Learner perspectives on the use of a learning management system in first-year Economics

By

Karen Thomas

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Supervisor: Prof. Johannes Cronje

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Definitions of key concepts and abbreviations

Asynchronous: "Designating processes or information exchanges that do not occur simultaneously. For example, e-mail is a form of asynchronous interpersonal communication, because the sending and receiving parties are not Communicating at the same time" (Gartner, p.28).

CC: Computer conferencing

CIE: Computer Integrated Education

EKN 124: Economics First-year course, second semester

HE: Higher Education

HSRC: Human Sciences Research Council

ICT: Information and communication technologies

LMS: (learning management system) "A full infrastructure on which e-learning can be built and delivered" (Garner, p.228).

Synchronous: Having a constant time interval between successive bits, characters or events. Synchronous transmission uses no redundant information to identify the beginning and end of characters, and is faster and more efficient than asynchronous transmission, which uses start and stop bits" (Gartner, p. 431).

NQF: National Qualifications Framework

TC: Traditional Classroom: "a learning environment where most interaction takes place by speaking and listening, though it may be supplemented by writing and reading from a blackboard or from 'handouts'" (Hiltz, 1994, p. 6).

Tutors: Senior (usually post-graduate) students in economics who assist lecturer in the online environment.

UFS: University of the Free State

VC: Virtual Classroom: "is a teaching and learning environment located within a computer mediated communication system" (Hiltz, 1994, p. 3).

WebCT: World Wide Web Course Tools

Chapter 1

ORIENTATION TO THE STUDY

The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn.
Alvin Toffler (1928-)

1.1. Introduction

"It is amazing to me how in all the hoopla and debate these days about the decline of education in the US we ignore the most fundamental of its causes. Our students have changed radically. Today's students are no longer the people our educational system was designed to teach. Today's students represent the first generations to grow up with this new technology. … What should we call these "new" students of today? ... But the most useful designation I have found for them is Digital Natives. Our students today are all "native speakers" of the digital language of computers, video games and the Internet.

So what does that make the rest of us? Those of us who were not born into the digital world but have, at some later point in our lives, become fascinated by and adopted many or most aspects of the new technology are, and always will be compared to them, Digital Immigrants.

The single biggest problem facing education today is that our Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language.

So unless we want to just forget about educating Digital Natives until they grow up and do it themselves, we had better confront this issue. And in so doing we need to reconsider both our methodology and our content" (Prensky, 2001, p. 1).

Background to the study

In June 2000, economics students in Paris circulated a petition calling for the reform of their economics curriculum. In essence, they were asking "…to escape from imaginary worlds" (Fullbrook, 2003, p.13). This protest was mirrored three years later by Harvard students, demanding "…better balance and coverage of a broader spectrum of views" and that which would "…not only teach students the accepted modes of thinking, but also challenge students to think critically and deeply about conventional truths" (Fullbrook, 2003, p.13). Students were demanding that economics teaching should move away from the purely theoretical world of (often ridiculous) assumptions to practical, applicable content, which would make sense in the real world and would assist in solving real-world problems, such as unemployment and inflation.

Nobel laureates for economics, Milton Friedman and Ronald Coase by supporting the belief that economics teaching is too removed from real issues and that there is something amiss in the education of future economists, state that ". . . economics has become increasingly an arcane branch of mathematics rather than dealing with real economic problems" (Snowdown and Vane, 1999, p.137). Coase maintains that "Existing economics is a theoretical [meaning mathematical] system which floats in the air and which bears little relation to what happens in the real world" (Coase, 1999, p. 2). "The field of economics was intelligent but obsessive, narrowly focused, and cut off from the outside world" (Campbell, 2004, online). Indeed, recently Fullbrook (2003) and Becker (2004) criticised the economic teaching fraternity in strongly worded statements, accusing academia of not keeping up with the times - in terms of content and presentation.

Furthermore, this gap in the teaching, this disregard for concrete realities, "poses an enormous problem for those who would like to render themselves useful to economic and social actors" (Fullbrook, 2004, p.13). Similarly, we need to move beyond the outdated chalk-and-talk lecture methods to the active learning techniques made available by experimental economics, games and simulations, and the internet (Becker, 2004, p. 52).

Becker (2004) further comments on the way that economics is taught by stating that the majority of instructional practices in economics courses are presented in a passive learning environment which does not allow for students to take an active role in their own learning. Critical reflection, independent learning and learner autonomy is not fostered. These important cognitive skills can and should be fostered by making use of information and communication technologies (ICT) in economics education.

According to Laurillard (1993, p.26), "…every academic subject faces this same kind of challenge, to help students go beyond their experience, to use it and reflect on it, and thereby change their perspective of it, and therefore change the way they experience the world".

Nevertheless, students still need to gain access to the academic environment of economics (Postman, 1995, p. 3). It will not solve the problem merely to change all economics teaching to practical applications and exclude all the theoretical grounding. A model to address the problem, whilst still including sound academic teaching and learning, needs to be used. However, inept methodology of teaching and learning in economics is further exacerbated by the critical issue facing higher education institutions worldwide - that of access and size.

In the USA, colleges and universities "…expect to enrol more than two million new full-time students by 2010 - a phenomenon referred to as Tidal Wave II" (Maclay, 2000, online). Tony Blair, Prime Minister of the UK, has overtly stated that he hopes to establish a "learning society" and that 50% of school leavers will register for a university education (Milliken and Barnes, 2002, p.223). "The growing demand for access to HE is a factor that continues to shape universities. Governments are generally putting pressure on universities to increase enrolments in order to ensure that more citizens receive higher education" (Bourlova, 2005, p. 6).

This trend is also mirrored in South Africa, where the government's national plan for Higher Education's (2001, online) goal is for participation to increase from 15% to 20% within the next 10 to 15 years. Given the current situation in South Africa with regard to the recent mergers of Higher Education institutions, this will lead to even larger classes.

During the period 2000 – 2005, the University of the Free State's (UFS) Economics first-year class increased from 733 to 1269 - an increase of 73% over the period (H. van Tonder, personal communication, 15 August 2005). This trend was seen in all the other subjects in the Faculty of Economic and Management Sciences at the UFS. However, the increase in the number of students registered for courses was not accompanied by a concurrent increase in staff or capital outlay. Class sizes became unmanageably large, with individual staff members being responsible for up to 800 students at any given time. This led to the overburdening of lecturers and the inability to foster individual relationships with any students.

It has been argued that the strategic use of online resources in large lecture classes may result in some savings and the redistribution of teaching staff time (Twigg, 2003). However, more than 50% of the students enrolled at the University are from backgrounds where access to basic services, such as electricity, is not a given. The majority of students in the Economics 1 classroom have never been exposed to computers. Can the electronic media therefore be used successfully in this situation? Furthermore, although much has been written and researched in terms of technology, very little exists in terms of students' experiences of electronic learning (Meyer, 2005).

This research has been done in an attempt to address the challenges of improving the learning experiences of Economics first-year students in ever-increasing class sizes, by facilitating interaction via the use of e-learning.

1.2. Problem statement

The main reason for concern is the absence of any interaction - which is essential for effective learning and teaching to take place - in a large class. Not only is there very little interaction between the lecturer and the students, but the subject-related interaction between students – both inside the classroom as well as outside – is virtually non-existent. A further dimension that exacerbates the problem is that there seems to be very little interaction with the study material or additional reading on the part of the students. This, in a residential, face-to-face setting, is a worrying fact that needs to be addressed. The question arises: what can lecturers do to compensate for the lack of personal interaction?

Essentially, interaction refers to three categories within the academic environment (Moore 1989, 17-18). These are:

- Interaction with the lecturer or facilitator;
- Interaction with peers;
- Interaction with content.

Hillman, Willis and Gunawardena (1994) add a fourth dimension to interaction, which is interaction with the interface. This type of interaction would form the boundaries which contain Moore's three types of interactions.

The merits of different types of interaction are discussed in Chapter Two. The way in which students experience a learning intervention will affect the effectiveness of that intervention (Bastable, 2003).

Given the above background, the title of this research project is the following:

Learner perspectives on the use of a learning management system in first-year Economics.

1.3. Research questions

In view of the above problem statement, the following research question forms the basis of this study:

Learner perspectives on the use of a learning management system in first-year Economics.

From the topic and the research question, three sub-questions emerged:

- How do students use technology to interact with the lecturer when classes become unmanageably large?
- What is the relationship between Learning Management Systems use and students' experiences of peer interaction?

- What possibilities exist to encourage students to interact with content by making use of a Learning Management System?

The first question focuses on the relationship between lecturers (or representatives of a lecturer) and students. The second question addresses the use of computers to foster better interaction and discussion between students. The third question concentrates on the possibilities which exist to foster better use of the content and material by students whilst making use of technology.

1.4. Purpose of the study

The purpose of this study is to investigate how students experience the use of blended learning in a first-year economics class.

1.5. Objectives

Given the purpose of this study, the objectives are to establish:

- Whether students use the Learning Management System to interact with lecturers;
- Whether a Learning Management System may effectively be used to create interaction between students and lecturers;
- How students experience online interaction with the lecturer;
- Whether students use the Learning Management System to interact with peers;
- How students experience interaction with peers in the online environment;
- Whether students believe that online interaction with peers is effective;
- Whether students use the Learning Management System to interact with content;
- Which of the different components of the Learning Management System affect students' learning experiences?

1.6. The scope and context of the study

Before the inclusion of CIE, there was very little contact with or interaction between students – both on a personal, as well as an academic level. Table 1 illustrates the structure of the course before the Learning Management System was introduced, as well as afterwards.

	Before LMS introduction	**After LMS introduction**
Course structure	2 lectures per week, 2 tutorials per semester	2 lectures per week
Assessment	2 tests and 2 tutorials per semester	2 tests, 4 online quizzes and 5 online discussions
Role of the Lecturer	Central to the learning process	Peripheral
Role of the student	Passive	Active
Role of lectures	Information transfer, learning content explained	LMS central to the learning process

Table 1: The structure of the course before and after the inclusion of the blended learning.

(Adapted from Johnson, 1993, p. 81).

1.7. Exclusions from this study

The study does not address the following:

- Learning experiences of Afrikaans-speaking, mostly white Ekn 124 students;
- The influence of the intervention on results;
- The role of the design on learning experiences;
- Academic backgrounds of the students;
- Personality issues on learning experiences;
- The role of computer literacy on the learning experiences;
- Demographic characteristics, such as race, gender or age.

1.8. Limitations of the study

The following limitations of this study should be taken into consideration:

- The study is about the personal learning experiences of Ekn 124 students using CIE in their course. Transferability of the results is therefore limited.
- Only students in the English medium of instruction class were included in this study. Since the majority of these students are not English mother tongue speakers, this might have had an effect on the results.
- Following on the previous limitation, the majority of students are from previously disadvantaged backgrounds and may have experienced the use of computers as a novelty. This could also have tainted their experiences.
- This research was limited to one semester only. Students may have experienced the use of the Learning Management System differently over a longer period.
- Only Economics students were involved in the research. The content of the subject, which is reportedly complicated, may also have had an effect on the learning experiences.

1.9. Significance and potential contribution of the study

As mentioned previously, the problem with many tertiary institutions is the fact that classes are becoming larger and interaction within these classes is not taking place. However, interaction is a vital ingredient for any learning experience to be optimal. Hence the following question comes to mind:

Can the use of a Learning Management System replace the contact that has been lost?

This research provides a basis for further research into the field of interaction and computers. Educators who are interested in making use of blended learning may find the findings interesting and applicable to their own situation.

1.10. Research method

Qualitative as well as quantitative methods of data collection were used. However, the bias was toward qualitative measures, with some quantitative interpretations to support the findings. The questionnaires were mostly open-ended, semi-structured or unstructured and the focus group meetings were unstructured.

1.11. Research design

This research was conducted in the form of a case study, which Gillham (2000, p. 1) defines as "…a unit of human activity embedded in the real world which can only be studied or understood in context which exists in the here and now that merges in with its context so that precise boundaries are difficult to draw."

In essence, the primary defining feature of a case study is the fact that there is a multiplicity of perspectives rooted within a specific context (Richie and Lewis, 2003, p. 52). In the context of this research, then, the multiplicity of perspectives lies in the fact that each individual role player may have experienced the use of a Learning Management System in a different way. This case study aims to give the reader a sense of having experienced Ekn 124 through the eyes of the first-year students, the tutors and the lecturer involved.

1.11.1 Population and sampling

The population for this study was the Ekn 124 class of 2004, English medium instruction. With regard to the paper-based questionnaires, all students attending class on the days that the questionnaires were administered were asked to fill them in. The total number of students registered for the course was 648 (H. van Tonder, personal communication, 8 November 2004). Group 2, which was invited to the focus group meeting, was selected by means of stratified sampling where all the different demographic characteristics (stratums) of the Ekn 124 class were represented.

1.11.2 Data collection

Data were collected by means of questionnaires (unstructured and semi-structured), informal discussions with students, focus group meetings with tutors and students and a course evaluation. Table 2 summarises the types of instruments used, when the data collection was done and who the target group was.

Instrument	**Target**	**By whom**	**When**
Focus group discussions	Tutors	Researcher and observer 1	18 August 2004
	Tutors	Researcher and observer 2	21 September 2004
	Group 2	Observer 2	17 November 2004
Questionnaire: Semi-structured	All students of case	Researcher	2 August 2004
Questionnaire: Unstructured	All students of case	Researcher	20 September 2004
Questionnaire: Semi-structured	All students of case	Researcher	25 October 2004
Course Evaluation: Semi-structured	All students of case	Programme Director	28 & 29 October
Observations: Academic Discussion forums (online)	Group 2	Researcher	Throughout Second semester
Observations: Informal Discussion forums (online)	Group 2	Researcher	Throughout Second semester

Table 2: Research instruments and data collection schedule.

1.12. Data analysis

Data received were paper-based, tapes and electronic. All the data were transcribed by the researcher. The initial planning was to make use of a qualitative analysis package, Atlas TI, but I decided to use manual, fingers-on-keyboard content analysis. I felt that I would be able to better understand and make sense of the students' comments by reading and rereading, as well as listening to the information (Selwyn, 2002). After the initial reading and listening, data were open-coded so that an initial code list was drawn up. This was done until saturation point – where no new codes were uncovered (Selwyn, 2002, p. 18).

1.12.1 Authenticity and trustworthiness

The findings were given to the observers of the focus group meetings, as well as colleagues in the Department of Economics at the UFS. Member checks were done after the focus group meetings and peer reviews were done by the observers for analysis and interpretation checks.

1.12.2 Crystallisation:

Multiple methods of data collection, including several questionnaires, discussions and observations, were used.

1.13. Literature control

"A substantive, thorough, sophisticated literature review is a pre-condition for doing substantive, thorough, sophisticated research" (Boote and Beile, 2005, p.3). Much has been written on electronic learning as a form of distance education, the interface and the importance of the interface for e-learning and the role that the computer will play in addressing future teaching and learning strategies. However, there is a gap in the literature concerning the use of blended learning and the experiences of students making use of the different components of the blend. Shortcomings in the literature, contradictions and different studies will be discussed.

1.14. Ethical considerations

Because I was so closely involved in the project, ethical issues were of utmost importance. These issues include the focus group meetings and my personal involvement. Thus, independent people were present at all these meetings and all transcripts were given to the persons for member checks. The data interpretation and analysis chapters have also been given to the observers to check for interpretation bias.

One of the responsibilities of a researcher is to protect the participants from harm - both physical and psychological (Ethics issues in qualitative research: 1999, online). For this reason, the following were done:

1.14.1 Informed consent

All students were informed in writing via their course guides, as well as verbally in class for the first two weeks of lectures, about the research project. Every time a questionnaire was completed in class, students were reminded of the purpose of the research. They were also told that they need not participate if they did not want to.

1.14.2 Anonymity

I informed the students about the purpose of the study, but assured them that all information would be treated anonymously and that at no stage, would I request their names or other information which could identify them.

1.14.3 Withdrawal from the project

Students were informed that they could, at any stage during the research, withdraw and that they would not be disadvantaged because of their decision. The questionnaires were filled in during a class period and handed in at the end thereof. Students who did not want to complete the questionnaire, simply did not do so. Because of the number of students in the classroom at any given time, it was not possible to identify students who did not hand in the questionnaire.

A copy of the information given to the students is attached as appendix 1.

I was not always sure what the next step in the research project would be. I was led by the outcomes from the previous data collection instrument. Students were informed about the method that I was going to use.

The Dean of the Faculty of Economic and Managements Sciences, as well as the Head of the Economics department at the UFS, gave permission for the project to be carried out and for me to collect data as the semester proceeded. Summaries of the results have been forwarded to the Dean as well as to the Head of Department.

1.15. Role of the researcher

I was directly involved in all aspects of the course. I was the English medium lecturer, the project manager for the course, as well as the person in charge of the tutors. I also designed the course initially and was the driving force behind the implementation of a blended model in the Economics Department.

1.16. Outline of the study

Chapter 1: Orientation to the study

In this chapter the background to the study is described. The general lack of research in the field of economics teaching, as well as the resistance to the use of CIE within the economics teaching fraternity, is discussed. The current debate within the teaching of economics adds to the urgent need for more interaction and engagement when lecturers rethink their economics courses.

Chapter 2: Literature in context

Chapter 2 discusses the current literature available in the field of technology in education and effective learning. Gaps and shortcomings in the literature, contradictions in findings, as well as current studies will be discussed.

Chapter 3: Research methodology

Chapter 3 discusses the methodology and design of this study, which lies within the Interpretivist (Burrel and Morgan, 1979) paradigm. Each student's experience is unique and lies within the individual because of their involvement with their own learning. At the core of the research is the need to observe and understand the functioning of Ekn 124 students. The aim of this study is to understand how the students made sense of their learning experiences.

The research strategy chosen is a case study. In this study, the main focus is on students' qualitative experiences, and I as the researcher, had very little control over the way in which students would respond to the teaching methodology employed. The importance of current events was central to the outcomes. The characteristics of a case study as they apply to this study, is summarised in the form of a table in Chapter 3.

Different instruments were used to collect data. These include questionnaires, (semi-structured and unstructured), focus group meetings and online observations. Data were collected throughout the semester and analysed continuously. All the students were included in the completion of the questionnaires, but only one of the groups was

invited to the focus group meeting. Chapter 3 discusses the sampling method used to select the group.

Chapter 3 concludes with data capturing and analysis, shortcomings and sources of error.

Chapter 4: Findings

In Chapter 4, the different categories as revealed through extensive coding, will be discussed. These categories will be substantiated by means of code-words and concepts, as well as substantial quotations from the different data collection instruments.

As the data were read and re-read, three core categories (first level) emerged. The general themes of the core categories are as follows:

- Lecturer/facilitator related
- Peer related
- Content related

Within each category, recurring themes were identified. These themes will be elucidated and examples of students' comments will be presented.

Chapter 5: Conclusions and recommendations

In this chapter, the findings will be placed in the context of the conceptual theory upon which the research is based. The different theories, which inform the research questions, will be linked to the results and the literature in context, as discussed in Chapter 2. Chapter 5 also allows for personal reflection on the study. Recommendations for further research will be made.

1.17. Summary

In Chapter 1, a general overview of the research was given and the research question was introduced. In order to answer this question, as well as the sub-questions, several focus group interviews were held, questionnaires were completed, and observations were made. It is envisaged that this study will add to the literature on learning and especially blended learning. Different options and choices within the blended model were used and students' reactions to these tools were recorded. Educators can select the different tools to create a unique learning experience for their students – from a minimal presence, to a full blend of learning. Chapter 2 discusses the recent literature which is relevant to this study.

Chapter Two:

LITERATURE IN CONTEXT

2.1 Introduction

Whilst Chapter 1 presented the background to the study and the proposed research design, this chapter considers the relevant literature within the context of the study. The literature focuses on issues of effective teaching and learning, problems relating to effective teaching and learning, the online environment and problems relating to this environment. At the end of the chapter, the shortcomings in the literature, as well as the lack of research, will be discussed and finally a conceptual model is presented to frame this study.

Many educators entered the 21st century with the traditional teaching methods still firmly entrenched. However, the times, as well as the students, have changed. They have started adapting to the future in ways that go beyond the digital immigrant's imagination:

"…new systems for communicating (instant messaging), sharing (blogs), buying and selling (eBay), exchanging (peer-to-peer technology), creating (Flash), meeting (3D worlds), collecting (downloads), coordinating (wikis), evaluating (reputation systems), searching (Google), analyzing (SETI), reporting (camera phones), programming (modding), socializing (chat rooms), and even learning (Web surfing)" (Prensky, 2005/2006, p.9).

Lecturers cannot continue to use the age-old tried and tested methods of lecturing (e.g. chalk-and-talk) and expect students to be satisfied and to succeed. New methods of effective teaching and learning, which meet the expectation of the diverse student body and which engage students, should be explored and implemented. "Because common sense tells us that we will never have enough truly great teachers to engage these students in the old ways—through compelling lectures from those

rare, charismatic teachers, for example—we must engage them in the 21st century way: electronically" (Prensky, 2005/2006, p. 10).

However, and this is the nub: class sizes are increasing, classes are diversified in terms of ability, cultural background, etc., universities face stringent budget constraints, lecturers are under severe pressure to increase their research outputs and as a result of this, changing teaching methods is just not a priority for many in the Higher Education field (Bartlett, 2003). The problem seems to fit the saying: "You do not have time to sharpen the blade, so you chop with a blunt axe."

This research considers the use of e-learning and specifically a Learning Management System available to lecturers involved in addressing the digital native's needs and evaluates the different tools from the perspective of students.

The focus of this research covers four main areas, namely:

- Higher education
- Good and effective teaching and learning
- Large classes
- Electronic learning

The literature consulted had therefore to cover a wide spectrum of issues. Many of these were overlapping and boundaries were not always clear. Initially, key concepts such as 'Higher Education', 'Learning Theories', and 'Electronic Learning' were used. However, this soon proved futile, since the number of hits were far in excess of a million and the majority of these were irrelevant to the topic. The search was then refined and keywords and concepts used either alone or in combinations, were:

Higher Education
Large Classes
Teaching/learning strategies and theories
Constructivism
Behaviourism
Social Constructivism
E-learning/Elearning/Electronic learning
Hybrid learning and teaching /Mixed modal
Economics teaching

Searches were conducted through ERIC, Google and EBSCO.

Journals on Higher Education, Economics Education and Learning with Technology were also consulted and articles which supported the keywords were included for perusal.

2.2 Teaching and learning within the HE environment

The Human Sciences Research Council (HSRC) defines Higher Education as follows:

"A level of educational provision defined by the National Qualifications Framework (NQF) in South Africa as including all qualifications from Level 5 to Level 8 on the NQF. Defined differently, higher education includes all education programmes at the post-school, pre-degree level, including certificates, diplomas and higher diplomas (Level 5 programmes), as well as all undergraduate degree and post-graduate degree programmes, from bachelors degrees to the doctoral level (Levels 6-8 programmes)" (HSRC, 2005. online).

"The purpose of Higher Education is to change people, or more precisely, for them to change themselves" (Bligh, 1990, p. 108). Bligh furthermore identifies five purposes for higher education, namely:

1 To develop attitudes and emotional adjustment,
2 To provide a base of adaptable occupational skills,
3 To promote the general powers of the mind,
4 To develop culture and standards of citizenship,
5 To advance learning (Bligh, 1990, p. 10).

In order to be effective, teaching or learning strategies should aim to address these five purposes. To do this, one should understand what is meant by effective teaching and learning and the symbiosis between these two concepts needs to be examined.

2.2.1 Teaching (Or lecturing?)

"Higher Education is an agent of change" (Bligh, 1990, p. 10). The teacher or lecturer needs to be the change agent and this change happens when "Teaching is orchestrated by one person to enable another person to do or comprehend something" (Pearsall and Trumble, 1996, p.1479).

The word 'teaching' is often used as a synonym for lecturing within the higher education environment, but when reading different definitions of lecturing, it becomes clear that teaching is a much wider concept than lecturing. In its basic form, lecturing may be defined as follows:

"Middle English, act of reading, from Late Latin lectura, from Latin lectus, past participle of legere, a discourse given before an audience or class especially for instruction" (Naber and Köhle, 2002, online).

This definition refers to the actual lecturing activity involved, and is also echoed in the work of Brown and Race (2002, p. 17), where they refer to lecturing as the classroom situation where "…someone (is) talking; a lot of people (are) listening". In the same sense, Sloman and Cambell (2002, online) state that lecturing is "…the delivery of a course through a series of presentations by academic staff members to a group of students, usually with visual prompts and aids. The term 'lecture' can encompass a range of styles, approaches and formats… Some of these involve considerable student participation. Traditionally, however, lectures have involved the one-way transmission of course content from academics to students." Race (2001, p.105) maintains that "…lecturing is the most public side of the work of most higher education lecturers", implying that it is merely one part of the life of a lecturer.

Teaching is more than a mere one-way knowledge transfer; it is knowledge advancement. Laurillard defines the aim of university teaching as that which "…makes student learning possible" (1993, p. 28). Steinberg (1991, p. 102) speaks about the Socratic dialogue as a teaching technique used by Socrates:

> …ask questions, probe the answers and allow students to learn more about themselves by doing this. (See also Blight, 1990, p. 23).

2.2.2 Learning:

Different domains of learning have been identified: predominantly Cognitive learning (Bloom, 1956), Affective learning (Krathwohl, Bloom, and Bertram, 1973) and Psychomotor learning (Harrow, 1972). This is often referred to as KSA: Knowledge, Skills, and Attitude (Clark 1999, online).

Cognitive Domain

The cognitive domain refers to knowledge and intellectual facts. Within this domain, there are six major categories, which can be thought of as degrees of difficulties. Therefore they must be mastered sequential order. These categories are listed below with a very brief keyword relating to each one (Bloom, 1956).

Knowledge: Data or information recall
Comprehension: Understanding,
Application: Applies that which was learned in the classroom to new situations.
Analysis: Break up concepts into parts to understand the whole.
Synthesis: Put parts together to form a whole to create new meaning
Evaluation: Make judgments

Affective Domain

This domain refers to the role which emotions play in learning, such as values, appreciation, motivation, and attitude. Five major categories are identified and listed below and are described in terms of increasing levels of complexity regarding attitudes and emotional responses (Meyer, 2005, p.33). They are:

Receiving or attending: Creates awareness
Responding: student's motivation to learn
Valuing: accepting a value and committing to it
Organising: the development of a value system
Characterisation/Internalisation: person's behaviour consistently reflects the values that s/he has organised into some kind of system

Psychomotor Domain

This domain is characterised by motor skills, and for the purposes of this thesis, refers to technical or computer usage skills.

- **Involuntary/Reflex movement** – automatic reactions without learning
- **Basic Fundamental movements** – inherent basic movement patterns
- **Perceptual** - response to/interpretation of various stimuli
- **Physical abilities/activities** - stamina that must be developed for further development
- **Skilled movements** - advanced learned movements
- **Non-discursive communication** - effective body language/bodily movements

Learning is never only cognitive or psychomotor in nature, but is linked to affective behaviour (Meyer, 2005, p.32).

The three domains of learning mentioned above find expression in the work of Ramsden (1992, p. 26), who classifies learning into five categories:

1 Learning as a quantitative increase in knowledge
2 Learning as memorising
3 Learning as acquiring facts, skills and methods that can be retained and used as necessary
4 Learning as making sense or abstracting meaning
5 Learning as interpreting and understanding reality in a different way

Several models of learning exist to explain how learning takes place. The approaches are either from the teacher's perspective or from the learner's point of view (Ask and Haugen, 2005). Most approaches may be classified in one of three categories:

- Instructional: The Behaviourist school views learning as a continuous process of stimulus, response and reward, i.e. changing behaviour (Race, 2001, p.2). This teacher-centred approach allows the teacher to choose material, determine the pace of delivery and observe the students' progress, whilst students are passive (Ask, Bjørk and Heck, 2003).

- Constructivist: The Constructivist learning perspective originated in the 1970s and finds it origins primarily in the works of Bruner (1985), Piaget (1952), Vygotsky (1978) and Papert (1980). Its fundamentals lie within the cognitive learning psychology (Jonassen, Peck and Wilson, 1999; Oliver, 2000), which

focuses on perception, memory and people's development of their own interpretation and understanding of learning by demonstrating it through problem- solving (Race, 2001, p2). Vygotsky and Piaget's theories support the notion that learners should be active in the learning process, rather than passive bystanders who merely receive given knowledge (Laurillard, 1993, p.15).

- Social Constructivist/Social-cultural: The Transformatory approach integrates the learner, the group, the social context in which the learning takes place and the action learning process (Askew and Carnell, 1998, p. 8, Ask and Haugen, 2005, WCCE). Unlike the first two approaches discussed, which stress behavioural and cognitive aspects of learning, this approach to learning also includes emotional and social aspects. "Constructivist teaching usually searches for the current cognitive framework of the learner on which to build, and contextualising is part of that" (Robson and Hide, 2002, AusWeb2002).

Whereas teaching is seen as a vehicle for learning, it does not necessarily result in learning. Many other factors are also involved, not least of which is a teacher (Robson and Hide, 2002, AusWeb2002).

From the literature, it becomes apparent that teaching and learning are not mutually exclusive; the one happens in synchronisation with the other. The question that now arises is the following:

What are the essential components necessary in teaching that lead to effective learning?

What is currently considered to constitute successful teaching and learning? (Or alternatively – is teaching and learning the same thing?)

There is no single, most effective way of teaching. What is important is how the approach chosen affects the students' learning (Race, 2001, p.1, Prensy 2005/2006). The changing nature of current students, economic pressures and the use of different media forces one to change one's definition of what constitutes effective learning and teaching. In the past, students were regarded as "blank slates" and the instructor merely had to fill these slates with information. Students now create knowledge and

meaning, thought collaborative and interactive measures. Traditional methods of teaching are not able to measure up to expectations any more (Pallof and Pratt, 2001, p.3). A "real" teacher will include "…extensive and intensive interaction between faculty and student, a focus on individualizing instruction, a commitment to providing a broad knowledge base, and a critical perspective on the subject matter" (Lairson, 1999, p. 187).

According to Chickering and Ehrmann (1996, online), the American Association of Higher Education's "Seven principles for good practice in undergraduate education" include, as the first two principles, the following:

1. Encourages contact between students and faculty and
2. Develops reciprocity and cooperation among students.

Central to successful teaching is communication and interaction which should be included in any effective teaching strategy.

However, Colander (2004, online) warns against being overly naïve and ambitious when defining successful teaching. "Ultimately content, not delivery, determines whether one is or is not a good teacher. No matter how well you deliver it, if you do not have something to say, you are not going to be a good teacher." He goes further to compare the so-called "old methods" of teaching with the "new methods", but cautions that a great deal of common sense is a vital ingredient of good teaching and that not all that is new is necessarily good. This is summarised in table 3 below.

	Old paradigm	**Common sense approach**	**New paradigm**
Knowledge	Transferred from faculty to students	Faculty leads student into a previously constructed knowledge, while pointing out that it is not necessarily truth; emphasises critical thinking	Jointly constructed by students and faculty
Students	Passive vessel to be filled by faculty's knowledge	Active vessel to be filled by faculty's knowledge, but still a	Active constructor, discoverer, transformer of knowledge

		vessel to be filled	
Mode of learning	Memorising	A combination of learning terminology and relating	Relating
Faculty purpose	Classify and sort students	Develop students' competencies and talents; inspire, force, connive ways to get them to learn	Develop students' competencies and talents
Student goals	Students strive to complete requirements, achieve certification	Students strive to complete requirements and achieve within a discipline, certification and maybe become interested in broader learning	Students strive to focus on continual lifelong learning within a broader system
Relationships	Impersonal relationship among students and between faculty and students	Respect by student for faculty; personal relationship among students and between faculty and students within confines of the class	Personal transactions among students and between faculty and students
Context	Competitive/individualist	Combination of cooperation and competition	Cooperative learning in classroom and cooperative teams among faculty
Climate	Conformity/cultural uniformity	Sufficient conformity to make the class work	Diversity and personal esteem/ cultural diversity and commonality
Power	Faculty holds and exercises power, authority and control	Faculty has the authority and power, but uses it with restraint and understanding	Students are empowered; power is shared among students and between students and faculty
Assessment	Norm-referenced (i.e. graded 'on the curve') Typically multiple-choice items; students' rating of	Norm-referenced grades, with clearly defined requirements; teaching environment	Criterion-referenced; typically, performances and portfolios; continual assessment

	instruction at end of course	determines the type of exam used	of instructions
Ways of knowing	Logico-scientific	Uses the logico-scientific narrative, with acknowledgement of its limitations	Narrative
Epistemology	Reductionist; facts and memorisation	Abductive; combination of inductive and deductive	Constructivist; inquiry and intervention
Technology use	Drill and practice; textbook substitute; chalk- and-talk substitute	Class size and available technology determine the use of technology	Problem-solving, communication, collaboration, information access, expression
Teaching	Any expert can teach assumption	Content comes first; teaching comes second. An expert who cares can convey that to students	Teaching is complex and requires considerable training

Table 3: Colander's common sense approach to teaching

(Adapted from Colander 2004, online)

Colander further maintains that a good mixture of the old and the new may lead to teaching that is more effective. Hence, teaching strategies cannot be a one-fits-all approach, but must be developed within the context of the subject matter.

Successful teaching is therefore not merely constructivist or merely behaviourist, but an eclectic mixture of different methods, depending on factors such as the subject matter, the content, the composition of the students, etc. For example, Lairson's (1999, p. 187) reference to "individualized instruction" becomes virtually impossible when large groups of students are assigned to a single lecturer who struggles to get to know a handful of the group. In some subjects, such as Economics, the use of a constructivist epistemology is not feasible at all times; certain facts have to be taught and memorised before they can be understood or applied
(Colander 2004, online). The primary role of the teacher/lecturer is thus to decide on the ideal mix of "old" and "new" methods and then to provide guidance; learning should take place within this framework.

Biggs (2003, p. 5) is more specific with his definition of good teaching as "… getting most students to use the higher cognitive level processes that the more academic students use spontaneously." He compares the more academic student with the less academic student by means of a graph (adapted, 2003, p. 4), where levels of engagement are plotted against levels of student activity in Figure 1.

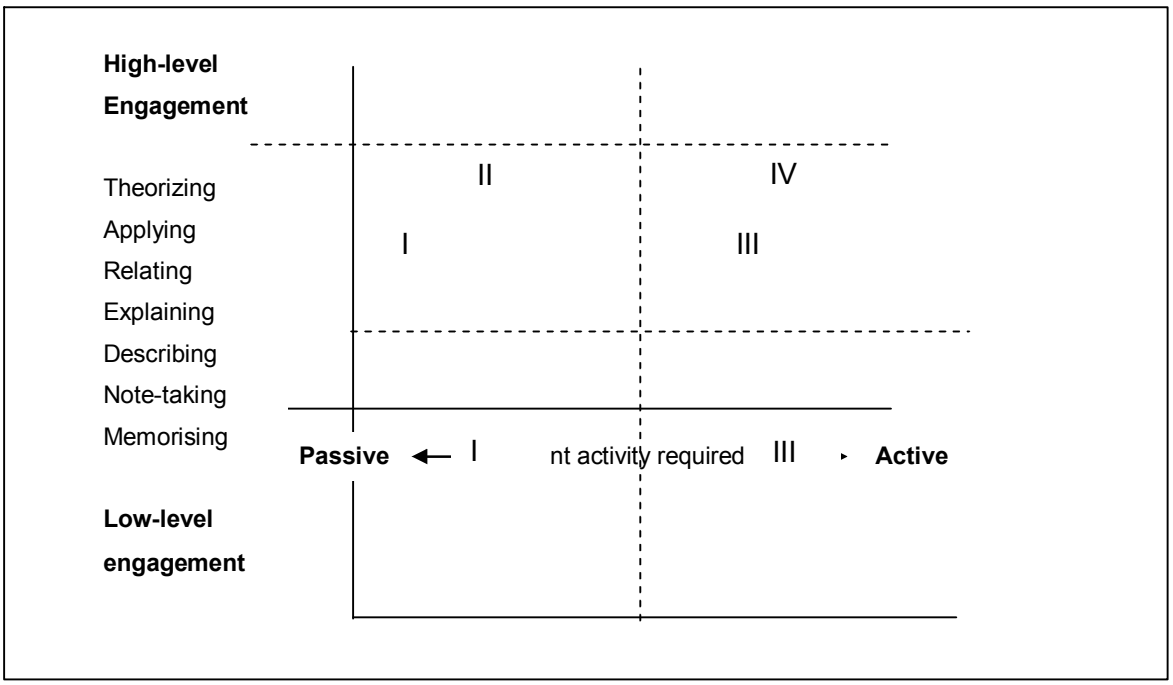

Figure 1: Levels of student engagement and student activity.

"Effective learning does not happen in a content vacuum" (Anderson, 2004, online). Learning has to take place within a specific context for it to have meaning. Academic learning may be seen as "…a series of activities that promote acquisition of high-level knowledge" (Nunes and Fowell, 1996, online). "However … the acquisition …is futile if the learner lacks the understanding needed to apply them in appropriate settings" (McPherson and Nunes, 2004, p. 2). Learning therefore, is the action of attaining new skills which the learner may make use of.

The most undesirable of situations is for students to fall within the first quadrant, where students are subjected to the standard lecture and are expected to write down and memorise. The ideal situation is in the fourth quadrant. Students participate

actively, communicate and are able to apply learning to real-world situations. Thus, the role of good teaching is to narrow the gap between the students in different quadrants.

Ultimately, the basic purpose of teaching or lecturing is to get the student to learn. Bligh (1990, p.102) quite rightly states that "a student's job is to learn" which "is something that students do, not something that is done to students" (Johnson, Johnson and Holubec, 1994, p.4).

Race identifies five factors underpinning successful learning (2001, p. 9). Table 4 summarises these factors, whilst combining them with elements of teaching (as identified in the literature), which need to be present in order for learning to be successful.

Factor (Race)	**Key issues**	**Teaching strategy must include:**
Wanting	Motivation, interest, enthusiasm	Enthusiasm, knowledge of subject matter
Needing	Necessity, survival, saving face	Applicability of content
Doing	Practice, trial and error	Active learning
Feedback	Other people's reaction, seeing the results	Interaction
Digesting	Making sense of what has been learnt, realising, gaining ownership.	Constructivism

Table 4: Successful learning and elements of teaching

(Table adapted from Race, 2001, p.9)

However, students' approaches to learning will differ, just as their experiences of learning will differ (Askew and Carnell, 1998, p. 35). This is instrumental when deciding on a teaching strategy.

In essence, teaching and learning cannot be separated when looking for success factors. The CHE (2003, p.7) maintains that teaching is not an end in itself, but "exists to bring about learning"; hence, "…one tends to teach (implicitly or explicitly) according to how one thinks learning happens." Ramsden (1992, p.102) links good teaching with effective learning. "The best way to improve teaching is to inquire into

the effects of one's teaching on student learning … Good teaching is open to change; it involves constantly trying to find out what the effects of instruction are on learning, and modifying that instruction in the light of evidence collected." However, one concurrent theme throughout the research is clear - when students are actively involved, rather than passive listeners, more effective learning takes place (Webb, Jones, Barker and Schaik, 2004, p. 93).

2.2.3 Active learning

Chickering and Ehrman's (1996, online) third principle of good practice in undergraduate education states that "…good instructional practice encourages active learning". In contrast to passive learning pedagogies such as lectures, in active learning the student has to be actively engaged in the learning process. 'Active learning' is a fairly broad concept and this might include in-class exercises, writing assignments, discussions or case-studies (Marburger, 2005, online).

2.2.4 Interaction

Neo (2005, online) refers to the importance of interaction within the learning and teaching process when he states the following: "Modern education theory is moving beyond the recall of facts, principles, or correct procedures and into the areas of creativity, problem-solving, analysis or evaluation (the very skills needed in the workplace in a knowledge-based economy, not to mention in life in general). Learners need the opportunity to communicate with one another, as well as with their teachers. This of course includes the opportunity to question, challenge and discuss issues. Learning is as much a social as an individual activity."

Interaction within the CIE-field is a "complex and multifaceted phenomenon" (Muirhead and Juwah, 2004 p. 12). Interaction refers to a dialogue or discourse or event between two or more participants and objects which occurs synchronously and/or asynchronously …" (ibid.). which involves at least two parties or objects, whilst interactivity allows for a two-way flow of information. In 1916, John Dewey referred to interaction as the "…defining component of the educational process". Laurillard (1997) also emphasises the essential role of interaction in education, whilst Vygotsky's (1978) popular concepts of social cognition imply that students can and should cooperate with one another. (Also see Schweizer, Paechter and Weidenmann, 2003).

Even though interaction is seen as a critical component of the education process, Anderson (2002, online) finds it difficult to define a clear and precise definition of interaction in education literature. Wagner's (1994, p.8) definition states that interaction needs action and two objects to be present. "Interactions occur when these objects and events mutually influence one another."

Bates (1991) identifies two types of interaction: Private interaction between the learner and the learning material, and Social interaction between the learner and tutor/facilitator and other learners. Moore (1989, online) subdivides social interaction into two further subgroups, therefore classifying it into three distinctive types:

- Student /content (or learner/content)
- Student/ teacher (or learner/instructor)
- Student/student (or learner/learner)

This list was expanded by Anderson and Garrison (1998, as quoted in Anderson, 2002, online) to include teacher-teacher, teacher-content and content-content interaction.

According to Anderson (2002, online), students who interact will have a deeper understanding of the content, and surface learning which is often found at undergraduate level, will be replaced by deeper learning. Anderson and Garrison's channels of interaction between the different participants in the learning process are illustrated as follows in Figure 2. According to this illustration, learning that goes beyond superficial rote learning and memorising, needs some kind of interaction to take place.

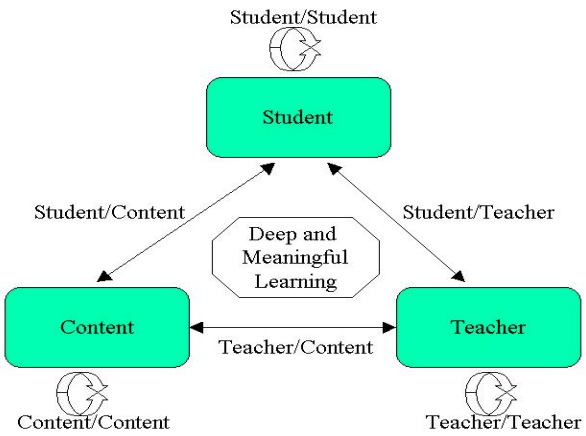

Figure 2: Channels of Interaction (Anderson, 2002, online).

Anderson's equivalency theorem (2002) further states that not all interactions need to be present; as long as there is at least one of the forms of interaction available on a high level. Which interactions would be present, would depend on costs and accessibility factors (Anderson, 2004, online).

Sufficient levels of deep and meaningful learning can be developed as long as one of the three forms of interaction (student–teacher; student-student; student-content) are at very high levels. The other two may be offered at minimal levels, or even eliminated, without degrading the educational experience.

High levels of more than one of these three modes will likely deliver a more satisfying educational experience, though these experiences may not be as cost or time effective as less interactive learning sequences.

Whereas, according to Anderson, it is not important which of the three forms of interaction is present, as long as there is at least one type, other authors disagree. Steinberg (1991) criticises the notion that interaction and learning are synonymous. Interaction without a plan is likely to lead to either no learning or even incorrect learning (1991, p. 100). Le Grange (2004, p. 88) adds to this, maintaining that the "mere exchange of information" is not necessarily learning. Mere interaction is therefore not learning and effective learning does not only depend on interaction. The emphasis should therefore be on the type of interaction suitable for the subject matter, the outcomes envisaged and the learning styles of the learners.

Whether all the types as described, represent interaction, is questioned by Steinberg, (1991) who sees reading course material, such as reading matter, film and television, as a one-way process, stating that "…a book does not respond to a reader's activities" (Steinberg, 1991, p. 13). If one revisits Wagner's (1994, p. 8) definition of interaction as stated above, then the concepts that are problematic, "Reciprocal events… two actions" need to be questioned. Is learner-learning material and content-content a two-way action and does the learner influence the learning material.

With the advent of technologically enhanced learning, a fourth type of interaction has emerged – that of learner-interface interaction. Hillman, Willis and Gunawardena (1994, p. 31) define this type of interaction as that which "…takes place between a student and the technology used to mediate a particular distance education process."

Within the diagram as presented by Anderson and Garrison, interface would form the outside boundaries within which the interaction takes place. It may be necessary to redefine interaction. Wagner's (1994, p. 8) definition needs to be expanded to include inanimate objects, such as computer screens, television screens and other technological devices. Learners therefore receive the learning materials, (be it through paper-based textbooks, notes, in class and/or technology) and have to transform this, processing, personalising and contextualising the information. In this transformation process, learners interact with the content, other learners, the instructors and the design of the content. According to Garrison (1999, online), it is the design of the content that holds all the different types of interaction together.

2.2.4.1 Student/ teacher (or learner/instructor)

Several authors have commented on the necessity of interaction between the student and the teacher (Lairson, 1999, Spady, 1970, Stolowy and Tenenhaus, 1998). Discourse between the different parties leads to higher levels of learning and the more effective integration of learning material and real-world situations. "The learning process must be constituted as a dialogue between teacher and student, operating at the level of descriptions of actions in the world" (Laurillard, 1993, p. 94). The interaction therefore, takes the form of a conversation between the learner and the teacher, but it must be beneficial to a better understanding and insight into the subject matter. "There is widespread agreement that high quality interaction between teacher and learners is an important element of effective teaching" (Kennewell, 2005, World Conference on Computers in Education).

Holmberg's didactical conversation (1995, p. 47) includes seven characteristics, which need to be in place before successful dialogue (and thus successful teacher-learner interaction) can take place. These include:

- Feelings of personal relations between instructor and student to promote study pleasure and motivation;
- Conversation concept may be successfully translated for use by the media available to distance students.

Guided didactic conversation fosters a personal relationship between the learner and the teacher, leading to greater motivation and thus improved learning (Kesley and

D'souza, 2004, online). However, one needs to look at the feasibility of the "guided didactic conversation" and the viability of it happening when student numbers continue growing and becoming too large. The question remains, how does one lecturer encourage personal interaction with more than 800 students?

2.2.4.2 Student /content (or learner/content)

"In dialogue, two or more people exchange ideas and beliefs… Dialogue therefore becomes an essential feature of their [students] making meaning and constructing knowledge... Similarly, learning from text involves a dialogical approach when learners attempt to explore the meaning the author is trying to convey" (Taylor, Marienau and Fiddler, 2000).

Student-content interaction has always been an important aspect of formal education, be it in the form of library study or the reading of textbooks (Anderson, 2004, online). Learner-content interaction therefore happens when a learner interacts with inanimate learning resources (Kesley and D'souza, 2004, online), but for effective learning to take place from this interaction, it must be more than merely reading the text itself. Hounsell (1984 as quoted by Taylor, Marienau and Fiddler), observed the following with regard to learning from a text. "In a surface approach, what was to be leaned was interpreted as the text itself. In a deep approach, the text was seen as the means through which to grapple with the meaning which underlay it." Ally (2004, online) takes learner/content interaction further by stating that interaction should also take place between the learner and the context (own emphasis), which allows learners to apply that which they have learnt to real-life situations. Authentic learning then takes place, which enables students to link knowledge and skills to their own lives (Van der Westhuizen, Gravitt, & Geyser 2004, p. 171).

2.2.4.3 Student/student (or learner/learner)

According to Damon (1984, online), peer collaboration is useful for "facilitating intellection discovery and the acquisition of basic knowledge", as well as for "complementing adult teaching". "Socio-cognitive theories of learning maintain that all learning is social in nature and that knowledge is constructed through social interactions" (Swan 2004, online). The third type of interaction refers to that between peers, where dialogue takes place within the student/learner body. Within this interaction, the communicating partners try to establish what has been said so as "…to reach common ground…. It is important that the members share their knowledge…" (Schweizer, Paechter and Weidenmann, 2003, p. 213).

Anderson (2004, online) goes further by stating that "The traditional lecture mode of delivery has medium levels of student-teacher interaction, usually low levels of student-student interaction and medium to low levels of student-content interaction." The applicability of this statement in the large classroom, where student-teacher and student-student interaction is minimal or in many cases non-existent, needs to be questioned. Factors such as noise level, audibility of students when making comments and lack of motivation to participate may, indeed, deliver a less satisfying educational experience if this were to be attempted. Interaction, as seen by the above, is essential for good learning to take place, but given the large number of students enrolled for some courses, this cannot happen effectively in the classroom. The problem remains that students need to work together, in order to make meaning of the content, to foster a better understanding of the material and to learn how to work together in groups.

The French sociologist, Emile Durkheim's concept of "collective representations" refers to the "…social power of ideas stemming from their development through the interaction of many minds" (Salmon, 2000, p. 28). Different methods of collective representations exist, of which, according to literature, cooperative and collaborative learning stand out as being the most effective.

Mehta (2004, p. 116) talks about a "little tool box" which every young person needs, to be part of the knowledge society. The tools in this toolbox include:

To learn how to learn – specifically to extract information

To learn how to communicate

Thus, in order for learning to be successful and for learners to be successful, not only in their present studies, but also when they become part of the working world, communication and interaction is vital. This is a recurrent theme throughout the literature and is crucial for success. However, what the literature does not appear to address, is the problem that interaction does NOT take place and thus, effective learning does not ensue. Students simply do not interact with one another, instructors or content and one of the main reasons for the lack of interaction is the size of the classes (Marsh, McFadden and Price, 2003, online). If lecturers continue to use the "old" methods of teaching, then, according to the proponents of interaction, they are not successful in making learning happen. Interaction needs to return to the learning arena. Alternative methods must be utilised, since many of the current methods are not successful. More importantly, the success of these alternative methods and the reaction of students to these methods need to be assessed, tested and evaluated. Students should be exposed to different forms of interaction and their experiences and reactions when this happens, must be investigated.

2.2.5 Cooperative and collaborative learning

Traditionally, learning has been an individual activity. A learner was given a task, and it was up to the individual to find information, make sense of this information and reproduce it in some way. When group-learning approaches are followed, learners participate in group-activities, which could be small group assignments, where the group is evaluated; it could be collaborative work on case-studies or it could be participating in discussions (Van der Westhuizen, Gravitt, & Geyser, 2004, p. 173). A subset of active learning is co-operative learning. With cooperative learning, students work on exercises in small groups. The exercises may be brief ('Think, Pair, Share') or the students may be required to resolve a fairly complicated exercise. The common bond among the variants is that the students uncover knowledge through small-group interaction, rather than by passively listening to lectures (Marburger, 2005, online).

Within the linguistic framework, the two terms, cooperation and collaboration, are used interchangeably. Within the educational environment, there is a marked difference between the two types of learning. "Cooperative learning" and

"collaborative learning" refer to learners working together in groups on tasks or issues, so that individual learning takes place through interaction in groups. Both terms referred to are not about competing with fellow members, but about "…using the diverse resources available in the groups to deepen understanding, sharpen judgement and extend knowledge" (McConnell, 1994, p. 13).

Johnson, Johnson, Smith and Sheppard (2005, p. 93 – 94) give a very specific slant to cooperative learning, which distinguishes it from collaborative learning. They refer to collaborative tasks as having "elements of cooperative learning", but the former involves "…joint work, social negotiation, peer evaluation and the sharing of responsibility in a group, optimising on complementarities and instilling collaborative skills", whilst the latter refers to having "…a mutual goal, positive interdependence, joint accountability and individual responsibility." The degree of structure in the group has also been used as a way to differentiate between the two concepts (Strijbos, Martens and Jochems, 2004, online). For the purposes of this study, the difference thus lies in the final result that is produced by the group; with collaborative tasks the group will hand in one final product, whilst with co-operative learning, each individual in the group will hand in his/her own product. Neither one of these is necessarily superior to the other in enhancing the learning process via group learning. What is true is that collaboration is a well-used and important form of social learning (Chan, 1995, p. 114).

Schweizer, Paecher and Weidenman (2003, p 121) summarise the advantages of group work as follows:

Advantage	**Description**
Qualitatively or quantitatively better joint task outcomes	Wider range of knowledge and skills
Better individual knowledge	Wider knowledge gains that incorporate multiple perspectives
Development of social skills	Helping, explaining, encouraging group members
Gains in motivation	Higher commitment

Table 5: Advantages of group work

Although the advantages and gains of group work are well documented, the realities of making use of this type of teaching methodology in difficult circumstances, such as large classes, with students of different cultures working together and classrooms

where seating is fixed, are not. Felder (1997) and Graham (1992), for example, refer to some of these issues, but their solutions are not always applicable to the unique problems facing a developing country, such as South Africa.

2.3 Problems relating to the face-to-face classroom

The national plan for the goal in Higher Education (2001, online) is that participation has to increase from 15% to 20% within the next 10 to 15 years. Given the current situation in South Africa with regard to recent mergers of Higher Education institutions, this will lead to even larger classes. Large classes may be cost effective for the institution, but there is widespread concern about the quality of instruction in these large classes (Marsh, McFadden and Price, 2003; Gibbs and Jenkins, 1992).

2.3.1 Large classes

The literature is not very specific when referring to the size of large enrolment classes. Riffell and Sibley (2005, p. 218) identify a high enrolment course as "…100+ students per section". Johnson's (2002) Business Communication class was 500 strong, DiBiase (2004, p. 48) reports on a group of 642 students enrolled for a geography course, whilst Naber and Köhle (2002) refer to groups of more than 1000. There is no formal definition of how many students make up a large class. What is clear is that the number of students in a class is such that individual relationships with the instructor are precluded, and students who want to speak out cannot do so (Gibbs and Jenkins, 1992, p. 11).

Johnson (2002) identified "Three Big Issues" which hinder the effectiveness of teaching and learning in a large enrolment course:

- Accessibility to course content: Students who missed a class, inevitably fell behind and catching up seemed impossible
- Effectiveness of large lecture instruction: Even though efforts were made to engage students, learning was largely a passive endeavour.
- Low level of connectivity: Time to interact was limited and getting to know students was impossible.

Twigg (2003) also refers to the problems encountered when she says, “Students in large lecture classes tend to be passive recipients of information, and student-to-student interaction is often inhibited by class size.” This is echoed by Naber and Köhle (2002), who state that “[Venues] are so overrun that students will actually fight for a place in the lecture hall...The lecturer passes information to his students by reading the information in question aloud. A lecture hall packed with a thousand students perched on every flat (or not so flat) surface surely is not a place to inspire a lively discussion of the latest development in this or that scientific field”.

Apart from the lack of opportunities to interact, Race (2001, p. 13) identifies two further drawbacks of large enrolment classes, namely, lack of motivation and lack of opportunities for remedial work.

Felder (1997) asserts that lectures do not have much educational value, since they make people watch and listen, instead of actively doing something. “No matter how good you are, you probably won’t be able to persuade most students to open their mouths in front of 120 classmates – it feels too risky for them. If you hope to move away from the museum-like aspect of most large lectures, you’ll have to try a different approach.” One approach could be to supplant personnel with technology – including e-learning, by making use of a blended learning approach or a hybrid model (Marsh, McFadden and Price, 2003, Murphy, 2002; Riffel and Sibley, 2005).

2.4 What is e-learning?

Technology-enhanced education is widespread and there are several terms used to indicate the use of technology in the learning process: e-learning, blended learning, hybrid models, Internet learning, distributed learning, networked learning, tele-learning, virtual learning, computer-assisted learning, Web-based learning, online instruction and distance learning are some (van der Westhuisen, 2004; Sanders and Morrison-Shetlar, 2001; Herselman and Hay, 2005).

Rich (2001) identifies five specific attributes of e-learning which distinguishes it from other forms of learning:

- It is Web-based
- There is a virtual classroom

- The curricula can be personalised
- Various learning experiences are present
- It has measurable results.

Recent literature does not necessarily agree with the above. Certainly, the latest writings indicate that e-learning does not only refer to the web/internet, and virtual classrooms do not always denote the presence of e-learning. Herselman and Hay (2005, p. 395), include the following technologies as e-learning devices: inter-, intra- and extranets, audio or video conferencing, television, video, satellites, DVD, and mobile phones to name but a few (see also Engelbrecht, 2003; Evalutech, 2004). Even so, all of the above terms imply that there is some distance between the learner and the lecturer and that some type of technology is present. For the purposes of this research, Le Grange's (2004, p. 87) straightforward definition of e-learning will be used:

E-learning is "learning facilitated online through network technologies."

Initially, e-learning was used primarily by and for distance education (Hiltz, 1994, French, 1999). This has changed; e-learning is progressively becoming a partner in face-to-face education. Increasingly, organisations are adopting online learning as the main delivery method to train employees (Simmons, 2002). At the same time, educational institutions are moving towards the use of the Internet for delivery, both on campus and at a distance (Ally, 2004; Bourlova, 2005). Online learning is now becoming omnipresent at all levels of education and in all institutions of learning. It originally started with distance education, but campus-based students are also mixing and matching their classroom and online learning in all sorts of often unanticipated ways (Davis: 2004). It is "…becoming an extension of the classroom and learning facilitation" and complements what happens in the classroom (Herselman and Hay, 2005; Paloff and Ratt, 2001, p. 109). The computer is not only a powerful learning tool, but is becoming vital in communication (McLean and Murrell 2002).

Figure 3 illustrates the Modes of e-learning (Bourlova, 2005, p.10)

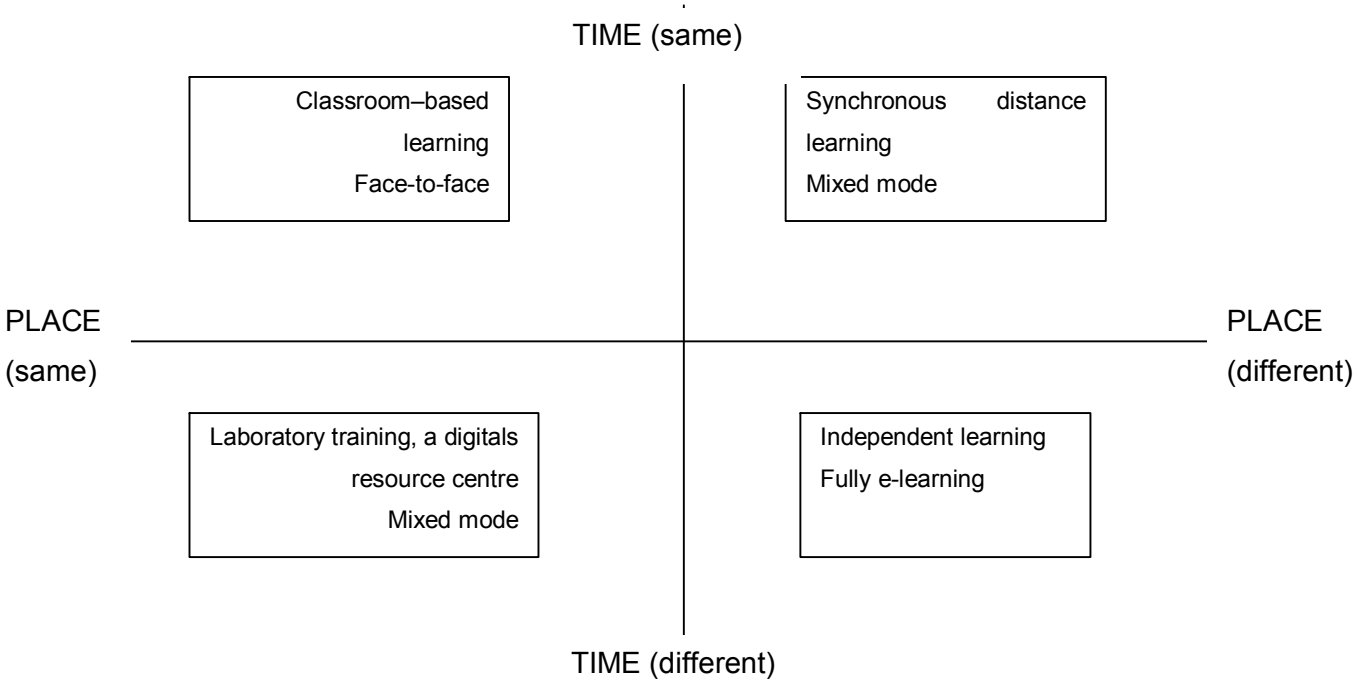

Figure 3: Modes of e-learning

The time/place continuum is understood best when referring to this figure. Where face- to-face restricts the learner, and total e-learning demands much in terms of motivation and self-discipline, the mixed mode allows for a combination of flexibility and extrinsic motivation to influence the learner (Bourlova, 2005). The combination of different time and place settings would depend on the students and the subject matter.

2.4.1 Blended learning.

The blended approach of instruction refers to a combination of technological and traditional classroom instruction, when some of the face-to-face sessions are replaced with virtual or online sessions. The approach maximises each method's benefits, in order to improve learner outcomes and/or save costs (Marsh, McFadden and Price, 2003; Osguthorpe and Graham 2003; Riffell and Sibley 2005; Young 2002; Garnham and Kaleta, 2002). Different terms are used for this approach; Hybrid learning, Mixed mode teaching, "Click and Brick classes", are but some (Lago, 2000). For the purposes of this study, the term, blended learning, will be used.

The purpose of blended learning may different with different instructors. Osgurthorpe and Graham (2003) identify six goals for educators when designing the blended environments, encompassing the main goals of blended learning. These are:

1. Pedagogical richness: The central focus of the intervention should be to improve student learning (see also Prammanee, 2003; Riffel and Sibley, 2005; DiBiase 2004; Garnham and Kaleta, 2002; Aycock, Garnham, and Kaleta, 2002).

2. Access to Knowledge: This allows for students to consult with different sources, to compare information and to make better-informed decisions – something that a single textbook cannot do (see also Riffel and Sibley, 2005; DiBiase 2004; Herselman and Hay, 2005).

3. Social interaction: Students are able to share, not only in an academic atmosphere, but also in a social one. They have the option of communication in the online environment or in a face-to-face setting (see also Shank, 2004; Aycock, Garnham and Kaleta, 2002).

4. Person Agency: Personal choices for students, thus allowing for learner-control, increase (see also Riffel and Sibley, 2005; Garnham and Kaleta, 2002).

5. Cost Effectiveness: Some authors believe that the blended approach will free seats in lecture venues, thus allowing for lecture venues to be free so that more students could be enrolled (see also Prammanee, 2003; DiBiase 2004; Young 2002; Sands, 2002).

6. Ease of revision: The majority of blended learning environments are created by the teachers themselves, thus the potential is there to create simple, easy to change programmes (see also Prammanee, 2003; Riffel and Sibley, 2005).

The literature is vague on one issue – that of a single best mix, standard approach to a blended course. Whether class time is reduced by a “significant portion” (Garnham and Kaleta, 2002) or by reducing only one lecture by 30 minutes, (Aycock, Garnham and Kaleta, 2002), there seems to be no single solution for a so-called ‘best-fit’ or ‘one-size-fits-all’ approach. What seems to be the general belief is that each

instructor should spend a great deal time on redesigning the course and then make use of as much or as little of each of the two methods as is deemed necessary (Aycock, Garnham and Kaleta, 2002). Brown (2000, online) refers to this principle as "the 90-10 Rule". This rule suggests that 100% face-to-face and 100% online are inferior to blended courses and that the optimal mix should be between 90-10 and 10-90.

Agreement is reached on the issue of delivery. The majority of e-learning and blended learning programmes use computer-mediated instruction as their technology 'partner' (Evalutech, 2004, p.1). Online instruction occurs when learners use the Web to go through the sequence of instruction, to complete the learning activities and to achieve learning outcomes and objectives (Ally, 2004, online).

Furthermore, courses are built around or upon the use of certain scaffolding or reusable objects, one of these being the learning management system (LMS). "At the core of most e-learning [hence blended learning] programmes is a learning management system" (Herselman and Hay, 2005, p. 395). "The course may be constructed in a 'Content Management System' (CMS). The CMS version may then be incorporated in a 'Learning Management System' (LMS) to facilitate communication, collaboration and administration" (Ask and Haugen: 2005, WCCE). Perhaps one way of bringing back communication and interaction to the classroom is to turn to a blended model of teaching and learning. Students could interact via technology – specifically computer integrated teaching – where the possibilities and options are vast and where the problems relating to larger classes are non-existent. Students would have access to notes and course content without having to go to the lecturer; learning would be much more active by placing some of the tasks online and there would be enough time to foster interaction. This needs to be investigated and tested by making use of students' reactions and comments about the use of an LMS.

2.4.2 Learning Management Systems (LMS)

Gartner's E-learning Glossary (Lundy, Harris, Igou, &Zastrocky, 2004, p. 230) identifies a Learning Management System as "A full infrastructure on which e-learning can be built and delivered." a Learning Management System has six main components which include "…the ability to launch a course or interact with a learning content management system (LCMS), as well as a Learning Programme Administration which includes test and assessment capabilities" (p. 230).

The most popular LMS's in South Africa are at present WebCT, Blackboard, Electronic campus system, e-College and Groupware (Herselman and Hay, 2005, p. 400). These systems have, amongst others, features such as bulletin boards, chat rooms, online quizzes, whiteboards and integration with other software programs (webct.com 2004; Backboard 2004; Groupware 2004; Ecollege 2004; Electronic Campus 2004). A distinct advantage of using a Learning Management System is that the tools are accessible only by those registered for the course, thus protecting the participants from external parties (Longe and Ogege, 2005).

2.4.3 Why did e-learning not fulfil its early promises?

Initially, e-learning was seen as the panacea of education. Le Grange (2004, p. 87) describes the growth of e-learning as "explosive, unprecedented, amazing and disruptive." E-learning was portrayed as a "revolution in Higher Education" and "…the vehicle for transforming all education and learning in the twenty-first century" (Le Grange 2004, p. 87). Brown (2000, online) stated that "Computer enhanced learning will transform the practice of education in all country, at all levels and the world will be a better place for it!" E-learning was hailed as the solution to all problems and a large number of institutions jumped on the proverbial bandwagon of technology, placing entire courses online, often with disastrous effects. Lecturers, learners and in some instances, management, did not buy into e-learning as expected (Engelbrecht, 2003, p. 41). Reasons cited for the reluctance to buy-in are summarised in Table 6.

Lecturing Staff	Students	Management
Inability to provide quality content	Ineffective interaction experiences	Upfront costs of technology are vast
Lack of training in new technologies	E-learning merely being a replication of the classroom	HE institutions are not profit driven
No incentives (financial or promotional)	Lack of motivation by students to complete the course	Lack of E-readiness
Limited technical support	Unfamiliar with computers	
Labour intensive, time-consuming, added workload,	Access to computers	
Intellectual property rights	Resistance to change	
Academic dishonesty		
Lack of equipment		
Resistance to change		

Table 6: Lack of buy-in into e-learning

(Engelbrecht, 2003; Yang and Cornelious, 2005; Wilson 1998; Galanti, 2004; West and Graham, 2005; Quiness and Hurst 2005; Schweizer, Paechter and Weidenmann, 2003)

Le Grange (2004, p. 88) further voices his concern about the "…flagrant disregard for some of the educational and philosophical problems associated with e-learning. For example, is mere retrieval or exchange of information, learning?" Many authors support his view in that much of which was called e-learning was merely rerouting the pick-up point of class notes and reading material – the so-called 'paper-behind-glass syndrome' (Evans, Gibbons, Shah and Griffin, 2004; Cronje, 2002).

It would be lacking if the Kozma-Clark debate on the effect of media on teaching were not part of the literature review of this research. The different points of view in this debate hinge on the effect that media has on learning. On the one hand, Clark (1983, p. 445) argues that the use of media is not the driving force behind effective learning, but that media "…are mere vehicles that deliver instruction, but do not influence student learning…" Kozma (1994, online), on the other hand, is of the

opinion that the "…processing capabilities of the computer can influence the mental representations and cognitive processes of learners". Thus, it is the media that facilitate the learning process and the media is more than the vehicle. After several studies on distance education, Russell (1999, p. 14) concludes, "No matter how it is produced, how it is delivered, whether or not it is interactive, low-tech or high-tech, students learn equally well". However, just more than 10% of Russell's studies included computer-based learning and these studies were done before the explosion of the internet.

The debate continues – what is it that improves learning – the actual technology, or the pedagogy behind it? However, the issue is no longer whether the media make a difference or not, since the media, and more specifically technology, is now an integral part of the society in which present and future students exist (Prensky, 2001). Duffelmeyer (2002, p. 359) does not agree with this statement. She refers to Haas (1996) and Barton (1994) as she quotes them by stating that it is a myth to think that "…we can't do anything about them (technologies), so we might as well accept them". Possibly, the question that should be asked is not whether the media (or technology?) may or may not influence learning, but whether lecturers can still afford to go to the lecture hall without making use of some kind of technology. However, technology should be used in a manner that is pedagogically sound, adds value to the teaching and learning process and is used so that it adds to the satisfaction of the students.

Wills and Alexander (2000) have taken this debate further by including other role players in the equation. "Technology in itself does not change or improve teaching and learning. Attention to management processes, strategy, structure, and most importantly roles and skills, are the key to successfully introducing technology in university teaching and learning". One of the "roles and skills" they refer to could be that of the lecturers and students themselves; if they do not accept or appreciate the use of technologies in the learning process, it would be doomed to failure. Both lecturers and students have to buy in to the concept of the use of technology. *Attitudes towards* e-learning, and not e-learning itself, could thus be the downfall of technology's use in education.

A hotly debated issue is that of the effect of e-learning on workloads. Quinsee and Hurts (2005, online), for instance, state that one of the biggest misnomers of e-learning was that it would decrease the workload of both the student and the

instructor. In another study done by Utts, Sommer, Acredolo, Mather and Matthews (2003, online), where a course in Introductory Statistics was offered both in the traditional face-to-face manner as well as with mixed mode teaching, the authors concluded that "…instructor time spent on each version of the course was almost identical." The evidence is not conclusive and much more research needs to be done on this specific aspect. If, however, it is found that the workload increases, it could impact negatively on the use of technology, by staff, as well as students.

2.4.4 How can we use e-learning to improve on-campus learning?

Lairson (1999, p. 187) refers to new ways of thinking when he asks the following: "What is the actual purpose of class time in courses today? Is this an optimal use of the time of students and faculty? Can the Web make face-to-face class time more productive?" Le Grange (2004, p.94) adds to this by stating that we cannot ignore the effects of technology; "…we will have to find ways of working through the issues that we are concerned about."

"E-learning is a transformational process that posits new challenges for staff and students, both in educational methods and support" (Quinsee and Hurst, 2005, online). According to Smith and Ferguson (2002), there are several advantages of online delivery. The advantages include deeper levels of discussion and more time for students to consider their responses in the asynchronous discussions.

In a study done by West and Graham (2005, p.20), the researchers found five ways in which technology was impacting positively on learning. In Table 7, I summarised the five ways and identified some of the authors who support West and Graham.

Ways	How	Literature support
Visualisation	Learner-content interaction	Kehoe, Tennent and Becker 2005; Murphy 2003; Naber and Köhle, 2002;
Interaction	Learner-learner and learner-teacher	Naber and Köhle, 2002; Swan, 2004; Pena-Shaff and Nicholls (2004); Aycock, Garnham and Kaleta (2002); Woods and Ebersole; 2003; Brown 2000;
Reflection	Learning experiences	Kehoe, Tennent and Becker 2005; Murphy 2003; Swan, 2004;
Authenticity and Engagement	Opportunities for real-life activities	Naber and Köhle, 2002; Pena-Shaff and Nicholls (2004); Aycock, Garnham and Kaleta (2002); Merrill 2002;
Practice	Quality and quantity	Woods and Ebersole; 2003; Merrill 2002; Brown 2000.

Table 7: Positive impact of technology on learning

In Pena-Shaff and Nichol's (2004, p. 206) analysis of student interaction, the authors found that, although there were not many, postings would be longer than in-class discussions would allow, and students could not interrupt one another as they would in a face-to-face class. It is therefore apt for Anderson (2004, online) to state that "The greatest affordance of the Web for educational use is the profound and multifaceted increase in communication and interaction capability that it provides."

"A learning environment is a place where people can draw upon resources to make sense out of things and construct meaningful solutions to problems. Adding 'constructivist' to the front end of the term is a way of emphasizing the importance of meaningful, authentic activities that help the learner to construct understandings and develop skills relevant to solving problems" (Wilson, 1998, p. 3). Wilson expands this definition to include "communities" of learners who come together on projects and support one another (1996, p. 5). "The social constructivist approach lends itself in many ways to e-learning" (Ask and Haugen, 2005, WCCE). Computer Conferencing (CC) therefore seems to fit the constructivist, as well as the collaborative learning mould.

Contreras-Castillo, Favela, Perez-Fragoso and Satamaria-del-Angel (2004) report on studies done in the United States where the major problem reported by students is the lack of interaction with peers. Guidera's (2003/2004, p. 164) findings indicate a "…consensus among the study population that online instruction is less effective at interactions both between faculty and students as well as between students themselves".

In direct contrast, Macdonald and McAteer (2003) found that online media "…can be used to join up people and resources, supporting communication and the sharing of information between staff and students, regardless of time and location". Salmon's (2000, 2002) extensive work on e-tivities (active and interactive online learning, 2002, p.3) supports the idea that online media may be an effective way of fostering interaction in groups. Thus, a lack of conclusive evidence regarding the usefulness of e-learning with regard to interaction is apparent.

Furthermore, simply replacing all face-to-face contact with e-learning is not an option. Learning is a social process, and the development of skills beyond mere competence "requires time and face-to-face contact" (Dreyfus 2002). In addition, the lack of social contact when using e-learning is a topic which needs further exploration. "… e-learning scenarios have often ignored the learner's need for a socially rich communication in phases when learning contents are discussed" (Schweizer, Paechter and Weidenmann, 2003, p. 214). A combination of e-learning and face-to-face instruction should include the best aspects of the real and the virtual classrooms (Concannon, Flynn and Cambell, 2005).

Apart from West and Graham's five positive aspects of e-learning, the following have also been identified as e-learning characteristics which impact positively on learning:

- Time independency (asynchronous learning) (Cochrane and Robinson, 2004)
- Easier access for handicapped students (Naber and Köhle, 2002; Cochrane and Robinson, 2004)
- Lack of discrimination due to facelessness (Paloff and Pratt, 1999)

Specifically, the reaction to online content delivery reinforces the benefits of using technology as a way of assisting students, particularly those with English as a

second language (Kehoe, Tennent and Becker, 2005). Students have more time to read the content and are able to reflect more fully before they have to contribute.

In making use of face-to-face, as well as online modes, i.e. the blended model, the benefits of each mode can be reaped. However, it should not be seen simply as an add-on or a way of lessening the lecturer's burden without the student benefiting; it should be beneficial to both teaching and learning.

E-learning may also assist learners to develop more generic skills which are not necessarily used only in learning, but may be used in working environments as well.

2.4.5 Note-taking vs Note-making

Note-making is an essential skill that a university student needs, but often lacks (Grabe, 2005). During lectures, most students turn to writing. However, whether what they are writing down is indeed what the lecturer wants them to write down, is not always clear (Bligh, 1990, p. 117). Brown and Race (2002, p. 114) distinguish between taking notes and making notes; where the former is merely a copying of what the lecturer says/portrays on the whiteboard, the latter is a process of taking what is said and turning it into their own, personalised notes. Moreover, time does not always permit students to write down the notes and concentrate in class (Bligh, 1990, p.120).

The internet now offers a practical way of assisting students to acquire this skill. If the notes are loaded before the class, students can print them out beforehand. Grabe (2005) notes an improvement in learning in cases where students accessed the notes before class. In Couch's study (1997), two distinct advantages of placing notes on the LMS were observed: students did not have to pay for the notes (which they might even lose), and lecturers did not have to prepare the notes in advance; thus, they were able to revise material or add on during the term. In a subject such as Economics, where the chances are that this is common practice, it could prove most useful.

2.4.6 Groupwork

Apart from enhancing learning, cooperative learning may also affect the way in which students interact with one another. Intergroup relations and more specifically, cross-cultural relations, can be fostered through cooperative learning (McConnell, 1994, p. 25). Gabriel's (2004) study on group interaction online, found that "…members of the small learning groups did learn from interaction … When these were shared in the context of the online work, students learned from one another."

2.4.7 Questioning

This could be an activity which could lead to effective learning – both asked to the students, as well as asked by the students. Doing this in a large class could lead to disruption and disturbance and could also be utilised only by the more confident student (Brown and Race, 2002, p. 118).

2.4.8 Cautioning against e-learning

Studies done on e-learning do not necessarily support all aspects of e-learning. Kehoe, Tennent and Becker (2005) warn that results from their study show that some students still prefer traditional forms of teaching and learning and at the very least, would prefer a choice in how they engage with the learning activities. This is echoed by Maloney (1999 p. 21) who claims that "Some students learn better in a course in which they can interact with the professor in person. Others, however, thrive in an online environment. Shy students, for example, tend to feel liberated online, as do many foreign [second language] students who are unsure of their spoken English". There is, furthermore, still the matter that the method being used by the lecturer is not necessarily the students' preferred method; the learning style of the student must also be accounted for.

Role players in education "…continue to argue for updated learning and schooling models and the increased use of new and emerging electronic learning technologies" in order for students to cope more effectively with the "…increasingly changing and complex world" (McCombs and Vakili, 2005). Content is abundant, but context and

meaning are scarce commodities. This changes the purpose of education; learners and teachers become co-learners and partners in "…learning communities that go beyond the school walls" (McCombs and Vakili, 2005). E-learning might be the solution to many of the problems faced by HE, but in order for that to happen, traditional roles are going to have to change in several ways.

2.5 How might teacher and student roles change?

"Online education is widely accepted as student-centered education" as opposed to "professor-centered" (Yang and Cornelious, 2005). This implies that the instructor will become more of a facilitator than a lecturer. Goodyear (2001) has derived indicators of teacher and student role changes when moving from 'traditional' teaching (for example, lectures), to online learning, which involves collaborative online learning. In this environment, the professor and the student become part of a community of learners, instead of the traditional way where roles were regimented (Yang and Cornelious, 2005; Schweizer, Paechter and Weidenmann, 2003, McCombs and Vakili, 2005).These role changes are summarised in Tables 8 and 9.

Traditional	**New role**
Oracle and lecturer	Consultant, guide and resource provider
Provider of answers	Expert questioner
Provider of content	Designer of student learning experiences
Exercising total control of the teaching environment	Sharing with the student as fellow learner
Structure provision	Encouraging more self direction

Table 8: Teachers' roles changes

(Adapted from O'Leary, 2005, online)

Students' roles may also change, in that they move from being "…passive classroom learner[s] into a more active online enquirer" (Yang and Cornelious, 2005).

Traditional	New role
Passive receptacles for hand-me-down knowledge	Constructors of their own knowledge
Memorisers of facts	Complex problem-solvers refining their own questions and searching for their own answers
Individual learner	Working as group members on more collaborative/cooperative assignments
Acting as blank slates	Acting as autonomous, independent, self-motivated managers of their own time and learning process
Observing the teacher's expert performance or learning to pass the test	Using knowledge

Table 9: Students' roles changes

(Adapted from O'Leary, 2005, online)

The focus is hence on "learner-centeredness" (McCombs and Vakili, 2005, p. 1584) which is defined as follows:

"Learner centeredness is the perspective that couples a focus on individual learners – their heredity, experiences, perspectives, backgrounds, talents, capacities, and needs – with a focus on learning – the best available knowledge about learning and how it occurs and about teaching practices that are most effective in promoting the highest level of motivations, learning and achievement for all learners."

The learning-centred principles identified by the American Psychological Association include four categories: Cognitive and Meta cognitive; Motivational and Affective; Developmental; and Social and Individual-Differences Factors (McCombs and Vakili, 2005, p. 1586). Thus, the implementation of technology in the classroom implies that a totally new set of rules should be developed and used by both the teacher and the learner. By using a blended learning strategy, Integrated Multiple Learning Strategies (IMLS) are created for a feasible "student-centered learning (e-Learning) model" (Al-Khanjari, Kutti and Ramadhan, 2005). The crux of the matter, therefore, is to "…understand the nature of e-learning from the learner-centered perspective" (Al-Khanjari, Kutti and Ramadhan, 2005).

One of the problematic issues is the perspective of the students who have been making use of a blended model. Little research on the blended model and the pedagogical issues underlying the blended model is available. Macdonald and McAteer (2003) refer to the lack of research by stating the following: "Yet to date, much of the research into e-learning has focused either on the evaluation of online course design and delivery, with implications for course development teams or on the practicalities of completely online course presentation". Bourlova (2005) is more emphatic in his reference to the need for research in this area, when he looks at changing technology, an increasing need for Higher Education and the way that e-learning is currently used:

"The fact that technological processes occur so rapidly, and profoundly affect social processes, raises the demand for a precise analysis of current conditions of on-campus infrastructure, students' experiences in education, as well as the management strategies in modern HE Institutions. A better understanding of the relationships between e-learning and these other factors will suggest strategies that university administration can utilize to manage better the pressures caused by increased demand for higher education…Currently the biggest use of e-learning is not intended for the learners remote from campus. WebCT Inc., manufacturers of the most widely used online learning platform, estimates that more than 80% of WebCT applications are used for campus-based teaching. Surprisingly, though, little attention had been paid to the possible academic, administrative and social implications of using e-learning extensively on campus."

One also needs to continue to look at the effectiveness of e-learning in relation to other methods of teaching. "Further research will determine whether e-learning is better than traditional instructional methods and check the pedagogical methods that are employed in using e-learning tools" (Longe and Ogege, 2005). The effectiveness of e-learning in student support also needs to be analysed and researched. "However, we have tended to neglect the contribution of other modes and media used in learner support, and there has been a critical lack of overt integration of online use with other good learning support systems, as part of a cohesive strategy" (Macdonald and McAteer, 2003).

2.6 Previous studies

Several studies have been undertaken in the field of communication, interaction and e-learning. Hoskins and van Hoof (2005) looked at motivation and ability in a study on dialogue via the online learning environment and found that it may influence achievement, but does not address the issue of diversity and the effect thereof. Yip's (2004) study on 30 undergraduate psychology students at the Open University, Hong Kong, found that students generally prefer online teaching to the traditional classroom lecturing because they enjoy the various ways to communicate with instructors, tutors and fellow students for the sake of collaborative learning. However, this was a very small group of learners in a subject in the Humanities field of learning. Research on using e-learning dialogues (Webb et al., 2004) using e-learning dialogues as an integral component of a taught module, found that students' participation in these dialogues is positively correlated with module learning outcomes.

In a comparison of groupwork between face-to-face and online groups in an 'Introduction to the Psychology of Learning' course in Munich, Schweiser, Paechter and Weidenmann (2003) found that it does not depend on the setting, but on the task; therefore, students do not have to meet face to face. In this course, consisting of 96 males, only learners in their first-year, groups of 4 (face-to-face) or 6 (Computer Mediated Communication), had to complete a specific task over a period of 3 weeks. The study does not consider gender-specific issues in groupwork.

The use of WebCT in the study of medicine was investigated by McLean and Murrell (2002), where 200 first-year students from diverse backgrounds, found communication and information access online useful and benefited from getting to know the rest of the students in a virtual world. They found that the most useful aspect of the LMS was that staff could upload resources and concluded that online work should be graded in order for students to participate actively and effectively.
Storey, Phillips, Maczewski and Wang evaluated the usability of Web-based learning tools and state that "…very few case-studies have been conducted to identify potential usability issues with these tools" (2002, p. 91). They furthermore assert that no studies had been done on both the usability and the impact on the potential users. This study looked, amongst others, at the students' perceptions of how these tools influenced their learning. Fifty-four 3rd and 4th year computer science students in

Canada were included in this study. Their findings may be summarised as follows: "Web-based course supplements are widely accepted, even expected" (p.99). This is confirmed in the work of Haywood, Macleod, Haywood, Mogey and Alexander (2004). Students in Higher Education take ICT for granted since they use ICT daily and effortlessly for studies and reactions.

The relationship between students' attitudes towards e-learning and the effectiveness of e-learning is the focus of Henning and van Rensburg's (2002) study. An enquiry into students' engagement with online courses on campus found that constructivist learning with electronic networks creates enhanced learning opportunities for students who embrace it, but creates turmoil in those who do not.

With reference to Economics teaching, not much has been done in this field. Marburger (2005) states that despite the attention paid to cooperative learning, relatively little research has been conducted in economics education to measure its impact on learning.

In conclusion, Figure 4 illustrates the problems on the one hand and possible solutions on the other.

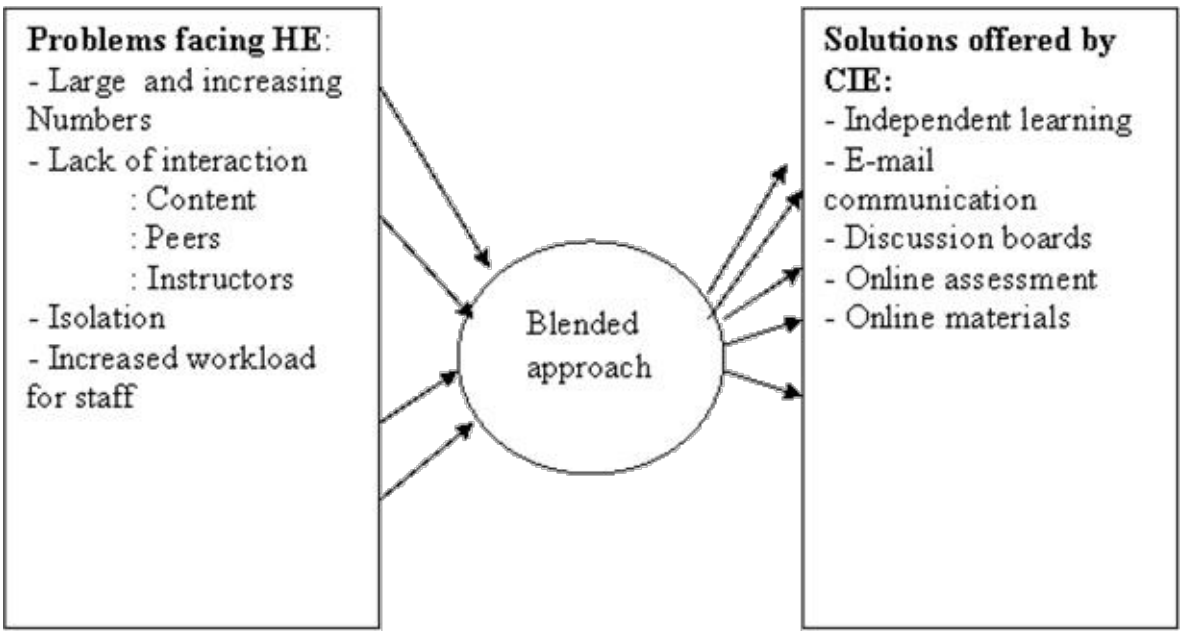

Figure 4: Problems and possible solutions

(Adapted from Brown 2000)

Hence, the need that has been identified leads to the research question:

What value does a Learning Management System add in promoting interaction in large classes?

2.7 Conceptual framework

In order to make sense of the data collected and to be able to answer the research question, a conceptual framework has to form the basis of the research project. The conceptual framework is illustrated in figure

Pedagogical Problems	Intervention: Engagement Theory and Conversation Theory	Tools	Immediate Outcomes: Contingency theory	Long term outcomes: Grounded theory
Lack of interaction: Peer	**Learning Management System** UNIVERSITEIT VAN DIE VRYSTAAT UNIVERSITY OF THE FREE STATE YUNIVESITHI YA FREISTATA WebCT	Discussion board 	Increased communication Enhanced computer literacy Reasoning skills	Improved understanding and integration of Economics Improved learning skills and retention rates
Lack of interaction: Lecturers		Discussion board  E-mail Notices 	Increased communication Increased understanding Increased communication Increased communication	
Lack of interaction: Content		Quizzes  Course material  Notes  My progress 	Increased preparation Additional learning Integration skills Improved note taking Self-pacing	

Figure 5: Conceptual Framework

The research question for this study focuses on the use of computers to foster communication, contact and interaction. It is therefore necessary to look at the theories which emphasise the relationship between communication and effective learning. Two theories of communication and learning are relevant to this study: Pask's Conversation Theory (Boyd, n.d., online), and Kearsley and Schneiderman's Engagement Theory (Miliszewska and Horwood, 2006).

Students and lecturers are, in effect, managers – the students have to manage their own learning and the lectures are managers of the courses. Decisions made by these parties may not necessarily be made long in advance, because of the nature of the context in which teaching and learning take place. The immediate decisions made the students and the lecturer informed by Burns and Stalker's Contingency Theory (Jones, George and Hill, 2000, p. 62) and the long-term effects of the intervention finds its foundations in Glaser and Straus's Grounded Theory (1967).

Pask offers a "…cybernetic and dialectical model for the construction of knowledge", which implies interaction between two participants (Boyd, n.d., online). Although Conversation Theory stems from the pre-technology period (1975), one of its applications is the use of the discussion board, where interested parties engage in meaningful conversation on given concepts. These concepts are discussed in an informal and relaxed manner at a time which is suitable for the participants.

The basic premises of Engagement Theory are that students must be "…meaningfully engaged in learning activities through interaction with others and worthwhile tasks" (Kearsley and Shneiderman, 1999, online). Although engagement does not necessarily imply the presence of technology, "…technology can facilitate engagement in ways which are difficult to achieve otherwise" (Kearsley and Shneiderman, 1999, online).

Engagement Theory is based on three components, also called 'Relate-Create-Donate' Learning' activities which:

- occur in a group context (i.e., collaborative teams)
- are project-based
- have an outside (authentic) focus

Contingency Theory explains the decisions made by the manager when confronted by a situation; the crucial message being that "…there is no one best way to organize" (Jones, George and Hill, 2000, p. 62). In the case of teaching and learning, the learner is the manager of his/her own learning and the teacher manages the teaching situation and makes decisions based on the immediate information available. Very often, this information is based on the class in front of the lecturer and decisions are made on the grounds of age, size of the class, background and composition.

Grounded Theory begins with a research situation. In this study, the situation occurred when classes became too large, interaction and conversation did not take place and effective teaching and learning was not always present. In Grounded Theory, the researcher has to observe how each of the participants acts or reacts. In this study, I observed, interviewed and communicated with the students via different data collection instruments. A priori decisions about each round of data collection were not formed; rather, the information gathered was used to decide upon the next course of action. Grounded Theory does not test a hypothesis – the research has to explain itself. The aim of Grounded Theory is to understand the situation as it is.

2.8 Conclusion

Chapter 2 explored the current writings and studies done in the field of teaching and learning in Higher Education. These studies/theories formed the basis for the case-study, conducted at the UFS, which dealt with Economics first- year students and their experiences of a blended learning model.

Chapter 3

Research Design and Methodology

3.1 Introduction

The research problem emphasises the need to investigate ways in which contact with students and within the student group may be fostered by making use of electronic media. In Chapter 1, the outlay of this thesis was presented. Chapter 2 will discuss the research design and methodology used in order to address the problem, and subsequent research questions as stated. The rationale for this study is to observe whether the blended learning model may be used effectively in fostering a culture of interaction with and amongst students. The objective was to explore and analyse Economics first-year students' experiences of a blended learning model. Data were collected by means of unstructured and semi-structure questionnaires, focus group discussions, informal discussions and course evaluation, and were captured and analysed. Each method will be described and discussed. Methods to ensure the trustworthiness of the findings included member checks and crystallisation and this will also be further elaborated. The chapter concludes with a consideration of the sources of error and shortcomings.

3.2 Conceptualisation

During the period 2000 – 2004, the UFS's on-campus enrolment increased from 10 862 to 17 255, an increase of almost 59% (A century of excellence, 2005). According to the University's mainframe (www.uovs.ac.za), the enrolment in the Economics first-year, second semester class increased by 73% over the same period. Yet, the number of staff members teaching the course did not increase exponentially. The result is now that the number of students in classes are huge (up to 800 students being lectured and assisted by one lecturer) and there simply are not enough venues on campus to run effective tutorial classes.

This leads to the problem: how does a lecturer improve on or even merely sustain the quality of teaching and learning, and how can a lecturer be accessible to students, given the lack of resources such as time and venue space? One solution was to make use of other methods of communication with the students, which did not need a huge capital outlay and which could be implemented without much disturbance, but would still be attractive to the students. Since WebCT as Learning Management System (LMS) had already been installed on the UFS campus network, although not optimally utilised by staff, I investigated the possibility of using this LMS. Initially, during the first semester of implementation, it was used only for online quizzes. During the second semester of that year, notes, additional learning materials and minimal communication (announcements) were made available via the use of the LMS. In the third semester of using this mode of delivery and communication, funding was obtained, tutors were appointed and a-synchronous discussions were added to the blend.

Nevertheless, it was not clear whether this blended method was succeeding in its goal: to improve the students' experiences of teaching and learning.

The objectives of this study are therefore to answer the following:

- Do students use the LMS to interact with lecturers?
- Can a Learning Management System be effectively used to create interaction between students and lecturers?
- How do students experience online interaction with the lecturer?
- Do students use the LMS to interact with peers?
- How do students experience interaction with peers in the online environment?
- Do students believe that online interaction with peers is effective?
- Do students use the LMS to interact with content?
- Which of the different components of the LMS affect students' learning experiences?

From the objectives, the following sub-questions emerged:

- How do students use technology to interact with the lecturer when classes become too large to manage effectively?

- What is the relationship between LMS use and students' experiences of peer interaction?
- What possibilities exist to encourage students to interact with content by making use of an LMS?

The main research question of the study is the following:

What value does a Learning Management System add in promoting interaction in large classes?

3.3 Research paradigm

It is often a daunting task to choose an approach for a research project. "Deciding how to study the social world has always raised a number of key philosophical debates" (Snape and Spencer, 2003, p. 11). The questions asked in this study focused on how students experienced the LMS and why they felt that way. It was then my role as researcher to observe the students whilst in their learning environment and to interpret each individual's experience. Burrel and Morgan's two-dimensional matrix (1979, p. 220), presupposed different ontological and epistemological frames of reference, where one dimension refers to the nature of social science and the other to the nature of society. This allows researchers to classify their research according to the four different sociological paradigms:

Functionalist Paradigm:
Interpretivist Paradigm:
Radical Humanist Paradigm:
Radical Structuralist Paradigm:

Burrel and Morgan (1979, p. 25) explain the uniqueness of the four paradigms as follows: "The four paradigms are mutually exclusive. They offer alternative views of social reality, and to understand the nature of all four is to understand four different views of society. They offer different ways of seeing. A synthesis is not possible, since in their pure forms they are contradictory, being based on at least one set of opposing meta-theoretical assumptions. They are alternatives, in the sense that one can operate in different paradigms sequentially over time, but mutually exclusive, in

the sense that one cannot operate in more than one paradigm at any given point in time, since in accepting the assumptions of one, we defy the assumptions of all the others".

Deciding in which of the four quadrants one's study will fall, raises important methodological implications and therefore implies certain data collection methods. The objective was to study individual student's experiences; thus, this study lies within the Interpretivist paradigm, which is illustrated in Table 10:

Interpretivist Paradigm	**This Study**
Reality does not lie outside the individual, but each person is subjectively involved in his or her experiences.	The reality of each student's experience lies within the individual and each of the participants was subjectively involved in his or her experiences.
Research in this paradigm focuses on observing the participant in action.	I observed the students within their Ekn 124 learning environment.
Attempts to understand how humans make sense of their surroundings.	The aim of this study is to understand how the students made sense of their learning experiences.
The need to see and understand the world as it is the core of this paradigm.	The need to see and understand the Ekn 124 students as they were, are at the core of this research.

Table 10: The study within the Interpretivist Paradigm.

Given the two dimensions - the subjective-objective dimension and the regulation-radical change dimension, Burrell and Morgan's (1979, p. 22) paradigms are illustrated in Figure 6. This figure also positions this research within the matrix.

<table>
<tr><td colspan="4">SOCIOLOGY OF RADICAL CHANGE</td></tr>
<tr><td rowspan="2">SUBJECTIVE</td><td>Radical humanist</td><td>Radical structuralist</td><td rowspan="2">OBJECTIVE</td></tr>
<tr><td>Interpretevist
- Subjectivity of students' own experiences
- Observation of students in action</td><td>Functionalist</td></tr>
<tr><td colspan="4">SOCIOLOGY OF REGULATION</td></tr>
</table>

Figure 6: Placing the research within the four paradigms

(Burrell and Morgan, 1979, p.22)

After having placed the study in the interpretevist paradigm, the research strategy which was applicable to the subject had to be chosen.

3.4 Research Strategy

A research strategy is the broad plan of action of how one intends to go about answering the research questions one has asked (Saunders, Lewis and Thornhill, 2000, p. 98). There are several strategies that one use when doing social science research. The strategy chosen depends on three conditions: (a) the type of research question, (b) the control an investigator has over the actual behavioural events and (c) the focus on contemporary, as opposed to historical, events (Yin 2003, p. 1). In the case of this research, the question mainly focused on qualitative experiences. I had very little control over the way in which students would respond to the teaching

methodology employed, and the importance of current events was central to the outcomes.

Furthermore, I had the choice of using a qualitative, a quantitative or a mixed methodology of research. I wanted to determine the personal experiences of students and I also wanted to know to what extent there was consensus amongst the students. Researchers who use logical positivism or quantitative research employ experimental methods and quantitative measures to test hypothetical generalisations (Hoepfl, 1997), and they also emphasise the measurement and analysis of causal relationships between variables (Denzin and Lincoln, 1998). This was not my goal – I did not want to test causal relationships without knowing the "how" and "why". Qualitative research uses a naturalistic approach that seeks to understand phenomena in context-specific settings, such as a "real world setting [where] the researcher does not attempt to manipulate the phenomenon of interest" (Patton, 2002, p. 39). Although a qualitative study would encapsulate the experiences of students, it would not be useful when I needed to generalise about the entire class. Thus, I have used a mixed methodology, which includes both qualitative and quantitative methods to gather data.

There are several ways of doing social science research. Yin (2003, p.1) states that case studies "…are the preferred strategy when 'how' or 'why' questions are being posted, when the investigator has little control over events and when the focus is on a contemporary phenomenon within some real-life context". He goes on to quote Schramm when he says the following: "The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result." It was therefore appropriate that the selected strategy for this research is a case study. The questions asked of the students, the questions asked in the study and the lack of control that I had over the students' decisions, strengthened this decision.

Whilst Lincoln and Guba (1985, p. 360) state that "…there seems to be little agreement about what a case study is", several authors have attempted descriptions. Gillham (2000, p.1) defines a case as follows:

- "a unit of human activity embedded in the real world;
- which can only be studied or understood in context;

- which exists in the here and now;
- that merges in with its context so that precise boundaries are difficult to draw."

He then continues, "A case study is one which investigates the above to answer specific research questions". After the Cambridge Conference on "Methods of case study in educational research and evaluation" held in 1975, two definitions of a case study came to the fore. The first, "The study of the instance in action", was coined by Barry MacDonald and Rob Walker. The second was posited by Louise Smith, stating that a case study was the "Study of a bounded system" (Bassey, 1999, p. 24). Miles and Huberman (1994, p. 26) define a case "… as a phenomenon of some sort occurring in a bounded context. The case is, in effect, your unit of analysis."

The unit of research was a group of first-year Economics students making use of a mixed mode of teaching. It was the first time that these students had encountered this methodology of teaching. The size of the class was approximately 800. However, the number of students in the class did not pose a problem in this instance, since there seems to be no conclusiveness with regard to the size of a case. A case may be as small as an individual; it may be defined by role, or it may be as large as a nation. (Miles and Huberman, 1994, p. 26) The group of students was heterogeneous with regard to demographic characteristics, such as gender, race and age, but this could have added to the quality of research. A case study may also have sub-cases embedded within it, as explained by Yin (2003, p.14), which may have the added advantage of allowing the "…researcher an even deeper understanding of processes and outcomes of cases…" (Miles and Huberman, 1994, p. 26). However, for the purpose of this research, boundaries were set in that these demographic differences were not recorded (Miles and Huberman, 1994, p. 25).

Cohen and Manion (1991, p. 125) write the following on case studies:

"… the case study researcher typically observes the characteristics of an individual unit….The purpose of such observation is to probe deeply and to analyse intensively the multifarious phenomena that constitute the life cycle of the unit with a view to establishing generalisation about the wider population to which that unit belongs. "

The life cycle in this instance was the semester running from July to December 2004. The individual unit belongs to the wider population of the student body and

specifically involves the students in the Faculty of Economics and Management Sciences.

MacDonald and Walker, (as quoted in Bassey 1999, p. 24) compared case study research with the work of an artist, when they wrote the following:

Case-study is the way of the artist, who achieves greatness when, through the portrayal of a single instance locked in time and circumstance, he communicates enduring truths about the human condition.

In an attempt to define case studies, Walker (2002) describes the aims of a case study:

"… case study research is essentially concerned with providing credible representations of reality. Case studies aim to give the reader a sense of 'being there'; whether this means seeing a classroom through the eyes of a child, a school through the eyes of a teacher, or education through the eyes of a parent (or more often, all of the above)" (Walker 2002). Stenhouse states in this regard that ". . . the task of case study is to produce ordered reports of experience which invite judgment and offer evidence to which judgment can appeal."

Table 11 is a summary of the literature as discussed above and links the key aspects/characteristics of a case study to the unit of analysis, the Ekn 124 English medium class (2004).

Literature	**Author**	**Researched Case**
human activity, real world	Gillham (2000)	Ekn 124 class
studied/understood context	Gillham (2000)	Observed throughout semester via WebCT
here and now;	Gillham (2000)	Observed throughout semester
boundaries difficult to draw.	Gillham (2000)	Only English speaking Ekn 124 students, not the only ones on campus
specific research questions	Gillham (2000)	See questions stated above
instance in action	Merriam (1988)	Observed throughout

		semester
bounded system	Creswell (1998)	Only English speaking Ekn 124 students
Size: one, small, big	Miles and Huberman (1994)	Entire group observed
sub cases	Yin (2003)	Not applicable
'how' or 'why' questions	Yin (2003)	See research questions
little control	Yin (2003)	Linked to students' personal experiences
contemporary phenomenon	Yin (2003)	Blended learning
real-life context	Yin (2003)	Observed throughout semester
Illuminates a decision	Yin (2003)	Why use an LMS?
observes the characteristics	Cohen and Manion (1991)	'How' and 'why' experiences
communicates truths: human condition	Walker (2002)	Experiences reported on
credible representations of reality	Walker (2002)	Observed throughout semester
ordered reports of experience	Stenhouse (1985)	Observed throughout semester
unit of analysis	Miles and Huberman (1994)	Entire class analysed
Multiple data collection methods	Yin (2003)	See table 3.4

Table 11: Linking characteristics of a case study to this research

In essence, the primary defining features of a case study is the fact that there is a multiplicity of perspectives rooted within a specific context (Snape and Spencer, 2003, p. 52). In the context of this research, then, the multiplicity of perspectives lie in the fact that each individual role player may have experienced the use of a Learning Management System in a different way. This case study aims to give the reader a sense of having experienced Ekn 124 through the eyes of the first-year students, the tutors and the lecturer involved. In order to do this, several different instruments were used to gather data.

3.5 Instruments, Data collection methods and Fieldwork practices

3.5.1 Data collection

Data were collected by means of questionnaires, focus group interviews, literature reviews and observation. This is in accordance with Bassey (1999) who identified three fundamental types of data collection methods: "Asking questions (and listening intently to the answers), observing events (and noting carefully what happens) and reading documents". In this study, all three methods were used: questions were asked (through questionnaires and discussions); students were observed (in the discussion area) and documents were read (in terms of investigating other researchers' works.) In order to gather rich and detailed descriptions of students' experiences, more than one method of data collection was used. This allowed me to listen carefully to the nuances of the students when they spoke about their experiences (in the focus groups), but also to assess the opinions of a large number of students (paper based questionnaires) and to allow for one set of instruments to verify or refute the other (Fidel 1993 as quoted in Olson). Bassey (1999, p. 62) calls this "eclectic" when he states that there is no unique method of collecting the data, but "…is eclectic and in preparing a case study researchers use whatever methods seem to them to be appropriate and practical". Hence, "multiple methods of data gathering" were employed (Olson).

3.5.2 Triangulation

Much has been written about triangulation in research and the need to use multiple methods of data collection in order to protect the researcher against bias. "Triangulation in social research is the combination of different methods, methodological perspectives or theoretical viewpoints…proponents of 'triangulated' approaches to research assert that the result of combining varied approaches is a net gain – the strengths of each contrasting approach more than cancel the weaknesses of their counterpart" (Millller and Brewer, 2003, p. 326). Patton (2002, p. 41) advocates the use of triangulation (and thus multiple methods of measuring data) by stating that " …triangulation strengthens a study by combining methods. This may mean using several kinds of methods or data, including using both quantitative and

qualitative approaches to research. Triangulation is typically a strategy (test) for improving the validity and reliability of research or evaluation of findings".Eisner (1991, p. 110) used the term 'structural corroboration' – a means through which multiple types of data are related to each other to support or contradict the interpretation and evaluation of a state of affairs' (as quoted by Woods, 1999, p. 5). However, although many researchers support the notion of triangulation and insist on its use, there are several social scientists "…who do not believe that *true triangulation is really possible*" (Millller and Brewer, 2003, p. 329, own emphasis).

The argument is that the triangulation approaches sit within a framework where the researcher is supreme and, even if there is some objectivity involved, the text and the writer are still interdependent. What we as readers know, we only find out because of the writer, and there cannot be only one truth, or one explanation. There are several overlapping truths and these are constantly changing. Consequently, the term 'crystallisation' is a much more useful validating concept than triangulation. (Woods, 1999, p. 5) According to Richardson, (1994, p. 522) triangulation is "rigid, fixed, two-dimensional", while crystallisation is three-dimensional. Triangulation assumes that there are three sides (a triangle) to view the world, while a crystal has multiple sides and "…depends upon our angle of repose" (p. 358). This research uses multiple methods of data collection in order to triangulate, but the crystallisation is grounded in the fact that the reader will view the data and each reader will create a different perception of the reality, depending on each one's angle.

3.5.3 Methodology

I had a choice of using qualitative, quantitative or a mixture of methods. "Knowing what you want to find out leads inexorably to the question of how you will get that information" (Miles and Huberman, 1994, p. 42). I wanted to find out how certain aspects of the course were encountered by the students, and I also needed to know to what extent there was agreement (or not) amongst the members of the class. The methods used by qualitative researchers epitomise the belief that they may provide a "…deeper understanding of social phenomena that would be obtained from purely quantitative data" (Silverman, 2000, p. 89).

In this study, I used a mixed methodology: both qualitative, as well as quantitative data collection methods and analyses. Blaikie (2003, p. 47) maintains that "…quantitative methods are used when the data have been collected in, or are soon converted into, numbers for analysis, whiles qualitative methods are used when data are in words and remain in words throughout the analysis".

Proponents of this mixed methodology highlight the fact that the disadvantages of the one method is compensated for by the advantages of the other. This can be illustrated in Table 12 below:

Qualitative Research: Advantages	**Quantitative research: Disadvantages**
Holistic, detailed	Limited Scope
Reactivity	
Naturalism	Artificiality
Qualitative Research: Disadvantages	Quantitative research: Advantages
Non-representative	Representativeness
	Possibility of impartial disproof
Lack of bias control	Control (rigour)

Table 12: Qualitative vs. Quantitative research

(Adapted from Miller and Brewer, 2003, p. 327)

The qualitative instruments were concerned with the experiences and the impressions that the students have of the use of a blended learning system, whilst the quantitative methodology concerns issues where the students were asked to rank the different tools of the LMS.

The questionnaires which were used at three different points in the intervention were unstructured and semi-structured. Gillham (2000, p. 60) uses a table (see Figure 7) to illustrate the different dimensions of the questionnaires. Although questionnaires are not usually used in case study, they are classified by Gillham as the "…most structured end of the continuum.' (2000, p. 59).

Unstructured						**Structured**
Listening to other people's conversa-tions	Using 'natural' conversa-tions to ask research questions	'Open-ended' interviews with a few key open questions	Semi-structured interviews i.e. open and closed questions	Recording schedules, in effect, verbally administered question-naires	Semi-structured Question-naires: multiple choice and open questions	Structured question-naires: simple, specific, closed questions

Figure 7: Research instruments within the structured/unstructured continuum.

The instruments in this research were, therefore, a combination of unstructured (focus group discussions, observations), semi-structured (questionnaires) and structured (closed-questioned questionnaires). The data collection instruments, the dates of data collection and the persons responsible for administrating these instruments, are summarised in the following table:

Instrument	Target	By Whom	When
Focus group discussions	Tutors	Researcher and observer 1	18 August 2004
	Tutors	Researcher and observer 2	21 September 2004
	Group 2	Observer 2	17 November 2004
Questionnaire 1: Semi-structured	All students of case	Researcher	2 August 2004
Questionnaire 2: Unstructured	All students of case	Researcher	20 September 2004
Questionnaire 3: Semi-structured	All students of case	Researcher	25 October 2004
Course Evaluation: Semi-structured	All students of case	Programme Director	28 and 29 October
Observations: Academic Discussion forums (online)	Group 2	Researcher	Throughout Second semester
Observations: Informal Discussion forums (online)	Group 2	Researcher	Throughout Second semester

Table 13: Data collection instruments, target groups and dates.

Each instrument and its applicability to the research study will be discussed in the following section.

3.5.4 Focus Group discussions

Three focus group meetings were held – two with tutors and one with students (Table 3.4). Participants in Group 2 were all registered Economics 124 students (English medium) at the UFS who belonged to subgroup 2. The other focus group discussion consisted of all the tutors who participated in this unit of analysis. The tutors, as well as members of Group 2, were familiar with one another – either through their activities as tutors, or through their interaction in the discussion forum throughout the semester. All these participants had experienced the blended model and its applications. They were in a position to share their experiences with one another, as well as with the convener. By encouraging them to share these experiences, a much richer source of data was obtained than from just the questionnaires.

A focus group as a data collection instrument is a group discussion that gathers together people from similar backgrounds or experiences to discuss a specific topic of interest to the researcher (Dawson and Manderson 1994). Words such as organised discussion collective activity, social events and interaction distinguish focus groups from other types of interviews (Gibbs, 1997).

The main purpose of focus group research is to draw upon respondents' attitudes, feelings, beliefs, experiences and reactions in a way which would not be feasible using other methods; for example observation, one-to-one interviewing, or questionnaire surveys (Gibbs 1997). For this study, it was essential that the thoughts and honest opinions of the students towards the online method of instruction were gauged, and that enough detailed information was collected. Thus, the focus groups were ideal, since in a focus group discussion, the participants will give their own opinions, but also listen to what others have to say and elaborate on particular issues, thus deepening and refining points of view (Finch and Lewis, 2003, p. 171).

Focus groups are also "focused" because the participants usually share common characteristics. These may be age, sex, educational background, religion, or something directly related to the topic (Dawson and Manderson, 1994). The tutors were all of similar age with similar qualifications. Although the members of Group 2 were diverse in terms of age, gender and race, they had one thing in common – the desire to pass Ekn 124.

Because the study was ongoing for the period of a semester, and the data collection process was developmental in character, results from one questionnaire or focus group was used as the basis for the next data collection. Data were therefore collected at different stages of the study. This is supported by Gibbs (1997) who asserts that focus groups may be used at the preliminary or exploratory stages of a study; during a study, perhaps to evaluate or develop a particular programme of activities; or after a programme has been completed, to assess its impact or to generate further avenues of research. They may be used either as a method in their own right or as a complement to other methods, especially for triangulation and validity checking.

The tutors met for two focus group meetings – one at an early stage of the study and one at a later stage. They were able to asses more accurately their experiences in relation to their expectations at the later meeting. The reason why the interviews were held with the tutors were two-fold: Firstly, when they were first-year students, they were taught in the traditional way (only face-to-face lectures and paper-based tutorials) and were therefore in a position to compare their own learning experiences as first-years with the blended method. Secondly, they were the case group's first line of communication, and it was felt that they would present a different understanding, insight and interpretation of the experiences of the first-years. With each focus group meeting of the tutors, an independent observer, as well as the researcher, was present.

The students met only once, right at the end of the semester. Most studies bring the focus group together for one session (Garson, 2005, Lewis 2003). All thirty-two members of this group were invited. Each person was sent two personal emails and an invitation was placed on WebCT announcements. Figure 8 illustrates the screenshot of the latter, which is similar to the emails.

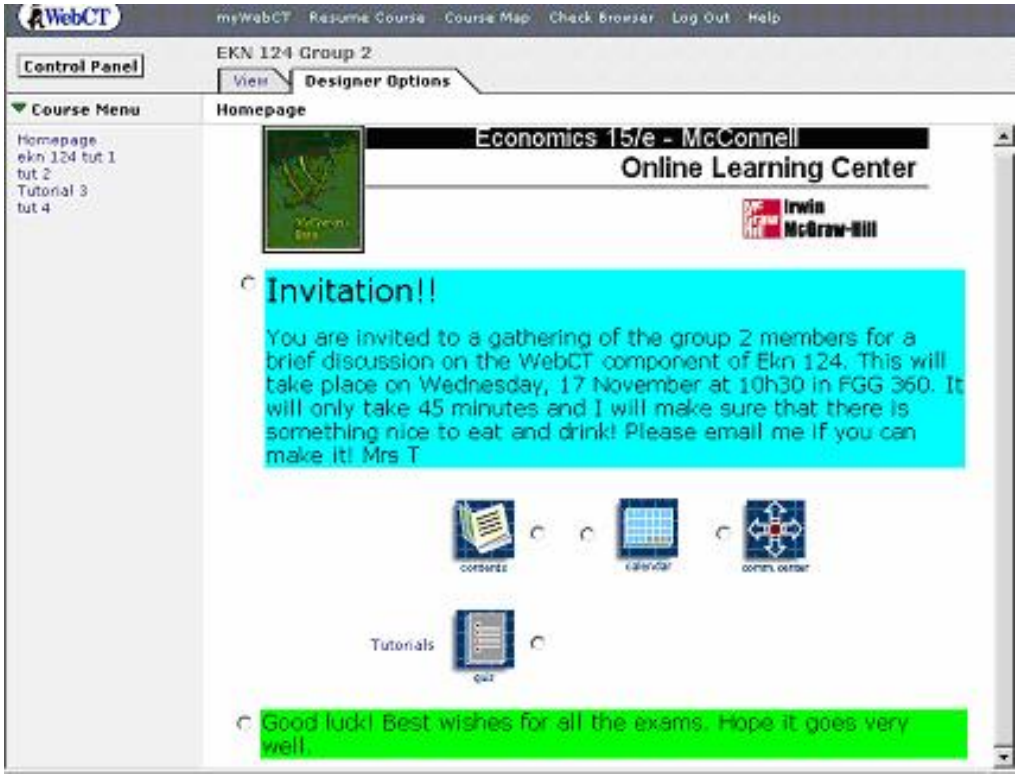

Figure 8: Invitation to the focus group meeting of the students in Group 2.

In the end, eight students attended this meeting. An independent observer, who, at that stage, was employed at the e-learning department of the UFS, ran this focus group meeting. I was not present, so that it would allow the participants to speak freely.

There were 10 tutors and 32 members in Group 2. In terms of group size, some authors recommend a focus group size of 6 -8, though examples can be found of both smaller and larger groups, and this can depend on several issues, such as the sensitivity or complexity of the population involved and the extent to which the researcher needs breadth or depth of data (Lewis, 2003, pp. 192 - 193). Focus group facilitators, however, usually regard even 10 as unwieldy and counterproductive. All students of Group 2 and all tutors were invited to the focus group meetings but none of these meetings exceeded eight.

In this study, the tutors were brought together for two sessions, because I wanted to find out if and how students' attitudes and experiences of the blended system changed after becoming used to the technological challenges. The first-years were brought together for one session at the end of the semester. They had already filled

in three questionnaires and a course evaluation form, thus the focus group meeting was held to clarify and elucidate any information that was gained from these instruments.

3.5.5 Structured and Semi-structured Questionnaires

Very little is available in the literature on qualitative research, and specifically in case study research, on the use of questionnaires. This could possibly be since questionnaires are seen as quantitative and not qualitative data collection instruments. Gillham (2000, p. 78) goes as far as to state that these "…usually has a minor place in case studies (if they are used at all)". Furthermore, they "…are of little use if meaning and understanding are primary concerns – but they have their niche in case studies" (own emphasis). In this specific case, I wanted as much information from as many students as possible. The more information, the better I could understand the way in which the students experienced the learning intervention. Gillham (2000, p. 78) explicitly states that questionnaires "….have some value in case studies as a way of getting straightforward, fairly accurate information."

The other advantage of using an unstructured or semi-structured questionnaire is in line with Mintzberg's (1973) advantages of 'structured observations' namely, that it is "…a method that couples the flexibility of open-ended observations with the discipline of seeking certain types of structured data. …Each observed event…is categorized by the researcher in a number of ways…The categories are developed during the observations and after it takes place (own emphasis)".

The areas to be included in this study were explored for a period of 18 months prior to the start of the actual research. The questionnaires were designed and developed together with colleagues from the Department of Economics and the e-learning department at the UFS. All questionnaires were piloted and tested before being implemented. The design of the questionnaires thus followed the three stages according to Wilson (1985, p. 66).

1 Exploration of the areas to included
2 Question wording and sequencing
3 Physical design layout.

In this study, questionnaires for the first-year students were used three times during the course of the semester. All three were completed at the beginning of a lecture period. I felt that the return would be higher if these were handed out and completed during class, and if there were any uncertainties, I would be present to answer questions. The main criticism against the use of questionnaires is the fact that they may lack validity. Respondents may interpret the questions in a different way from what was intended, especially when ranked responses are asked for. Furthermore, respondents may not be totally honest in their answers (Miller and Brewer, 2003, p. 255). In order to overcome this, I was present during the completion of all the questionnaires, and the questionnaires were tested beforehand on a sample group.

The first questionnaire, which was completed on 2 August 2004, was semi-structured The first section focused on demographic issues, such as age, gender, and questions about computer skills, access to computers and training needs. This gave a more comprehensive picture of the target group. The last three questions of this questionnaire were directed towards the initial impressions of students and meant to gauge the general attitude of the students towards WebCT (see appendix 3). In total, 378 students out of a possible registered 648 filled in this questionnaire, which translates into a 58% return.

The second questionnaire was completed on 20 September 2004 and was an unstructured questionnaire. In this questionnaire which was completed 6 weeks after questionnaire 1, i.e. 2 months after the start of the intervention, students were asked their opinion about using a Learning Management System as part of a course, and to give their advice to an imagined lecturer who was also interested in making use of the blended teaching and learning model. They had to tell the lecturer what to include in the course and what they personally gained from the experience. As was the case with questionnaire one, this was also done during the first part of a lecture. The following question was written on an overhead transparency and read to the class:

If you were to give advice to another lecturer who wants to use the blended learning model, what would you say? What should this person include? What should be left out? What is the value of WebCT to you?

The students were given a blank sheet of paper on which to write their answers. Two hundred and twenty-two questionnaires (34% of the total group) were completed. A possible reason for this low return (in comparison to the first questionnaire) is that the university holidays started on 23 September and many students may have decided to miss the last week of term.

The last questionnaire of 25 October was the most structured of all the questionnaires. (See appendix 4). All the questions were designed as "closed" questions where response alternatives were used, and then there was a follow-up question that was "open". Students were asked to rate the specific tools from WebCT which were used in the course. Ratings were from between 1 and 5, where 1 indicated 'totally useless' and 5 'very useful'. Initially, 'ineffective' and 'effective' were the choice of words, but after pilot testing and informal discussions with students and tutors, 'useless' and 'useful' were chosen, since these words reflect the everyday student language more effectively. Three hundred and fourteen students completed this questionnaire, which translates into 48,5% of the population.

In all three of the questionnaires, students were invited to use the back of the paper, which was left blank, to add further comments or issues which they might have wanted to raise. All the answers/comments were transcribed by myself.

3.5.6 Course evaluation

At the end of each semester at UFS, course evaluations are done by the different programme directors who, without the lecturer present, attend the first few minutes of a lecture and ask students to complete course evaluations. The aim of this evaluation is to give feedback to academic staff on how students experienced the course in terms of the course itself and in terms of the competence of the lecturer. The aim is to give the lecturer an idea of areas where they are successful, but also to identify areas that need improvement. Together with other evaluations (such as peer evaluation), this will form part of the achievement-evaluation system at the UFS (Liesl Massyn, personal e-mail, 10 February 2005).

There are two main sections in this evaluation. The first section consists of closed questions with grading scales between 1and 5 and focuses on three areas:

- The Course;
- The Lecturer;
- General.

The second section consists of three open-ended questions:

1. Which aspects of the course were most beneficial to you?
2. What do you suggest to improve this course?
3. Other remarks.

On 28 and 29 October 2004, the course evaluation for Ekn 124 was done. At the initial planning of this research, this evaluation form was not factored in as a data collection instrument. However, as I scrutinised the evaluations, the following emerged:

- 239 students completed the course evaluation
- 69% (164) of the students answered the open-ended questions.
- Of the 164, only 43 (18% of the total) did not mention WebCT
- More than half of those who completed the course evaluations indicated that WebCT somehow influenced their learning experiences in this course.

It was imperative that the results from the course evaluation be included in this study. I once again transcribed all comments. These will be discussed in Chapter 4.

3.5.7 Online Participant Observation

In this study, online observations took place on two different levels. Group 2s contributions in the academic discussion forums were recorded and analysed. This was the more formal discussion forum. The social discussion forum (chill café) where students discussed general, non-academic issues was also analysed. All together, there were 504 messages for Group 2, spread over a period of 10 active weeks. All these messages were read and, where applicable, included in the analysis.

Banister et al (1994, p. 19) state that with observation, there is the commitment to try to understand the world better, usually from the standpoint of individual participants. Thus, with these online observations, the aim was to understand the 'real' students in

their learning environment. By observing from the outside what the students wrote and how they reacted to comments from their tutors and their peers, I could form a better insight into their understanding of the course content and topics. Macqueen and Knussen (1999, p. 233) suggest that observation may be used, amongst others, to:

- Establish what actually happened in various settings
- Illuminate findings or examine situations more closely
- Evaluate the impact of interventions.

By reading comments in the academic discussions, I could form an opinion of the added value that these discussions had for the learning experiences of the students and this assisted me when analysing the focus groups and questionnaires. The informal discussion (chill café) gave me an insight into the enjoyment that students had in using CIE for social purposes.

Silverman (2000, p. 90) claims that observations take place over an extended period of time and attributes the understanding of the 'subculture' as one of the claims of using observations. He states further that "… observation is not generally seen as a very important method of data collection in quantitative research. This is because it is difficult to conduct observational studies on large samples." He goes on to say that some qualitative researchers find observations as not very reliable, because of the fact that different people experience what they see in a different way. However, observation has been used as the method of choice in many qualitative studies, especially when understanding another culture is important (Silverman, 2000, p. 89).

3.6 Sample design and sampling methods

For this research project, the Economics first-year, second semester English medium class at the UFS was selected. The class consisted of an almost equal number of males and females. The majority of the students were Sesotho speaking, with English as their second or third language.

Blaikie (2003, p. 165 – 166) maintains that "…the accuracy of estimates of population parameters depends on the sample size. For this reason, the general rule of samples is the bigger the better." Since the factors that are normally cited as problems with

regard to sample size (such as costs), were not applicable to this study, for the purposes of the questionnaires and the course evaluations, all members of the population were included.

I selected this group from the target population by means of stratified sampling. "Stratified sampling is a commonly used probability method that is superior to random sampling because it reduces sampling error. A stratum is a subset of the population that shares at least one common characteristic. Stratified sampling is often used when one or more of the stratums in the population have a low incidence relative to the other stratums" (Walonick, 1997).

For the purposes of the online participant observation and the focus group meeting, only one group, namely Group 2 was selected. Initially, the class was divided into groups in a random manner. However, I then had to select a group as the sample group, which I was to observe closely, as well as initiating a focus group discussion. The group that was most representative of all the different demographic characteristics (stratums) of the Ekn 124 class was selected. These stratums include:

- All races (White, Black, Coloured, Asian)
- Full-time as well as part-time students
- Male as well as female
- Good achievers (more than 75% for Economics in the first semester)
- Average achievers (between 50 – 74%)
- Failures
- Access to internet facilities at place of residence
- Different levels of Computer skills

Schatzman's method of selective sampling (as quoted by Strauss, 1987, p. 39), which refers to the "…calculated decision to sample a specific type of interviewee according to a preconceived but reasonable initial set of dimensions which are worked out in advance for a study" was used to select Group 2, as it represented all the different categories/dimensions mentioned above.

3.7 Data capturing and data editing

All the focus group meetings were recorded on a dictaphone. After each meeting, I captured the data on computer and sent them to the observers who attended the meetings in order to vouch for accuracy and to minimise error. The "open" questions in each questionnaire were typed according to each group, and then a composite set of answers for each questionnaire was made. The "closed" questions were sent to the computer services section of the UFS for statistical analysis. The comments made by Group 2 on the academic discussion forums, as well as the 'chill café' comments were saved at the end of the semester. I made general notes on informal discussions and comments throughout the semester.

I felt that it was imperative for me, as the researcher, to get intimately involved with the data and immerse myself in the data. A more intimate understanding of what students think about an issue is obtained, when the observer is actually present. A pause, an affirmative comment in the background, students laughing at comments, also tells a story that is important to hear. I thus decided to transcribe the tapes and questionnaires personally. Mostyn believes that "… most qualitative researchers agree that there is definite value in listening to the tape recordings in addition to reading the transcripts, since the nuances of feeling, tone of voice, pauses and so forth become evident" (Mostyn, 1985, p.136). By doing the data transcriptions as the data were collected throughout the semester, I gained an indication of the foci of the next questions. Reading and listening to the conversations was also the starting point of the data collection process, since I could immediately start with open (unrestricted) coding – the initial type of coding, which allows the researcher to produce provisional concepts (Strauss 1987, p. 28).

3.7.1 Data/content analysis

The fact that the questionnaires were open-ended or unstructured, allowed the students to share as much or as little as they wished about their experiences in the LMS, the effect of it on their learning process and the effect of sharing with others in groups. A large amount of data was collected and had to be analysed and interpreted. Qualitative content analysis is the tool used by qualitative researchers when they are "…faced with a mass of open-ended material to make sense of. The

overall purpose of the content analysis approach is to identify specific characteristics of communications systematically and objectively in order to convert the raw material into scientific data" (Mostyn, 1985, p.117). For this reason, I analysed the data on a continual basis.

Creswell's (1998) procedure lists five steps to data analyses and reporting.

1 Organisation of data.

I listened to the tapes several times and transcribed them. These transcripts were then sent back to the two independent observers to confirm accuracy. They agreed that the transcribed versions were, indeed, an accurate version of the conversations. I also typed the responses from all the questionnaires. As the data were read and re-read, three core categories emerged. The general theme of the core categories is as follows:

- Lecturer/facilitator related;
- Peer related
- Content related

"Content analysis stands or falls by its categories" (Berelson, 1952, p. 147). The next step was to categorise the data and to identify themes - one of the most fundamental, but also one of the most mysterious tasks in qualitative research (Ryan and Bernard, 2003). It was imperative that this section of the research was done accurately and all possible categories were included.

2 Categorisation of data.

Once the core categories were decided upon, I used colours to identify the data that belonged to each category – concepts that referred to the lecturer were coded in red, those referring to peers were yellow and content related issues were highlighted in green. This tool is called a literal tool where a concrete physical apparatus (in this case, highlighting on the computer) is used (Lee and Fielding 2004, p. 530). The colours thus served as a coding system and the data were coded accordingly. Data were then sorted and stored according to colours. The different categories and subcategories that emerged will be discussed and analysed in Chapter 4.

3 Interpretation of the data.

The statements that fell into comparable themes or codes were then examined to see if they had specific meaning in relationship to the purpose of the study. These statements will also be discussed in Chapter 4.

4 Identification of patterns.

I then read the data and the statements made by the students within the context of the categories and looked for patterns and topics which allowed me to draw conclusions. The conclusions are discussed in Chapter 5.

5 Synthesis.

The final step in the data analysis and interpretation is to give an overall representation of all the responses and to conclude the study by making recommendations, based on the insight gained into the data. This will also be discussed in Chapter 5.

3.8 Shortcomings and sources of error

Validity (the accuracy or truthfulness of a measurement) and reliability (the possibility of replicating the study) (Walonick, 1997) are often seen as problematic within qualitative research. As is the case with this particular study, the problem stems from the fact that the research material (in this case the students), is subjective and the majority of projects (the Ekn 124 class, 2004) are of a once-off nature (Mostyn, 1985, p. 117). There is agreement on the “impossibility of absolute objectivity” (Hardy and Bryman, 2004, p. 543). I am aware of the fact that I, since I was very involved with the students in the study, this could cloud my interpretation of the data. Nevertheless, I made every effort to ensure the maximum degree of objectivity within the scope of the study. I am of the opinion that the number of questionnaires handed out, the large number of respondents, and the fact that I made use of several data collection instruments verify my results.

The following were done:

Crystallisation: Multiple methods of data collection, including several questionnaires, discussions and observations, were used.

Member checks (focus group meetings): After each focus group meeting, the transcribed discussions were sent to the observers for checking. Observers agreed that the transcriptions were in line with what had been discussed.

Peer reviews (analysis and interpretation): After the analysis was done (as discussed in Chapter 4), it was sent to the observers (see focus group meetings), as well as to colleagues to test for accuracy of interpretation.

3.9 Conclusion

This interpretavist study (Burrel and Morgan, 1979) of a group of Ekn 124 students focused on their learning experiences whilst making use of different tools in an LMS. The study was done in the form of a case study (see Table 11) where the case was the 2004 Economics second semester class, studying at the UFS. The boundaries of this case (Gillham 2000, p.1) are the fact that all the members of the case study attended the English medium of instruction class. This class has traditionally been offered in a face-to-face manner only. The study investigated the responses of the students after a component was added to the course which changed the mode of instruction to a blended model. The following components were added electronically:

- A-synchronous discussions
- Multiple choice quizzes
- Notes
- Additional material
- Announcements
- My Grades

Data were collected throughout the semester by means of focus group meetings, semi-structured and unstructured questionnaires, course evaluations, and observations.

Chapter 4 reports on the findings from the data collection and analysis.

Chapter 4:

FINDINGS

4.1 Introduction

"Although traditional face-to-face offerings can result in some learning, complementing it with the Internet is more likely to result in significantly more effective learning" (Damoense, 2003, p. 27).

In Chapter Three, the research design and methodology was discussed. During the coding process, several categories emerged. The categories are summarised in Table 14.

Interaction with the lecturer	**Interaction with one another**	**Interaction with the study material/content**
Motivation and Encouragement: Emotional issues	Learning :Pedagogical Issues	Preparation
Convenience: Practical issues	Application: Academic Issues	Notes/note-taking
Understanding: Academic issues	Confidence building: Social issues	Continuous learning
		Deeper learning
		Additional Information
		Generic Skills

Table 14: Summary of categories

These categories are elucidated in Tables 16 – 18.

The main- and sub-categories will be discussed and analysed in Chapter 4. Quotations from the different data collection instruments will be included in the findings and finally, negative experiences will be highlighted.

The rationale for this study is to investigate how using a Learning Management System as part of the course affects the learning experiences of first-year economics students. Results from the different data instruments, combined with the coding used, as explained in Chapter Three, will be examined.

From the rationale, three questions emerge:

- How do students use technology to interact with the lecturer when classes become extremely large?
- What is the relationship between LMS use and students' experiences of peer interaction?
- What possibilities exist to encourage students to interact with content by making use of an LMS?

Chapter 4 is divided into three categories, according to the three questions mentioned above. In this chapter the effect which the LMS had on interaction and communication according to the students' reactions and comments, is discussed. The comments of the participants were not edited for language. Students use a different style of writing (SMS language) which adds to the relaxed atmosphere of the discussions and this is evident in their contributions.

Sub-question 1: How do students use technology to interact with the lecturer when classes become extremely large?

The first category relates to the interaction, which was facilitated between the lecturer (or tutor, as representative of the lecturer) and the students in the online environment. Table 15 summarises the key concepts and words which were identified during the coding process.

SUB-QUESTION 1	Category	Learning domain	Key Concepts	Additional Descriptive words
Interaction with the lecturer	1.1: Understanding: academic issues	Cognitive	Help/explain	
			Feedback	
			Understand	Check/Mistakes
			Satisfaction	Improved marks
	1.2: Convenience: practical issues	Cognitive	Quick	speed, saves time
			Easy	Easy
			Convenient	ask online
	1.3: Motivation and Encouragement: emotional issues	Affective	Lack of self-confidence	shyness, fear
			Motivate	Relationships, encouragement
			Care	

Table 15: Categories and key words: Lecturer Interaction

4.2 Interaction with the lecturer or the representative of the lecturer (tutor)

Holmberg (1983) believes that "…students learn by engaging in guided didactic conversation with their instructors." These conversations are "…essential characteristics of learning. Guided didactic conversation promotes a personal relationship between the instructor and the student, thus creating greater motivation in the student and increased learning outcomes" (Holmberg 1983). In this way, affective learning could be fostered. The first task was, therefore, to establish if "*guided didactic conversation*" (own emphasis) did indeed exist in the Ekn 124 class.

In the pre-course questionnaire (see appendix 2) one of the questions asked was how often they, as students, visited the lecturer to discuss problems and if never, what the reason(s) for that were. Only 39 (16,6 %) of the respondents reported that they had seen the lecturer in her office, whilst the rest, (83,4%) had never been to the office. Several reasons were cited, included the following:

> "The consultation times clash with my classes."
> "I am a working person; I cannot come in to see her."
> "I am too busy."
> "I seem to understand the work, but when I learn I see that I don't and then I cannot get hold of her."
> "I don't prepare well enough."
> "I don't know where she stays."
> "I am too shy."

According to the comments, a lack of time, a lack of self-confidence and the need for a just-in-time explanation are the main culprits. The comments made by the students imply that they do have a need to communicate with the lecturer, but that the current method is not satisfactory. An alternative method of communication needs to be used as students in this group simply did not interact in a face-to-face manner with their lecturer. Thus, ways of initiating communication need to be found.

The first section of this chapter discusses students' interaction with the lecturer (and tutors as an extension of the lecturer) by using the LMS and the experiences of the students with regard to this interaction.

After the initial identification of the main themes, as discussed in Chapter 3, three patterns or sub-themes emerge. These are:

> Convenience (This refers to practical issues),
> Motivation (This refers to emotional issues),
> Understanding (This refers to academic issues).

Each category will be discussed separately by referring to key words that emerged during the analysis of the data.

4.2.1 Category 1: Understanding

The concept, 'understanding', (called 'comprehension' in Bloom's cognitive taxonomy of learning), is defined as "…demonstrating understanding of facts and ideas by organising, comparing, translating, interpreting, giving descriptions and stating main ideas" (Fowler, 1996). Thus, the ability to grasp the meaning of content is of the essence; going further than merely remembering. It requires demonstrating a deeper level of learning.

The simplest possible model of learning envisages a straight transfer of material between institution and student:

> Student + Teaching Material = Successful student

However, a third and vital ingredient needs to be added in order for effective learning to take place:

> Student + Teaching Material + Student support = Successful student (Simpson 2002, p. 5)

Simpson, as cited in Chapter 2, defines student support as all activities beyond the production and delivery of course material that assist in the progress of students in their studies and divides student support into academic as well as non-academic categories. He lists the following under academic support:

Defining, explaining, assessing, chasing progress, developing skills, exploring, enriching. (Simpson, 2002, p. 7)

The third category/cluster of comments with regard to the interaction with the lecturer/tutor was focused on the benefit to the actual learning process and improved understanding of the content.

Academic support from the lecturer and tutor featured throughout the questionnaires and interviews as integral to the perceived success of the students.

4.2.1.1 Help/explain

The first keyword defined under sub-question one refers to the additional help that is available via the LMS. Tutors are there to give additional explanations to the students. Economics students, especially first-years, experience economics as an abstract subject and very often, they find it particularly difficult to conceptualise. It is also important that certain aspects of the work are mastered before a student can progress to the next section of the work. The following statements point out the advantage of having help at hand in the form of a tutor, from Questionnaire 1. Students identified the help that they received as one of the most exciting uses of the LMS, hence indicating not only an increase in cognitive learning, but also an increase in student motivation, a level of the affective domain of learning . This is supported by comments from the other two questionnaires, where students pointed out the opportunity of asking for help and also believed that other students would benefit from this additional assistance.

> *"The tutor session (section) is exciting, you can email in case of any difficulties. It is enjoyable." Q1*
> *"It is also of great help to have the tutor assist you because when you have questions you can go to her. WebCT has been of great value to me so I definitely recommend it to others." Q 2*
> *"They were always there guiding us and helping us with the work." Q 3*

During the second focus group meeting, the tutors indicated how their initial way of communication had changed over the course of the semester and how they realised the value that their comments and assistance added to the learning process. At first, they visited the discussion area only once or twice a week, but found that if they paid more individual attention to the responses, instead of writing only a general comment, the resultant reactions were greater.

> *Ek het altyd net een of twee keer per week gegaan en al die emails gelees en dan 'n algemene antwoord ingetik en dit aan almal gestuur, maar nou sien ek daar is altyd 'n paar wat heeltemal way-out is, so wat ek nou doen is ek gaan elke dag so 'n halfuur in wat in elk geval min is, dan kan ek vir elkeen persoonlike antwoord en hulle waardeer dit in elk geval baie.*

(Translation: "I went only once or twice per week and read all the emails and then typed in a general answer and sent it to all, but now I see that there are always a few who are way-out, so what I do now is that I go every day for half an hour which is in any case very little, so that I can write a personal answer to every one and they appreciate it in any case a lot.")

"Ja, maar ek verduidelik dit soos aan 'n std 2 kind! Elke stap, ek los niks uit nie! Dan kan hulle alles sien. As hulle 'n vraag vra, dan maak ek of hulle niks weet nie. Daai goed - soms vergeet ek!"

(Translation : "Yes, but I explain it as I would to a Std 2 child! Every step; I leave nothing out! Then they can see everything. If they ask a question, then I pretend that they don't know anything. That stuff – sometimes I forget!")

During the focus group meeting with the students, the students shared the same views with the tutors where they felt that the intervention by the tutors, the detailed explanation and the extra attention that they received, was most beneficial.

4.2.1.2 Feedback

The second keyword refers to the value of feedback, and the positive value that the students attach to feedback.

"Our tutor was 200% he answered all the q's [questions] effectively."
"If a question was posted, feedback was quick. Tutors often asked additional questions derived from your answer."

This last statement indicates how the tutors added value to the discussions by encouraging students to think further than the question that was asked. A detailed example of this is discussed at the end of this chapter.

The tutor of this specific group was, according to the group, dedicated and this added to the motivation factor that they experienced This added to the affective learning of the students.

"Our tutor was wonderful. She posted things on time; organised extra classes. She really cared about what she did. I have heard from other students that

their tutor was not good and they did not get discussion and they did not get any replies. And if it's a one-way discussion, then it's not worth anything. The tutors must be dedicated to what they do; must really want to do it."

4.2.1.3 Understand

One of the problems that economics students often mention, is the fact that they seem to understand the work when it is discussed in class, but when they sit down to prepare their tutorials or prepare for a class, they realise that that they do not really fully comprehend the material. The third keyword, therefore, speaks about the help that is available when students find that they do not understand a concept – thus the cognitive learning domain. Another comment that is regularly made is that they thought they understood the work, but when it came to writing the test and they received their marked scripts, they had in fact, misunderstood some issues. In fact, this has helped them to apply the knowledge to other situations. According to the comments that were made, this problem could be solved by making use of discussions and questions with the tutors, where they could ask and be shown if they were indeed, correct.

Students' general impressions of the WebCT component, as expressed in the first questionnaire, were positive with regard to making use of the tutors as guides to ensure that they were on the right track.

"I think it helped because it makes me to think thoroughly and it makes me to ask my tutor the questions that I don't understand. And another thing, it makes me to be flexible." Q1

One of the most exciting aspects of the LMS use that was pointed out, also in questionnaire one, relates to the opportunity to clarify issues.

"One can discuss different components of economics and can ask questions if confused."

Additionally, in questionnaire two, the immediate explanations and response to questions and the help and assistance in the understanding of course material, is emphasised.

> `*"The hybrid learning has stimulated my interest in the course EKN 124. The interaction with the online tutors helps a lot; if you don't understand anything about the course, you send an email and he/she will respond immediately and answer your question."*

This is supported by the following quotation from Questionnaire Three, as well as the focus group held with the students.

> *"Ja [yes] and that gives us more detail, instead of saying good, or you can improve a bit, they are actually saying this is where your problem is and get back to you on it, come back to me again."*

The intervention that took place and the fact that students were corrected before it was too late, is invaluable to them. They know that what they are learning is acceptable and correct.

Although this study looks at the learning experiences of students and not at the effect that the use of a Learning Management System has on results, there were students who felt that it had a positive influence on their marks. This is mentioned not only by the students themselves, but also by the tutors.

4.2.1.4 Satisfaction

In the first questionnaire, students indicated that according to them, using a Learning Management System would lead to better results. The tutors also commented on this perception during the second focus group discussion. They had access to the number of discussion contributions that every student had made, and detected a relationship between that and results, as can be seen by the following comment. Much of this perception is based on the idea that the students did not want to disappoint their tutor; they felt accountable to the tutor. The fact that students were no longer just one member of a huge class, but were known personally by the tutor, made a great difference to their attitude towards the subject.

"Daai (Student se naam) ou was baie disappointed in sy eerste toets, hy het so 32/50 gekry, toe se hy vir my hy gaan beter doen in sy tweede toets, en hy neem deel en alles en nou het hy in die 40!"

(Translation: "That (student's name) guy was very disappointed with his first test, he got about 32/50, then he told me that he was going to do much better in his second test, and he participated and all, and now he has in the 40s!")

Ek dink as jy kyk na die eerste en die 2de toets punte, daar is 'n groot verskil. Ek weet nie of dit WebCT is nie, ek dink dis 'n geval, die mense is bang hulle gaan my teleurstel en ek dink hulle het geleer. Hulle sê die heel tyd 'sorry ek het so sleg gedoen', en 'ek gaan harder leer', en so aan, en ek het nou die toetse gemerk en hulle het rerig hard geleer."

(Translation: "I think if you look at the first and the second test marks, there is a big difference. I don't know if it's WebCT, but I think it's a case of, the people are scared they will disappoint me and they learned. They say the whole time 'sorry that I did so badly, I will learn harder' and so on; I marked the test now and they really learned hard.")

(In the background, the rest of the tutors affirmed this statement, as could be heard by their responses on the tape.)

The students themselves also felt that they had gained in terms of results by using the LMS in their studies of economics. These comments were made after the examination had been written, but before the results were published. Students, therefore, did not know their final mark, but were able to share their thoughts on the learning that took place and were of the opinion that their marks had been affected by the online presence.

"We only implemented this group thingy in the second semester, I don't know maybe I was crazy or maybe I did study a bit harder maybe the first semester 'skrikked me wakker' [woke me up] but the second semester, my marks did improve 'cause truly I was forced to do work every week, ja [yes] that was kind of the idea, but truly, I did see an improvement of between 5 – 10%, that's big for me, well that was good at least."

"I can say it has helped, because last semester I also failed economics so this semester I can say I improved my semester marks, the investments, interest what is the savings, I wasn't involved in those things, that is how I learnt!"

The following comment from the second questionnaire summarises very succinctly, the general level of satisfaction experienced by many of the students. This student believes that the use of WebCT and specifically the discussions were instrumental in her improvement.

"The discussion on WebCT is very helpful because now I am able to speak Economics everywhere I go, meaning now I understand it much better than last semester. I used to get 33-36% in my semester test but now moved to 56%."

Clearly the above student's cognitive learning had improved. Below is an example of one of the discussions. It illustrates the level of thinking and the way in which the tutor leads the student to a deeper level of understanding. This type of interaction would not have taken place outside an LMS, and thus the higher level of cognitive learning would not have taken place.

Example of a discussion.

During the third week of the semester, the learning topic was: Unemployment. During the TC, the theoretical aspects, such as the definitions of unemployment, the different methods of measuring unemployment and the general causes of unemployment, were dealt with. This topic is something that the majority of South Africans have encountered in their daily lives, be it via an acquaintance laid-off, hearing about job losses in the media or merely observing the number of unemployed people in the streets. It is, therefore, a topic that lends itself to an exciting and engaging debate. However, this was never the case in the TC, due to lack of time, too many students for it to be a fruitful exercise and the lack of confidence of the students.

It was the first discussion topic of the semester and the first time that students were expected to participate in academic online discussions.

Group 1's discussion board question during Week 3

Message no. 69

TUTOR:
What, in your opinion, are the reasons for the unemployment problem in South Africa? How do you think this problem could be addressed? Make some realistic and substantiated suggestions.

Posted by Student (Student number) on Monday, 2 August , 2004 2:04pm
Subject: Discussion Topic 1
Message no. 118[Branch from no. 69]

The reasons for unemployment is that some people don't have qualifications(education) and others have been retrench while they have the ability to work. According to me some people don't get chance even if they have qualifications because the managers they say they are going to take their promotion. Other thing we as teenagers we don't want to go to school and be educated we just make thousands children and waiting to be paid by government for those kids. Another thing is that people who are willing to work are those people under the age of 15.Thank you i think that's my own understanding hoping that you will correct me if m'm [I'm] wrong

The role of the tutor was not to overshadow the students and take over the discussion, but to build their confidence and yet to spur them on to continue with the discussion and not to stop after making a single comment. The aim of these discussions was therefore, to allow students to engage in meaningful, continued interaction. The danger existed that students would make a single comment, merely for the sake of attaining marks, and then refrain from proper engagement with one another. Thus, the tutor kept the thread going by making short, positive comments and then asking additional, related questions.

Message no. 127[Branch from no. 118]
Posted by Tutor on Monday, 2 August, 2004 10:08pm
Subject: Discussion Topic 1
Very good! How will you go to work to provide equal opportunities for everyone?

The tutor takes on the role as a more constructivist “guide on the side” (Mazzolini and Maddison: 2003, p. 237) when she gives a very general, positive comment, which motivates and encourages the student, but then she prods the student to extend his comment so that he comes up with a deeper argument.

This discussion continued with other students making comments and adding to the conversation. The tutor continually guided and encouraged them, allowing the conversation to stay on track without stifling the contributions.

The second category defined under sub-question one refers to the way in which the use of technology makes the lives of the students easier, by offering alternatives to traditional methods.

4.2.2 Category 2: Convenience

The second category therefore focuses on elements of the LMS, which made the learning experience easier for students. The experiences of the students with regard to practical issues, as well as words that were identified as recurring and relevant to the key concepts will be discussed.

4.2.2.1 Quick

The speed at which students can communicate with the lecturer and tutors was a topic that was emphasised throughout the responses of different instruments.

Questionnaire 1 was completed one month after the commencement of the semester (and thus, after implementing the blended system of TC and VC). This questionnaire focused on students’ initial reactions to the LMS and how they experienced using this system in general.

Question No. 16 from this questionnaire asked:

“What are your general impressions of the WebCT components of Ekn 124?”

> *"One of the good things about WebCT that I like is that it is one of the fastest ways of getting a message and work to us from our lecturer and tutors."*
> *"I think our tutor was very active, you post a question today, and very quickly you get a response. "*

This positive experience of learning with convenience, ease and speed, is also evident in the questionnaire 1 question no. 14, where students were asked:

"What is the most exciting part of the WebCT Component?"

> *"You get to ask question on the computer, you don't have to go to the lecturer, it saves time."*

This student liked the fact that she could still get answers to her questions and that she could still communicate with the lecturer, but in a much faster way. What is also apparent from this comment is the issue of not having to actually take the trouble of making an appointment or having to waste time going to the lecturer's office.
During the focus group meeting with the students, the following comment was made which again argues in favour of communication without necessarily meeting.

> *"It is very quick because we can communicate with lecture or even a tutor without a meeting face to face."*

This is supported by a comment from the second questionnaire, which focused on the usability of the LMS. This student mentions the concept of a lecturer (teacher) not being able to communicate with all the students in such a large intake of first-years, had there not been the inclusion of tutors.

> *"The tutor was able to answer our questions, the teacher would take a long time if we were a large group for her to post all the answers to each person. "*

Chickering and Ehrman's fifth principle emphasises Time on Task: "Time plus energy equals learning" (1996) – this refers to the efficiency of the time spent on a task. From the above quotations, it is clear that the use of a Learning Management System as a time-saving device is experienced positively and allows students to manage their time more effectively, because of the fact that students can communicate and solve problems without waiting, or making appointments, which inevitably waste time.

4.2.2.2 Easy

A second theme that emerged in the convenience category was that it was really easy to use this system: “ease of use”, “easy access to information” , “user-friendly, easy to access” and “icons are helpful” are phrases and comments that emerged throughout Questionnaire 1 under the heading, “The most exciting part of the LMS.” Students also commented in more detail on how they experienced the communication tools of the LMS.

> *“A person can communicate easily with his/her tutor and lecturer, if you didn’t understand something. It’s a very good thing.”*
> *“It is the easiest way to communicate, it’s a sought [sort] of face to face communication with your tutor. “*
> *“It’s easier to talk to your tutor via computer than face-to-face.”*

It is interesting to note that the students made anthropomorphic connotations with the computer, as can be seen in the words, “face-to-face” and “talk” in the above two comments. The ‘human-like’ qualities of the computer are also apparent in the following comment from the same questionnaire, question 16, where students referred to the ease of communication that they experienced whilst using the LMS.

> *“Information is easily found and its serves as another lecture but electronically.”*
> *“Fairly user friendly. Communicate with tutor quite a bonus. It’s a privilege.”*

In questionnaire two, which was unstructured, students had to write down their own thoughts about the LMS. It is interesting to note that several students refer to the fact that they could still communicate, even if it were not face-to-face. It seems that students comprehend communication and interaction as not necessarily having to take place where there is physical contact, or that interaction does not necessarily imply an immediate response. Students also appear to value the advantages of some kind of contact with their lecturer. As a piece of advice that a student gave in reply to what he/she would recommend to other lecturers, is the inclusion of the chill-café, which is the forum for non-academic discussion.

> *"You can just open a chill cafe for your student so that they can communicate with you or you give them tutors and I think it will be easy that way cause any problems they do face they can communicate easily unlike the lecture course (because) is difficult to reach them."*

Very little else was said about the chill-café and those who did mention it, had mostly negative comments about it. They experienced this forum as a waste of time, stating that it was the most frustrating part of the LMS because there was "unuseful input", "people chat about boring stuff" or "People discussing stupid stuff on the web. Chill-café is totally boring."

One student indicated that it had no place in an academic environment. She found the chill-café the most frustrating part of the LMS, as she stated:

> *"The Chill-café, I really don't see the use of it. Ekn is a course to learn not to play with."*

Worthy of note, however, is that the chill-café was not created to be part of the academic learning experience. It was created as a forum for socialising, to separate casual discussions from the more formal academic forum. Students therefore were under no obligation whatsoever to visit the chill-café at all.

During the focus group meeting with the students, the facilitator asked the following question relating to the level of difficulty experienced by the users:

"How long did it take you to get used to working with technology and specifically with WebCT in you learning environment?"

The general consensus amongst the students, as could be heard on the tape by their comments in the background, suggests that it was easy and user-friendly and that they did not experience the technology as a hindrance.

> *"I don't know, it did not take long for me, cause its an easy system if you have some basic computer skills behind you, you know a little bit about a computer, chances are you are going to know it, some people will take longer, some shorter, but its an easy system to work on. Easy to pick up, I thought so."*

"I agree, quite easy."

(Rest agree, general comments heard in background)

The general impressions gained from the discussions and questionnaires are that the system was straightforward to use, that students did not battle to get used to the technological factors and that they rated the use of the LMS as uncomplicated.

The third element which related to the practical issues of the LMS was that students found this method of communication handy and usable, in so far as they did not have to search widely to get help; they could access everything they needed for the course from one place.

4.2.2.3 Convenient

This specific LMS is available to the students twenty hours per day, seven days per week and anywhere where an Internet connection is accessible. (Back-ups are made every night between 24h00 – 04h00). Much of what was written by the students supports the notion that communication takes place within the milieu of their choice and students place a high premium on this. The fact they do not have to meet the lecturer or the tutor face-to-face, but may still have the opportunity to ask questions at their convenience and when a problem arises, was highly valued. Although it may seem that students have to wait a long time for replies, tutors visited the discussion board every second day and the students were given these times. They therefore knew when to expect answers. The overwhelming response from students was that they felt that using the LMS was to their advantage with specific reference to the aspect of convenience.

One of the distinct and recurring topics that emerged was that students could ask questions at their convenience and did not have to make appointments.

"We can go 2 one place and get it done @ once, no running around."

In Questionnaire one, this sentiment was reaffirmed by several students, who stated the following:

"I especially like that you can ask the tutor something online and you don't have to go and make an appointment with the tutor."

"We now have tutors and are gathered in a group. If we have problems we can just send an e-mail 2 the lecturer."

"In general WebCT is a useful method of learning. One can ask questions and get a personal response."

"Ekn 124 WebCT component for me is exciting because I don't get to learn only the theory part of Ekn 124; but I can also apply what I have learned in class. Discussion questions help me to find out what's going on even in our country's economy. So far I am really enjoying Ekn 124. What I like about the WebCT component is that I get to ask a question anytime and they are answered satisfactorily."

This experience is supported by other students from the same questionnaire, who also commented on the use of e-mails in communication with lecturers, as opposed to making an appointment. The absence of personal contact does not seem to be a problem, as can be seen by the reference to "get a personal response". Students also suggested that it felt like face-to-face communication, but without the boundaries of time, as seen from the following comments from the second questionnaire.

"Learning in a relaxed environment with no time constraints and convenient for communication concerning academic stuff with both lecturer and tutor."

"It is an advanced and convenient way of learning 4 both the lecturer and the student. It is an electronic way in which the lecturer can reach the students so that they better understand the work discussed in class. "

"WebCT has served as another lecture who was contactable 24 hours."

In Questionnaire three, the different tools from WebCT were rated. One of these tools was the use of tutors in the online environment. In the past, tutors for Ekn 124 were used to present three face-to-face classes, where tutorials handed in earlier, were discussed. The availability of the tutors, once again, featured in the answers to the questionnaire.

When asked to rank the feedback from the tutors on a scale of 1 – 5, ranging from totally useless (1) to very useful (5), 41% of the respondents said that it was fairly to very useful, whilst 23% rated the presence of tutors as fairly to totally useless. Again, the role that the tutor system plays with regard to convenience, is emphasised.

> *"Tutor was efficient and available all the time on WebCT."*
> *"My tutor was very good. She was always available. "*
> *"Very good way of interacting with the tutor and lecturer."*
> *"Tutor was efficient and available all the time on WebCT."*

It is interesting to observe that of those who made additional comments on the questionnaires, negative comments relate solely to the comments of the tutors; the fact that tutors answered the questions late or not at all, ("Don't get feedback on discussions") or that the answers were too general ("well done", "good answer"), were seen as patronising and did not address the discussion content.

By implication, the ineffectiveness of the tutors themselves was the reason for the negativity towards the system, not the use of the instrument or LMS tool. Positive comments referred to the tutor's responding quickly and positively, and whether he/she asked additional questions. This was seen in the many comments relating to the tutors.

During the second focus group meeting, held on 21 September 2004, the tutors said that the LMS system was easier and more convenient, not only for the first-year students, but also for the tutors themselves. They also felt more comfortable being able to "hide" behind the computer screen, where they could be less vulnerable than in a class. This also implies better answers to questions asked, since tutors had the time to research answers, if they were not sure of a correct reply.

> *"Dis makliker nou – agter die rekenaar, maar daai kinders gaan check jou op, so jou moet goed weet wat jy sê. Dis hulle wat nou na jou terug kom, wat vir jou vra."*
>
> *(Translation: "It's easier now – behind the computer, but those kids go and check up on you, so you must know very well what you are saying. It's those ones who come back to you, who ask you.")*

In the past, the tutor classes took place in a classroom where they had to stand in front of the students and explain the tutorials. For many of the tutors, this was a harrowing experience because they felt vulnerable and exposed. Now that they were "faceless" and had time to think before answering, they were more at ease. This is what the tutor is referring to when she says "It's easier now."

The convenience of the system was also revealed during the focus group meeting with the first-year students which was held after the completion of the course, on the day of the Ekn 124 examination.

> *"It's convenient just to go online, and ask them a question, straight away you get an answer, instead of coming here and they are not in the office, you don't know their office time. "*

This is in agreement with what Reid writes when he discusses online learning
"With online access and a desktop or portable computer, students are never more than a phone call [or internet link] away from the classroom." (Own insertion)

There were also students who felt that making use of the LMS actually took up more time, instead of saving time. These students referred to the time it took to do the discussions and the tutorials, and that they needed Internet access to participate in these activities. Most students reported not having Internet access in their homes and subsequently, even on the days that they did not have classes, they had to come in to the campus.

> *"Takes a lot of time to do tutorials and sometimes I have to drive all the way to campus to do it. It wastes petrol thus money."*

The third category that was identified relates to the emotional support that students experienced from the interaction with the tutors. Students felt that the communication with the tutors and the closer relationships that they forged inspired them to work harder.

4.2.3 Category 3: Motivation and Encouragement

This category is specifically related to the Affective domain. According to Huitt (2001, online), "motivation is an internal state or condition (sometimes described as a need, desire, or want) that serves to activate or energize behavior and give it direction". It implies the following:

- internal state or condition that activates behavior and gives it direction;
- desire or want that energizes and directs goal-oriented behavior;
- influence of needs and desires on the intensity and direction of behavior.

Students experienced the involvement of the tutors on an emotional level, as well as on an academic level and commented throughout on issues such as pleasing the tutors, wanting to improve performances or not wanting to disappoint their tutors. From the discussion that follows, one realises that each of the four definitions of motivation is applicable to the students' experiences.

The experiences of the students with regard to practical issues will be discussed according to the identified key concepts.

4.2.3.1 Lack of self-confidence

One of the reasons why students do not want to interact with the lecturer is due to a lack of self-confidence and fear of being labelled as 'stupid'. This emerged in informal discussions with students, as well as from the preparatory questionnaire. Phrases such as "I was petrified to speak in class" and "After the lecture is over, she is bombarded by questions from other students constantly and I did not have the guts to go up to her in front of everybody" are indicative of the general feeling amongst students.

This is reinforced by comments in the questionnaires and the focus group discussions. One student commented in the first questionnaire:

> *"I see WebCT as interesting however it helps us to instill the skills, especially when we have to do some of the things ourselves, which means to give out our opinions on some aspects that are discussed in class, and its also nice for*

those who does not have that confidence to ask or answer in class, more of freedom found in the discussion board."

The above statement demonstrates this student's lack of self-confidence to make a contribution in class. The role of emotions in classroom participation is supported by the following statements from the same questionnaire:

"WebCT is the very nice thing I ever come across in my life, just learning electronically is very exciting. Also WebCT help us to ask or say anything without being shy."

This also came out in Questionnaire 2, where several students mentioned it as one of the reasons why lecturers should make use of an LMS:

"The hybrid system is quite good in a way that when we are in lectures some students are shy to express or ask questions as they might be shut down by their fellow peers."

The facelessness of electronic communication also enhanced the learning experience because students felt they could now ask questions without "losing face" in front of their peers. The tutors discussed the advantages of "faceless" communication during the second focus group meeting:

"Hulle sê dis "cool". Die rede hoekom hulle nie die dosente kom sien nie is omdat dit nie "cool" is nie. Dis makliker om agter die rekenaar in te skuif, niemand sien hulle nie. Hulle kan meer eerlik 'n opinie gee, want hulle is nie sigbaar nie."

(Translation: "They say it's '"cool'. The reason why they do not come to see the lecturer is that it is not cool. It's easier to sit behind the computer; nobody can see them. They can give a more honest opinion, because they are not visible.")

The other tutors agreed with the above statement. The discussion on the tape confirms that they also felt shy when they were undergraduates, with comments such as "I HATED to have to go to the lecturer" underlining their agreement. The tutors furthermore, recognised that this group of students had a great advantage over them

because of the personal communication that the first-years have, and the confidence that they build through the use of better interaction. Even at post-graduate (4th and 5th year) level they still feel uncomfortable about asking questions and making appointments with their lecturers. One student made a pertinent statement during the second focus group meeting concerning the lack of accessibility that she experienced during her post-graduate studies.

> *"In my graad het ek nooit kontak gehad met dosente nie, Nou is ek Hons, ek het geen relationship met my lecturers nie, jy voel weer soos 'n eerstejaar. Jy moet hands-on practical experience hê. Daar is baie mense wat daarmee suffer, want hulle voel die dosent is ontoeganklik. Na klas – dan is jy voor al jou maats, en jy 'kruip'. En nou het jou toegang privaat tot die dosent! Die student moet net ingelig word, die possibilities is daar! Nou kan hulle net mail as hulle te bang is!"*
>
> *(Translation: "During my degree studies I never had contact with the lecturers. Now that I am an Honours student, I have no relationship with my lecturers; you feel like a first-year again. You should have hands-on practical experience. There are many people who suffer in this way; they feel that the lecturer is not accessible. After class - then you are in front of all your friends; then you 'suck up'. And now you have private access to the lecturer. The students must just be informed; the possibilities are there. Now they only have to mail if they are afraid.")*

During a private discussion with this specific tutor after the focus group meeting, she admitted that, had she been able freely to speak during her first-year, things would have been much better. ("As ek as eerstejaar my sê kon sê en so kon kommunikeer was dit nou BAIE beter.")

If students first "say" something or make contributions in a non-threatening environment and find that what they have to say is of value, they might feel less threatened in other situations and find the courage to speak out. The advantage of first overcoming shyness in a comfortable, protective environment could help students to speak with confidence in their future careers.

4.2.3.2 Motivation and Encouragement

As discussed in Chapter Three, Holmberg's (1995) theory of distance education proposes that the characteristics of didactic conversation should be based firstly on the cultivation of a personal relationship between the instructor and student, so that study as a pleasurable experience and self-motivation may be promoted (Kelsy and D'souza, 2004). Furthermore, within the affective domain, students were responding to these comments and were motivated by these comments. The tutors spoke about the way in which their relationships with the students in their groups developed throughout the semester. They noticed how students seemed progressively to warm to them and form more intimate relationships with them. During the second focus group meeting, tutors spoke about the progress that they felt they had made in terms of building trust and rapport.

> *"Vandat ons die eerste keer die focus groep gehad het, tot nou het WebCT baie verander. Die mense gebruik dit makliker, hulle is meer vertroud, hule vra meer vra en goeters"*
>
> *(Translation: "From when we had the focus group for the first time until now, WebCT has changed a lot. The people use it more easily, they are more familiar and they ask more questions and stuff.")*

Holmberg's (1995) fourth postulate states that the atmosphere of friendly conversation favours feelings of personal relations according to postulate one (see above). Students made more use of the system as they became more confident and as they got to know the tutors. The positive effect that personal contact has on both the student as well as the tutor is evident in the reaction of the tutors when they speak about personal messages that they received or when students came to meet them personally. The following quotations are from the second focus group meeting with the tutors.

> *"Weet jy hoe lekker dit is as daar op die toets staan, tutor X, of aan die einde van die toets, thank you Y!"*

(Translation: "Do you know how nice it is if there is written on a test, tutor X, or at the end of the test, thank you Y!")

Daar is mense wat na die toets uitstap en na jou kom en sê, "Haai ek is so bly om jou te sien, en ek is so en so" - dis so lekker.

(Translation: "There are people who walk out after the test and come to you and say, 'Hey I am so glad to see you. I am so-and-so' – it's so nice.")

The enjoyment experienced by the tutors is evident from these two quotations. The murmur of agreement that was captured on the taped conversation also confirms that the other tutors felt the same way.

When analysing Group 2's Discussion Board contributions throughout the semester, one becomes aware of the encouragement that occurred and how it motivated the students. It seems as if the students felt indebted to the tutor and that they were letting the tutor down if they did not perform well. Tutors also experienced this and commented during the second focus group meeting on the value of motivation.

"Motivation, nice messages, they really appreciate it. Die meerderheid hou baie hiervan, ek sou sê 80% van hulle hou rerig hiervan."

(Translation: "The majority like it a lot; I would say 80% of them really like it.")

The lack of visual clues in the online environment makes it impossible to "show" the students what type of person the tutor is and it is important to form a rapport with the students right from the start.

This comment from the second questionnaire underlines the necessity of a caring tutor in order to benefit from and enjoy the system.

"I find WebCT to be a really exciting learner friendly component. And I think I'm liking economics more than ever before this semester. Tutors online make it really worth studying Economics."

4.2.3.3 Care

During the first week, tutors introduced themselves. They explained to the students that their role was that of support and assistance. They had to create a secure and comfortable atmosphere that set the scene for the semester. The following is an extract from Group two's messages for the first week. By telling them that she was a post-graduate economics student, she implied that they could trust her knowledge and ability in the subject, but by writing in an informal style, she indicated to them that she was open to a comfortable relationship and that she was not to be 'feared'.

> *Message no. 9*
> *Posted by Tutor (Student number) on Friday, 23 July, 2004 1:28pm*
> *Subject: Welcome!*
> *Hi!*
>
> *I am "Tutor" and will be your tutor this semester. I am currently doing my Honours in Economics and will be helping you through this course. If you have any questions or problems, please feel free to ask me. I will be available.*
>
> *I hope we have a great semester together!! Good luck and enjoy!!!*

Some of the students responded and welcomed the opportunity to have a dedicated tutor. This also set the tone for the rest of the semester.

> *Message no. 31[Branch from no. 9]*
> *Posted by Student (Student number) on Wednesday, 28 July, 2004 11:42am*
> *Subject: Welcome!*
> *Tutor, I am happy and also glad that you'll be working with us especially me [be]cause I really want to have knowledge and better understanding in this course and hope to achieve more.*

The tutor responded to this as follows, emphasising her role and her willingness to assist the students. This allowed the students to have a glimpse of her style of communication, and underlined her role as an assistant who was willing to help them whenever they needed her.

Message no. 75 [Branch from no. 31]
Posted by Tutor (Student number) on Friday, 30 July, 2004 11:39am
Subject: Welcome!
If you have any questions concerning EKN 124, please feel free to ask on WebCT. I will go through the relevant week [work] every week and answer any questions that might be asked.

I am here to help you, so do not be shy.
Have a great weekend and good luck!

At a later stage, more students joined. There were some problems with the registration of students who where either repeating the course or who were not registered during the first semester, hence the following indication from a student that he was late.

Message no. 57 [Branch from no. 31]
Posted by Student (Student number)) on Thursday, 29 July, 2004 7:17pm
Subject: Welcome!
Hi Tutor, sorry for only responding now but I believe you were aware of the problems we've encountered to be registered with WEB CT. I'm "Student" and thank you very much for welcoming me as one of your students. Please be patient because I've never worked on WEB CT in EKN before. Bye keep well and see you!
Student

The reference to "see you" is yet another indication that the students seem to give the computer human qualities. The computer is merely an extension of the tutor and not a replacement. The tutor's message was once again one of reassurance and security and of building relationships, so that the student did not have to feel anxious about the fact that he had joined late.

Message no. 76 [Branch from no. 57]
Posted by Tutor (Student number) on Friday, 30 July, 2004 11:41am
Subject: Welcome!
Hi Student

Glad to hear your problems are sorted out. If you don't understand something, please feel free to ask me.

Hope we have a great semester together!
Tutor

After the first week, the discussions were focused on academic issues. This will be discussed during the second and third sections of this chapter.

Just before the test, the tutor posted a message of good wishes. Although this may be seen as general and not really of much use in terms of learning, it encouraged the students to work hard and motivated them, indicating to them that somebody cared about their performances and that it was important for the tutor to build good relationships. The responses to this message indicate that although not of academic benefit, it had immense value in terms of emotional support.

Week 4: Test week
Message no. 211
Posted by Tutor (Student number) on Friday, 6 August, 2004 5:35pm
Subject: Good luck!!!
Lots of luck for your test on Thursday at six!!!

Hope it goes very, very well!!!
Study hard, and everything will go well. I'll think of you!!!

Tutor

Message no. 243 [Branch from no. 211]
Posted by Student (Student number) on Tuesday, 10 August, 2004 4:19pm
Subject: Good luck!!!
Hi, Tutor
i've just want to say thank for your support to us and as you say you wishes us good luck i am going to try very hard to pass not to disappoint you and me and as well as my group members.

THANK YOU HAVE A NICE DAY!!!

The responses to this message affirmed the need for encouragement and indicated an appreciation for the concern showed. The impression that is created from the students' attitudes was that they did not want to disappoint their tutor and that it was also important for them to have a positive relationship with their tutor.

After the test, the following message was posted.

> *Message no. 263 [Branch from no. 211]*
> *Posted by Student (Student number) on Friday, 13 August, 2004 10:47am*
> *Subject: Good luck!!!*
>
> *Thanks for your best wishes and myself and others did well in the test. I think I could have achieved high marks on that test if wasn't for some little foolish mistakes though I know that the marks are not yet out but I know that I performed well. I was very pleased to final see you in stabillis 4, I mean sometimes it's not nice to talk to someone you don't even know or seen her before through the computer.*

The comment about "meeting the tutor" refers to the test venue where the tutor was invigilating. It indicates that some students are not very comfortable with the facelessness of the LMS and still prefer the human aspect to be present.

The reply from the tutor strengthens the relationship that she has been building and exhibits a warmth and genuine interest in their academic progress.

> *Message no. 269 [Branch from no. 263]*
> *Posted by Tutor (Student number) on Friday, 13 August, 2004 11:35am*
> *Subject: Good luck!!!*
> *It's a great pleasure. I was pleased to see all of you as well. I hope you get the marks that you expect and are'nt disappointed when you get them...*
>
> *Enjoy your weekend!!!*
>
> *Tutor*

Although the Chill-Café was intended for non-academic purposes, some students posted similar messages here as well. The personal association that they felt with

their tutor also comes across clearly in messages posted there, especially in phrases such as “not wanting to disappoint”.

The following comment was taken from Questionnaire three and sums up one student’s sentiment about his tutor and the way that she motivated and cared about them as follows:

> *“Our tutor was the best as she was continually worried/concerned about how we’re coping.”*

Several comments make use of anthropomorphic qualities which is interesting in that these students saw the computer/LMS as a replacement for a human; the use of the word “talk” to the tutor and “seeing” the lecturer suggest that computers possess human qualities or that the human qualities traditionally linked to communication, no longer have to be present.

During the first focus group meeting with the tutors, the difficulty, as well as the importance of this specific task, i.e. to build relationships with the students, is clearly identified.

> *“What I tried now, is that I mentioned names, and say this is good, doing well. Motivate them and they might work harder, and those who don’t might want to try harder, so that their names are there as well.”*

Holmberg’s (1995) third postulate maintains that it is essential for motivation to be present, in order for learners to attain their study goals. The motivational aspects of personal communication and the interest shown should not be underestimated. It can encourage a student who would otherwise not have been motivated, to study harder.

During the discussion session with the first-year students, the following comment was made, which encapsulates the value of interaction and two-way communication with tutors and lectures via an LMS, as experienced by students.

> *“Our tutor was wonderful. She posted things on time, organised extra classes. She really cared about what she did. I have heard from other students that their tutor was not good, and they did not get discussion, and they did not get any replies. And if it’s a one way discussion, then it’s not worth anything. The*

tutor must be dedicated to what they do, must really want to do it. Then we can really learn a lot from the system."

A second form of interaction was explored in this intervention. Not only do students lack interaction with the lecturer or representative (in the form of the tutor), they also do not communicate with one another regarding the content of the subject matter. Thus, the second research question:

What is the relationship between LMS use and students' experiences of peer interaction?

Table 16 encapsulates the key words and concepts as described and pointed out by the students.

SUB- QUESTION 2	**Category**	**Domain**	**Key Concepts**	**Additional Descriptive words**
Interaction with one another	2.1: Learning: Pedagogical Issues	Cognitive	Interaction	talk
			Understand	Learn, Find out, Share, Participate, Help
	2.2: Confidence-building: Social issues	Affective	Small groups	
	2.3: Application: Academic issues	Cognitive		

Table 16: Categories and key words: Peer Interaction

4.3 Interaction with one another (peer interaction)

According to Moore (1989), "Learner-learner interaction among members of a class or other group is sometimes an extremely valuable resource for learning, and is sometimes even essential." "In large classes, students become isolated and solitary. Students are being denied the opportunity to negotiate meaning and explore half-

formed ideas" (Gibbs and Jenkins, 1992, p. 43). In previous semesters, Ekn 124 students attended two formal, TC lectures per week in groups which often exceeded 300, as well as two formal face-to- face tutorials per semester in groups which were anything between 50 and 80 in size. Apart from these lectures and tutorials, there were no other opportunities created by the department for students to interact formally with one another or to share ideas on the application of the content.

One way of dealing with this problem, is to try to control the situation by means of introducing the discussion of lecturer-set questions and tasks within fixed time-slots within lecturer-directed sessions (Gibbs and Jenkins, 1992, p. 49). However, due to a lack of classroom space on the campus of the UFS, this was not feasible. An alternative was to explore the use of electronic media. The fourth principle of Good Practice, which relates to Prompt Feedback, (Chickering and Ehrman, 1996), states: "A clear advantage of email for today's busy commuting students is that it opens up communication among classmates, even when they are not physically together". Hiltz (1994, p. 9) adds to this by stating that "…the formal goals of the VC are to improve both access to and the effectiveness of post-secondary education. … The goals are also linked through a pedagogical approach ideally suited to VC: collaborative learning."

The second research question looks at the establishment of learner-learner interaction among members of (this specific) class by making use of discussion forums in the LMS. It focuses on the use of collaborative learning as a pedagogical approach which is essential for good teaching and learning.

In this study, students were divided into twenty groups of approximately 35 students and were given a new discussion topic on a biweekly basis which was related to the subject content as discussed in class. Instead of using the email as the platform for communication, as stated by Chickering and Ehrman, the discussion tool was used; this allowed the discussions to take place in a public forum so that students could read one another's contributions and comment on them.

Three patterns or sub-themes became apparent after the data were examined. These are:

Learning (This refers to Pedagogical Issues)
Confidence building: (This refers to Social issues)

Application (This refers to Academic Issues)

Key words, which emerged during the examination of the data, were used in the discussion of each category.

4.3.1 Category 1: Learning

Learning is the acquisition of knowledge, or the acquisition of skills. One learns when one comes to know something through education or experience. It is also a way of finding out something or teaching somebody something. The first category therefore focuses on elements of student interaction, which added to positive learning experiences.

The pedagogical influence of interaction with one another by means of an LMS will be discussed in the following section.

At the beginning of the semester, the lecturer gave students a definition of discussion groups and then asked them to state what they thought the role of discussion groups were.

> *Message no. 6*
> *Posted by K Thomas (ECO1GRP1) on Monday, 12 July, 2004 3:20pm*
> *Subject: The role of Discussion Groups*
>
> *Discussion groups are also known as threaded discussion groups, electronic fora and asynchronous chat. They are very similar to newsgroups and mailing lists. Discussion groups are much more organised than live-chat and tend to be topic-related. Many users prefer discussion groups because they can think about their response before posting.*

This was useful because it allowed students to write down their thoughts and to verbalise their expectations, but it also allowed the tutor to comment on their ideas and to rectify any misgivings that might have existed. It therefore ensured that students were in the right frame of mind before the discussions started.

Group 1 week 1
Message no. 30 [Branch from no. 26]
Posted by Student (student number) on Wednesday, 28July, 2004 11:33am
Subject: The role of Discussion Groups

"My understanding about the group discussion and the manner in which group members should work together, is that we should all partake or participate by expressing our different opinion in every topic therefore at the end we'll understand and learn from one another and respect other people's opinion."

It was also an ideal opportunity for students to "try out" the discussion tool and to make sure that they understood what was expected of them.

4.3.1.1 Interaction

One of the themes that came through strongly is that students could 'talk' to one another and discuss their thoughts on economic issues. Comments made throughout the instruments were positive with regard to this kind of interaction. From the use of the word, 'talk', it seems that students approached the LMS in the same way they would any face-to-face conversation.

In response to the question, "What is the most exciting aspect of WebCT?" in Questionnaire one, students often mentioned interaction with one another. They also referred to the fact that it led to more than mere talking, but also assisted in learning.

"Interaction with tutor and fellow students – often fair debates. "
"Chatting, like chill-café, and the fact that we can interact even though we don't really know each other."

This comment already implies that this student experiences the comments from fellow students in a positive light; that other people's ideas add to constructive learning.

Under the general section from the same questionnaire, students elaborated on the interaction experienced. In the following comments, students indicate that they

cannot initiate interaction by themselves and that they need outside intervention to force them to "speak" to one another. However, the recurring theme is that this interaction is important in the learning process.

> *"Help us to interact with other students,which is something we cannot do personally. You learn many things from other students that you would not have learnt alone. They help us get information that we don't know from others."*

> *"I am an interactive person who likes debating and it really made me like economics more as I can do it in and outside the classroom.*
> *Discussion board is helping to see how other people view things that interaction is really important*."

> *"Personally, I think it's too much work, but exciting at the same time cause I gain more computer experience. Nevertheless I get to interact with people, learning to work in a team."*

As can be seen from the last comment, all students were not equally positive and enthusiastic about the added component of discussions. By far the majority of students who made negative comments, referred to the time factor; that it took up too much of their time. Nevertheless, as is the case with the above comment, they were quick to point out that even though time was an issue, there were still positive learning advantages in participating in the discussions. This is confirmed by comments taken from Questionnaire two, where the advice given to future users of the blended learning system included facilitating interaction between students.

> *"I think the WebCT has helped a lot especially in reaching every student with announcement and interaction with other students by weekly discussion topics to realise one's abilities and level of study to catch up with other student's abilities.*
> *The online discussions must definitely be included. Not only are students allowed to give their opinion on the economics world done in the module but also on the economy of SA. The discussions allow students to think critically and enable them to grasp the work better – 80% of the knowledge you gain is by explaining it or discussing it."*

Also in Questionnaire three, students viewed the discussions in a positive light and pointed out the help that peer interaction gave them. Knowing that other students also battle with the same work and being able to ask one another for explanations seemed to act as a motivating factor.

> *"Interaction with my classmates has helped me a lot."*
> *"Interact, because to my surprise we experienced same problems."*

In the first-year focus group meeting, students referred to the small group interaction, the discussions and the advantages thereof.

> *"One thing, starting economics and this discussion online, it also helps in a way you interact with the outside world, people hold their discussion on the interest rates and inflation, of late we have started to interact, all the stuff I have learned."*

The second key concept within the pedagogical section of peer interaction focuses on the fact that students were able to understand issues better if they were able to share them.

4.3.1.2 Understand

Students' comments supported this statement and showed that their level of understanding economic concepts deepened through the use of a different learning strategy i.e. that of collaborating with peers. (From Questionnaire one: general comments).

> *"It is interesting to see different view points form other students on the discussions and helpful when the qualified tutor corrects us."*

> *"I think it is going to help us to pass EKN 124 because we get more information about the course and other discussion helps very much because we compare our discussion and get tips from others."*

With reference to the most exciting aspects of the use of WebCT in Economics 124, students stated the following, which reveals a better understanding/learning of the content:

> *"I learned to use the internet and communicate with tutor and a lot from other people's discussions."*

> *"Discussions are interesting, learning about what other people have to say about the economy we always learn from them."*

> *"The discussion really has improved my understanding in EKN 124 compared to last semester."*

> *"In WebCT since we had discussions, I started enjoying it, I get to learn more without going to class."*

The last comment is particularly noteworthy, since this student evidently does not enjoy the classroom situation and has a different learning style, which does not necessarily include class attendance. Thus, the inclusion of discussions on WebCT allows for the students' individual learning styles and eventually for personalised learning.

In the general section of Questionnaire one, students also commented on the value of learning from one another's viewpoints. Students who referred to last year (when WebCT was used only on a minimum-presence base, i.e. only for notes and comments and not for student interaction) are those who were repeating the course. They were in a very good position to compare the different systems and their comments are of particular value to this section.

> *"Definitely I am impressed by how you can learn from other students because we have different views and you know what your groups members have to say on a particular topic."*

> *"I think that in general it has both advantages and disadvantages. The good thing is that we learn a lot and its fun to participate in discussions and hear what other people's opinions are and learn from that."*

"It is a convenient way of learning because you can go and answer the questions any time and gain a lot of information at the same time. You get to understand a lot of concepts relevant to the subject more clearly because you get a lot of opinions from different people."

One notices again the theme of convenience, as was also seen in the first section of this chapter.

The general feeling of learning from one another is also emphasised throughout the comments from Questionnaire two, where students adamantly stated that the value added through the discussions with other students, should remain in the course structure. Words/phrases such as "awesome", "helped a lot", "inspired" and "very good", once again underline the positive learning experiences gained from interacting with fellow students. The following quotations are but a few of the many constructive comments made by students about the weekly peer discussions, taken from Questionnaire two.

"The group weekly discussions for Ekn 124 really helped me a lot to improve my marks and understanding for Economics. They gave the ability to learn from other students as well and not from the lecturer only. I think you must continue to have them as part of learning Economics."

"WebCT is very awesome, every time I go through it and discover what my fellow-mates have to say in the discussions, I really learn a lot and I benefit a lot – I like it! The whole weekly discussions are awesome."

"I find WebCT as being very useful because my discussions in the discussion forums help me understand what I am dealing with in Economics. I find the topic discussions very interesting and help me look at Economics or adjust to not just the lectures but in my social life too."

"Compared to last year I can say it's much better now because we can share and contribute to the discussions with fellow students. So we can learn more from what other people say."

During the first-year focus group meeting, students also referred to the improved understanding that was gained from the group discussions. They furthermore referred to the fact that the discussions added to the classroom explanations; that some students understood concepts better when explained during class, but that all could benefit from this by interaction with one another.

> *"We got an opinion from other people, I don't know, I understand from other parts that we did in class, other students would talk about it and even add some, so I understand more."*

> *"There was time before the conclusion, I could check what other people have said, before I could complete, I could base mine on other people, and write something much better."*

On the negative side, students again referred to the time issue, where they felt that the discussions took too much of their time and mentioned this as the most frustrating component of WebCT.

However, even when some students referred to the negative aspects, they also pointed out the positive advantages with regard to grasping concepts.

> *" I stay off campus and it's a 20 min. drive, and if I did not have classes on a day, I had to take that 20 min. drive to come to the computer lab, and its time consuming. It is a quick process of getting information, but its time consuming in the traffic. That was frustrating for me. But you learn to deal with it and make it part of your routine."*

This view was not shared by all the students. Comments referred to the time issue as: "More than enough time for handing in tutorials".

During the first tutor focus group discussion, tutors also mentioned the way in which students help one another.

> *"Daar is wise guys wat al die vrae antwoord. Daar is 'n paar wat mekaar help, wat mekaar antwoord."*

(Translation: "There are wise guys who answer all the questions. There are a few who help one another, who answer one another.")

This comment from a student, from the third questionnaire, sums up the general feeling about the usefulness of discussions for interacting with and learning from peers.

"The best part of WebCT is the discussions – if your tutor gives you work you actually get to know something you never knew from your fellow group mates related to work."

4.3.2 Category 2: Confidence building

The word, confidence, refers to the belief in one's own ability. The second category therefore focuses on being able to speak freely to fellow students and having a belief in your own ability to be correct. The recurring pattern here was the reference to small groups.

Small groups

In the focus group meeting with the students, the idea of getting lost in the crowd (specifically in this subject with its large number of registered students), was countered by the advantages afforded to one, if one is part of a small group.

"I think a small group is much better because if you are huge, they won't recognise all the contributions because they will maybe only concentrate on half the people. So if it's a small group then all of you will participate."

This also emerged in the First and Second questionnaires respectively, where once again, the shyness of students prevented them from actively taking part in class, whereas the discussions allowed them to speak freely from the security of anonymity.

"Also the online discussions are fantastic because you find students who are shy to voice their opinion in front of a lot of people, now this becomes their chance to say whatever they want to say without facing anybody."

> *"Sharing the knowledge among group members, you gain more confidence and become acquainted with the economic issues."*

Other students' opinions also matter. Students view them as a positive contribution to their own learning, indicating that peer interaction adds to confidence building with regard to understanding the subject matter.

> *"The discussion forum is a really good idea as it helps students in a particular group know what other or how others view economics."*

The tutors pointed out at their first focus group meeting the advantages of learning within the secure environment of facelessness and with the added advantage of confidence, could only be beneficial for learning.

> *"She (student's name) likes the online because they are all noticed. That personal contact in that way is good, and they can say anything and get feedback, it's not like in a test. And they can all see what the others say, they can compare themselves, and see how they improve, they benchmark themselves. You can really give an opinion and be confident. If you have an idea you can say it people respond to that that is a good feeling."*

They also commented on the social aspect of the groups; that it allowed students to meet one another which would not have happened had the smaller groups not taken part in discussions online.

> *"The most interesting thing about the discussion is that students get to know each other and they get a chance to learn from each other in terms of knowing how other people are answering the questions."*

All the students, however, did not feel the same towards being forced to participate in online discussions or to be part of a group. The first message was taken from Group 2's discussions and it clearly comes from a most enthusiastic student.

> *Message no. 221 [Branch from no. 9]*
> *Posted by student (2004119323) on Sunday, 8 August, 2004 2:45pm*
> *Subject: Welcome!*
> *Thanks TUTOR 4 a nice welcome, from me guys of the first chosen group I*

say
Weeeeelcome,much looooooove!!!!!

However, all students are not equally enthusiastic by the idea of working in a group! The following message is from a rather disgruntled student who does not believe in the advantages of learning and participating in groups.

> *"The group thing! NOT a good idea, especially that we're going 2 be evaluated 4 it [how many times do I ever engage in it] Doesn't make sense VIVA TO INDIVIDUALISM."*

"Higher education institutions should educate students to become well informed and deeply motivated citizens, who can think critically, analyse problems of society, look for solutions to the problems of society, apply them and accept social responsibilities" (World Conference on Higher Education, 1998, online). A student cannot merely rely on rote learning and regurgitation of facts, but has to be able to apply his/her knowledge in a socially responsible manner. Furthermore, Fourie (2001, p. 1) states emphatically that in the study of economics, students need to think and reason about real-world economic events and that teaching should strive to encourage an "…active way of thinking, not dry, static theory".

The third category considers the use of the LMS to enhance the integration of theory and active application.

4.3.3 Category 3: Application

Comments made by students also referred to the fact that economics is a subject that needs to be linked to real-world issues and must not be restricted to being a textbook based, theoretical subject only. One of the advantages of using the discussion board is that students are able to discuss real-world issues with one another and apply the knowledge/theory as discussed in class. The advantages of communication and linking of 'real world issues' with the theory, is pointed out in many of the comments made, as may be seen from the extracts below.

When asked what the most exciting aspect of WebCT was, students' reactions were overwhelmingly positive. The interaction and discussion with one another on

situations that were actually taking place seem to have stimulated students' interest in the subject – something that could not have happened in the classroom situation where there are too many students and where the protection of facelessness does not happen.

> *"U get a chance to find out what other people think about economics and matters affecting us on general economy, pose questions on discussion board."*

The following observations were taken from the First questionnaire (general section).

> *"Each of us has a chance to interact with other students and possible creating an atmosphere of the outside world, I guess it really boosts one's capabilities and encourages one to do his part, which at the end of the day is mission accomplished."*

> *"What helped me improve more with my learning is the discussion topics because they made me study more and understand what economics especially practical one is all about."*

> *"People provide valuable and interesting points which have broadened my knowledge and perspective about economics."*

In Questionnaire two, where students had to give advice on the integration of WebCT into a course, many students referred to the discussions and how talking to other students about the work, and applying it to practical situations, actually helped them understand the content better.

> *"What helped me a lot is the discussions concerning real world data/info in which one had to express oneself by applying economic theory as well. More of a 'outside the classroom thing'."*

In addition to the discussions, it also forced the students to think before they made their contributions and to consider what they had to say, since they felt a responsibility towards the group and therefore, had to make sure that what they said, was correct.

> *"WebCT has been very helpful especially the discussion part where I have to read a lot before making contribution that will benefit everybody in my group. It also helps us to stay on top of things, because we become very observant at the economic phenomenon happening all over the world. I would therefore recommend the use of the discussions on the WebCT."*

The next comment, made at the first-year focus group discussion, is a practical example of how a student went about making use of the discussion board to get assistance with work that was discussed in class and how the group assisted in linking the theory to the practical discussion.

> *"For instance in the case of imports and exports. I went to the WebCT discussion group and asked about the causes of inflation and how to keep our economic stable, I think I we can continue using WebCT we will have a good knowledge of what is happening in the economy."*

The online discussion allowed for this student, within the safety and comfort of the group, to make sure that he/she understood the theory and that the application of that theory was correct.

From Questionnaire three, it also emerged that being able to link the theory/classroom work to the economic situation is very valuable, as seen from these brief statements about the discussions and the applications thereof:

> *"They actually stimulated my knowledge on economics. One needs to know more about the real world."*

> *"Discussions and Tutorials stimulated my ability to think critically and well-prepare for the lecture."*

Students confirmed the positive value of discussions in the focus group meeting by making the following comments. The words in brackets refer to general comments of agreement that could be heard.

"Well most of the questions posted were very practical, hmmm, repo rate, things that just happened [yes, true] so they were discussing something very practical at that point in time."

"It makes you interested in the subject (yeah) because it make you realise I am not just earning things out of a book, you know this actually applies to the real world and WOW, and I can do the same thing as the Minister of Finance is doing out there. [laughter from several students] It makes you feel good about the subject and it makes you really want to do it."

During the fifth week of the semester, the topic for the week was the South African business cycle. Whilst the theoretical aspects included the different phases, the measurements thereof and the indicators, one of the outcomes of this section is to discuss the situation with regard to South Africa's business cycle and to make use of the theory to try and establish the current position of the South African business cycle.

Students were referred to several websites which they had to consult and then they had to link the theory with the data in order to answer the question. With this particular topic, a lot of discussion took place, since this is a subject that has many different answers, depending on the way in which the economic indicators are interpreted. The issue of a weak vs. a strong currency and whether it is advantageous for the South African economy, is one example which illustrates how students interacted with one another in an academic forum, while trying to explain the content to one another.

The question/discussion topic for the week was posted by the Tutor.

Message no. 266
Posted by Tutor (student number) on Friday, 13 August, 2004 11:24am
Subject: Discussion topic Week 5 (1)

Go to the website of the South African Statistical services. (http://www.statssa.gov.za)
Find out what the latest information is on economic growth, unemployment, CPI, PPI and the size of the population. Now go to the website of the SA Reserve Bank. (http://www.reservebank.co.za/)

Look at the latest information available on the home page. You will also notice that the interest rate is down. Read the following: 2004-08-12: Statement of the Monetary Policy Committee

Now comment on the state of the South African business cycle. Do you think that the South African economy is in a trough, upswing / boom, peak or downswing/recession? Substantiate your answer.

One of the first contributors made a statement about the manipulation of the US dollar, something that was not discussed in the lectures during the week. This student also referred to another article that was not referred to in the week's topic, but was relevant to the discussion. Students were, therefore, starting to look beyond the boundaries of the textbook and the tutor's instructions and reading more widely than was expected.

Message no. 274

Posted by (student number) on Monday, 16 August, 2004 10:08am
Subject: CONSUMERS' PARTY ROCKS ON
Consumers' Party Rocks On was the headline in The Sunday Business Times dated 15 Aug 2004.As we know, that as the interest rates dropped, the retail stores increased their sales tremendously. Economists believe that the interest rates will remain steady for the rest of the year and there could be further cuts if the oil prices cool off. A US analyst admitted that that US had imported a ton of stuff, so the dollar will continue to weaken.

Although this particular contribution does not answer the question, it does point towards issues applicable to the discussion, but, more importantly, it touched on something that is vital to the economy and something that students have difficulty grasping – the relationship between currencies, economic growth and inflation. The issue of the currency is questioned by a number of students, which may be seen from these two messages.

Message no. 279 [Branch from no. 274]
Posted by (student number) on Monday, 16 August, 2004 5:53pm
Subject: CONSUMERS' PARTY ROCKS ON

If the dollar weakens are we South Africans going to enjoy that or is something going to be done about that? Because it is not all good for us if the dollar is weak.

Message no. 280 [Branch from no. 274]
Posted by (student number) on Monday, 16 August, 2004 5:56pm
Subject: CONSUMERS' PARTY ROCKS ON
Is it really that good for our country when the dollar is weak? I mean should we really rejoice over that given that somewhere somehow it is not good for us.

The question is addressed briefly by other students, who go on to explain the result of a weaker dollar.

Message no. 283 [Branch from no. 282]
Posted by (student number) on Tuesday, 17 August , 2004 12:21pm
Subject: CONSUMERS' PARTY ROCKS ON
Because, e.g, some mines were closed down because it was expensive to produce but cheap when selling so that declines economic growth.

.

Message no. 443 [Branch from no. 274]
Posted by (2004071052) on Friday,, 3 September, 2004 11:18am
Subject: CONSUMERS' PARTY ROCKS ON
Message 274 on Monday, 16 August, 2004 10:08am, (2004150013) writes:
(Student quotes message 274 and adds the following:)

For people who import is not good for business, couse now the prices will increass,but for business that export is very good for them, they are profit will increass so this is not a balanced equastion.

Even though the terminology is not always correct, the gist of the answer is and this assisted in the understanding of the topic. Perhaps the fact that it was NOT written in complicated academic terms, also added to the understanding of the problem.

According to the third questionnaire, the majority of students indicated that they experienced interaction with other students in a positive light. This is illustrated in Figure 9.

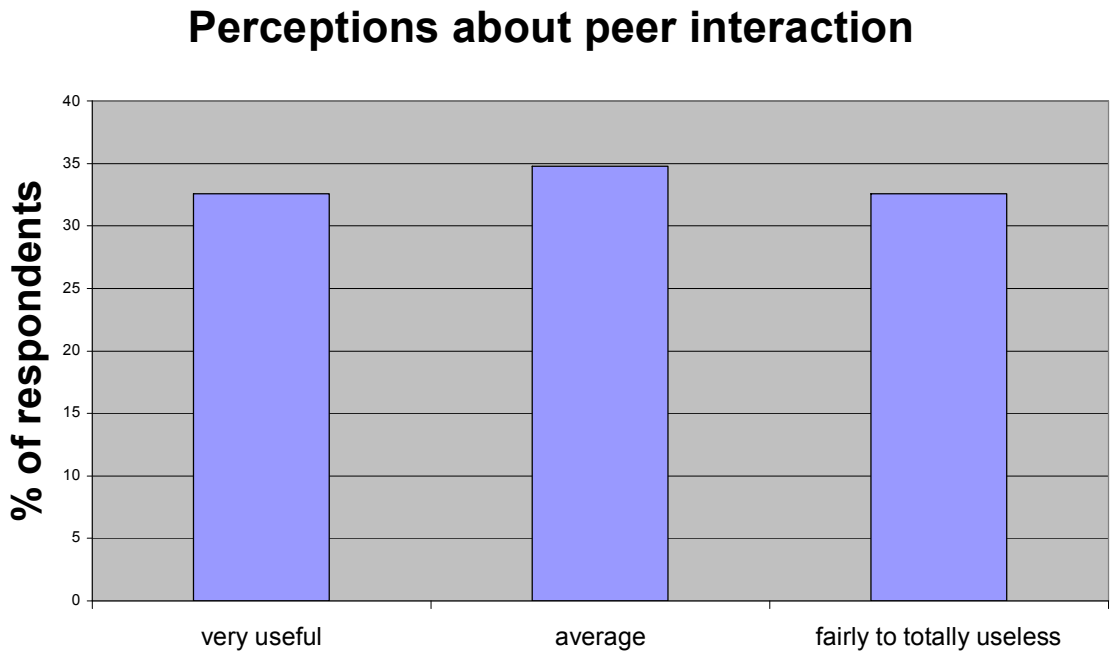

Figure 9: Students' perceptions about the usefulness of the peer discussions.

Almost a third of the students who completed the questionnaire (32,6%) stated that interaction with other students was fairly to very useful, whilst another 34,8% indicated that it was average. The rest (32,6%) state that it was fairly, to totally useless. It therefore seems that interaction with other students did add to the learning experiences of the Ekn 124 class.

Overall it seems that, at best, students benefited to some extent from the interaction with one another. At worst, it did not detract from their learning experiences. In Group 1 there were a total of 559 messages in the various discussions. Taking into account that there were altogether 20 groups interacting simultaneously with their respective tutors, the amount of interaction that took place is much more than it would have been without the use of the LMS.

This statement made during the Second questionnaire, seems to sum up the value of the discussions, the application and the added learning that took place.

"I think it rightly done especially for Ekn 124 student – meaning that it's the extra mile that has been take to make sure that we get through this course with an idea as ekn 124 does not only ends in class but is available anywhere/anytime."

The last form of interaction discussed in this chapter relates to content issues. Students need to make better use of the materials available to them, but also need to be able to choose between different sources of information. The last sub-question of the study is as follows:

Sub-question 3: What possibilities exist to encourage students to interact with content by making use of an LMS?

Table 17 summarises the key concepts and descriptive words which were used to analyse the data.

SUB-QUESTION 3	**Category**	**Domain**	**Key Concepts**	**Additional Descriptive words**
Interaction with content	3.1: Preparation	Cognitive	Prepare	Before class
	3.2: Notes/note-taking	Cognitive	Notes	Listen, follow in class
			Concentrate	
	3.3: Continuous learning	Cognitive	Understanding,	
			Self-study/study	
			Practical/South African Economy	
			Tutorials	
	3.4: Deeper learning	Cognitive Affective	Application	
			Interested	
	3.5: Additional information	Affective Cognitive	General information, communication	
	3.6: Generic skills	Psychomotor	Computer literacy/computer user	
			Learning/life skills	

Table 17: Categories and key words: Content interaction

4.4 Interaction with the study material/content

"The fundamental idea underlying Engagement Theory is that students must be meaningfully engaged in learning activities through interaction with others and worthwhile tasks" (Kearsley and Shneiderman, 1999, online).

Fourie (2001, p. 2) asserts that the biggest problem with economics students is their inability to link theory with real-life situations, something that is exacerbated by the fact that students do not interact with the material and lack the ability to analyse data. "I realised that the typical economics graduate might have a Master's degree in Economics – or even a PhD – and yet not have the ability to analyse the basic operation of the economy…This typically leads to the accusation that universities provide 'ivory tower' training, with limited applicability in practice." This sentiment is echoed by several other authors of economics textbooks who have changed their approach to one of allowing the student to interact with the content (Mankiw, 2004; McConnell and Brue, 2005).

One of the goals of the pre-course informal questionnaire which was discussed in Chapter Three was to ascertain whether students interact with the course content on a regular basis, and if so, how much time is spent on the course material. One has to bear in mind that Ekn 124 is a 16 credit course, which translates to 160 notional learning hours. Students were asked, amongst other things:

- How much preparation do you do for each class?
- How much time do you spend after each class going through the work covered?

Options were given as follows:

- None
- Less than 1 hour
- Between 1 and 2 hours
- More than 2 hours

234 students from a group of 601 registered students completed the questionnaire. This translates into a 39% response rate. The results were as follows:

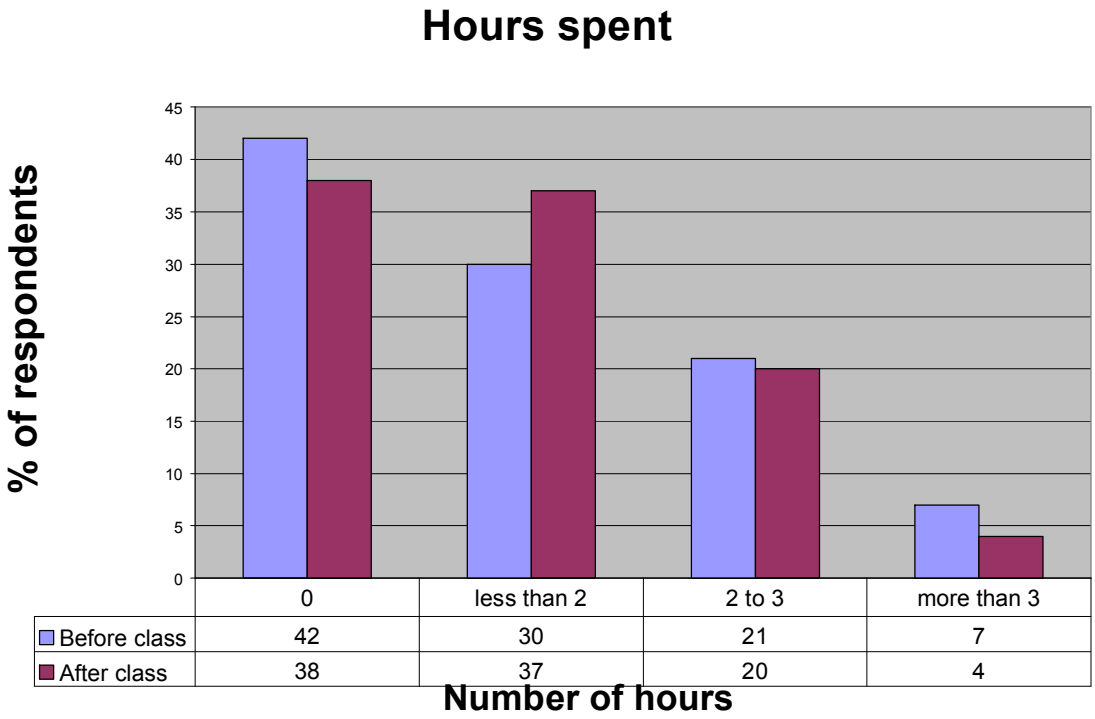

Figure 10: Hours spent on study material.

Figure 10 illustrates the following:

By far the majority of students (72%) do very little or no preparation for lectures and an even larger group (75%) does very little or no work after the lecture. Almost half of the respondents hear about the work for the first time when they attend class. For 38% of the respondents, the first time that they interact with the work after having heard it in class, is when they prepare for a test.

If one keeps in mind that only 39% of the registered students attended class on that particular day, the amount of interaction with the study material is dismal for this particular group. The lack of time spent on the subject matter was something that had to be addressed, if one wished to get students to engage in deeper learning and understanding; not mere regurgitation.

The last section of this chapter analyses students' use of the different components of the LMS and the perceived added value to learning afforded to each of the components. The following features of the LMS were used during the semester:

- Discussion board

- Section for general questions
- Tutorials
- Additional notes on chapters
- General notices on the notice board
- Availability of notes to be used during lectures
- Links to other websites associated with the course material
- Computer literacy

During the data analysis five of these features were mentioned repeatedly, namely:

Notes; Quizzes; Discussion board; General information; and Computer literacy.

Within the context of the identified keywords, students' experiences of integrating the LMS into their learning will be discussed.

4.4.1 Category 1: Preparation

The first category investigates the use of the LMS in assisting students to prepare more effectively for lectures. Because of the availability of notes, students had the opportunity of reading through the outcomes for the lecture and the main points which were going to be discussed.

4.4.1.1 Prepare

The key words identified concerned the issue of being prepared for class, of having some knowledge of what is going to be addressed during class and how using a Learning Management System assisted in this. Students stated that in the past, they did not prepare for class since there was no incentive which forced them to do so. Since having to do quizzes and discussions, and having the notes to assist them, they found that they actually prepared more thoroughly for classes and they felt that it assisted them in the learning process as it also helped to prepare for tests. The following comments were taken from the First questionnaire.

"Good way to help us improve our marks and help us prepare for class."

"The component is very effective. It's like a second lecture. The notes help us prepare before class."

"Notes help having learning objectives, help to prepare for class and tests. What I have gained from this is the realisation that preparing regularly for class is crucial."

"WebCT is really helping more especially the notes as they're helping one to know what the next lesson will be about so one will prepare basing oneself on that."

"The notes that are given on WebCT are also helpful in preparing for class and makes studying easier as it provides the outcomes."

Having the outcomes before the lecture helped to give direction to the students, so that they knew beforehand what to expect from the class and what to focus on. It also helped them when they studied for a test, as they knew what the important issues were. This student clearly believes that by using the LMS, her results did (and possibly would, in the exams) improve.

"The notes that are on WebCT help me a lot when I prepare for a test and exam, my marks have improved from the day I started using them."

In Questionnaire two, the following were stated regarding preparation:

"I'd say WebCT helped me most in preparation for tests. Since I don't usually prepare for class, the tutorials left me with not option, but to read through the work in order to be able to answer the tutorials."

"First of all the weekly discussions and tutorials make you prepare more or learn more about the previous lectures. Tutorials are fascinating because for me, doing my tutorials made me understand more and do more research about the work. WebCT was quite used for when it came to the notes and previous tests because you knew for that you could find previous tests on it."

As in previous sections, the issue of saving time and easy access was mentioned. In the following comment, it is distinctly linked to more effective learning.

"WebCT is very fast, time-saving, effective and most of all easy to use way of learning. Daily class notes are always pasted (posted) for reference purposes, and as such there is not much paperwork needed and that makes it time saving."

Shorter comments made in Questionnaire 3 also refer to the notes, which allow an overview before class and the ease and speed of the use of the LMS.

4.4.2 Category 2: Notes/ note-taking

Traditionally, students attend classes; lecturers present the information by means of a teaching resource such as an overhead projector, or more likely, PowerPoint slides.

"Copying down words from transparencies is not the most productive of learning activities" (Race, 2001, p. 129). However, the danger of using transparencies is exactly this - students attend class to copy down the notes and then do not have the time in class to listen to any explanation, or to digest what has been taught. According to Race (2001, p. 211), this is especially true for people studying in their second language. These students "…are disadvantaged (in the classroom) in that they may be spending much of their energy simply making sense of the words, with little time left to make sense of the ideas and concepts." Making the background notes available as resource material before class via WebCT, was one way of overcoming this problem, which allows students simply to add to the notes and then work through them in their own time and at their own pace. As seen by the comments made, this was one of the most valued features of the intervention.

Students identified receiving notes as one of the most exciting aspects of WebCT in the First questionnaire.

"The fact that we get a framework, with the notes, to work from is very good."

In the focus group meeting, the fact that even when a student misses a class, he/she can still catch up, was discussed. The comments in the background indicated that the others present also agreed with this statement.

"I think we got notes posted, we got all our class notes, If for some reason you missed a class, because it happens, it happens, you knew you were not entirely behind, because you could go to WebCT, get you notes, you could work through it a lot, and that really helped a lot, you knew you weren't missing out on something entirely."

"What I really liked about the lecture is that we got the notes before class. So you had an idea of what was going to happen in class. Even if you did not comprehend it first time around, so it actually helped a lot."

Very often, students have not yet learnt to make summaries and notes and come to tertiary institutions without having learnt that skill. Students in large classes manage better with the workload if they are presented with a structure. (Ward and Jenkins, 1992, p. 29) The issue of making summaries and the aid of notes in that respect was an important topic in the Third questionnaire.

"It is a summary of my work which decrease my work load."
"Helps me to make my own notes."

In the past, one of the criticisms of the Ekn124 course has been that too much work has to be covered in too little time and that the work is 'all new' to the students. Students' comments on the value of being able to listen in class, to concentrate on the explanations and to add/write down only additional information, seem to show that this method could be successfully used in overcoming the criticism.

4.4.2.1 Concentrate

From Questionnaire one, the most exciting aspect of WebCT, the use of notes as a way of improving understanding in the classroom was referred to several times.

"I think that the availability of notes in WebCT makes it very easy for students to concentrate in class."

"Notes, they help us listen in class, rather than jotting down notes while the lecturer is teaching."

Furthermore, in the third questionnaire, explicit reference is made to the advantages of concentrating in class and the effectiveness of making use of notes received before lectures.

> *"I find WebCT very interesting and useful because I'm able to find notes that I missed in class. Now I can concentrate more on what the lecturer is saying than on writing notes. It also forces me to think about economic issues and to listen to the news to keep up to date. It also broadens my mind reading other people's opinions on economic issues."*

> *"I think that WebCT is a great help to us because of the tutorials are practice for the exams. Notes help big deal because sometime we can't take notes quickly in class. All in all WebCT does help."*

4.4.3 Category 3: Continuous learning

Because students had to participate on a weekly basis in the discussion forum and had to hand in tutorials in the form of online quizzes over and above the two semester tests, they had to be knowledgeable about the content of the subject matter on a continuous basis. Students commented extensively about the fact that they had to know what they were talking about before they could take part in these activities and that it helped them to benchmark their understanding of the work.

4.4.3.1 Understanding

> *"Discussions topics for each week should be included because that way you can see how well the students have understood the chapter that was dealt with in class."*

In the following comment, it is clear that this student understands the problem of large classes and that it is impossible for the lecturer to reach every student in every class. The issue of understanding the work, but having to do extra work on their own, is something that began surfacing increasingly throughout the different stages of data collection.

"I think the discussion topics were very good to helping me understand the work we do in class and studying for test was very easy because we did the things already in the discussion. I think the discussion or online topics reached out where the lecturer could not reach and it make us think aloud. WebCT added a lot of value to my knowledge of economics and helped me to understand not only the theoretical part but the application and the work in real world situations and observations."

4.4.3.2 Self-study/study

As was seen from the pre-course questionnaire, self-study and working through the notes after class was not something that students did on a regular basis. However, the only way in which something can be learnt is by practice and repetition (Race, 2001, p. 28). As opposed to the traditional "transmission model of teaching delivery and instruction" (Damoense, 2003, p. 27), by being continuously assessed via online quizzes and discussions, students had to take more responsibility for their own learning experience and had to spend time on self-study. This was pointed out in all of the questionnaires.

"Very nice because it forces people to go into their books even if they don't want to. A person can't go to discussion board without having studied."

"I like it because it promotes a sense of self study and the fact that there are discussion forums tops it all because you share and help it others. Again, academically, it gives a positive and exciting new way of studying." (Q 2)

"I would definitely recommend the online tutorials and discussion although they are a nag because it forces students to actually open our books and study, which we otherwise would not do unless we were writing test or exams." (Q 3)

The notion of self-discipline and being informed, were also issues that students mentioned in Questionnaire two as part of the LMS learning advantages.

"It is forcing us to go over lectures which benefits us when tests are approaching

It really helps us a lot because those works are seen as a part of homework and they make use not to forget the stuffs which we have done in class. I think it teaches every individual to do that little bit extra and to revise the work on a weekly basis, it also teaches students self-discipline to a certain extent."

In the second focus group meeting with the tutors, one tutor described how using the internet helped one of the first-years to find additional information and to take responsibility for his own learning.

"Een van my vriende doen nou 1st jaar en hy wou hê ek moet hom help, maar ek kon hom nie help nie! Ek moes net die antwoorde kry, dan kan ek dit verduidelik. Toe bel hy my en sê ek moet nie worry nie, hulle klomp het rondegekrap op die internet, toe lees hulle en doen bietjie ekstra werk en toe kry hulle die antwoorde, nie die regte antwoorde nie, maar toe verstaan hulle dit en sien dat dit nie so moeilik is nie, hulle moet net bietjie ekstra werk doen."

(Translation: "One of my friends is now a first-year and he wanted me to help, but I couldn't! I first needed the answer, then I could explain. Then he called me and said I need not worry; they searched on the internet, read a bit and did some extra work and then they got the answers – not the correct answer, but then they understood it and saw that it was not that difficult, they just needed to do a little bit of extra work.")

4.4.3.3 Practical/South African Economy

As part of the government's desire for "…graduates who can demonstrate a strong array of analytical skills" (Ministry of Education, 2001) and the need for liberal education, students used the LMS to enhance their integration of theoretical and 'real world' economics. By using the discussion tool, students were able to make use of the information from class and apply it to practical, contemporary economic issues. Students remarked that they found the discussions motivated them, helped them to understand the work better and although they were time consuming, they assisted in learning content by linking with it. These are thus higher-order cognitive skills as postulated by Bloom (1956).

"The one of the most useful things about hybrid learning systems is the weekly discussions we have on WebCT, because it helps and stimulates your thinking about relevant subjects, and because it forces you to refer to the economic activities happening around the country."

"We get more exposed to what is happening in the real world. Through the discussions we get something that could be regarded as practical work. Here we don't only read or absorb what we were taught. We get to put it into use."

"The discussions has really helped me a lot because most of them we were doing things of SA economy which stimulated my knowledge cause I didn't know how things work."

'Excellent way for learning, easier. Makes the learner take time and complete discussion which excels the learning experience. Promotes thinking and greater ideas. Well made program for the 21st century."

4.4.3.4 Tutorials/Quizzes

The one WebCT tool that stood out in Questionnaire three as exceptionally popular amongst students was the tutorials (also called quizzes). Figure 11 illustrates their responses to the question: how did the quiz assist you when learning economics?

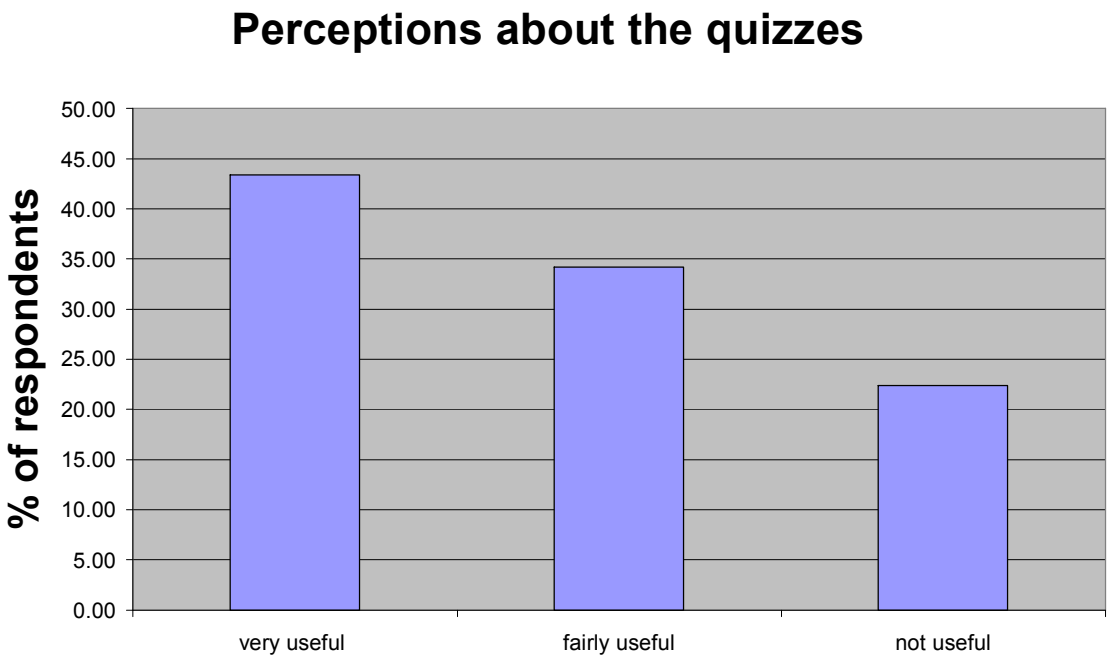

Figure 11: Students' perceptions about the usefulness of the quizzes

Almost half of the respondents, 43,4%, indicated that the quizzes were very useful and another 34,2% stated that they were fairly useful. Students who commented specifically on the quizzes in this questionnaire stated that by doing the quizzes, they were forced to study on a continuous basis, that it helped them to assess themselves and that it was a comprehensive way of learning all the work. The following are a few of the comments made which indicate the level of satisfaction.

"Good revision and a saviour for lazy students."

"Encouraged me to study."

"Forces you to open the book even if you don't want to."

"Requires that you really go through your work and think which is excellent."

"Some of the questions were difficult but if you could answer them you were prepared for anything."

"Encourages you to read your textbook because you can't answer without it."

4.4.4 Category 4: Deeper learning

One of the roles of a lecturer is to help students to become more competent. Competencies include thinking, originality, problem-solving, etc. (Adapted from Race, 2001, pp. 17-20) Students need to move from the danger zone, where they do not yet possess the necessary knowledge and are not aware of this, to the target area of competency and an awareness of their need for knowledge. Figure 12 illustrates the different levels of understanding and learning.

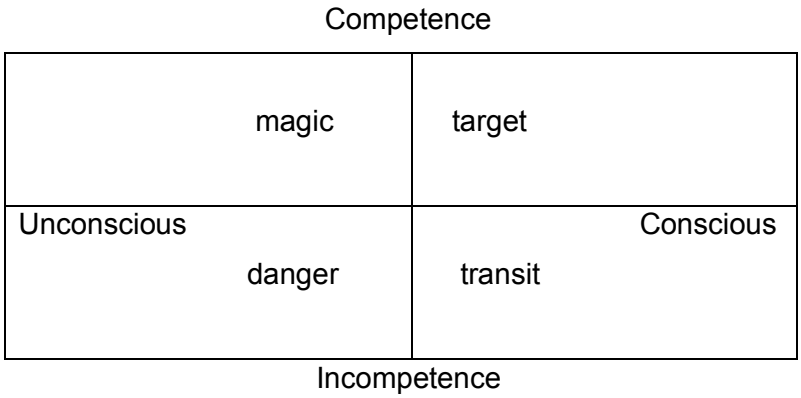

Figure 12: Levels of learning.

(Race, 2001)

According to the diagram, this could follow different routes, where one route is not necessarily better than the other. However, one of the responsibilities of the teacher is, on the one hand, to tell students what they need to know, but, on the other hand, to alert them to what they already know and to reinforce that knowledge. Deeper learning thus takes place on the conscious and the unconscious level. In this process, students need to apply what they have learnt for it to make sense within a world context.

4.4.4.1 Application

The level of application which took place within the LMS was commented on by the tutors in their second focus group meeting. They found it remarkable that first-years could argue on a level which was much more advanced than when they were first-years.

> *"I think the first time I opened WebCT and looked at the discussion topics, my mond het oopgehang. The way that they wrote, hoe hulle geredeneer het, was shocking, ek het nie in my eerste jaar so geredeneer nie. Ek het klas toe gegaan en notes geneem. Ek kan nie 'n ding onthou van my eerste jaar nie! Wat hulle nou besig is om te doen, die manier waarop hulle dink, is wat ek nou in my derde jaar eers regkry. Dis nie meer memory werk nie, dis redenasie, en ek dink WebCT het dit begin op 'n vroee stadium ontwikkel. Hulle dink nie meer tonnel visie nie, met die discussion topics en dis allerdaagse goed en dis wat hulle eendag sal onthou. Jy gaan nie onthou wat is die vyf goeters nie, rerig nie. Maar jy gaan onthou wat inflasie, interest rates, interaksie is."*
>
> *(Translation: "…, how they argued, was shocking, I did not argue like that in my first year! I went to class and took notes. I cannot remember a thing from my first year! What they are busy doing now, the way in which they think, is what I only achieved now, in my third year. It's not memory work anymore, it's arguing and I think WebCT started this at an early stage. They don't think with tunnel vision, with the discussion topics and the everyday stuff and this is what they will remember one day. You won't remember what the five things are, not really. But you will remember what inflation, interest rates, interaction is.")*

This perception of linking the world to the textbook and being able to relate to both the textbook and real-world issues are echoed in both Questionnaire 2 and the focus group meeting held with the first-years.

> *"I can say this also. One subject that I feel I have learned something that I can apply in everyday life. The other subjects I feel I am just learning a lot of stuff, when am I ever going to use if (laughter in the background) this you can use*

in everyday life, in your money management, you can have an intelligent conversation."

The background noises also indicate that the group agreed with the speaker. It seems that students want to learn material that they can use elsewhere and that mere rote learning of work, just because it is in the textbook, is not what they are looking for at university level. Students need to make sense of what they learn and this happened in the discussion forum of the LMS.

The last discussion topic for the semester was for the students to reflect on the course, how they experienced the intervention and what their general attitude was towards Economics. The responses where overwhelming. The responses referred to the application, the way that they were able to make more sense of the economy around the idea that it is not a dry, boring subject any more and that they felt confident that they understood the fundamental issues in economics.

Subject: At the end of the semester...

"At this stage of level I'm so glad about everything in economics, at this moment I didn't understand the Fiscal Policy but now I really enjoy it and get knowing it harder. Most important thing I'll like to thank about this training seccion of webct for assisting us about the real thing of what happening in economy and the rest of the world."

4.4.4.2 Interest

According to Race (2001, p. 9) one of the five factors underpinning successful learning, is "wanting to learn". This word implies more than motivation; "…it goes right to the heart of human urges, emotions and feelings" Words that he uses to summarise this factor are motivation, interest and enthusiasm. Students and tutors alike maintained that using the LMS functions added to the desire of students to learn.

In the focus group meeting with the tutors, the effect of reading additional information and digesting it, was perceived in a very positive light.

"Occasionally you get some jewels, it shows you that they actually think."

"I posted 'Where are you?' and they started encouraging one another. "I read in the Business Times last year…." Quite impressive! We did not do it! The first time we read newspapers was in Ekn 314, and we were forced to."

"I have only learnt now that there is not only one answer to a question! There are several correct ones, as long as you understand it; I wish I knew that in my first year."

"This system makes the students think, and this allows them to start argue them. It increases enthusiasm."

The first-years agreed with this in their focus group meeting. They also reflected on the fact that they would hear something and then were able to link it to the subject matter and that it stimulated their thinking.

"You got interested, really, because you'd hear on the news that inflation has increased or decreased but if you don't know anything, you had to fall back to the textbook to be able to refer and then you apply that practically."

"The discussion on the topics we've done in class with the extra information was very good. This caused me to go do some more research and finding this information was very interesting and gave me so much knowledge about SA."

4.4.5 Category 5: Additional Information

Communicating general announcements to students when there is a large group can be difficult. Often students miss a class where an important message is announced. One specific problem is, for instance, that there is not a single venue for writing tests which is large enough at the UFS, so that students have to be accommodated at different venues. Students therefore need to be informed in which specific venue they would be writing their test. Information of this nature was regularly posted on the notice board section of WebCT and students commented on this functionality as informative and a constant reminder. This was especially seen in Questionnaire 3,

where, in addition to general comments, 72,8% reported that they found it fairly to very useful.

> *"Over and above I think that WebCT is okay…good for communication and learning."*
> *"Receiving important messages about course, tutorials, etc."*
> *"These notices kept me up to date and they really attracted a person's attention."*
> *"New exactly what was happening when. Could not miss dates of tutorials. Information was easily obtainable."*
> *"Very very helpful. Whatever you need to know was right in front of your face."*
> *"It was a backup system and there was somebody to remind you the whole time – this is the date that you are writing the test, it was like a constant reminder".*

4.4.6 Category 6: Generic Skills

According to Michael Gibbons, graduates in the 21st century will require, amongst other skills, the following: computer literacy, knowledge reconfiguration skills, information management, problem-solving in the context of application, team building, networking, negotiation/mediation competencies and social sensitivity (Gibbons: 1998). One of the priorities as indicated by the objectives of South Africa's National Plan for Higher Education is "…to produce graduates with the skills and competencies required to participate in the modern world in the 21st century (Ministry of Education, 2001, p. 18).

Several of the students identified computer literacy as a very important skill that they have learnt. These students commented that they had never used a computer before and that they probably never would have bothered to learn computer skills, had they not been forced to in this course. Students learned within the psychomotor domain.

4.4.6.1 Computer literacy/computer user

When asked to identify the most exciting aspect of using a Learning Management System in Questionnaire one, using the computer ranked very high, with comments stating that using computers was totally new to them.

> *"Values added to my WebCT are my computer literacy has tremendously increased and I began to like and enjoy working with the computer."*

> *"Doing EKN has helped me have eager to go to my computer. At first I didn't have any computer interest but fortunately I had to go."*

> *"I think WebCT is a very good tool for learning because as a student who haven't been exposed to the world of technology it is a great way of being computer literate."*

This sentiment is also shared by respondents in Questionnaire three, where 36,1% of respondents ranked computer literacy as very useful, whilst another 29,7% stated that it was fairly useful. Only 8,9% indicated that it had no or very little use in their learning process. Comments made on this questionnaire relating to computer literacy include the following:

> *"I didn't know how to move a mouse, now I can type assignments!"*
> *"I don't have any problem when using the computer and this is thanks to WebCT."*

During the focus group meeting, first-year students explained how they felt when they realised that part of the evaluation for this course would be via the use of computers. The following comment was made by one of the participants, but the others in the group made contributions which could be heard in the background, agreeing with the speaker.

> *"I think it was difficult for all of us. I don't know about you guys, but I never had any computers at school. Computers weren't something I had worked on when I was in high school. (Laughing in background, affirmative noises) And suddenly I had been thrown in this environment of computers where I had to*

form my studies around this computer - basically it improved my computer skills amazingly. I can do thing that I never were able to do before but it was difficult, I was forced to do it. It was a shock in the beginning but we got used to it!"

The sense of excitement about achieving something is picked up in the tone and volume of the student's voice, as well as from the laughter that accompanied this comment. Another student's comment adds to this:

"In a way we were killing two birds with one stone – it was learning Economics on the one hand and basic computer skills on the other hand. If we get out and join the working force we need those basic computer skills so I think it was very helpful."

Once again, noises of agreement are heard in the background. A third student commented on how being obliged to participate in the discussions, forced her to become computer literate.

"If I did not have to do the discussions on WebCT I probably would not have used a computer at all, unless I had to do assignments, I wouldn't go on the internet, I wouldn't learn new things like that unless I am forced to do that."

4.4.6.2 Learning/life skills

Other skills learnt from using the LMS were those of using the internet to get additional information, integrate that information with research skills.

"I think WebCT is a great thing especially on a 1st year level, because if you get a question that need a lot of thinking, instead of paging the whole book looking for an answer, a person can just look for that answer of the internet. By doing that it's a way of starting to learn about a research over the internet."

"The most valuable was learning skills and knowledge, how to approach economic questions and it is simpler to approach them (than) to approach a lecture in class."

Furthermore, students knew that if their tutorials (quizzes) were late, even only by one minute, the computer would not accept them and an incomplete result would be given, thus denying them access to the examination. Consequently, they had to learn to do proper time-management and planning.

> *"What I've learnt from WebCT is punctuality (first of all), especially with tutorials, I know that if I'm late with the tutorial them I'm in big trouble…" (INCOMPLETE).*

> *"Even if one is computer illiterate, WebCT forces one to gain skills for a future career. Whether we like it or not, we'll become computer literate. It also prepares us to meet deadlines."*

4.5 Negative aspects of using the LMS.

Not all the students were positive towards using the LMS. Their negativity stems from four basic clusters as identified during the data analysis and which is summarised in Table 18.

Category	Key Concepts	Additional Descriptive words
Negative aspects and experiences	Time consuming	Takes too much time
	Technology	Off line, cannot find, log in, password
	Extra effort	Go to the lab
	Late notes/responses	After class

Table 18: Negative experiences

The bulk of the negative comments were found in the first questionnaire, which was completed after three weeks of using the LMS. Many technical problems and glitches had not yet been sorted out, and students were not yet used to the new system of learning. As the semester progressed, much less was reported in terms of technical problems and fewer negative comments in general, were made.

4.5.1 Time-consuming

Many of the comments relating to additional time spent refer to the discussion board and that students had to spend time there.

"Discussion board, takes time."
"Discussion, I do not always have time."
"Takes much of my leisure time."

However, when asked the question during the focus group meeting: how much time did it take? (relating to the discussions) the following answers were received:

"15 minutes! (Laughter)"

"…But the discussions, that is about 30 minutes, then you really put in your time and effort. But if you just sat down, it could take 10 minutes, then you just make your discussions."

4.5.2 Technology

The second source of frustration referred to technological issues, such as networks not being available, passwords not allowing access and diagrams which did not appear whilst doing the tutorials. The main problem with the diagrams was that students needed to log on to the internet for those, whilst WebCT was loaded on the university's intranet. What added to the problem was that the University did not have a single password and that students needed different passwords to log on to different functionalities. This caused endless confusion and frustration, but also seemed to lessen as students became more au fait with the system. The following quotations were taken from Questionnaire one: the most frustrating aspects of WebCT.

"When trying to do tutorials and you struggle, trying to open notes and they don't."
"Diagram not available."
"Spending hours on the computer, losing info if server is down. Not being able to find something."
"Pathetic backbone infrastructure that WebCT has for the UOVS."
"Internet down."

"Writing discussions because sometimes I have to rewrite due to the fact that it disappears."
"When the system is down at crucial times (when assignments are due)."
"When you fail to log in because you forget the password."
"When the password is denied, and then you have to register again."

4.5.3 Extra effort

Some of the comments related to the fact that it took extra effort from the students to make their electronic contributions. This had already been predicted by one of the tutors in the first focus group meeting, when he was asked to explain to the meeting's facilitator exactly what it was that they, as tutors, were doing.

"We are doing magic! I think they are not spoon-fed anymore, you actually have to DO something. If I were a first year, I wouldn't like it, but you know in the long run they are going to benefit. They want to go to class, go home, write the test and pass it. They don't see the benefits of using WebCT, what they can get from WebCT."

Students' comments from Questionnaire 1: most frustrating, also referred to the fact that they had to make an effort to go to the computer lab and that it was costly, both in terms of time and money.

"We have to go to the lab twice a week."
"Must be in a computer lab daily even if we are busy of something, eg studying for a test."
"Everything, WebCT itself is irritating."
"Discussion because they need much of your understanding."
"Takes a lot of time to do tutorials and sometimes I have to drive all the way to campus to do it. It wastes petrol thus money."

The following comment was taken from Questionnaire three and represents a very disgruntled student. (Interesting to note, however, is that this student indicated that he/she failed the Ekn 1 first semester course.)

"I hate WebCT and hate the person who came up with the whole idea of WebCT. It is time consuming and requires time and effort. I feel as a student I don't have time and between my books and my life WebCT just takes 1/3 of both the joys of my life."

4.5.4 Late notes/responses

Not being able to access the information that they had logged on for, caused extreme frustration for the students. This refers especially to the notes or answers to specific questions/feedback. Students would visit the computer labs with the specific intention of downloading the notes or seeking answers and then those would not yet have been posted. These comments on frustrations come from Questionnaire one.

"Not finding what you really logged in for. Sometimes notes are late."
"Its sometimes very hard to get notes!! It takes quite some time to get ur tutorial marks."
"Not getting your results immediately from the quizzes."

This source of frustration is only evident in the responses of groups whose tutors were not committed and dedicated to their responsibilities. The students from the focus group stated that they were very happy with the way in which things were run. When asked about their tutor and the return-time on queries, they had only positive comments to make.

"Next day, even same day sometimes, you see I am off campus and that makes it difficult so I'd come once, go on the computer, and check next day, I don't know if it was faster, but for me it was next day."

"Our tutor was wonderful. She posted things on time, organized extra classes. She really cared about what she did. I have heard from other students that their tutor was not good, and they did not get discussion, and they did not get any replies. And if it's a one way discussion, then its not worth anything. The tutor must be dedicated to what they do, must really want to do it. Then we can really learn a lot from the system."

Negative feedback refers to tutors who were not involved enough and who did not seem to really care about the students.

4.6 Summary

In this chapter, the experiences of the students making use of a Learning Management System in their economics first-year second semester course were discussed in three separate sections where each section addressed a different research question:

Interaction with lecturer/tutor
Interaction with peers
Interaction with the study material.

Quotations, comments and opinions from tutors and students were used to illustrate students' attitudes to, and experiences of, the LMS. Overall, students experienced the interaction on all three different levels as adding value to their learning experiences. However, both positive and negative experiences were noted. In general, the negative experiences refer to the time it takes, unreliable technology, the extra effort that students have to make and the problem of late responses; thus, issues are not necessarily related to the pedagogical value of the LMS, but rather to issues outside of the learning and teaching arena.

Chapter 5 presents the findings and conclusions of this study.

Chapter 5:

REFLECTIONS AND RECOMMENDATIONS

5.1 Introduction

The topic of the study is:

Learner perspectives on the use of a learning management system in first-year Economics.

In Chapter 5, I will reflect on the study and the findings according to the three sub questions. I will consider the use of technology to foster interaction between students and lecturers, I will discuss the relationship between using Learning Management systems and peer interaction and I will deliberate the possibilities of using technology to encourage student-content interaction. I will ask the question whether the intervention changed the way in which students experienced Economics learning, and if so, in what ways?

I will also refer to recommendations that can I make for institutions and other lecturers as well as follow-up research can be done in the field of blended learning.

5.2 Research question

The research question was the following:

What value does a Learning Management System add in promoting interaction in large classes?

Within this question, reference must be made to the value that is added to cognitive, affective and psychomotor learning.

In order to address the research question, three sub-questions were asked:

5.3 Sub Questions

- How do students use technology to interact with the lecturer when classes become too large for effective interaction in class to take place?
- What is the relationship between LMS use and students' experiences of peer interaction?
- What possibilities exist to encourage students to interact with content by making use of an LMS?

In Chapter 1, the outline of the study was presented. The research questions were introduced as well as the sub-questions.

In Chapter 2, the relevant literature pertaining to this study was discussed. The key issues of this study were higher education, sound and effective teaching and learning, the problem of large classes; and electronic learning (e-learning). Therefore, the searches that were done focused on these topics using them as key words, as well as others such as Constructivism, Behaviourism, Social Constructivism and blended learning.

A conceptual framework was developed in order to answer the research questions. In this framework, the following theories were included:

Engagement Theory (Kearsley and Shneiderman, 1999), which emphasises the interaction that needs to take place for effective learning to happen;
Conversation Theory (Boyd), which supports the notion that conversation between two parties is essential for the construction of knowledge;
Contingency Theory (Jones, George and Hill, 2000) which explains decisions made by students and lecturers on the basis of information present; and
Grounded Theory (Glaser and Strauss, 1967), which allows the researcher to understand the theory as it is without a priori decisions.

A schematic integration of the conceptual framework was developed and presented in Chapter 2.

Chapter 3 discusses the research design and methodology. This study falls within the Interpretivist paradigm, because of the subjectivity of students' own experiences. This paradigm allowed me to observe students in action, whilst they were participating in the blended environment. The research strategy was a case study, with the Ekn 124 class being the case under observation.

In Chapter 4, the different responses to the different data-collection instruments are discussed. Answers to the questionnaires, as completed by the students, as well as responses from the focus group meetings are examined. This information will be analysed and compared to the literature, as reviewed in Chapter 2.

5.4 Answers to the sub-questions

In this study, contact between students and students, students and lecturers and students and content, was central to the course design. Chickering and Ehrman's, 1996, online) revised seven principles, as discussed in Chapter 2, state that "…time-delayed (asynchronous) communication" allows for "…total communication [to] increase" (1996). This is in complete agreement with the findings of the study. Contact between students and faculty was encouraged and this led to a more effective learning environment. Kennewell (2005, World Conference on Computers in Education) claims that high quality interaction between teachers and learners is an important element of effective teaching – a statement that is in support of the findings in this research.

5.4.1 Sub-question one: Student-lecturer interaction

The first sub-question addresses the way in which students interact and converse with a lecturer or a tutor (as representative of the lecturer). The question asks the following:

How do students use technology to interact with the lecturer when classes become extremely large?

Within this sub-question, three categories were identified, namely understanding (academic issues), convenience (practical issues) and motivation (emotional issues).

5.4.1.1 Category 1: Understanding: academic issues

The first category concentrated on the content and on the academic issues. Students find economics a hard-to-grasp subject and need to have the opportunity for reflection. Often they think that they understand the work during a lecture, only to find that when they are working on their own, difficulties arise. Based on the work of Pask's (1975) theories on conversation, two cognitive systems should engage and interact, leading to some form of debate and hence an improved understanding in both parties. In online forums, such as the discussion board used in this course, Pask's model is especially useful because several agents may interact and engage in conversation.

The effect of the intervention on students' perceived understanding of the content was clear. Comments related to this category included words such as 'help', 'explain', 'feedback' and 'understand'. Students felt that they were able to go back to the tutors and ask for additional explanations. They were given help on issues that they found difficult and the feedback that was given to them was most valuable. Some students commented that their marks improved and that they believed it was because of the additional assistance received. The experience of students is in agreement with one of Race's (2001) factors that underpins effective learning, namely digesting. Students need to gain ownership of what has been learnt and by discussing the content; they are able to make sense of the material.

5.4.1.2 Category 2: Convenience: practical issues

The second category concentrated on practical issues. Using a Learning Management System to communicate with the lecturer/tutor was clearly something that the students enjoyed and appreciated. They were able to ask questions without having to wait and were able to post a question to the lecturer and receive an answer at their convenience. Concepts such as speed, time-saving and convenience were used to describe their experiences. Chickering and Ehrman's fifth principle emphasises time on task: "Time plus energy equals learning" (1996, online). The less time spent on non-learning tasks, such as making appointments, finding the lecturer and going to the office, the more time is available for effective learning.

Consistent with the work of Heffner and Cohen (2005), students commented on the fact that it was an easy way of accessing information and that the system was simple to use. Their comments also tally with the results from Cochrane and Robinson's (2004) study where time independency (through asynchronous learning) was highlighted. Not being tied down to learning at specific times is one of the key areas where students felt the benefits of the intervention.

Something that was mentioned by several students is the fact that many students did not enjoy the classroom situation; that it was too big and impersonal. For them, the interaction in the online environment compensated for missing classes. Different learning styles were thus catered for by incorporating WebCT into the course, as well as allowing students the freedom of managing their own learning and deciding upon their course of action, given their specific circumstances.

Students also started seeing the LMS as an added lecturer and attributed anthropomorphic qualities to it, by for instance, referring to 'talking' to the computer. Herselman and Hay (2005, 395) call it the "extension of the classroom". It does not seem a problem to the students that they have to use a 'machine' when they need to communicate with their lecturer. The advantages in terms of time and effort saved seem to outweigh the so-called loss of a physical presence.

Many students also made use of emails to communicate with the tutors or lecturers. Email as a learning tool is not within the scope of this study and needs to be researched separately.

5.4.1.3 Category 3: Motivation: emotional issues

The last category identified under sub-question one relates to motivational aspects of learning. In this section, issues relating to emotional matters are discussed. Students' lack of self-confidence and shyness to speak in class, were issues that were mentioned very often. Students do not like to answer questions or make comments in class. They feel vulnerable; they are fearful that they might be embarrassed and will therefore not volunteer to answer a question or clarify something in front of the rest of the students. Chickering and Ehrman's principles (1996, online) refer to the use of electronic communication as "... more thoughtful and 'safe' than when confronting one another in a classroom or faculty office … and, for many students, the result seems more intimate, protected, and convenient than the more intimidating demands of face-to-face communication with faculty."

Frequently mentioned with regard to the interaction with the facilitators, was the matter of care and relationship-building. Race's (2001) factors of success in learning include motivation, interest and enthusiasm and he notes that the absence thereof will impact negatively on learning. Students remarked that they got to know their tutor, that their tutor seemed to care about their progress and that they were inspired to work harder because of that. Kelsy and D'souza (2004) agree that a personal relationship between the instructor and student must exist so that study pleasure and motivation may be promoted. The tutors, in particular, responded to the enjoyment that they themselves derived from these personal relationships. They felt that had they had the same opportunities as these first-years to talk to someone and have a dedicated person who was responsible for communication, they would have been better prepared for their further studies.

Students, however, did not feel that lectures should be done away with. They commented that they still enjoyed the face-to-face sessions and some mentioned that they missed interacting with the lecturer. They wanted the presence of the teacher/lecturer to still foster some measure of the human element. Robson and Hide (2002, AusWeb2002) support this finding, stating that "…teaching is a vehicle for learning …. Many other factors are also involved, not least of which is a teacher."

5.4.2 Sub-question two: Peer interaction

Neo (2005, online) highlights the importance of generic skills, such as problem-solving and analysis when referring to modern educational theory, which should go beyond mere regurgitation of facts. Students need to be prepared for life beyond the university, when they become part of the workplace. The second sub-question deriving from the research question, relates to peer (student-student) interaction.

What is the relationship between LMS use and students' experiences of peer interaction?

Sub-categories identified under the second sub-question include learning (pedagogical issues), application (academic issues) and confidence building (social issues).

5.4.2.1 Category 1: Learning: Pedagogical Issues

According to Race (2001), when students receive feedback in terms of other people's reaction and seeing the results - in other words, effective interaction - more improved learning will take place. Interaction, as indicated by Anderson (2002, online) is essential for good learning to take place, but given the large number of students enrolled for some courses, this cannot happen effectively in the classroom. Nevertheless, students need to work together in order to make meaning of the content, to foster a better understanding of the material and to learn how to work together in groups.

Engagement Theory builds on the premise that students need interaction with others and with meaningful tasks in order to enhance effective and meaningful learning. Students thus need to interact with one another in order to give meaning to concepts. Students accepted that if they share, help and participate, they would learn more and understand the work better. They need to explain the work to somebody in order to internalise the information and move from a shallow learning, where information is merely regurgitated, to a deeper learning. According to Chickering & Ehrmann (1996, online), good teaching and learning develops reciprocity and cooperation among students.

Students referred to the interaction as talking to one another, hence indicating that the approach was similar to a traditional conversation. They also referred to the value

of debates, where they could test their own understanding on one another. This type of interaction would not be possible in a face-to-face class consisting of 300 students. It was also noted by the students that they themselves were not able to organise themselves into groups or initiate the discussions, but that they realised the value thereof. Gabriel's (2004, online) study on group interaction online came to a similar conclusion – that students interacting in an electronic environment did learn from one another.

Using the discussion space in the online environment was thus a good way of fostering discussions amongst the students. Apart from being effective in terms of pedagogy, it seems that the students enjoyed the experience – an aspect that is essential but often ignored in teaching.

Although all of the discussions were not of the same standard and in some weeks the discussion board was much more active than others, at the very least, there was some discussion taking place – something that in previous years never happened. Pena-Shaff and Nichol's (2004) analysis of student interaction came to the same conclusion, adding that "…students could not interrupt one another as they would in a face-to-face class." In the case of Ekn 124, interruption in a classroom never took place, since students simply did not speak in class.

Webb, Jones, Barker and van Schaik (2004) found that students who participated in online dialogue improved their learning outcomes. Although this was not one of the areas of reasearch, it is worth noting that some students believed that by contributing to the discussions, their marks also improved. However, it is clear from the comments that students learnt more and understood concepts better because of the small-group interaction (see Marburger, 2005).

5.4.2.2 Category 2: Application: Academic Issues

The second category of comments refers to the value of peer-interaction when having to apply the knowledge learned, thus, academic issues were discussed. In response to the value of peer-interaction, students were adamant that this was a positive experience and that they were able to learn from one another's opinions. Students included the peer-discussion aspect as a necessity when designing a course, since they felt that they were comfortable with the fact that they needed to learn from one another and share ideas on the South African economy. Deeper levels of discussion and debate were fostered, as supported by Smith and Ferguson

(2002), whose arguments for online delivery not only emphasise the fact that students can think about their answers before attempting them (something that advantages especially the second-language students as also found by Kehoe, Tennent & Becker, 2005), but also decreases the feeling of intimidation that students experience from lecturers and classmates.

Practical application of the content is necessary for effective learning and peers assist one another because they tend to think in similar ways. "Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Sharing one's ideas and responding to others' improves thinking and deepens understanding" (Chickering and Ehrman, 1996, online).

5.4.2.3 Category 3: Confidence building: Social Issues

The last category defined in the section on peer-interaction is relevant to social issues, and specifically to confidence building. The value of smaller groups, where students were able to get to know one another on a more personal and informal level, added to their ability to argue a point and to state their own ideas without being intimidated. According to Schweizer, Paechter and Weidenmann (2003), group work fosters better individual knowledge, the development of social skills and gains in motivation. Students learnt to say what they wanted to and to state their own opinion, in the process becoming more effective communicators. One of the shortcomings of students is that they are not able to communicate (Mehta, 2004), hence the need to incorporate this skill into the learning environment.

The facelessness of the discussion board also added to their growing confidence in their own abilities and understanding of the subject matter. They pointed out that they did not feel alienated in a huge crowd, but that they were noticed, without the intimidation of people looking at them, and that they were able to state their own point of view and be heard. Apart from enhancing learning, learning in groups may also affect the way in which students interact with one another. Intergroup relations and more specifically, cross-cultural relations, may be fostered through cooperative learning (McConnell, 1994: 25). In this study, students of different races and cultures were randomly grouped together and they had to interact, regardless of their own backgrounds and belief systems.

Salmon (2002) asserts that in online learning, there could be a lack of group learning, co-presence and learning communities. On the other hand, in direct contrast, Macdonald and McAteer (2003) came to the conclusion that this methodology may achieve the opposite – it supports communication and thus allows active participation by all. In this study, it was found that students, who participated fully, built strong communities, were able to air their views with confidence and were more at ease in the VC than in the TC. The presence of a tutor certainly made a positive contribution to the atmosphere that was created and could also be identified as a factor that contributed to the success of this project.

It may appear to be a contradiction – developing social skills in a faceless environment. However, when one considers the Social Constructivist/Social-cultural Transformatory Approach which integrates the learner, the group, the social context in which the learning takes place and the action learning process (Askew and Carnell, 1998: 8, Ask and Haugen, 2005), it is does not matter in which area or space (virtual or traditional) the interaction takes place. It is more important to ensure that interaction takes place within the cognitive framework of the learning and to build on that (Robson and Hide: 2002, AusWeb2002), than to consider the platform from where it takes place.

5.4.3 Sub-question 3: Interaction with content

What possibilities exist to encourage students to interact with content by making use of an LMS?

The last sub-question in this study investigates how subject content was utilised and how, by making use of ICT, students could make better use of materials. Six categories were identified, namely preparation, note taking, continuous learning, deeper learning, additional information and generic skills.

5.4.3.1 Category 1: Preparation

In the pre-study questionnaire, students admitted to not preparing for class. One of the defining aspects of tertiary education is the fact that lectures should be there to highlight specific important aspects of the content and to clarify particularly challenging areas of the subject matter. A lecturer cannot cover all the work, but is only there to explain the more complex issues. This therefore necessitates that students should come to class prepared. Students commented on the fact that, because the class-notes were online before the scheduled lecture, they were able to be better prepared for class. They were able to download and print these notes and go through them so that they had a basic idea of the content of the lecture. This links up with the ideas of preparation as stated by Race (2001). According to the author, in order for students to succeed in larger classes, students need to "…take ownership of their ownership of their own particular learning needs" (Race, 2001, p. 116). One way of achieving this, is to clarify the targets (or outcomes) enabling students to know in advance what is expected of them; thus, making for better preparation from the students themselves (Race, 2001).

5.4.3.2 Category 2: Notes/note taking

Note-taking is an essential skill for a university student, but is often lacking (Grabe, 2005). This skill is very often neglected and little research is available about how to solve the problem. Race (2001, p.108) remarks that students copy down from the screen and from remarks made by the lecturer, whilst Bligh (1990, p. 117) questions the quality of their writings. Neither of these authors indicates how to solve the problem with large numbers of students enrolled in one class. Race (2001, p. 108) furthermore states that students worry because they cannot understand what is being discussed and this is exacerbated by the fact that there is not always enough time to write down notes and concentrate in class (Bligh, 1990, p. 120).

These problems have also been experienced in the Ekn 124 class in previous years. When a large amount of information is covered in a single period, students do not pay attention and are not able to listen to the actual explanation, since they are too busy copying down the information. Now that notes are made available before class, students are able to note-take more effectively, concentrate, listen and follow in

class. The findings of Couch (1997), who found that all of the students in a particular study who favoured access to the lecture notes and 95% of the students who felt that other instructors should develop similar course Web sites, support the comments made by the students in Ekn 124.

Having access to the notes helps students to make proper summaries, highlight the essentials and identify core information in a specific section of the work. It lessens their workload and teaches them valuable skills. It allows them to concentrate more in class, thus assisting them in the classroom situation, to consider the content of the work in context, not just to regurgitate mere facts.

5.4.3.3 Category 3: Continuous learning

In the pre-study questionnaire, students admitted that they seldom revisit the work after a class and only interact again with the content when studying for a test or the exams. The third category refers to the need for learning on a continuous basis, not in surges of activity just before a test or an examination. In this regard, students referred to three distinct sections:

Additional material

Because students have access to much more information than in the past, by means of additional online resources and internet, they are able to solve many problems by merely doing a search. They commented on the fact that they do need to go back to the notes, textbook and lectures, before they are able to participate meaningfully in the discussions. They also noted that they are forced to do extra work and take responsibility for their own learning.

Discussions

One of the biggest shortcomings in economics education is the fact that students are not able to apply what they have heard and learnt to the environment in which they live (Fourie, 2001). Discussion topics are set to include a theoretical issue that is discussed in class, as well as an economic event that has taken place. Students are asked to read articles relating to the events and to interpret or comment on these events. Students stated that discussions help them to a better understanding of the economy and that they are able to apply their knowledge to the real world around

them. They also commented on the fact that they have to do some research before they are able to contribute, which again forces them to do some additional studying and reading.

Quizzes

The tutorials (also referred to as quizzes by the students) are a method of formative assessment, since the students may access these as often as they need to and may make use of any method they choose to find the answers. This allows them to spend as much time as they require, (within the framework of two weeks), to read up and discuss the possible solutions. It therefore forces them to spend additional time on the content of the work covered. The students commented on this aspect of the intervention as something that saves the lazy student, forcing him/her to work throughout the semester. Comments also referred to the fact that they themselves would not spend so much time on the study material and textbook, if the tutorials were not compulsory for entrance to the examination.

Although they readily admitted that it means extra time and extra effort, the majority of the students react positively to the tutorials, discussions and additional readings. The students' appreciation of the additional material and supplements is clear. The number of times where gratitude was expressed, underlines the fact that students do not take the inclusion of ICT as a given. It may be because they are not very computer literate and do not take it for granted. This is in direct contrast with the work of Haywood et al, (2004), where the researchers found that students in Higher Education take ICT for granted since they use ICT daily and seamlessly for studies. Students in this particular class were necessarily from schools where computers are part of the curriculum.

5.4.3.4 Category 4: Deeper learning

The fourth category refers to the fact that more intensive learning takes place after students have made use of the LMS tools. Students agree that, because they have to apply their knowledge, they are more interested in the subject itself and are able to make more sense of the content. They are also able to apply knowledge to other, related issues. This is particularly noticed by the tutors, who only a few years ago, were first- years themselves. They are impressed by the level of argumentation and

integration that the first-year students are now able to display. The first-years themselves also realise that they are indeed able to make more sense of the subject matter. Race (2001) refers to this as the conscious competencies which students need to posses - including thinking, originality and problem-solving.

5.4.6.5 Category 5: Additional Information

Not all the benefits refer to subject-specific learning. In categories 5 and 6 references are made to general advantages gained by using the LMS. The first of these two categories refers to the fact that general information may be communicated more easily and much more effectively. The calendar and general notices keep the students informed about important dates, events and venues and are available whenever they have access to the internet. Students are appreciative of the fact that they can check on information, make sure of venues and be reminded of specific deadlines, other than in class.

5.4.3.5 Category 6: Generic Skills

Students also referred to some of the generic skills that they are forced to learn. If one keeps in mind that the majority of the students in the English speaking class are from previously disadvantaged communities and schools, then their statements of not having had much experience in terms of computer use, is understandable. Many of the respondents indicated that, initially, they find the use of a computer very frightening, but that it has become an exciting part of learning. They also concurred that had they not been forced to do so through the economics course, they probably would not have been able to use a computer. As for other skills, such as research and writing skills, students need to read up on the topics and have to formulate their answers very carefully, since they are allowed only four lines for any one posting. This makes them reflect thoroughly on what they actually want to say, before contributing.

Students are also aware of the fact that late tutorial submission will not be accepted by the computer; therefore, they have to make sure that they have planned properly. They know that the computer laboratories are always exceptionally busy at peak times, thus their time management skills have to be developed.

The greatest benefit of the Web for educational use is the profound and multifaceted increase in communication and interaction capability that it provides (Ally, 2004, online). This statement rings true especially in this study. What also came out strongly in this study is that it enhances generic skills, social skills, learning skills and communication skills.

5.4.4 Negative experiences

Not all students experienced the intervention in a positive light. Two categories emerged; one refers to time spent and the other to problems of a technological nature. Students referred to aspects such as the time that it takes to do the discussions and tutorials as something that they really dislike. If one considers the credits of the course (16) and the notional learning hours attached to that (160), this appears to be an unfounded complaint, since this averages out to 10 hours per week/two hours per weekday. It could simply be a case that in the past, students worked much less than the expected notional learning hours and needed to get used to the new system. However, the effect of e-learning on workloads – both of staff and of students – is a hotly debated issue. Quinsee and Hurts (2005, online), for instance, state that one of the biggest misnomers of e-learning is that it will decrease the workload of both the student and the instructor. The initial belief was that it would lighten the loads of both parties; however, conclusive evidence does not exist to support or refute this claim. In this research study, the bias is towards increasing the workload of the student, but not to the extent that it is more than the notional learning hours allocated. It would seem rather, that in the past and in other subjects, students do not work hard enough, hence the perception that it takes too much time.

The second category included technological matters. Students sometimes battle to log in, forget their passwords, or the system is off-line. Students who do not have access to the Internet from home or at work, find that they have to make the extra effort to be on campus especially, but even they agree that it is worth the effort. Students become extremely irritated when notes are posted late or comments are not forthcoming, indicating that they are becoming used to the system and are starting to rely on it.

5.4 Summary of findings

The Ekn 124 students really enjoyed making use of the LMS and indicated that it added value to their learning experiences. They felt that they were able to make more sense of the content and were able to apply the theoretical knowledge to the real world. They also indicated that they liked sharing their insights with one another and that the feedback that they received, both from tutors as well as from peers, was valuable and helped them understand the content better. Tools used to encourage continuous learning, such as the quizzes and the class notes, were also effective methods used in the intervention.

The effect of the intervention on learning

The question remains – has the LMS affected learning and if so, how? In chapter two, learning was defined in terms of three domains: cognitive, affective and psychomotor. In tables … presented in section … (see p.), each the three domains of learning were related to the sub questions. In terms of the findings presented in this chapter, the following table clarifies the relationship between each of the major findings and the relevant domain(s) of learning in each case.

Findings from this study: Categories and keywords	**Domain of learning**	**Taxonomic level**
Sub-question one:		
Category 1: Understanding : Help/Explain	Cognitive Affective	Comprehension Responding
Category 1: Understanding: Feedback	Cognitive Affective	Comprehension Responding
Category 1: Understanding: Understand	Cognitive	Application
Category 1: Understanding Satisfaction	Affective	Responding
Category 2: Convenience: Quick	Psychomotor	Skilled movements
Category 2: Convenience: Convenient	Cognitive Affective	Application Responding

Category 3: Motivation and Encouragement: Lack of self-confidence	Affective Psychomotor	Valuing Skilled movements
Category 3: Motivation and Encouragement: Motivation and Encouragement	Affective	Characterisation/ Internalisation
Category 3: Motivation and Encouragement: Care	Affective	Receiving/attending
Sub-question two: What is the relationship between LMS use and students' experiences of peer interaction?		
Category 1: Learning: Interaction	Cognitive Affective	Comprehension Receiving/attending
Category 1: Learning: Understand	Cognitive	Application
Category 2: Confidence building: Small groups	Affective	Responding
Category 3: Application:	Cognitive	Synthesis
Sub-question three: What possibilities exist to encourage students to interact with content by making use of an LMS?		
Category 1: Preparation: Prepare	Cognitive Affective	Knowledge Receiving/ attending
Category 2: Notes/ note-taking: Concentrate	Cognitive Affective Psychomotor	Knowledge Receiving/ attending Skilled movements
Category 3: Continuous learning: Understanding	Cognitive	Application
Category 3: Continuous learning: Self-study/study	Cognitive Affective	Comprehension Characterisation/ Internalisation
Category 3: Continuous learning: Practical/South African Economy	Cognitive	Evaluation
Category 3: Continuous learning: Tutorials/Quizzes	Cognitive Affective	Comprehension Characterisation/ Internalisation

Category 4: Deeper learning: Application	Cognitive	Synthesis
Category 4: Deeper learning: Interest	Affective	Characterisation/ Internalisation
Category 5: Additional Information	Affective	Creates awareness
Category 6: Generic Skills	Psychomotor	Skilled movements
Category 6: Generic Skills: Learning/life skills	Affective	Characterisation/ Internalisation

Table 19: Learning Domains within the scope of this study.

Thus, within each of the domains, and at different levels of the taxonomies as discussed in chapter 2, learning took place through the use of the LMS.

5.5 Reflection

In this section, reflections on methodological, substantive and scientific will be presented. Methodological reflection considers the chosen research method and research design. In substantive reflection, the findings of this study will be compared to the findings of similar studies. Scientific reflection deliberates on the findings and contributions of this study.

5.5.1 Methodological reflection

This research took the form of a case study. What made the case study relevant and effective was the fact that this group of students could be observed continuously, that they were able to express their opinions which reflected their own interpretation of their experiences and that I, as the researcher, had access to this information.

Several data collection instruments were used. From the questionnaires, rich and detailed descriptions of what the students thought of the LMS were gathered. What made this method extremely valuable was that I had access to the students on a regular basis, and if I wanted to explore some comments made by them, I had the opportunity to do so. I was also able to structure my data collection around the information that I received.

The second data collection instrument was by means of focus group discussions. Two groups were involved – the tutors and the students. All the tutors were invited to these groups and although the information gained from these discussions was not necessarily directly related to the questions, it gave me valuable background information about the first-years and allowed me to gain a deeper insight into the way that they learned. The first-years shared their thoughts with the tutors and I was then able to have access to this information. The tutors' interpretation was also a way for me to make sure that I was not interpreting the data in a certain way; it was, therefore, a method of ensuring that my findings were not biased. This is vital in qualitative research where validity and reliability are often difficult to demonstrate, but remain necessary to support the validity of the findings.

The focus group meeting with the students was held on the day after the examinations. The meeting was thus at the end of the semester, after they had completed the course and used all the different tools of the LMS. The rationale for having it then, was that all the students were on campus and did not have to travel in; hence, I hoped that more students would attend the meeting. Although the students were invited in several ways, not many attended. In retrospect, I think that the tutor had a significant effect on the way that they felt towards the electronic section. They were very positive about what she had done and how she had reacted to them and their questions. If another group whose tutor had not been as effective as this one had been selected, the outcomes of the focus group meeting might have been different. However, the ones that did attend made useful comments about the way in which they had progressed from, initially, not having had any computer experience to being completely at ease with the system.

I also made use of the course evaluations as data for the research. Initially, I did not plan to do so, because the evaluations are done through the management of the faculty and I did not think that the questions asked would impact on this study. However, when I did read the comments made, especially those to the open-ended questions, I made the decision to include these, as a number of comments referred to the use of the LMS. A common thread throughout these evaluations was that using the blended learning system was effective, should continue to be used and that other lecturers should also include it in their courses.

I kept a journal for personal observations and informal communications. Perhaps I should have made more use of these comments and entries. However, what I did find was that the comments confirmed my findings from the other resources.

I based my research on Grounded Theory. I made no a priori decisions about what I would find and I was able to theorise as I went along. Scrutiny of the data allowed me to proceed in a certain direction, which I had not planned in advance. Contingency Theory also allowed me to manage my data collection as I saw fit; I could read the data and then only decide on the next course of action.

One of the shortcomings of this study is the size of the groups; they were too big. Groups consisted of between 30 and 35 members. In a group of approximately 30 students, it was still possible for the students to 'get lost' in the crowd. This number could be brought down to groups of 10 without incurring additional costs. It would be more beneficial to work with a smaller group, as it allows the group members to get to know one another much better. Additionally, when contributions of only 10 members are made, students would be able to read with more insight all the contributions, and make more pertinent comments.

5.5.2 Substantive reflections

There can be no denying that interaction - be it with peers, lecturers, content or interface - plays an essential role in learning and education as a whole. (Laurillard, 1997; Vygotsky, 1978; Schweizer, Paechter and Weidenmann, 2003) Several authors have commented on the use of electronic media to enhance learning. Chickering and Ehrman's (1996) revised seven principles states that "…time-delayed (asynchronous) communication" allows for "total communication [to] increase".

This particular study's findings correlates with findings from McLean and Murrell (2002) where communication and information access, interaction with other students in the virtual workplace and, most importantly, the uploading of resources, were stated as the most valuable aspect of technology's use in education. Felder's (1997) criticism of lectures also rings true for this particular class; students sit, watch and listen, but it is very difficult to convince them to voice their opinions.
Table 7 was used in Chapter 2 and summarised what current literature says on technology's impact on learning. The interventions used in this study are mapped against the different identified ways in which technology is used.

Visualisation was achieved through the quizzes, notes and additional material, and allowed learner-content interaction. Peer interaction as well as learner-teacher interaction took place in the discussion board, general questions section and emails. Reflections on learning experiences were fostered in the chill café, while authenticity and engagement opportunities for real-life activities were presented in the discussion board. Lastly, opportunities to practice, hence quality and quantity, were available in the compulsory quiz as well as the additional quizzes.

It is evident, therefore, that technology already plays a significant role in establishing more effective teaching and learning environments. However, many other problems have been identified, particularly where large classes are present. Technology may also be used in addressing these problems.

5.5.3 Scientific reflections

Johnson (2002) identified "Three Big Issues" which hinder the effectiveness of teaching and learning in a large enrolment course. Table 20 integrates these three issues with the intervention used in this particular study and links it to the results achieved.

Three Big Issues	This study	Result
Accessibility to course content.	LMS available via Web access Notes placed on the LMS.	Accessible wherever internet is available.
Effectiveness of large class lecture instruction.	TC lectures still took place. Interaction via discussion board, Quizzes.	Additional exercises done and posted on WebCT. Additional quizzes done.
Low level of connectivity.	Asynchronous interactivity. Tutors.	Personal relationships with tutor. Tutors acted as agent of the lecturer.

Table 19: Large enrolment and ways to overcome the "Three Big Issues"

Although lively discussions no longer take place in the TC, as noted by Naber and Kohle (2002, AusWeb2002), these do happen in the VC and are based on the latest economic issues. Students are therefore exposed to contemporary issues and are encouraged to read articles from the financial and economic press.

Osgurthorpe and Graham (2003) have identified six goals for educators when designing the blended environments. Four of these goals were addressed in this study. These goals, the results from the research, as well as the conceptual framework used for the research, are summarised in Table 21.

Goals	**Learning Management System Tools**	**Results from the study**	**Conceptual Framework**
Pedagogical richness.	Discussion board, quizzes, Additional content.	Students interacted, Explained to one another.	Learning Theories (eg. Social Constructivism) Conversation Theory.
Access to knowledge.	Internet searches, articles.	Students were more informed, Could use different sources.	Engagement Theory, Contingency Theory.
Social interaction.	Discussion Board, Chill café.	Number of postings, quality of contributions, Social discussions. Could meet FTF as well.	Engagement Theory, Conversation theory.
Person, Agency.	Additional material, Asynchronous discussions.	Choices on how to approach studies, What additional material to use, When to contribute, When to do the quiz.	Contingency Theory.

Table 20: Goals for educators integrated with Ekn 124

The use of technology and its benefits are very well documented, but not much has been written about the way in which students respond to making use of blended learning. In this study, it may be concluded that even when the students are not digital natives, but indeed, are strangers to technology, they adapt very well to the digital world, enjoy using it, find that it assists them in learning and even insist that it is used in other courses as well.

5.6 Recommendations

5.6.1 Recommendations for policy and practice

By far the majority of students preferred the blended or mixed mode of teaching, which combined traditional face-to-face classes with some kind of technology. The variety in learning opportunities, as well as in teaching methodology, enhances the learning experiences of the students and makes allowances for different learning styles.

Interaction is a necessity and a prerequisite for effective learning to take place. The absence of interaction was noticeable in this specific case study. By far the majority of students did not interact with the lecturer, one another or the course material. If interaction does not take place in the traditional sense of the word – i.e. in a face-to-face manner, then other means or channels of interaction need to be implemented.

In this research project, a Learning Management System was used with great success to fulfil the need for interaction. In terms of lecturer-student interaction, the use of the notice board or discussion board was positively experienced by students. However, when the number of students becomes so large that it is impossible for the lecturer(s) to foster a personal relationship with the students, it is recommended that tutors be appointed and trained to take the place of the lecturer. In this way, the lecturer becomes the main course manager and the tutors, in effect, the first point of communication for the students.

Peer or student-student interaction may also be managed very successfully when students are registered in smaller groups. Students should be divided randomly, so that they are able to get to know one another in the online environment. They will then also be in diverse groups which include different genders, races, ages etc. Not only would this benefit their learning experiences, but they would also be subjected to interaction with people they might not necessarily meet in normal circumstances. Apart from enhancing their academic experience, it would also prepare them better for a life outside the protective environment of the university.

It is highly recommended that the notes which will be discussed in the lecture, are made available to students well in advance. This allows for students to prepare for class, to listen in class and not just to sit and concentrate on writing down what is

said; it assists with note-taking as a skill and allows for better summaries of the work. This would also assist students who cannot attend a class, so that they are at least informed of the main issues which were discussed.

A further recommendation is that some form of automated assessment is included. The average course at the UFS has two tests and an examination. In some cases, students have to hand in an assignment as well. This is not in line with formative assessment or continuous assessment policies. By making use of regular quizzes, students are obliged to keep up to date with the material; it allows for students to test themselves against the outcomes and it is an ideal method of formative assessment, since students are able to refer to other sources when they are not sure of the questions.

By making use of regular discussions, which are graded, students are aided in integrating the theory with practical applications. This would produce graduates who can argue, integrate, apply and reason; the type of graduates that are needed. This is yet another method of formative assessment, since the students would be given guidance as to whether their arguments are correct or not. It would then produce students who are much more advanced in the way that they think and argue when they reach their final year or post-graduate level.

Another advantage, which comes with grading discussions and online assessment, is that it considers other learning styles. Too often, the only way in which a student can contribute to a semester and therefore a final mark, is through formal tests. Although this is a tried and tested method, it does not make allowances for different learning styles and is not always suitable for all students. One has to accept that in one group of students, one will find several types of learner and all should be accommodated.

The one golden thread that is seen running throughout other research and also in this particular study is that students need to be actively involved for more effective learning to take place (Webb, Jones, Barker and van Schaik, 2004). Add to this the possibilities of technology and some of the problems associated with large classes could very well be something of the past.

5.6.2 Recommendations for further research

Most of what has been written on the use of technology in education is based on studies done by researchers in developed countries. Whilst it is necessary for educators in developing countries to take note of these developments, it is not necessarily applicable to them. Whereas the developed world has only 15% of the population, it has 88% of the internet connectivity, leaving 85% of the population in the developing world with only 12% of connectivity with internet (Mehta, 2004, p. 109). The reality is that in South Africa, approximately 30% of the population does not have access to electricity in their houses and only 24% of the population has a landline telephone in their homes (Botes and Pelser, 2004, online).Thus, the proportion of the population that has access to the internet in their homes is minimal. Prensy's "Digital Natives, Digital Immigrants" (2001, p.1) therefore needs to be redefined and refined for the specific context of the developing world.

Another complicating factor is that specifically within the South African environment, students from vastly different backgrounds are found in one class. There are Digital Natives who have grown up with the internet in their homes and then there are the Digital Foreigners, who do not have access to any computers at all, neither at home or at school. Their knowledge of internet capabilities is virtually non-existent and their use of the LMS must be monitored much more carefully. How to effectively integrate these two vastly different groups needs urgent attention.

Another aspect that is imperative to research is "technology's fitness for use" (Fahy 2000). Some courses may be more appropriate for a synchronous discussion, whilst others for an asynchronous one. There is not a one-size-fits-all combination of teaching tools, but the suitability of one tool above another for different disciplines, needs to be analysed. Can, for instance, the chemistry laboratory be replaced by online experiments or is it necessary for students to become intimately involved with the materials? However, in a country where there is a shortage of funding for schools, is this not perhaps a solution? There is also a need to investigate the possibilities of different tools being more suited to different types of students. The question one needs to ask is rather:

What combination of possibilities is the most appropriate for each discipline?

Another aspect which needs to be investigated relates to the institution itself. If students are ready for the introduction of technology but the institution is not, it will be a futile exercise, since technological, financial and other support will not be present. Thus, the question that needs to be researched is: to what extent does a university's ICT maturity contribute to the success of the introduction of a blended learning system? If the institution is not ready for the responsibility to support technology in education, then the viability of the projects is in serious danger (Fahy, 2000).

Based on previous personal experience, students in a traditional course tend to achieve mostly in the 40% – 55% range with very few students falling on either side of this range. In a purely e-learning class (in other words, only distance) the performance range is much wider and the drop-out rate is much higher, even though more students achieve higher marks. The blended model could thus effectively be used to combine the "best of both worlds" – lower drop outs, higher individual achievements and a better through-put rate. This hypothesis, it would seem, is an important area for further research.

5.7 Conclusion

Current students come from a very different world to their lecturers. In the past, students were vessels to fill with knowledge, sitting at the feet of the master and learning from, not learning with. On the one hand, digital natives have grown up in a world where linearity has been replaced by multiple stimuli. The students have become familiar with technology impacting on their everyday lives – cell phones, online banking, play-station games and computers to name but a few. In comparison, students from previously disadvantaged communities' experiences with technology are seriously lacking and, in order to be competitive in a working environment, need to play 'catch-up' with their peers. Furthermore, lecturers cannot afford to make use of old tried and tested methods of teaching if they want to be effective and inspiring educators; they will have to address the specific needs of their students. Lastly, with classes increasing and communication and interaction not taking place, lecturers

cannot ignore the fact that interaction is vital for effective learning and should investigate other options available to them.

This study investigated alternative options and students' responses to these options in an Economics first-year English speaking group. Students found that they were able to interact with one another, with lecturers and with content, in an enjoyable, effective manner by making use of WebCT, the LMS of choice. Lecturers need to experiment with different technological tools to establish which of these tools would be useful in their teaching environment. There is not a one-size-fits-all approach in the use of technology, with regard to subject matter, as well as the personal teaching style of each lecturer.

Although several problems have been identified concerning effective teaching and learning, by making use of technology, and particularly an LMS, these problems may be overcome. Initially, it may take up much of the lecturer's time and students need to be trained to be able to make use of the technology. If it is, however, experienced in a positive way, it would add a great deal of value to teaching and learning.

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Appendix 1

Information to Students.

Hybrid learning model

1. Combine face-to-face classes with a-synchronous discussion forums.
2. English groups: online Ekn 124 group.
3. Discussion topic: contributions, dedicated tutor
5. 2 FTF classes per week.
6. No practical classes, as in the past,
7. If you failed the test, you will have to attend a compulsory class, which will be facilitated by your tutor.

The goal of this intervention:

To ascertain whether the mixed mode of teaching improves students' experiences/understanding of Ekn 124.
All information will be handled totally anonymously and confidentially. However, any student who does not wish that his/her details be used in this research, or who do not wish to participate in the project, must please see me no later than 2 August in my office. It remains your choice. If, during the semester, you would like to withdraw, you are also free to do so. You do not have to contact me, you merely do not fill in any of the questionnaires.

Appendix 2

Pre-course Questionnaire

1. How often do you attend class?

   Twice a week
   Once a week
   Every now and then

2. Do you have a text book?

   Yes
   No
   Photo copied

3. What were your results?

   Test 1: ……..
   Test 2: ……..
   Tutorial 1: ……
   Tutorial 2: ……
   Tutorial 3: ……
   Tutorial 4: ……

4. How much preparation do you do for **each** class?

   More than 2 hours
   Between 1 and 2 hours
   Less than 1 hour
   I do not prepare for class

5. How much time do you spend **after** each class going through the work covered?

   More than 2 hours
   Between 1 and 2 hours
   Less than 1 hour
   I do not go through the work after class

6. How many of the tutorial classes did you attend?

All three
Two
One
None

7. How much time did you spend preparing / learning for the tests (each)

More than 10 hours
Less than 10 hours
I did not really learn for the tests.

8. How often did you go to see the lecturer with problems?

More than 3 times
Between 1 – 3 times
Never

9. If your answer was never, please give a short reason.
……
……

10. In comparison with my other subjects, in terms of difficulty,
EKN 114

Was the easiest
Was the most difficult
Was in the middle

11. In comparison with my other subjects, in terms of enjoyment,
EKN 114

Was the most enjoyable
Was the least enjoyable
Was in the middle

Appendix 3

WebCT Ekn 124 Questionnaire Number 1 August 2004

1.Name (Optional) ……

2. Age……

3. Gender……

4. Group Number……

For questions 5 – 12, Circle the correct answer

5. Approximate Results for Ekn 114:

Failed between 50% – 59% Between 60% – 74% Distinction

6. Do you have a computer where you live during the academic term?

Yes / No

7. Do you have Internet access where you live during the academic term?

Yes / No

8. Have you ever, before EKN 124, used an Internet discussion board?

Yes / No

9. How long have you been using computers (e.g. word, Excel, internet searches?)

Less than one year 1 – 2 years 3 – 4 years More than 4 years

10. How would you rate your computer skills?

Beginner Intermediate Expert

11. How would you rate your WebCT skills?

Beginner Intermediate Expert

12. How did you learn to use WebCT?

I listened in class when the lecturer explained and then tried it out

I taught myself

My friend helped me

I went to the E-learning office

Other: Specify ……

13. How many times altogether have you used the following for Ekn 124:

Discussion board

Never 1 - 3 times 4 – 10 times more than 10 times

Notes

Never 1 - 3 times 4 – 10 times more than 10 times

Chill-café

Never 1 - 3 times 4 – 10 times more than 10 times

14. What is the most exciting part of the WebCT Component?

……

……

15. What is the most frustrating part of the WebCT component?

……

……

PLEASE answer the following question at the back of this page.

16. What are your general impressions of the WebCT components of Ekn 124?

Appendix 4

Questionnaire: 25 October 2004 Group Number ……..

Please answer the following questions as honestly and as truthfully as possible.

Where did you access WebCT?

…… ☐

If you used an on-campus computer, did you have to wait for a computer to become available?

Yes	No

☐ ☐

If yes, on average how many minutes? ……..

Comment on the usefulness/uselessness in terms of economic learning of each of the following WebCT tools. Make a cross through the appropriate block, using the following scale:

1 = totally useless 2 = fairly useless 3 = average 4 = fairly useful 5 = very useful

Class Notes:

1	2	3	4	5

☐

Comment: …….

……

Discussion board:

1	2	3	4	5

☐

Comment: …….

……

General questions on the work:

1	2	3	4	5

Comment: ……

……

Feedback from Tutors:

1	2	3	4	5

Comment: ……

……

Tutorials/Quizzes:

1	2	3	4	5

Comment: ……

……

Computer Literacy:

1	2	3	4	5

Comment: ……

……

Interaction with other students::

1	2	3	4	5

Comment: ……

……

Additional notes on chapters from the text book:

1	2	3	4	5

Comment: ……

……

General notices / information on home page:

1	2	3	4	5

Comment: …….

……

Thank you very much for your valuable contributions! I really appreciate it! If there is anything else you would like to bring to my attention with regard to WebCT, please write it on the back.