. (Sic)

Participant 7 (Surface Approach): *I liked the lecture and that was the reason I attended most of them regularly in the first semester. However it is not possible for me to tell the benefit of seminars and labs, as I did not even attend a single lecture. I like very much the idea of having both coursework and exams. If I do not have the coursework then I would have left everything to study at the end. Because of the coursework, which was spread in several tasks, I studied this module constantly and therefore I learnt it better than other modules with only an exam at end of the year. I was clear about assessment processes of tasks in the first semester but I was not very clear about questions asked in the statistical report. Each question in statistical report should be more explained so students know what is exactly required in the report. It would be really helpful if an example answer for each type of questions would be posted on WebCT or given printed ones to student. (Sic)*

Participant 8 (DA=SA): *I was not attending any of the lecture and seminars so I cannot comment on anything. However the only thing I can say is that it sounds like a very focused approach to introduce concepts and ideas. Coursework was aimed to gain practical hand in solving mathematical and statistical problems and the exam was meant to assess students' knowledge of theory. It was not brilliant but not bad. I think they can introduce different sorts of coursework's. Coursework was clearly outlined in sheets provided to us and it was also available on WebCT. It was very clear what, how and when I had to do each task by reading the provided information. (Sic)*

Participant 9 (DA=SA): *I found this approach of teaching good. Because I get instruction in lectures and then learn more in seminars and lab sessions. Assessment procedures were ok because they test different things and I really did not mind it. Yes I was clear about the assessment process because they gave us handouts and I saw the information on WebCT. (Sic)*

Participant 13 (Deep Approach): *Over all teaching approach was good. However I feel like there should be more time devoted on statistics module then earlier part. More time should be given on regression, correlation and probability. Teaching assistant was not supportive in this particular section. It would be helped me a lot of I would have got more support in this particular section. I really did not get good help in seminars. Other things were good in teaching.*

Over all the assessment process was fantastic. It is good to have coursework divided in several tasks, which was assessed at different stages. It helps me to evaluate myself for each section if I am ok with that or not. It also facilitates more cohesiveness among different section of the module. However I feel that feedback needs improvements. For example in one section I got a C but I did not know why I did get C, I expected more explanations on feedback so I could improve that particular section according to that. I was clear about the different tasks of coursework and how to accomplish them. I mainly used study guides for this; everything was explained in the study guide.

Participant 14 (DA=SA): *Over all it was a good approach of teaching i.e. dividing the course in various sections, however I have a few comments. The first semester lecture was extremely useful and interesting. However the second semester lecture was too lengthy, for me it was too much to attend 1 1/2 hour lectures without any break. After an hour I get tired, I lost my concentration and interest. Also in the*

Statistics lecture there were less interactions between the students and the lecturer, students only ask questions at the end of the lecture not during the lecture. However it would be more useful to have questions and answer during the lecture. Seminar assistance was good as it helped a lot to clarify the things, which I did not understand in the lecture or doing problems that were new to me. Also sometimes in the same week lectures and seminars were not on the same topic but different, which was slightly difficult for me to follow. Therefore I believe that it would be useful to have lectures and their corresponding seminars and lab sessions in the same week rather different weeks. More coordination requires arranging lectures, seminars and lab sessions. It was a certainly good approach of assessment. Having 50% coursework and 50% exams provide a very balanced way of assessing the module and helps students focus better. I am good at exams so for me there were no problems but for many students, which are not good at exams, coursework helps allot. It would be difficult to cover 100% exams at the end of the semester/year whilst having exams for other modules as well. Assessments in the form of several small tasks help students manage their work efficiently and that results in to better learning and performances. I was very clear about the task and assessment process before I undertook them. Coursework was very well explained in the study guide, handouts and also information provided on WebCT. Also coursework and exams were explained in lectures as well. I only had problems using excel for regression analysis but it was just a small problem and I resolved it easily. (Sic)

3.3. STUDENT CHARACTERISTICS

Besides the teacher's approach, the characteristics of the students may also affects the confidence and hence the learning outcomes (Biggs 1999). The interview clearly suggests the effects of the students' previous education on learning approach. The majority of participants studied math at GCSE level and a few of them at A or As level. They accepted that they were quite familiar with the statistics part of the module and therefore they found it easy. This was reflected in the teaching approach that most of students were not regularly attended statistics lecture. The reason was simple that they knew this part however a majority of them were not taught regression and correlation in their GCSE and A level, so they found it difficult. Since the module is heavily depending on the use of a PC and the Internet, students were also interviewed if they had access to a PC outside the lab session. All students except one who stayed off-campus had access to a PC and the Internet, they showed their concern that it is difficult to pass this module without a PC and the Internet. Students living on-campus put similar arguments regarding the need of a PC and said that it is essential to have a PC and Internet access if someone is considering studying this module. Also in terms of doing a part time job and engaging in other activities, although a majority of the students either worked part time, engaged in other activities such as gym, football etc, they perceive that it does not affect their study if the student kept a good balance between time allocated to study and other activities. However, they also argued that if someone worked too many hours part time then their study would certainly be affected. Although living off campus takes long hours to come to university, this was the reason students living off-campus came less frequently to university and did not intend to attend seminars and the lab, they believe that it does not affect their study and performance of this module greatly. Most of the participants argued that studying alone was a better option at least for this module. The following comments made by students regarding student characteristics including educational

background, living off or on-campus, working whilst studying and studying alone or in-group:

Participant 1 (Deep Approach): *I am an International student and I studied it in my country and this was just a refreshment of what I studied before but the mathematics part was quite new for me. I knew most of the statistics part. I was on campus and I think this is best for study. Its saves time from travelling and also you can have support from students as they can easily communicate with others about their problems. Most of the things were available on the Website so it was not possible to even pass without PC access at home. I was doing a part time job, going to gym and socialising and I do not think it's affected my study in anyway; it's just a matter of good allocation and management of time. I prefer studying on my own and even doing coursework on my own as well because group arranging meetings and allocating work can be tedious task so I would rather prefer to work alone. If there is two people in a group then its fine but if there is any more than that it then it becomes a mess. I rarely discuss exam questions with others; I only do when I am unable to solve them alone. (Sic)*

Participant 2 (Deep Approach): *I am a 33-year-old mature student so I had a long gap after my A levels. I studied statistics at O level but did not do very well at A level and that was one reason why I did not continued my degree after A level. However in order to join University after a long gap I did access the course. I knew basic maths and most of the statistics, which I studied at O level, and still I can remember all of them. Therefore I was quite comfortable with that. I was staying off campus in my own house, which is located very close to university. I did most of the study from home only. I believe that staying off campus does affect study but not much. This is because if I stay on campus then I have access to many facilities for example the library, which I don't whilst staying at home. Also if I am in campus then I can talk to my friends and I can get help from them if I have any problems in my study. This is not possible from home. However my performance was not at all affected by living off campus, as I was very motivated for my study. I had access to a PC and broadband Internet at home so I can download anything I needed for study. I do not think that students should consider doing this module if they do not have Internet access at home if they are living off campus. Nothing is possible to do in this module without the Internet, so it's very essential to have. I was regularly going to gym and playing football, however I was not working anywhere part-time. Working long hours and engaging in too many activities certainly would have affected my study, however I had to balance it so did not affect my study. For this module I found studying alone was adequate for me. I think studying or working in-group is waste a lot of time, which I do not like to do. (Sic)*

Participant 3 (Deep Approach): *I had MATH at GCSE level and ICT at A level. I found mathematics slightly easy as I had studied it before but for me statistics was difficult as I had weak background of it. I stayed off campus at home and I found staying at home is easier as I can spend more time on study than I would have if stayed on campus. I had no problem of travelling, as I only needed to come few days a week. It does not affect my study staying at home. I had computer access at home and it helped me preparing the module whilst I am off-campus. It would not be possible to study at home without a computer and the Internet. I use to go out once or twice a week, which I believe does not affect my study, however if it's excessive it would affect my study and overall performance. I prefer working and studying alone then in a*

group. This is because working alone helps me to concentrate more, whilst in a group we end up discussing things, which is completely irrelevant to the study. (Sic)

Participant 5 (Deep Approach): *I studied math both in GCSE and A level and I knew most of content of foundations of computing module. I had no problem doing this module. I was living off campus and I had to travel everyday, which did affect my study a little bit. Also living off campus prevents interactions with other students so I did not know how others were doing, also when I needed help I was not able to get it from other students due to distance. I had a PC and Internet access at home. Without the Internet my study of this module would have been severely affected. This is because most of the information, discussion board, etc was available through WebCT so if there was no Internet at home then there would be no access to the module information therefore the Internet is an essential if a student is living off campus. I was going to the gym twice a week and was also doing a part time job. I do not think that it affected my study. I need some time for me to relax, and a different environment to which I study in so I do not get bored with doing the same thing. I think within limit activities other than studying is good for motivation. I would prefer working in a group because it would help solving difficult problems. However I am not sure if working in a group or studying individually has an affect on study. I believe this depends of the individual learning behaviour. (Sic)*

Participant 7 (Surface Approach): *I studied math at GCSE level and advance mathematics at A level. Most of statistics part I studied before, however math section was relatively new for me. Due to my background I was quite confident in this module. I was staying on campus and I believe that staying on campus is much convenient than off campus. Sometime I use to study even by 1 or 2 clock in morning and still manage to attend lectures in early morning, however if I were staying off campus it would not be possible for me to do so. Communication is not a problem living on campus or off campus as everyone has got a phone and whenever I need help I can call up my friend. I had a PC in my room as well which was connected with the university network. Therefore it was very convenient that anytime I could access WebCT if I needed it. If anyone living off campus would not have a PC and the Internet then it would be really difficult to pass this module. This is because everything we need to study in this module is available on WebCT. I was not working, not engaged in any other activities and I am not very outgoing as well. Therefore I put my full effort on my study, which helped me a lot to achieve my desired performance. It would definitely affect their study if someone were doing a job or engaged in other activities during their study period because one cannot put their best effort on study. I study in the Library and my other friends as well study at the same time there. But we sit at different tables so we do not talk and study on our own and if we get stuck then we can ask if anyone knows the answer. But if we sit down at the same desk then we end-up just talking about something irrelevant. I think group study is important for those who are not good in the subject so they can get support if they need but it does not matter for a clever student. (Sic)*

Participant 8 (DA=SA): *I studied economics, English and physics at A level. I did math at GCSE level. I've done a lot of logic stuff on my own, as I was very interested in that area but things such as tables, and probability I did in GCSE, however I have forgotten it. I was off campus and I had to travel by bus, which took around one and half hours each way. This was one reason why I was not attending the lectures, coming university means wasting 3 hours in travelling and in that much time I can do some work. It did stop me from going to lectures but it had no affects on my learning,*

I did an amount of work, which I was happy with and my progress was good as well. Therefore not attending lectures did not affect my learning. I have got a PC and connection at home so it was not an issue, but people who do not have a PC and connection at home would find it difficult. This is because near to coursework deadlines all the computers were taken up and many people who reached late could not get a place to work. Therefore I would suggest that there should be three deadlines: preliminarily, second and then final deadlines so people do not rush at the last moment. I play football and work in a bank at the weekend and I also work a few hours in the weekdays as a programmer. I also go out a few times a week. I do not think it affects my study at all. I believe this helps, because it gives me a little break and it helps me to remember what I have been studying. We did coursework in group but I prefer studying alone because I believe that in a group with too many people, which means too much distraction and it become messy and I can not concentrate therefore I prefer working alone. If I get stuck then I can ask two of my cousins who studied the same course before and if they were not available then I would call up my friends to ask. (Sic)

Participant 9 (DA=SA): *I studied math at GCSE level but not A level. I studied the statistics part of this module in GCSE but not the math part. I was living off-campus; it did not affect me much. I did not have a computer at home, so I had to come to university everyday to study. So it was a waste of my time travelling. Sometimes I did work in a group because everyone considered each other's problems. (Sic)*

Participant 13 (Deep Approach): *I am an overseas student so I did not do GCSE and A level from UK. However I did a one-year access course in which I did study math subject. Most of the first semester part was taught in an access course but most of statistics part was new to me. My background did help in my completing of this module. I was living off campus and it did affect my study, as I did not get a chance to interact with other students. Sometimes I needed help to clarify a few questions but I was not able to do so since I was not on campus. I had a pc and Internet at home. Without the Internet it would be impossible for me to complete this module successfully whilst living off campus. It would affect severely a student living off campus who did not have Internet access. Everything I needed was on WebCT and if I did not have Internet access then I would be behind all others. I was doing a part time job and I agree that it does affect my study. I cannot spend enough time on each module, as I did not have free time left after doing my job. Also after doing my job I would get tired and would not feel like studying. I always did coursework in a group and also for exam as well. I tried to find other students with whom I could discuss topics, which I have read so I can understand it, better. (Sic)*

Participant 14 (DA=SA): *I studied math at both GCSE and As level where I achieved A* grade in exams. I found most of the content except logic and few things in statistics (i.e. regression, probability and t table) of foundations of computing module was similar to what I have studied before in GCSE or As level. Therefore I was very confident in this module. Living off campus certainly affected doing group course work. If members of the group were living off campus then it would be really difficult to arrange meetings in comparison to all members living on campus. If everyone was living on campus then they could work together late night, which would be difficult for off campus students due to transportation problem. Individual work would not be affected by living on campus or off campus. But it may affect motivation slightly. If I am living on campus then I will be in constant touch with other members of my tutor group and I can see their work and also I can ask them If I get any*

problems doing that, however it wouldn't be possible to do this immediately if one is living off campus. Living on campus provides positive distractions as it gives a change of scenery and activities. Whereas at home one would be looking at the same things for a long time and doing the same routine, so it may affect ones motivation on study. I was working as a lifeguard at weekends and twice a week I go to play football. I also go out once or twice a week. It did not affect my study as I managed it nicely, it gives me positive distractions and little bit change of routine otherwise I get bored from study. However going out and drinking excessively definitely affects study and performance as too much drinking provides negative distractions and kills the brain cells. Except for coursework I do not prefer to study in a group. I prefer working alone if I know the subject and only go to other students if I have any problems or others want to ask something from me. Even in doing coursework sometimes group work is problematic because if one member is not good in the subject then they expect other members to do all the coursework, consequently only one or two students end-up doing all the coursework. (Sic)

3.4. CONTEXT CHARACTERISTICS

The last factor that was covered in the interview is context characteristics. Questions associated with this factor related to WebCT, written material, books etc that were used in this module. For the WebCT to be effective, a requirement is that this environment is easy to use by the students. All 9 interviewed students regarded WebCT very useful for this module. Students commented that 'we do not need to look anywhere else, since all information and facilities from lecture notes to progress report we needed were available on online at WebCT which we access from any where and any time'. All interviewees argued that although online videos are very good in quality, its accessibility is a major barrier outside the campus. Students believe that videos should be made accessible off campus. They are aware about alternatives on DVD, but the problems they pointed out about using a DVD was that they needed to have a good quality DVD player, which not everyone had. Two interviewees also suggested that videos are quite old and they should be modernised. All students specifically those living off campus commented positively on the use of the discussion board. They thought it was a very good idea, 'if I am at home and get stuck in some question I can just post the problem and get the answers from others'. All participants appreciated the use of self-test, however they believed that questions should made more random. Similarly the summaries of the lecture was also much appreciated for refreshing old lectures just before exams. The following are comments made by students regarding context characteristics including WebCT facilities:

Participant 1(Deep Approach): *Without the use of WebCT it would be difficult to pass the exam. On WebCT I use Lecture slides, notes, discussion board, online videos, self-test, and checking progress. The Quality of videos was good but the access of videos should be improved. During the exam period I was not able to access videos online so I had to buy videos on DVD. One suggestion is that at beginning of year students should be given a demo of WebCT, how to use it and the things available on it. Many students did not use it because they do not know how to use it. Other aspects are fine in the module; I would say it has very good organisation and delivery. (Sic)*

Participant 2 (Deep Approach): *I used everything available on WebCT. Statistics problems and data I downloaded from WebCT and did all labs from home only, and I must say that it helped me a lot. Practice/self test was a good thing to have on WebCT however its needs to be improved by making questions more random. I do not like to do the same questions 10 times. The discussion board was very useful for students who lived off campus because if I had any problems I could post the questions and get the answers from others. Over all WebCT is very good idea and offers several advantages to students. I used videos on DVD and the quality of it and the online one was fine. But I think online videos should be made easier to download. I also used the summary of lectures for revision purposes. The summary of the lectures was very good to revise the whole module, as it is difficult to read the whole module in detail. The last thing that I would like to discuss is the problem of indiscipline in the statistics lecture. Too many students come in class and just chat with each other about last night's social activity. It is not acceptable at all as it disturbed students who sincerely wanted to listen to the lecture. Most of the time lectures are too noisy as many people just keep chatting with each other. (Sic)*

Participant 3 (Deep Approach): *I used WebCT frequently for Videos, lecture notes and slides. I used other facilities when I needed. I did attend the diagnostic test and self-test, both of which I found very useful to know if I am good with a particular issue or not. This is also helpful to develop and build knowledge. I frequently accessed the lecture summary to refresh previous lectures. Videos were good but I was not able to access them online at home. It would have been a great helps if it was possible to access videos online at home. The content of videos were ok for me. Other facilities at WebCT were ok as well. Overall it was a good and interesting module but I found it difficult as well. (Sic)*

Participant 5 (Deep Approach): *I used most of the facilities on WebCT, such as printing notes, self-test, check my results, get information about coursework, discussion boards and previous exam questions. I found WebCT extremely useful for this course. Since I was not able to access on-line videos at home I used Videos on DVD. I think videos on DVD quality were good but they are very old so they should be modernised and updated. Summary of lectures on videos was a very good idea because if I have missed a lecture then I can listen to the summary and get to know what was covered in that lecture. Also it's a very quick way to refresh old lectures. I checked the discussion board quite frequently, this helped me to keep updated in what is going on and also it provided a way of communication with other students. I have one suggestions that there should be more support in the mathematics section, I think lecture should be more than once. Statistics lectures are too long and tiring and I think there should be break in between the lecture. (Sic)*

Participant 7: *I frequently accessed videos on WebCT. This is because I did not attend the seminar so I tried to understand and solve the problem by watching videos. Self-test also helped me to evaluate how much I know and what kind of problem I cannot solve. I also frequently accessed lecture notes on WebCT, as it was convenient for me. Having progress report on WebCT as well is a good idea. Students can monitor their progress continuously and see where they are weak and where they have to work hard. Although I did not really post anything on the discussion board I accessed it regularly to see what types of questions are posted on the discussion board. I did not post anything because whenever I had a problem I managed to get help from friends so did not need to post it. Content and quality of videos was good but the only problem is accessibility of videos off campus. Off campus students only*

have access on DVD but if they do not have a DVD player then it's a problem for them. Therefore my suggestion is to make them more accessible. Summary of lectures was very useful for me. Just before exams it was not possible to study whole things but the summary gives you opportunity to go through all lectures before exams. Room for statistics lecture was small and if anyone comes little late then no place left to sit-down, either attend the lecture standing or sit on floor. This discourages students to attend lecture. Therefore I would like to recommend larger room for coming year statistics lecture. (Sic)

Participant 8(DA=SA): I did not use Web CT regularly. I could not able to access the online videos because I was off campus and I did not purchase videos on DVD because it was too expensive. Videos were OK in terms of quality but hardly anyone did use it off campus because they cannot be accessed. Therefore I would suggest improving the media that delivered videos. The discussion board was very good, many of the questions, which I needed to be answered, had already been posted on it by other students and was answered by <name lecturer removed> and<name lecturer removed>. It was really useful for those living off campus. (Sic)

Participant 9 (DA=SA): I used WebCT very frequently for online test, self-tests and online videos. I used this because it helps me to practice questions, which would be important for my exams. The quality for videos was good and I think it's a pretty good idea. I have no suggestion to make, as I did not get any problem in WebCT and teaching as well. (Sic)

Participant 13 (Deep Approach): All facilities available on WebCT such as notes, results, discussion boards, study guides, videos, self-test facility etc were really useful and I used all of them. As I was living off campus I used Videos on DVD. The quality of videos was good but some errors were found, coursework problem solutions were numbered wrong and it causes problems. Similarly self-tests were very good for self-evaluation but a number of questions were easy. It would be useful if the number of questions would be increased and also if more difficult questions would be added. Handouts for the lab and seminars should be improved and additional material should be added. (Sic)

Participant 14 (DA=SA): WebCT was very useful for me. I used it very frequently for looking at the discussion board if anyone had posted anything new and I also posted whenever I got stuck somewhere or if I knew the answer of a problem posted on the discussion board. For me the video clips were very useful for providing correct answers to my question. It was also very useful in revising as the summary of lectures provided online videos, which was very helpful to refresh the old lectures. The quality of videos was good. We had high speed Internet access on campus so there was no problem in video downloading, however it might be very difficult for those students who were had dial-up access at home, for them it was really good to have the videos on the DVD options. Over all videos was good, it was only in one section that I had a problem accessing them. Self-tests were another good things, which I accessed frequently on WebCT, it was really good preparing for the module. However I believe that questions were a bit limited. I also believe providing printed material is very good idea. Sometimes when I do not like to go on the net I just looked up printed notes and learned from them. It was also very useful during the exam period. Finally I would like to provide a few suggestions. Initial tests should be made more difficult. Students should be divided in two groups: top band and low band. It would help students to learn more efficiently. (Sic)

4. CONCLUSION AND SUGGESTIONS FOR IMPROVEMENT

According to the student's perception of this module, it can be concluded that the way this module is organised and assessed encourages student learning. The majority of interviewed participants were happy with teaching and assessment method adopted in this module and they emphasised that it would be helpful for students to have a similar assessment process in other modules where they have only one exam at the end of academic year. This exam method discourages students to learn across the academic year. In contrast the multi task assessment approach adopted in this module encourages students to study each part of the module equally.

The utilisation of WebCT especially the discussion board is changing the student's approach of learning. Traditionally, students attend lectures, seminars and the lab to gain understanding and clear their doubts. However in this module students were reluctant to attend seminars and the lab, because they were able to solve difficult problems by posting it on discussion board and getting a solution from peers and tutors. This led students to perceive that attending seminars and lab is just a waste of time.

Students that apply a deep approach to learning regarded the continuous study across the year is more important. Students who had math background were generally good with statistics and therefore they found attending lectures not useful. Students thought that the two hour long lectures were too much and they suggested that either lectures should be organised to be one hour long two days a week or that there must be a break after 45 minutes. Videos generally were regarded as a very good facility but needed improvement in off-campus accessibility. The following improvement were suggested by students:

- Self-test should be more randomised and the number of questions should be increased.
- Initial tests should be more difficult.
- For purpose of the seminar and lab students should be split into two sections; lower and higher bands on the basis of their background and knowledge.
- Video quality is good, however problems of accessing online videos off campus should be resolved.
- There should be 5-10 minutes breaks in between one and half hour long statistics lectures.
- More time should be devoted on the later part of statistics lectures and seminars e.g. regression, correlation and probability. It will be useful to have more working examples of regression analysis.
- There should be an extra statistics lecture on introducing or providing hints on excel or SPSS use.
- One more lecture in the first semester would be helpful particularly on solving difficult problems. Just illustrate to students how to solve tricky questions by providing a working example.
- At the beginning of the year students should be given demo of WebCT. Student should be provided with a demonstration about what are the facilities available on WebCT and how to access them.

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APPENDIX

Appendix A: Letter

Department of Information Systems & Computing

Head of Department:

R D Macredie, Professor of Interactive Systems

M C Angelides, Professor of Computing

D Avison, Professor

G Fitzgerald, Professor of Information Systems

R Hierons, Professor of Computing

Z Irani, Professor of Information Systems Evaluation

X Liu, Professor of Computing

R J Paul, Professor Associate, Simulation Modelling

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Tuesday, 3 August 2004

To students of CS1022B,

Re: interview about CS1022B

During this summer period I hope to improve my module, CS1022B: Foundations of Computing. Although I have received already very useful feedback throughout the year, I now would like to have some more in-depth information regarding your views and opinions as a former student of this module. Therefore, I would like to invite you to participate in an interview. The findings of this interview will help me to improve the organisation and delivery of this module in the coming year.

Every interview participant will be given a book token of £5 for his or her participation in the interview. Also I would like to confirm that your data would be treated confidentiality. In order to achieve this I have asked Yogesh Dwivedi to conduct the interviews and report the feedback anonymously to me. The interview will take 15-20 minutes and will be done over the phone. Selection of interview participants will be based on completion of the included questionnaire, as I want to interview students with various learning styles and various final marks.

There are two ways in which you can confirm your interests to participate. The first option is to fill out the included questionnaire and return it in the stamped addressed envelope that I have included. The second option, as I have sent this letter also to your student email account, is to fill out the attached document and email this to Yogesh (cspgykd@brunel.ac.uk). Once Yogesh Dwivedi receives a reply from you he will confirm your participation via email.

If you have any questions about the interview, please don't hesitate to contact Yogesh (01895 274000 Ext. 3822)

Yours sincerely,

Dr Willem-Paul Brinkman, Module leader CS1022B

Appendix B: Questionnaire

Module CS1022B Questionnaire

This questionnaire will help us to understand the students' overall perception of the delivery of CS1022B in **both** semesters. The questionnaire has a number of questions about your attitudes towards your studies and your usual way of studying CS1022B Foundations of Computing in both the autumn and spring semester.

There is no right way of studying. It depends on what suits your own style and the course you are studying. It is accordingly important that you answer each question as honestly as you can.

Please circle the *one* most appropriate response (**email respondents please bold the right answer and save the file before you send it back to Yogesh**) to each question. Do not spend a long time on each item: your first reaction is probably the best one. Please answer each item.

Do not worry about projecting a good image. The feedback will be treated confidentiality, and your contribution is much appreciated.

The letters alongside each number stand for the following response.

A — this item is *never* or *only rarely* true of me

B — this item is *sometimes* true of me

C — this item is true of me about *half the time*

D — this item is *frequently* true of me

E — this item is *always* or *almost always* true of me

- | | | | | | |
|---|---|---|---|---|---|
| 1. I find that at times studying gives me a feeling of deep personal satisfaction. | A | B | C | D | E |
| 2. I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied. | A | B | C | D | E |
| 3. My aim is to pass the course while doing as little work as possible. | A | B | C | D | E |
| 4. I only study seriously what's given out in class or in the course outlines. | A | B | C | D | E |
| 5. I feel that virtually any topic can be highly interesting once I get into it. | A | B | C | D | E |
| 6. I find most new topics interesting and often spend extra time trying to obtain more information about them. | A | B | C | D | E |
| 7. I do not find my course very interesting so I keep my work to the minimum. | A | B | C | D | E |
| 8. I learn some things by rote, going over and over them until I know them by heart even if I do not understand them. | A | B | C | D | E |
| 9. I find that studying academic topics can at times be as exciting as a good novel or movie. | A | B | C | D | E |
| 10. I test myself on important topics until I understand them completely. | A | B | C | D | E |
| 11. I find I can get by in most assessments by memorising key sections rather than trying to understand them. | A | B | C | D | E |
| 12. I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra. | A | B | C | D | E |
| 13. I work hard at my studies because I find the material interesting. | A | B | C | D | E |

14. I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes. A B C D E
15. I find it is not helpful to study topics in depth. It confuses and wastes time, when all you need is a passing acquaintance with topics. A B C D E
16. I believe that lecturers shouldn't expect students to spend significant amounts of time studying material everyone knows won't be examined. A B C D E
17. I come to most classes with questions in mind that I want answering. A B C D E
18. I make a point of looking at most of the suggested readings that go with the lectures. A B C D E
19. I see no point in learning material which is not likely to be in the examination. A B C D E
20. I find the best way to pass examinations is to try to remember answers to likely questions. A B C D E

21. To participate in the interview you agree that Yogesh Dwivedi may look at the marks and grades you received for CS1022B in 2003-2004. If you agree with this, please write down your

Name:

Student ID:

Phone number:

Email address:

22. Which of the following time slots will be convenient for you to receive a call for the telephone interview:

Saturday, 14 August 2004	Between	10-12 am	1 –5 pm
Sunday, 15 August 2004	Between	10-12 am	1 –5 pm
Monday, 16 August 2004	Between	10-12 am	1 –5 pm
Tuesday, 17 August 2004	Between	10-12 am	1 –5 pm
Other (Please specify date and time).....			

If you are willing to participate in the interview please inform Yogesh no later than Friday, 13 August 2004 at cspgykd@brunel.ac.uk or return stamped addressed envelope with the completed questionnaire as soon as possible.

Thanks once again for your help!

APPENDIX C: Interview Questions

INTERVIEW QUESTIONS

Introduction

During this summer period Dr Willem-Paul Brinkman, Dr Andrew Rae and Ms Sue Brown are working to improve the module CS1022B: Foundations of Computing. Although they have received already very useful feedback throughout the year, they now would like to have some more in-depth information regarding your views and opinions as a former student of this module. Therefore, I have been asked to conduct this interview.

After I conduct the interviews I will write a report about my findings, and present them to Dr Willem-Paul Brinkman, Dr Andrew Rae and Ms Sue Brown. Before I begin with the interview, I want to make sure that you understand that your information will be tried confidentially. This means that I will report back to Dr Willem-Paul Brinkman, Andrew Rae and Ms Sue Brown without mentioning who make any specific comment. I will remove any direct reference that could link you to a particular comment you provide.

So don't feel that you can only give positive or negative feedback because this is expected of you. Please answer these questions as honest as possible.

Furthermore, to make it easier for me to report on this interview, I will record this interview.

1. Students approach to learning

Many students have different ways how they approach their studies. There is not a single best approach, some people like going to lectures, seminar, and lab regularly, but other like to work on their own at home. Some people spread the learning across the year, other like to focus their learning activities at the moment before an assessment. Can you tell me how you approached your learning of this module, and also why did you approach it like this? Let's start how you began the year and progress through the year up to the days of the exams.

What were the reasons for you to attend a lecture/seminar/lab session?

What were your motivated to start studying this module? Or what were the thinks that stop you from studying?

How much time did you spend studying on this module and why did you spend this amount of time on the module?

2. Teachers approach

In the first semester, Dr Willem-Paul Brinkman only looked at one part of the material in his lectures —unit 5— the other parts, unit 1-4, was covered by seminars and lab session. Whilst in the second semester Ms Sue Brown covered all topics in her lectures, while the seminar and lab session focuses more on details and practical issues.

Please tell me how you perceived this approach of teaching?

This module was assessed via both 50% coursework and 50% exams. Coursework includes 6 tasks (TARSKI, MIDTERM EXAM, PROJECT TWO, ATHLETIC TEST 1 & 2 and Statistical report).

How do you perceive this approach of assessment?

Why do you like or not like this approach and what suggestions would you like to make?

Were you clear about the assessment process before you undertook them?

3. Student Characteristics

3.1. Student of level one comes from various educational backgrounds, for instance some might study math subject in GCSE and A level and some may not. *What was your educational background?*

If you look at your background and the material in the module, which things did you already know and which things were new for you?

3.2. Students also differ in terms of where they stayed during their study period, on campus or off campus. Students that live off campus have different travelling time to come to the university.

What was your situation?

How might this have affected your study?

3.3. Some students only had access to a PC and Internet at the university; others have also access to these facilities at home.

What was your situation?

How might this have affected your study?

3.4. Some students work or engaged in other activities during their study period, such working, hobbies, sport, or other studies activities.

What was your situation?

How might this have affected your study?

3.5. Some students have many friends and they study and do coursework in-group, whilst others do their study alone.

What was your situation?

How might this have affected your study?

4. Context characteristics

Different modules have different way to support students learning activities. This module offered WebCT and printed material of lectures, problem sheets and lab notes at beginning of the semester. Different student used these resources and facilities differently. *How would you explain your way of using these and why did you use WebCT? What are the facilities you particular used and which didn't you use, and why?*

(If they only list one or two things such as video, then to prompt list facilities such as lecture slides and desecrate mathematic notes, online videos, videos on DVD, self-test facility, discussion board, time table, problem sheets, lab notes, mathletics, data files, progress report and grade information and information about assessment process for example how to do task 1, example exam papers and how to write statistic report)

Did you use any of these facilities?

Why did you use them?

Why didn't you use them?

Do you have any suggestions to improve these facilities?

Closing question

Is there anything else what you like the mention, which was not covered by the previous questions?

Thank you for you participation

Mention how they will receive the book token

APPENDIX D: Summarisation of data obtained from questionnaire and interviews with each student

PARTICIPANT 1

1. Questionnaire outcomes

DM	17
DS	20
DA	37
SM	8
SS	6
SA	14

2. Marks

Course work: 42.5

Examination: 33.75

Total: 76.25

3. Interview data

(i). Students approach to learning

I was reading and studying slowly. I have attended most of the lecture but not the lab or seminar. It was a core module therefore I felt it was important to attend all the lectures to get good understanding of the subject. However I did not attend the lab and seminars, as I did not need to discuss or clarify any of my problems. We had a book that was really good and all the problems could be easily solved using that book so I did not need to attend seminars and the lab. I prefer to study on my own than going to seminars. My motivation was my interest in computer science and this module provided the fundamentals of computer science therefore I was really motivated to understand it well. I would like to become a programmer and I am aware that it needs a good knowledge of mathematics, which was covered in the first semester. So basic motivation was to understand this module very well so I can do well in future modules as well.

I do not know how much time I spent on this module but it was definitely more than the other module. In other modules we had only one or two exams so I usually studied them near to exam but this module was well organised and had several assessment tasks so I studied them from beginning to the end, therefore I spent more time on this module than other.

(ii). Teachers approach

Overall it was a good approach, the first semester was fine but in the second semester it would have been better if an extra lecture could of been added to cover hint on use of software i.e. excel and spss. Most of students did not even attend the lab therefore such an approach would have helped many of us. Also in the first semester one lecture is enough but it would be better to have one more lecture that would cover the

technical solution to exemplar problems. Just to give some problems and show how it can be solved.

It is a very good approach of assessment and unfortunately we do not have the same approach in other modules. The reason is if 50% marks were allocated to coursework then students would keep themselves busy by doing coursework throughout the year in contrast to 100% examination where students only study at the end. This is an incentive in the fact that the project's based approach motivates students to learn constantly across the year.

90% of the time I was clear what I needed to do for each task, except the statistical report. In the statistical report I was not very clear how I should answer a few of the questions. It would be helpful if an example questions are provided together with an example answer so students can follow that path.

(iii). Student Characteristics

I am an International student and I studied it in my country and this was just a refreshment of what I studied before but the mathematics part was quite new for me. I knew most of the statistics part.

I was on campus and I think this is best for study. Its saves time from travelling and also you can have support from students as they can easily communicate with others about their problems.

Most of the things were available on the Website so it was not possible to even pass without PC access at home.

I was doing a part time job, going to gym and socialising and I do not think it's affected my study in anyway; it's just a matter of good allocation and management of time.

I prefer studying on my own and even doing coursework on my own as well because group arranging meetings and allocating work can be tedious task so I would rather prefer to work alone. If there is two people in a group then its fine but if there is any more than that it then it becomes a mess. I rarely discuss exam questions with others; I only do when I am unable to solve them alone.

(iv). Context Characteristics

Without the use of WebCT it would be difficult to pass the exam. On WebCT I use Lecture slides, notes, discussion board, online videos, self-test, and checking progress. The Quality of videos was good but the access of videos should be improved. During the exam period I was not able to access videos online so I had to buy videos on DVD.

One suggestion is that at beginning of year students should be given a demo of WebCT, how to use it and the things available on it. Many students do not use it because then do not know how to.

Other aspects are fine in the module; I would say it has very good organisation and delivery.

PARTICIPANT 2

1. Questionnaire outcomes

DM	17
DS	21
DA	38
SM	7
SS	6
SA	13

2. Marks

Course work: 44

Examination: 41.25

Total: 85.25

3. Interview data

(i). Students approach to learning

Especially for the first semester I went to every lecture and seminar. Before I move to new topic I tried to understand previous topics very well. A lot of students just do enough to pass exam but for me this is not important. My approach is to understand the topic so I can able to do any question I get. It requires more time but this is the best way for me to study.

My reason to regularly attend the lectures and seminars is to maximise my opportunity to learn the subject. The reason of having this module in the first year was that the foundations of computing module provide foundations for the rest of the degree. So if I don't learn this module well then I wont able to perform well in the rest of the degree. Therefore, even the first year marks are counted for the degree, therefore it was very important for me to learn this module well.

I spent a lot of time studying this module. On a weekly basis I spent around 12 hours per week studying on my own. In the first semester math was a bit hard/tricky so I spent more time on that than the second semester.

(ii). Teachers approach

Adopting two different teaching approaches for math and statistics module was appropriate. It should be like this since both modules are different from each other. I found that overall this approach of teaching the module very good.

The only comment I have is two-hour lectures are too long. I personally prefer to have one-hour lectures twice a week than the current system where we have two-hour long lectures once per week. This will help to utilise our time more efficiently.

I like the overall assessment process very much. This is because it fits with my way of learning and hence its affected my performance positively. For example my performance was better in modules, which assessed via coursework and exams in

comparison to those, which assess only via exam. This is because when I have to do coursework I learn the things in depth but for taking exam I would just focus on a particular topic or whatever is going to come up in the exams. I like to have coursework assessments as it keeps me busy across the year.

It the assessment process was clear. The study guide provides all information about course works and how it should be carried out. After reading the study guide I knew exactly what I had to do for each task.

(iii). Student Characteristics

I am a 33-year-old mature student so I had a long gap after my A levels. I studied statistics at O level but did not do very well at A level and that was one reason why I did not continued my degree after A level. However in order to join University after a long gap I did access the course. I knew basic maths and most of the statistics, which I studied at O level, and still I can remember all of them. Therefore I was quite comfortable with that.

I was staying off campus in my own house, which is located very close to university. I did most of the study from home only. I believe that staying off campus does affect study but not much. This is because if I stay on campus then I have access to many facilities for example the library, which I don't whilst staying at home. Also if I am in campus then I can talk to my friends and I can get help from them if I have any problems in my study. This is not possible from home. However my performance was not at all affected by living off campus, as I was very motivated for my study.

I had access to a PC and broadband Internet at home so I can download anything I needed for study. I do not think that students should consider doing this module if they do not have Internet access at home if they are living off campus. Nothing is possible to do in this module without the Internet, so it's very essential to have.

I was regularly going to gym and playing football, however I was not working anywhere part-time. Working long hours and engaging in too many activities certainly would have affected my study, however I had to balance it so did not affect my study. For this module I found studying alone was adequate for me. I think studying or working in-group is waste a lot of time, which I do not like to do.

(iv). Context Characteristics

I used everything available on WebCT. Statistics problems and data I downloaded from WebCT and did all labs from home only, and I must say that it helped me a lot. Practice/self test was a good thing to have on WebCT however its needs to be improved by making questions more random. I do not like to do the same questions 10 times. The discussion board was very useful for students who lived off campus because if I had any problems I could post the questions and get the answers from others. Over all WebCT is very good idea and offers several advantages to students. I used videos on DVD and the quality of it and the online one was fine. But I think online videos should be made easier to download. I also used the summary of lectures for revision purposes. The summary of the lectures was very good to revise the whole module, as it is difficult to read the whole module in detail.

The last thing that I would like to discuss is the problem of indiscipline in the statistics lecture. Too many students come in class and just chat with each other about last night's social activity. It is not acceptable at all as it disturbed students who sincerely wanted to listen to the lecture. Most of the time lectures are too noisy as many people just keep chatting with each other.

PARTICIPANT 3

1. Questionnaire outcomes

DM	14
DS	12
DA	26
SM	7
SS	11
SA	18

2. Marks

Course work: 30.6

Examination: 15.25

Total: 45.85

3. Interview data

(i). Students approach to learning

I was regularly attending most of the lectures but lab and seminars only when I had any problems to resolve. The reason I was attending the lectures was to enhance my theoretical knowledge and to understand the subject more thoroughly.

I spent a lot more time studying this module than other modules as I found it challenging, however it's not possible to measure how long I spent especially on this module.

(ii). Teachers approach

The teaching approach was good, I liked it because it was organised to provide both theoretical knowledge and practical hand to problems. However I feel that statistical lectures needed some improvement as it is two hours long and concentrating, therefore it was a long time without break, which is difficult. In the first semester lectures should be more than once, this will be helpful to understand the subject better.

Like the teaching, the assessment procedure was very good as it evaluates both theoretical and practical knowledge. Also it's good because it necessitates students to work constantly. I was very clear about the assessment process before I undertook them. I received assessment information from WebCT and also from the study guide and in lectures.

(iii). Student Characteristics

I had MATH at GCSE level and ICT at A level. I found mathematics slightly easy as I had studied it before but for me statistics was difficult as I had weak background of it. I stayed off campus at home and I found staying at home is easier as I can spend more time on study than I would have if stayed on campus. I had no problem of travelling, as I only needed to come few days a week. It does not affect my study staying at home.

I had computer access at home and it helped me preparing the module whilst I am off-campus. It would not be possible to study at home without a computer and the Internet.

I use to go out once or twice a week, which I believe does not affect my study, however if it's excessive it would affect my study and overall performance. I prefer working and studying alone then in a group. This is because working alone helps me to concentrate more, whilst in a group we end up discussing things, which is completely irrelevant to the study.

(iv) Context Characteristics

I used WebCT frequently for Videos, lecture notes and slides. I used other facilities when I needed. I did attend the diagnostic test and self-test, both of which I found very useful to know if I am good with a particular issue or not. This is also helpful to develop and build knowledge. I frequently accessed the lecture summary to refresh previous lectures. Videos were good but I was not able to access them online at home. It would have been a great helps if it was possible to access videos online at home. The content of videos were ok for me. Other facilities at WebCT were ok as well.

Overall it was a good and interesting module but I found it difficult as well.

PARTICIPANT 5

1. Questionnaire outcomes

DM	12
DS	13
DA	25
SM	9
SS	12
SA	21

2. Marks

Course work: 36.3

Examination: 22.25

Total: 58.55

3. Interview data

(i). Students approach to learning

I attended most of the lectures, seminars and labs but not all. I did study across the year to understand the topic. I was spending around 5 hours/week and sometime even more than that when I had to do coursework.

(ii). Teachers approach

I think it was pretty good approach of teaching. For this subject this approach was very much appropriate because lectures provided theoretical knowledge and seminars and lab provides helps in solving problems and gives practical hands. However it's not necessary to have such an arrangement for other modules as well.

I think it was very good approach of assessment as it kept us involved the whole year by giving different tasks. It made us learn whole courses not just a part and it helped to focus on my study for whole year.

Yes I was clear about the assessment process. Most of the information about the assessment process I got from WebCT and I was completely aware of what I had to do in each task before I undertook them.

(iii). Student Characteristics

I studied math both in GCSE and A level and I knew most of content of foundations of computing module. I had no problem doing this module.

I was living off campus and I had to travel everyday, which did affect my study a little bit. Also living off campus prevents interactions with other students so I did not know how others were doing, also when I needed help I was not able to get it from other students due to distance.

I had a PC and Internet access at home. Without the Internet my study of this module would have been severely affected. This is because most of the information, discussion board, etc was available through WebCT so if there was no Internet at home then there would be no access to the module information therefore the Internet is an essential if a student is living off campus.

I was going to the gym twice a week and was also doing a part time job. I do not think that it affected my study. I need some time for me to relax, and a different environment to which I study in so I do not get bored with doing the same thing. I think within a limit activities other than studying is good for motivation.

I would prefer working in a group because it would help solving difficult problems. However I am not sure if working in a group or studying individually has an affect on study. I believe this depends of the individual learning behaviour.

(iv). Context Characteristics

I used most of the facilities on WebCT, such as printing notes, self-test, check my results, get information about coursework, discussion boards and previous exam questions. I found WebCT extremely useful for this course.

Since I was not able to access on-line videos at home I used Videos on DVD. I think videos on DVD quality were good but they are very old so they should be modernised and updated. Summary of lectures on videos was a very good idea because if I have missed a lecture then I can listen to the summary and get to know what was covered in that lecture. Also it's a very quick way to refresh old lectures.

I checked the discussion board quite frequently, this helped me to keep updated in what is going on and also it provided a way of communication with other students.

I have one suggestions that there should be more support in the mathematics section, I think lecture should be more than once. Statistics lectures are too long and tiring and I think there should be break in between the lecture.

PARTICIPANT 7

1. Questionnaire outcomes

DM	6
DS	12
DA	18
SM	13
SS	22
SA	35

2. Marks

Course work: 42.25

Examination: 27.875

Total: 70.12

3. Interview data

(i). Students approach to learning

I was regularly attending lecture since the beginning of the first semester. Actually the first semester math was new for me so I attended regularly all lectures in the first semester. However most of the statistical stuff in the second semester was not new for me, therefore I only attended a few lectures in the second semester.

I did not attend any of seminar or lab sessions, this is because I get the answers for questions from our friends who attend the seminar if I need them. I first try to solve the problem sheet on my own but if I get any problems then I asked my friends therefore I did not attend any seminar and lab sessions.

My motivation to study this module is to get good job in the second year. I was planning to apply for a job in second year and if I get a good grade in the first year modules then there would be a better chance for me to get good job and therefore I started working hard. Otherwise I would not have put much effort in, as I know the marks of first year are not counted for the degree.

In the first semester I was studying this module about 5-10 hours per week because the teaching material was new for me but in the second semester as I studied most of things before I spent much less time than first semester.

(ii). Teachers approach

I liked the lecture and that was the reason I attended most of them regularly in the first semester. However it is not possible for me to tell the benefit of seminars and labs, as I did not even attend a single lecture.

I like very much the idea of having both coursework and exams. If I do not have the coursework then I would have left everything to study at the end. Because of the coursework, which was spread in several tasks, I studied this module constantly and therefore I learnt it better than other modules with only an exam at end of the year.

I was clear about assessment processes of tasks in the first semester but I was not very clear about questions asked in the statistical report. Each question in statistical report should be more explained so students know what is exactly required in the report. It would be really helpful if an example answer for each type of questions would be posted on WebCT or given printed ones to student.

(iii). Student Characteristics

I studied math at GCSE level and advance mathematics at A level. Most of statistics part I studied before, however math section was relatively new for me. Due to my background I was quite confident in this module.

I was staying on campus and I believe that staying on campus is much convenient than off campus. Sometime I use to study even by 1 or 2 clock in morning and still manage to attend lectures in early morning, however if I were staying off campus it would not be possible for me to do so. Communication is not a problem living on campus or off campus as everyone has got a phone and whenever I need help I can call up my friend.

I had a PC in my room as well which was connected with the university network. Therefore it was very convenient that anytime I could access WebCT if I needed it. If anyone living off campus would not have a PC and the Internet then it would be really difficult to pass this module. This is because everything we need to study in this module is available on WebCT.

I was not working, not engaged in any other activities and I am not very outgoing as well. Therefore I put my full effort on my study, which helped me a lot to achieve my desired performance. It would definitely affect their study if someone were doing a job or engaged in other activities during their study period because one cannot put their best effort on study.

I study in the Library and my other friends as well study at the same time there. But we sit at different tables so we do not talk and study on our own and if we get stuck then we can ask if anyone knows the answer. But if we sit down at the same desk then we end-up just talking about something irrelevant. I think group study is important for those who are not good in the subject so they can get support if they need but it does not matter for a clever student.

(iv). Context Characteristics

I frequently accessed videos on WebCT. This is because I did not attend the seminar so I tried to understand and solve the problem by watching videos.

Self-test also helped me to evaluate how much I know and what kind of problem I cannot solve.

I also frequently accessed lecture notes on WebCT, as it was convenient for me. Having progress report on WebCT as well is a good idea. Students can monitor their progress continuously and see where they are weak and where they have to work hard.

Although I did not really post anything on the discussion board I accessed it regularly to see what types of questions are posted on the discussion board. I did not post anything because whenever I had a problem I managed to get help from friends so did not need to post it.

Content and quality of videos was good but the only problem is accessibility of videos off campus. Off campus students only have access on DVD but if they do not have a DVD player then it's a problem for them. Therefore my suggestion is to make them more accessible.

Summary of lectures was very useful for me. Just before exams it was not possible to study whole things but the summary gives you opportunity to go through all lectures before exams.

Room for statistics lecture was small and if anyone comes little late then no place left to sit-down, either attend the lecture standing or sit on floor. This discourages students to attend lecture. Therefore I would like to recommend larger room for coming year statistics lecture.

PARTICIPANT 8

1. Questionnaire outcomes

DM	16
DS	16
DA	32
SM	15
SS	17
SA	32

2. Marks

Course work: 34.9

Examination: 29.625

Total: 60.52

3. Interview data

(i). Students approach to learning

I did not attend lectures, seminars, and lab sessions, and the reason for that was that I preferred to learn on my own. When you go to a lecture there seems to be a lot of people with a lot of questions with different levels of learning, therefore I prefer to work with my own pace so I get the work sheet and do the work at home. I work harder when I have exams and not as hard when I do not have exams. I went to the first few lectures and then I started studying on my own which fits more with my learning style. I only went to seminars if I got stuck sometime. This module provides basic knowledge, which would be needed in the second year and the third year module; this motivated me to study this module. The total time I spent was around 15 hours in a week, mostly on comprehension learning the topics from different sources, mostly from books.

(ii). Teachers approach

I was not attending any of the lecture and seminars so I cannot comment on anything. However the only thing I can say is that it sounds like a very focused approach to introduce concepts and ideas.

Coursework was aimed to gain practical hand in solving mathematical and statistical problems and the exam was meant to assess students' knowledge of theory. It was not brilliant but not bad. I think they can introduce different sorts of coursework's.

Coursework was clearly outlined in sheets provided to us and it was also available on WebCT. It was very clear what, how and when I had to do each task by reading the provided information.

(iii). Student Characteristics

I studied economics, English and physics at A level. I did math at GCSE level. I've done a lot of logic stuff on my own, as I was very interested in that area but things such as tables, and probability I did in GCSE, however I have forgotten it.

I was off campus and I had to travel by bus, which took around one and half hours each way. This was one reason why I was not attending the lectures, coming university means wasting 3 hours in travelling and in that much time I can do some work. It did stop me from going to lectures but it had no affects on my learning, I did an amount of work, which I was happy with and my progress was good as well. Therefore not attending lectures did not affect my learning.

I have got a PC and connection at home so it was not an issue, but people who do not have a PC and connection at home would find it difficult. This is because near to coursework deadlines all the computers were taken up and many people who reached late could not get a place to work. Therefore I would suggest that there should be three deadlines: preliminarily, second and then final deadlines so people do not rush at the last moment.

I play football and work in a bank at the weekend and I also work a few hours in the weekdays as a programmer. I also go out a few times a week. I do not think it affects my study at all. I believe this helps, because it gives me a little break and it helps me to remember what I have been studying.

We did coursework in group but I prefer studying alone because I believe that in a group with too many people, which means too much distraction and it become messy and I can not concentrate therefore I prefer working alone. If I get stuck then I can ask two of my cousins who studied the same course before and if they were not available then I would call up my friends to ask.

(iv). Context Characteristics

I did not use Web CT regularly. I could not able to access the online videos because I was off campus and I did not purchase videos on DVD because it was too expensive. Videos were OK in terms of quality but hardly anyone did use it off campus because they cannot be accessed. Therefore I would suggest improving the media that delivered videos. The discussion board was very good, many of the questions, which I needed to be answered, had already been posted on it by other students, which was answered by <name lecturer removed> and <name lecturer removed>. It was really useful for those living off campus.

PARTICIPANT 9

1. Questionnaire outcomes

DM	17
DS	13
DA	30
SM	11
SS	19
SA	30

2. Marks

Course work: 33.45

Examination: 29.5

Total: 62.95

3. Interview data

(i). Students approach to learning

Yes, I was attending the lecture, seminar and labs regularly. This is because I found the module interesting. I spend around 5 hours/week studying this module. These 5 hours include everything including lecture and work at home.

(ii). Teachers approach

I found this approach of teaching good. Because I get instruction in lectures and then learn more in seminars and lab sessions

Assessment procedures were ok because they test different things and I really did not mind it.

Yes I was clear about the assessment process because they gave us handouts and I saw the information on WebCT.

(iii). Student Characteristics

I studied math at GCSE level but not A level. I studied the statistics part of this module in GCSE but not the math part.

I was living off-campus; it did not affect me much.

I did not have a computer at home, so I had to come to university everyday to study. So it was a waste of my time travelling.

Sometimes I did work in a group because everyone considered each other's problems.

(iv). Context Characteristics

I used WebCT very frequently for online test, self-tests and online videos. I used this because it helps me to practice questions, which would be important for my exams. The quality for videos was good and I think it's a pretty good idea. I have no suggestion to make, as I did not get any problem in WebCT and teaching as well.

PARTICIPANT 13

1. Questionnaire outcomes

DM	11
DS	17
DA	28
SM	5
SS	8
SA	13

2. Marks

Course work: 41.95

Examination: 20

Total: 61.95

3. Interview data

(i). Students approach to learning

At the beginning of the course I first read the study guide thoroughly about lectures, coursework etc. It helped me to plan my time and manage my study. Since I did not know which lecture, seminar, and lab session was important and which not. I decided to attend all lectures, lab sessions, and seminars regularly which I followed until the end of the course. I did not miss out anything important which might affect my performance. I used to study most of the time in the library including this module but I never counted how much time I approximately spent. At home however I spent around ½-1 hour everyday. Everyday working helps me to learn and understand all topics covered by lectures and seminars.

(ii). Teachers approach

Over all teaching approach was good. However I feel like there should be more time devoted on statistics module then earlier part. More time should be given on regression, correlation and probability. Teaching assistant was not supportive in this particular section. It would be helped me a lot of I would have got more support in this particular section. I really did not get good help in seminars. Other things were good in teaching.

Over all the assessment process was fantastic. It is good to have coursework divided in several tasks, which was assessed at different stages. It helps me to evaluate myself for each section if I am ok with that or not. It also facilitates more cohesiveness among different section of the module. However I feel that feedback needs improvements. For example in one section I got a C but I did not know why I did get C, I expected more explanations on feedback so I could improve that particular section according to that. I was clear about the different tasks of coursework and how to accomplish them. I mainly used study guides for this; everything was explained in the study guide.

(iii). Student Characteristics

I am an overseas student so I did not do GCSE and A level from UK. However I did a one-year access course in which I did study math subject. Most of the first semester part was taught in an access course but most of statistics part was new to me. My background did help in my completing of this module.

I was living off campus and it did affect my study, as I did not get a chance to interact with other students. Sometimes I needed help to clarify a few questions but I was not able to do so since I was not on campus.

I had a pc and Internet at home. Without the Internet it would be impossible for me to complete this module successfully whilst living off campus. It would affect severely a student living off campus who did not have Internet access. Everything I needed was on WebCT and if I did not have Internet access then I would be behind all others.

I was doing a part time job and I agree that it does affect my study. I cannot spend enough time on each module, as I did not have free time left after doing my job. Also after doing my job I would get tired and would not feel like studying.

I always did coursework in a group and also for exam as well. I tried to find other students with whom I could discuss topics, which I have read so I can understand it, better.

(iv). Context Characteristics

All facilities available on WebCT such as notes, results, discussion boards, study guides, videos, self-test facility etc were really useful and I used all of them. As I was living off campus I used Videos on DVD. The quality of videos was good but some errors were found, coursework problem solutions were numbered wrong and it causes problems. Similarly self-tests were very good for self-evaluation but a number of questions were easy. It would be useful if the number of questions would be increased and also if more difficult questions would be added. Handouts for the lab and seminars should be improved and additional material should be added.

PARTICIPANT 14

1. Questionnaire outcomes

DM	16
DS	12
DA	28
SM	13
SS	14
SA	27

2. Marks

Course work: 41.5

Examination: 32.625

Total: 74.125

3. Interview data

(i). Students approach to learning

I found the first semester challenging in terms of content (logic) therefore I regularly attended lectures and seminars. I attended only 70% of the lectures in the second semester, as I had a good knowledge of most of the statistics from GCSE and As level. In the second semester there were a few lectures on one topic and I only attended the first lecture on each new topic and if I found the topic difficult then I followed up with rest of lectures on same topic otherwise I did not.

My motivation to attend lectures in the first semester was mainly to learn new things but the overall reason was to get a good grade in the module. Furthermore I am spending a lot of time and money in fees, accommodation and in other activities whilst studying so myself and my parents both expect me to obtain good grades in return and that was my secondary motivation to study the module sincerely. If I do not perform well then it's just a waste of time and money and so no point to continue my study.

In the first semester I spent around 6-7 hours per week. I have spent a lot of time learning new topics and doing the project work. The topic was new and therefore learning and doing the project demanded a lot of time. However it was not the case in the second semester, since I knew most of the topic as I has studied statistics before so I did not spent much time studying it.

(ii). Teachers approach

Over all it was a good approach of teaching i.e. dividing the course in various sections, however I have a few comments. The first semester lecture was extremely useful and interesting. However the second semester lecture was too lengthy, for me it was too much to attend 11/2 hour lectures without any break. After an hour I get tired, I lost my concentration and interest. Also in the Statistics lecture there were less interactions between the students and the lecturer, students only ask questions at the end of the lecture not during the lecture. However it would be more useful to have

questions and answer during the lecture. Seminar assistance was good as it helped a lot to clarify the things, which I did not understand in the lecture or doing problems that were new to me.

Also sometimes in the same week lectures and seminars were not on the same topic but different, which was slightly difficult for me to follow. Therefore I believe that it would be useful to have lectures and their corresponding seminars and lab sessions in the same week rather different weeks. More coordination requires arranging lectures, seminars and lab sessions.

It was a certainly good approach of assessment. Having 50% coursework and 50% exams provide a very balanced way of assessing the module and helps students focus better. I am good at exams so for me there were no problems but for many students which are not good at exams coursework helps allot. It would be difficult to cover 100% exams at the end of the semester/year whilst having exams for other modules as well. Assessments in the form of several small tasks help students manage their work efficiently and that results in to better learning and performances.

I was very clear about the task and assessment process before I undertook them. Coursework was very well explained in the study guide, handouts and also information provided on WebCT. Also coursework and exams were explained in lectures as well. I only had problems using excel for regression analysis but it was just a small problem and I resolved it easily.

(iii). Student Characteristics

I studied math at both GCSE and As level where I achieved A* grade in exams. I found most of the content except logic and few things in statistics (i.e. regression, probability and t table) of foundations of computing module was similar to what I have studied before in GCSE or As level. Therefore I was very confident in this module.

Living off campus certainly affected doing group course work. If members of the group were living off campus then it would be really difficult to arrange meetings in comparison to all members living on campus. If everyone was living on campus then they could work together late night, which would be difficult for off campus students due to transportation problem.

Individual work would not be affected by living on campus or off campus. But it may affect motivation slightly. If I am living on campus then I will be in constant touch with other members of my tutor group and I can see their work and also I can ask them If I get any problems doing that, however it wouldn't be possible to do this immediately if one is living off campus.

Living on campus provides positive distractions as it gives a change of scenery and activities. Whereas at home one would be looking at the same things for a long time and doing the same routine, so it may affect ones motivation on study.

I was working as a lifeguard at weekends and twice a week I go to play football. I also go out once or twice a week. It did not affect my study as I managed it nicely, it gives me positive distractions and little bit change of routine otherwise I get bored from study. However going out and drinking excessively definitely affects study and

performance as too much drinking provides negative distractions and kills the brain cells.

Except for coursework I do not prefer to study in a group. I prefer working alone if I know the subject and only go to other students if I have any problems or others want to ask something from me. Even in doing coursework sometimes group work is problematic because if one member is not good in the subject then they expect other members to do all the coursework, consequently only one or two students end-up doing all the coursework.

(iv). Context Characteristics

WebCT was very useful for me. I used it very frequently for looking at the discussion board if anyone had posted anything new and I also posted whenever I got stuck somewhere or if I knew the answer of a problem posted on the discussion board. For me the video clips were very useful for providing correct answers to my question. It was also very useful in revising as the summary of lectures provided online videos, which was very helpful to refresh the old lectures. The quality of videos was good. We had high speed Internet access on campus so there was no problem in video downloading, however it might be very difficult for those students who were had dial-up access at home, for them it was really good to have the videos on the DVD options. Over all videos was good, it was only in one section that I had a problem accessing them.

Self-tests were another good things, which I accessed frequently on WebCT, it was really good preparing for the module, however I believe that questions were a bit limited.

I also believe providing printed material is very good idea. Sometimes when I do not like to go on the net I just looked up printed notes and learned from them. It was also very useful during the exam period.

Finally I would like to provide a few suggestions. Initial tests should be made more difficult. Students should be divided in two groups: top band and low band. It would help students to learn more efficiently.