

Westminster Institute of Education

Oxford Brookes University

**Information Communication
Technology and the
Management of Change in Two
Education Institutions**

Submitted in partial fulfilment of the
requirements for Ed.D degree,
Westminster Institute of Education

Elizabeth Browne

January 2003

SOME PARTS
EXCLUDED
UNDER
INSTRUCTION
FROM THE
UNIVERSITY

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Dedication

This research is dedicated to my father who was by his example a lifelong learner and enthusiast for life, in the hope that his passion for learning will live on in my sons.

To my husband for his pride, for showing me the importance of attention to detail and commitment to a quality product.

To my mum, for being there whenever she was needed.

Thanks are also due to my supervisors, Professor Sue Hallam, Dr Melanie Nind and Dr David Palacio. I should also like to thank three academics with a special interest in management studies for their professional guidance. The advice they have provided has resulted in a number of revisions all contributing to the quality and depth of the final submission.

Without the support and influence of all mentioned above this research would not have been completed.

Glossary of Terminology

Access	an Access course prepares mature students without standard qualifications (eg A' Level) to undertake a course of higher education
A'Level	Advanced Level examination
A/S	Advanced Subsidiary Level
A2	Advanced Level, year two, following completion of the A.S qualification
Asynchronous communication	any communication in which the parties on the internet need not be present simultaneously
Bulletin Board	a forum accessible over the network where messages can be left
Computer Conferencing	a general term for computer mediated communication
Cyber-ethnography	the study of interaction and communication conducted through the Internet or by computer conferencing
Distance Learning	a term used to describe teaching and learning which uses packages of pre-prepared learning materials which can be accessed according to participant need and pace and at a distance from the source of production
Flexible Learning	a term used to describe teaching and learning which uses packages of pre-prepared learning materials which can be accessed according to participant need and pace
FE	Further Education
GCSE	General Certificate of Secondary Education
GNVQ	General National Vocational Qualifications

HE	Higher Education
Inclusion	terminology used to discuss the greater involvement of students with learning difficulties and disabilities into mainstream education
LEA	Local Education Authority
Lifelong Learning	terminology adopted following a number of government reports which emphasis the need for employees to re-train and adapt their skills to meet the needs of a changing employment market.
NVQ	National Vocational Qualifications
Masters	a degree level classification above that of first degree
Middle Management	tasks carried out under the direction of others to carry out the strategic requirements of the organisation
Management	tasks associated with organisation and structure and planning within an institution
Open Learning	a term used to describe teaching and learning which uses packages of pre-prepared learning materials which can be accessed according to participant need and pace and at a distance from the source of production. The term is also associated with access issues being available to all, although there is some confusion around the application of the term
Resource Based Learning	a term used to describe teaching and learning which uses packages of pre-prepared learning materials which can be accessed through a computer or through packages of prepared material available in a set environment usually attached to an educational establishment
UfL	University for Life- an Internet hub with a learning network using modern communication technology to link businesses and individuals to cost effective, accessible and flexible education and training

Virtual Conferencing	a visual and audio-based synchronous form of communication
Virtual Environment	any forum for interaction provided across a computer network

Abstract

Successive governments for decades have extolled the power of education in providing the answer to national problems. Recently published government reports (DfEE, 1998; DfEE, 1999a; DfEE, 2000a) suggest that through Further Education (FE) and Higher Education (HE), educational success for more and different types of students can be achieved, at no additional cost, through the deployment of new technologies in learning and teaching.

This research explored issues of change as two educational institutions responded to the Learning Age agenda (DfEE, 1998) which clearly articulates a role for FE and HE in providing and creating a culture of attracting more students from groups who would not traditionally have thought about continuing their education. Both sectors have been charged with providing more flexible learning opportunities to create the culture change.

Two educational institutions were used in this research, one from the FE sector, and the other from Higher Education. The cases for study were selected on the basis of their apparent similarities particularly in relation to the use of Information Communication Technology (ICT) to support the structural delivery of educational provision. In the Further Education College, change was instigated through a *top down* structural process that led to the introduction of a Resource Based Learning Centre. In the Higher Education Institution (HEI) change was driven by a *bottom up*

strategy focusing on pedagogic issues. Interviews with staff at various levels of seniority and analysis of student participation through technological means coupled with the analysis of responses to a student questionnaire, enabled an evaluation of each approach. These evaluations coupled with a consideration of government policy were evaluated within a Marxist reductionist approach using correspondence theory (Bowles and Gintis, 1967:23) and concepts of cultural hegemony (Gramsci, 1981:34). Additional support was drawn from management theorists who write convincingly about 'chaos theory' in relation to recent organisational change (Fullan, 1999; Lewin, 1993; McNay, 1995).

This research revealed that neither of the approaches to introducing change as adopted in the chosen institutions was without problems. In both cases managers and lecturers seemed unable to communicate effectively or agree the parameters of change. The use of ICT to support pedagogy was not understood nor had changes in learning and teaching been thoroughly articulated during the planning stages. Issues of communication and understanding became central as the research developed, with linguistic ambiguity apparent in relation to the use of ICT to support national policy. Recommendations arising from the research focus on the need for a clearer articulation of terminology associated with change management issues involving ICT so that issues of pedagogy and structure can be given equal import in institutional change management. It is also suggested that approaches to leadership which put considerations of teaching and learning in a central position in school management training, be adopted in the university and college sectors.

Chapter 1 Introduction

1.1 Introducing the Research

This research is a study of two education institutions undergoing change in turbulent times. The focus is on change which results when a greater reliance, than has previously been the case, is placed on Information Communication Technology (ICT) in course delivery. Given the emphasis on the use of technology to support course delivery, the research interest is in ICT as a communication and learning technology and as a tool in curriculum design and delivery. Interest does not extend to the study of Information Technology (IT) the term adopted in this thesis when referring to technological support mechanisms, for example, in record keeping.

The specific foci of the research are to be found in the government literature which assumes a link between ICT, learning and teaching, widening participation and inclusion (DfEE, 1996; FEFC, 1996a; FEFC, 1996b; FEFC, 1997a; DfEE, 1998). The research will be discussed in terms of four themes: Managing Change; ICT as a change issue; ICT in Learning and Teaching and the policy themes of Widening Participation and Inclusion.

The research assesses change in one Further Education College and a University. The justification for selecting the specific institutions is provided in this document.

Through the research process the cultural dimensions of human interaction in the two institutions are put under the microscope as staff and students respond to government directives to use ICT in learning and teaching in an attempt to support government policy directives to widen participation and support inclusion.

1.2 Aim

The aim of this research is to explore the management of change involving the use of ICT in two education institutions, to reflect on the impact of change in meeting current policy objectives and to make recommendations for future change strategies involving the introduction of ICT in learning and teaching.

1.3 Context

ICT is increasingly linked to the concept of widening participation, inclusion and lifelong learning. Technologically enhanced learning is seen as providing the potential medium to enable greater access to colleges and universities. Computer enhanced learning is advocated as the tool through which more students are to become engaged in education (DfEE, 1998:2).

A considerable body of literature, and many government initiatives, emphasise greater flexible learning opportunities available as a result of the exponential innovative growth of communication and learning technologies (DfEE, 1996a; DfEE, 1998).

The University for Industry (Ufi) launched in February, 2000 operating as *Learn Direct* is just one government initiative that symbolises this commitment (Times Higher Education Supplement, November 6th 2000). Central to such views, which some would call the *rhetoric of technology* (Fitzsimmons-Hunter and Moran, 1998:13), is that ICT can play a vital part in the self-empowerment of individual learners.

1.4 The Research Agenda

The recent years an elongated debate has been simmering about the relevance of education research to education practice. Theorists have been concerned with the need for research to be set in the context of established theory, to follow scientific method and have practical relevance (Hargreaves, 1996:5; Hammersley, 1997:2; Tooley, 1998:6). David Hargreaves in the 1996 keynote lecture at the Teacher Training Agency (TTA) Annual Conference maintained that: *practitioners and policy makers must take an active role in shaping the direction of educational research* (Hargreaves, 1996:6). The much debated speech, reprinted in the July edition of the British Educational Research Association Newsletter (BERA, 1996) highlighted the need for education research to build on earlier research by confirming or falsifying it, by replacing it with better evidence or theory.

Hargreaves (1999:2) argues that the majority of education research is neither cumulative nor relevant to practice. Of further interest is Hargreaves's call for academics to research the impact of Information Communication Technologies (ICT)

on learning and teaching (Sunday Times, July 10th 1999). Baroness Blackstone addressing the first research conference for the new Learning and Skills Sector at Warwick University on 13th December 2000 (www.lsd.gov.uk) identified a lack of research emanating from the Further Education (FE) sector in particular in relation to that which might impact on policy and practice. The research reported in this dissertation, which studies the impact of policy change in relation to ICT in two institutions, has been designed to respond to these issues.

The research is intended to have practical application, and be relevant to the lives of educationalists and students. It has been designed with Hargreaves'(1999:3) criticism in mind and is intended to meet Blackstone's requirement of research which examines the interface between policy and practice. Attempts have also been made to build on recognised education theory using a Marxist-reductionist approach in the application of correspondence theory (Bowles and Gintis, 1967:23) supported by Gramsci's (1971:34) theories of cultural hegemony to analyse the context and likely outcome of recent government policy. These terms are explored in Chapter 5 of this thesis.

1.5 Groundbreaking Research

The proposed research developed from a need to understand and explore the changes facing education institutions at the turn of the twenty-first century. As government reports (DfEE, 1998; DfEE, 1999; DfEE, 2000) outlined dramatic changes to education, it became increasingly important that research was carried out. There was

a need to focus on some of the taken for granted assumptions that underpinned the government message, namely that ICT can enhance student learning, widen participation and drive society comfortably into the new learning age. A perceived tension between academically compiled Reports known as the Kennedy (1997a), Dearing (NCIHE, 1996) and Tomlinson (FEFC, 1996) Reports, and the government Green Paper 'The Learning Age' (DfEE, 1998) in relation to the use of ICT in curriculum delivery, led to and prompted this research. To be specific, there was a concern that policy directives were being interpreted in terms of structural change without due consideration being given as to how change was to be achieved in learning and teaching.

By studying the two institutions in the light of the available theories about change, the aim was to gather information from a range of participants affected by the changes underway in order to understand what was going on. Information from the key stakeholders (such as those implementing and those directly affected by the changes), analysed alongside theories proposed by academics who study change, would provide information worthy of report and yield recommendations worthy of consideration by others managing similar changes.

A thorough literature review revealed a lack of research addressing issues of change in Further Education (FE) and Higher Education (HE). The sparsity existed in research into issues of increased access for students from non-traditional backgrounds, particularly in the use of ICT to support the proposed change.

During the period covered by this document (1998 to 2002) research on Information Communication Technology (ICT) has begun to influence education thinking (Seale, 1999:1; Tucker, 1997; Thorne, 2000:34). A conference hosted in Manchester (University of Manchester Institute of Science and Technology, 5th May 2000) by the Association of Learning Technology (ALT) featured papers on ICT and policy issues. A number of research articles examined ICT and change (McMurray, 2000; Armstrong, 2000; Dalglish, 2000). All of these papers made a contribution to the ICT discussion. Despite a thorough literature review (using library catalogues and electronic search mechanisms) supported by attendance at a number of conferences, the researcher has been unable to locate research that combines a study of change in two different education sectors. When this research was at the planning stage it was very rare for Further and Higher Education to be considered in parallel (Elliott, 1999:2). More recently it is more common for the two sectors to be inextricably linked in policy discussions (Times Higher Education Supplement, 4th November, 2001).

Currently there still appears to be little empirical research that addresses issues of change in relation to the current policies on change. Research exists into the use of information technology as a learning tool, (Ross and Shultz, 1999:23 ; Bosworth, 1999:12) and into the introduction of Resource Based Learning Centres (RBL) (Davies, 1989:10; Henry, 1995:3). Nothing is available, however, which assesses these changes in the light of the government rhetoric for change.

1.6 Research Context

At the time that the research was conceived there was much rhetoric concerning ICT in learning and teaching but very little practice. A number of course models were in operation which used distance and flexible learning, the Open University being the most well known (www.ou.ac.uk) but at the time the research was planned (1999) few UK institutions were using ICT directly as a medium for course delivery. In 1999, the Open University was piloting ICT course delivery over the Internet for one course only (Fallows and Bhanot, 2002:68). When selecting the case study institutions a number of avenues were explored. A publication specific to the FE sector identified two colleges where ICT Centres were being established (FE Now, 19th September, 1999). Approaches to the two institutions proved fruitless: one wanted to charge an hourly rate for any time taken to do the investigation; the other institution was still very much at the planning stage. An approach was made to a University where a commercial product was being used to launch a DfEE project (DfEE, 1998) for school teachers of Able and Gifted Pupils (Research Centre for Able Pupils-ReCAP).

Unfortunately, the conditions of the supplier's contract restricted any research.

In one respect the two institutions reported in this dissertation were self-selecting.

They were the only accessible institutions known to the researcher to be introducing ICT in course delivery at the time of the research. Numerous examples were found of ICT application as an addition to traditional delivery mechanisms but the two research

institutions represented the only known examples of ICT application replacing traditional classroom activity.

Issues of selecting a representative sample are difficult in the two chosen sectors of Higher and Further Education. Every FE and HE institution is unique so selecting a representative sample was not possible. However, the two institutions are as representative as they can be, given the diversity within the sectors being discussed.

Ainley and Bailey, (1997:23) argue that all FE institutions are representative of the sector in some way.

Given the deficit of research specific to the chosen subject in the FE and HE sectors, (Elliott, 1999:23; Ainley and Bailey, 1999:34) the researcher wanted to explore the experiences of those involved in the changes to ICT delivery of learning and teaching. The very personal nature of learning and teaching and how education institutions approach change, which is often said not to be well managed (Harper, 1997:36), gave a strong bias in the research design to the argument for case study using qualitative research methodologies in the two chosen cases. To hear the voice of the participants involved in the change (Hargreaves, 1999:34) was of paramount importance.

The choice of the two differing institutions was based on the innovative approaches to learning and teaching using ICT that were being tried at the time in each and the willingness of those involved in the institutions to allow the research to take place, at what might have be described as the *pilot* stage for both institutions. The researcher was able to gain access with ease to both institutions. This approach, is supported by Silverman (Silverman, 2000:28).

1.7 Introducing the Case Study Institutions

To protect the identity of colleagues and maintain confidentiality, the research institutions will be not be identified. It is enough to say that both institutions are situated in a shire county in middle England well known for educational innovation (Times Higher Educational Supplement, 12th January, 1999). As discussed earlier, selection of institution was prompted by the innovative approach to using ICT in learning and teaching. At the time the research was conceived, the widening participation agenda was newly articulated and the impact of the Kennedy Report beginning to be realised (FEFC, 98/06).

1.7.1 The FE College

The College building dated back to 1960. Students could register on a comprehensive range of courses. Student numbers at the time of the research were at approximately the level of 700 full-time and 6000 part-time enrolments. Some of the work of the college took place on other sites and there had been a recent outreach approach to offer courses in many of the rural villages beyond easy access of the main College site.

The majority of the courses, particularly for full-time students, were in general vocational education (more detail is provided later in this chapter). Recent funding

pressures had led to a reduction in community education work, an increase in courses supported by the Further Education Funding Council (FEFC) funding and a drive towards more full cost work priced by the College at a 44% profit margin.

The College was structured within six areas of study, each run by a head of study who reported directly to the Vice-Principal who held the position of joint executive of the College Management in association with the Principal. A tier of management reporting directly to the Principal existed to support functional duties such as Marketing, Finance and Administration, and Student Services. Staff appointed to senior roles held the *Director* title and were part of the *College Executive Group* alongside the Principal and Vice-Principal. Personnel issues were the responsibility of a Personnel Manager who reported directly to the Principal.

In 1997, the Senior Management Team had been reorganised, with a reduced membership, prompted by the ill health retirement of two staff. An external appointment was made to the post of Director of Student Services whose role it was to establish the Resource Based Learning Centre to support ICT delivery of a major element of the traditional provision (see Policy Document, Appendix 9).

Although a consortium arrangement existed with the three local comprehensive schools to deliver a shared timetable of Advanced (A) level options, the majority of full-time students were enrolled at the college to a General National Vocational Qualification, (GNVQ) (in Business, Leisure and Tourism for example) or National

Programme (in Nursery Nursing) of Study. The majority of Nationals were replaced by GNVQs in the early 1990s but in some curricula areas the National Programmes have remained. During the period in which this research was carried out, the College had been in negotiation with a smaller institution to discuss a merger. The merger was scheduled to take place in March 2001.

1.7.2 The University

The University dates its history back to a School of Art first established in 1865. In 1891 this had been taken over by the City Council and, following rapid growth, moved to a new site in 1893. Further expansion followed right up until 1956 when the institution was renamed as a College of Technology. In 1967, the College was identified in government proposals to become one of 29 polytechnics and in 1992 it was designated a university. The Times League Tables identify the University as one of the nation's top 50 universities (The Times Newspaper 15th September, 2000).

Currently the University is organised into thirteen Schools operating as individual academic divisions each with a head of school. The central university administrative body oversees issues of quality assurance, human resources, estate management and business development. Each School is responsible for its own budget and expected to manage as a full-cost unit covering its own operating costs by attracting students who produce an income from what may be a number of accepted sources.

This research focused on one of the Schools within the University, namely the School of Education. This School employed sixty five full-time members of staff, offered six different undergraduate degree programmes and three courses at masters level. No data are available as to the actual number of students enrolled on courses at any one time. This is due to the high proportion of short course provision and a number of overseas consultancy contracts which involve large numbers of students.

1.7.3 Similarities Between the Two Institutions

Although the two institutions are different in many ways, the researcher felt that comparison between the two is based on a sound rationale of broad similarities. The number of staff with full-time permanent contracts at the time of the research was similar (ie within 5%); the area of subject specialism, (i.e. education, in the most general of definitions) was also the same. Both institutions were responding to an identified financial overspend (see Appendix 10 in the case of the University and Table 7:5 in the College case). It had been a *six figure* deficit in the FE College which prompted the curricular changes under study. The strategic plan for the University (Appendix 9) makes reference to *a need to tackle financial difficulties*. The research data imply that the financial overspend in the University and the lack of a budget for marketing limited opportunities for change (see Table 7:11). The converse appeared to be the case in the College where fiscal issues were prompting action (see Appendix 9). It had not been the initial intention to focus on financial issues in this research design. However, the data produced from the interviews with

staff made it necessary to consider financial issues as one of the themes which arose from the research findings (see Tables 7:5 and 7:11).

The organisational arrangements and staff hierarchy in both institutions had been subject to change resulting in a reduction in the membership of the senior team (see Appendix 10 and Table 7.5) The likelihood of a proposed merger for the University was certainly in the public domain at the time the research was carried out (see Appendix 10). It is not clear how aware the staff in the College were that merger was likely: no reference was made to merger during the data collection period although the researcher can report that it certainly became a reality at the same time as merger occurred in the University. It is, therefore, likely that both institutions were in merger discussions at the time the research was carried out, such discussions being made more public in the University than in the College. During the write-up stage of this thesis the University department in this research merged with a separate teacher training institution creating an Institute of Education in the region. The College merged with another FE college some 15 miles away to form one college corporation operating on two separate sites. In both cases the institutions involved in this research had merged by August 2000. Figure 1.1 gives diagrammatic representation to the similarities between the two institutions and is presented below.

Summary of Similarities Between The Two Case Study Institutions

Issue	Similarities
Government Directive	<ul style="list-style-type: none"> • Re constituted governance following the Further and Higher Education Act 1992 • Required by the Government to widen and support greater inclusion of those not traditionally involved in education
Change Management	<ul style="list-style-type: none"> • Reduced senior management membership and reallocation of tasks amongst the remaining management team
Financial Issues	<ul style="list-style-type: none"> • Declared financial debt with staff urged to cut costs
Structural Change	<ul style="list-style-type: none"> • Involved in merger discussions with similar institutions
Use of ICT	<ul style="list-style-type: none"> • Using ICT in course delivery as a replacement for more traditional teaching methodologies

Figure 1:1

1.7.4 The Further Education Response

The FE College, faced with financial difficulties, had decided to build a Resource Based Learning Centre to meet the demands of more flexible provision and to cut costs (see Appendix 9). At the time that the Resource Based Centre was being planned, the Heads of Study operating at middle management level had been instructed to make a 10% saving on course hours, with strong recommendations that the Learning Centre be used to accommodate larger groups of students to precipitate a cost saving on course hours. At the same time, the hours allocated in the course portfolios for managing full-time courses were reduced from 666 to 450, thus reducing the time available for each programme. This reduction had the effect of broadening the range of courses a lecturer might be required to support and reducing the need to retain the same number of staff. For those unfamiliar with the system used to allocate hours to courses, it is necessary to point out that in any educational institution offering a variety of courses the viability of the provision is calculated by taking the income received from course fees, including the external funding (allocated by the funding body), set against the costs for running the course (FEFC, Circular 1997/5). Education institutions are not expected to make large profits but courses which do not *break even* are discouraged. Lecturing staff in FE and HE institutions guard the hours allocated for learning and teaching and perceive any erosion of the *status quo* as an attack on the quality of provision for the student group (Harkin, 1997:36). Those familiar with the workings of education institutions will need further information to realise that a cut in course hours would not have been well received.

These reductions placed extra pressures on the Heads of Study who were already grappling with staffing reductions and a workload monitoring exercise that had required them to increase the expected annual contact hours of a full-time member of staff from 750 hours to 800. Staff resentment was high and the data presented in this document reflect the strength of feeling. The style of change will be referred to as *structural* (Laurillard, 1993:51) since it was the result of a management directive and introduced in terms of being essential to requirements for the survival of the institution (see Appendix 9 and the end of this chapter for a more detailed discussion of terminology).

1.7.5 The University Response

As will be shown in Chapter 5 it is difficult to discuss the University intervention as a planned change. The University Strategic Plan for 1999-2000 identifies a number of possible strategies that might be adopted: however, the change identified in this study is not one of these. One of the proposals that is made expresses a possible reduction in teaching time, but nowhere else in the document are suggestions made as to how this might be achieved. It is important to note at this stage that the two institutions were facing similar pressures but adopted, whether by choice or otherwise, different approaches in response. Since the Strategic Plan (Appendix 10) from the University makes no reference to the introduction of ICT to deliver courses it is unclear how much the intervention studied in this thesis can be seen as a strategic response to structural issues. As a result, the response in the University is described as pedagogic

(Laurillard, 1993:51), since it derived from the motivations of lecturers at course level interested in curriculum delivery rather than organisational structures (see the end of this chapter for a more detailed discussion of this terminology).

1.8 Summary of the Factors Impacting on Change

As has been discussed at the time of the research both institutions were in discussion with another geographically close educational institution of similar size and function to their own. These major structural changes receive minimum attention in the research data as the focus of the investigation was change involving the use of ICT in learning and teaching.

As well as being influenced by *local* issues (Davies et al, 1992:95), national issues also have had an impact. Both institutions had been charged with increasing student numbers to encompass a broader category of student and both institutions had been subject to a national policy of re-structuring with a newly created constitution and title, in 1992/1993.

The differences between the two case study institutions relate to the promotion of the change emanating from staff in different roles within the organisation, with resultant different responses from those involved and a differentiation in the scale of the change. The differences between the case studies are illustrated in Figure 1:2.

Summary of Differences Between the Two Case Study Institutions

Issue	FE Institution	HE Institution
Change	Management decision to encourage ICT delivery of teaching and learning	Staff led initiative to introduce ICT
Staff Response	Overt staff resistance	Apparent management disinterest
Impact	ICT for all students	ICT on one course only

1.9 Personal Motivation

The motivation for this research grew from the researchers experience of employment in the two different but in many ways similar education institutions involved in this research and undergoing major structural change. Along with internal organisational changes, both institutions were responding to major societal change driven by policy directives from central government. Such changes were challenging the traditional nature of the learning and teaching process. This required education managers to re-think curricula delivery patterns. The philosophy underpinning pedagogic models of learning and teaching was being challenged (Laurillard, 1993:183). Such models, which focus on student learning through the creation of a community of learners (Wenger, 1998), are discussed in Chapter 3 of this thesis.

There was a need to record how professionals responded to the changes involving ICT as it impacted on learning and teaching. The changes forming the main focus of this research are those resulting from the introduction of information communication technology as a pedagogic tool.

The researcher was not working from a *Luddite* perspective, nor from a position of resistance to change, the research was stimulated by the desire to investigate what is involved in using ICT as a tool for learning and teaching in the hope that issues involving change would become clearer. The research emanates from a personal belief that changes involving the use of ICT as a tool for learning and teaching should

be explored and managed effectively. The aim was to make recommendations to those involved in the management of change as institutions harness the power of information technology to meet government imperatives to widen participation and support inclusion.

1.10 Terminology

For the purpose of the study, the term *Manager* refers to the hierarchical level of operation in education organisations to encompass those responsible for making strategic decisions. (Bagley and Challis, 1985:41). The term *Middle Manager* refers to those staff required to be involved in managing course teams and the curriculum. A Course Leader, for example, might be classified as a Middle Manager whereas the Principal, or Head of School would carry the title of a Senior Manager.

The terminology of *structure* and *pedagogy* applied in this research to discuss the motivators for change in the two institutions is taken from Laurillard's research where *structure* refers to the organizational parameters of the learning experience – an example might be timetabling and the allocation of resources (Laurillard, 1993:51). For Laurillard (1993) the term *pedagogy* refers to the discussion of intended learning objectives and outcomes for the learner (Laurillard, 1993:183). Gunter interprets *pedagogy* (Gunter, 2001:150) in terms of teachers and activity around learning and teaching. These definitions from Laurillard (ibid) and Gunter (ibid) are applied in this thesis.

To give greater clarity to support understanding of the application of the term *structural* reference is also made to the work of Fidler (1997). In his work Fidler (1997:88) uses the term *strategic* in the same way the researcher here has applied the term *structural*. Fidler (1997:88) defines strategic change is as that which is concerned with the whole institution, and impacting on its long term direction. In this research the term *structural* is to given the same definition as Fidler (1997) attributes to the term *strategic*.

Throughout this thesis the term *structural* implies change which impacts on the formal organization of the institutions in the study. Such a definition encompasses all the components of the institution which might be discussed in any strategic planning process. Examples might be: staffing compliment; the allocation and distribution of teaching hours; the physical allocation of students to courses; and any planned responses made strategically which impact on the size, culture and direction of the whole organization.

Reference is made to *bottom up* and *top down* drivers for change. These definitions are borrowed from Weil (1993) whose study of *top down* change in universities provides a framework for such application. *Bottom up* refers to change approaches that emanate from the core staff teams. The terminology is used by Fidler (1997:92) to describe the processes involved in strategic planning which might start with the *grand design (top down)* (Fidler, 1997:92) as the articulation of policy but needs to involve the *sum of the parts (bottom up)*. In one of the case study institutions, the

bottom up approach defines the change strategy adopted by one group of academics acting autonomously outside the organisation's strategic plan. Appendix 10 provides evidence that the change under discussion was not identified as part of the University planning process. The thesis discusses change in terms of the *post-modern* condition. The terminology is discussed further in Chapter 5 of this thesis.

Throughout the thesis the term *University* is used to describe one School within a particular University. Where other parts of the organisation are referenced then the term *central university* is adopted. When reference is made to the specific part of the institution then the term *university* appears as follows University. The same use of a capital letter has been adopted when reference is made to the specific College involved in this thesis. During the discussion of specific titles or roles, such as Head of School, Manager, the same use is made of the capital letter to denote status roles within the institutions.

1.11 Structure of the Document

Following this introductory chapter (Chapter 1) a number of chapters review the literature available on this topic. To give focus, the literature is divided in Chapters two and four into three areas of interest namely: education change, the language of technology in learning and teaching, and government policy in widening participation and inclusion. These three chapters provide an historic overview of education change from the 1970s to the present day. A discussion of ICT

developments takes a journey further into history but concludes in present times with an assessment of prevailing ideologies underpinning moves towards a greater reliance on information technologies for teaching. Government strategy is critiqued in Chapter 4 as attempts are made to review current policy thinking.

A further chapter of literature (Chapter 5) reviews the theoretical perspectives which underpin this study. A number of theories and models are explored starting with those which discuss organisational change in terms of classical theories of bureaucracy and structure. The discussion then moves to the exploration of more recent theories which prove useful when applied to the issues addressed.

Following a thorough review of the literature, the focus moves in Chapter Six to review the research process. The theoretical models presented in Chapter 5 are revisited in the next two chapters (Chapters 7 and 8) which discuss the research findings in terms of the initial objectives of the research.

Presenting the research findings in two chapters allows detailed analysis of the data: the first section (Chapter 7) reviews data collected from the staff whilst the following chapter examines data obtained from students. As is discussed further in the methodological chapter of this thesis (Chapter 6), data collected through technologically designed mechanisms permitted the use of new emerging research methodologies.

Chapter 8 gives summary to the conclusions of the research and provides detailed recommendations to support the education change process. Here, a model is

proposed to support the management of change in the belief that such a model provides a tool to synthesise the priorities of task, student and organisation in education institutions. Chapter 9, the final chapter, provides an evaluation of the research in its entirety.

1.12 Ethical Considerations

The awarding University's ethical procedures and guidelines have been followed throughout this research. Every effort has been made to safeguard the identity of colleagues and other professionals working in the institutions under study. This is discussed in detail in Chapter 6 of this document.

1.13 The Objectives

The objectives of the research can be articulated in the research questions presented below:

- What factors were promoting change in the two education institutions?
- How was change to greater reliance on ICT introduced in the two institutions; what strategies were adopted, what were the motivations, the driving forces and the outcomes?
- What institutional factors impacted on the change to ICT and how did the staff perceive the change? What were seen to be the advantages, disadvantages, issues and future potential?

-
- Was the use of ICT in learning and teaching perceived to be improving access in terms of encouraging student recruitment, widening participation and supporting greater inclusion?
 - How did the staff respond to a greater reliance on ICT in learning and teaching, how did they perceive the change in terms of student experience and quality issues?
 - How did the students respond to the ICT initiative; who were they, what previous experience did they have of using ICT for learning and what were their then current experiences of the use of ICT to support learning and teaching?

The focus of the research is ICT in education institutions and the concomitant change produced.

1.13 The Next Chapter

The next chapter of the thesis reviews the plethora of changes that have impacted on the world of education. The aim is to present, within an historic time frame, macro level issues, that have impacted on learning and teaching in the last thirty or more years.

Chapter 2 The Changing Face of Education

2.1 Introduction

A review of the literature which informs this research is now presented in three separate chapters which discuss educational change, ICT in learning and teaching and issues of widening participation and inclusion. These three chapters support the investigation of the research questions which inform this thesis. A fourth chapter (Chapter 5) reviews a number of theoretical models which when applied to the research situation support a greater understanding of the change process. The literature review is based on a need to understand the drivers for change towards a greater reliance on ICT in learning and teaching and in so doing supports the process of addressing the research questions.

The focus of this chapter is historic and provides the context for the changes discussed in the thesis. To understand fully the issues involved in the *white water rapid* changes (Lewin, 1993:123) endemic in all education establishments since the 1980s, it is necessary to take an historical approach to assess the context in which current change is located. Accounts of educational change which focus exclusively on the forces at work within institutions fail to address the wider implications of the social and cultural change dynamic at work in our society (Kenway, 1992:45).

2.2 Historic Context

The Ruskin College speech delivered by James Callaghan in 1976, known as *The Great Debate*, has been earmarked by educational theorists (Whitty, 1985:23) as the symbolic beginning of the marketisation of education. The Great Debate is seen to epitomise the onslaught of the post-modern and post-Fordist era on the very heart of education as it was understood at that time. The term *post-Fordist* in its most simple form refers to the decline in a production based economy as symbolised by the Ford Car company, to a more complex and diverse means of economic production - such as those found in a post-modern era. The term *post-modern* relates to the period in social history that society is currently thought to inhabit (Lyotard, 1984:14). In this period, language and knowledge, seen as sites of power, are ever changing and subject to uncertainty. The theoretical issues involved in applying a post-modern approach to the study of educational change can lead to *concerning conclusions* (Kenway, 1992:2) with power seen to remain clearly in the hands of the powerful. In this view, inequalities, rather than disappearing through the *globalisation of culture*, become assembled and exploited (Kidd, 1998 : 241). Post-modernism for writers such as Kenway (1992) and Kidd (1998) is symbolised by uncertainty and instability, with educational inequalities unchanged by attempts which aim at reform.

In the post-modern era, the significant nexus is between the global and the local (Whitty, 1993: 170). This theme is present in Callaghan's (1976) speech which focused on the relative decline of Britain as a productive economy against a backdrop of increased production by many European competitors (Whitty, 1985:23). Callaghan's

speech represents the first public articulation of the forthcoming changes in the process and structure of the education system throughout the United Kingdom (Whitty, 1985:24).

The tenets of the speech need to be interpreted against the backdrop of the industrial changes prior to the mid 1970s. The post-modern economic system, with the creation of global markets, and the forces of over-consumption following a period of accumulation, had resulted in the demise of traditional *Fordist* methods of working and the necessity to re-think the role of education in the rapidly changing *high-tec* information thirsty world. Post-Fordists, such as Murray (1988:23) suggest that computer technologies have transformed the nature of work and created a growing demand for diversity of goods and a highly skilled workforce. In the post-Fordist economy, where the core of workers needs to be highly skilled, the role of the post-compulsory sector of education becomes crucial in the development of a workforce which has the requisite skills and the flexibility to retrain, as fluctuating economies require fluid labour market skills. The apparent lack of response to such changes from those involved in the design and delivery of education underpinned the rhetoric of *The Great Debate*.

2.3 Curriculum Change

Concern over the relevance and quality of education after Callaghan's brief term in office was overtaken by *new-right* philosophies of the 1980s. These philosophies

resulted in policies which systematically set out to halt the alleged decline in the British education system through a series of sweeping educational changes. The first stages of change focused on the five to sixteen age range, with the introduction of the national curriculum and standard assessment tasks (SATs) at stages identified as being *key* to the academic development of an educated child (HMSO:1988). The results of the SATs and those of the public examinations at 16 and 18 were henceforth published, thus creating competition, parental choice based on perceived excellence and a market economy of *successful* and *failing* education establishments. School managers were encouraged along with their governing bodies to *opt out* of local authority control and become self governing, self managing *Grant Maintained Schools*.

2.3.1 Post-16 Curriculum

By the 1990s, dramatic changes were planned to alter the nature of post-compulsory education (Reeves, 1996:12). Policies were introduced to give a broader focus to a previously academic elite post-16 education: a whole tranche of new qualifications was introduced into the post-16 curriculum to encourage an elongated period in education for the development of skills seen to be key in a rapidly changing economy. Subject matter, both general and specific, was dictated by government legislation which had introduced a national curriculum in schools. Soon after the National Curriculum followed the vocational Advanced Level or General National Vocational Qualification (GNVQ) as it was called, to be followed by a further re-structured advanced course known as 'Curriculum 2000' (DfEE:1998). The rationale was provision of a broader

and more skill focused, post-16 education system. In December 2000, Baroness Blackstone announced a further review and rationalisation of the qualifications framework (keynote address to the Learning and Skills Council Conference, Warwick University, 13th December, 2000).

The curriculum at Advanced Level (A/S and A2), (see Glossary) following the introduction of Curriculum 2000, has been aligned with that of other qualifications which underwent similar changes in the 1990s (Green and Lucas, 1999:81). The curriculum is now presented as a content which is prescribed and broken down into constituent parts of knowledge and skill. This rigidity of curriculum content leads to the dissection of skills into numerous pieces of evidence to match stipulated criteria (Reeves, 1996:12). The result, brought about by the structuralisation of the qualification, is a product to be taken from an assembly line of constituent parts so that (Reeves, 1996:76):

A teacher can no longer be allowed to treat the actual teaching process expressed in the classroom as his or her private business.

Lewis (1998:36) refers to what is being framed as a new learning environment (National Committee for Inquiry into Higher Education 1997:24) as *constructive learning*, where learning is measured in terms of an achieved outcome and demonstration of understanding.

2.3.2 Further Curriculum Change

Higher education institutions have not been immune from change. Structural re-organisation has been endemic in all education sectors. In 1992, legislation was introduced which led to polytechnics being re-titled as universities, and colleges of further education being 'freed' from Local Education Authority control and established as quasi self-managing businesses. The reforms of the nineteen eighties which introduced a market forces philosophy into the compulsory sector of education (Simon, 1988:13) were applied to further and higher education (Sieminski, 1993:67). This philosophical approach involved the adaptation of a number of business models to the organisation of schools, including the need for accountability, and clarity in the measurement of student retention, and achievement (Heaton and Lawson, 1996:86). The aim was to raise performance and efficiency and in so doing create a climate of competition within the sector. In short, a business market approach was applied to all phases of education (Heaton and Lawson, 1996:87).

The professional lecturer operating at university level has not been subjected to the same overt control over course content as their fellow educationalists in the FE sector, although more subtle methods of control are being introduced with the use of benchmarking criteria in quality audit processes from 2001 onwards (Quality Assurance Agency, 1999). This process is assuring a standardisation of degree subject content so that similarity, structure and philosophy will underpin the knowledge

delivered in degrees with the same subject content in universities across the United Kingdom.

The publication of numerical scores allocated following university audit known as *subject review* by the Quality Assurance Agency (QAA) has produced a league table mentality into university culture similar to that found in schools. Such regimes have caused great consternation in our universities and, at the time of writing, the quality assurance of higher education is under review (Times Higher Education Supplement, 19th November, 2001), although it is thought unlikely that the numerical allocation of a quality score will disappear. A further attempt to impact on the closed environment of universities has been made by The Institute of Learning and Teaching (ILT), formed with a mandate to drive forward the quality of learning and teaching in higher education.

The 1990s witnessed a great expansion of post-16 education in both the Further Education and Higher Education sectors (HMSO, 1999). Justified by arguments of *post-Fordist* flexibility and specialisation, the range of subject knowledge, to include vocational degree subject choices (Elliott, 1999), was widened, none more so than in the new universities who adapted their provision to provide (in some cases) modular degrees, distance learning modes and an ever increasing range of subjects. A recent initiative has been the introduction of vocational degrees.

2.4 Adapting to a Changed World

Post-modernists such as Loader and Burrows (1994:12) argue that one of the characteristics of the HE / FE sector symptomatic of the development of a post-modern society is the dissolving of boundaries of time and space traditionally associated with post-compulsory education.

It is broadly argued by post-modernists that modern societies are typified by rigid *temporal and spatial* boundaries (Loader and Burrows, 1994:10). Traditionally, education has followed a closed, bounded segmented timetable of teaching and learning events established at a set time and place. In the post-modern systems, boundaries dissolve and melt into each other, spatial and temporal rigidities dissolve (Rustin, 1994:23). As the student becomes the purchaser of a market commodity, so customer need begins to dictate the provision. Flexible, accessible courses, such as those which can be delivered using the communication systems that are available through the use of information communication technology, have become the byword for gaining the market edge when competing for customers.

There is an inevitable negative to the process. The marketisation of education is linked closely with fiscal issues (Green and Lucas, 1999:5). Alongside the introduction of competition and pedagogic change, government forces have introduced fee-driven assessment of provision (based on payment by outcomes), reduced funding from central sources and allowed the value of the student grant to decline whilst introducing student loans. Jarvis (1990:25) argues that the monetarisation of education and training will be

a disincentive to working class students and further exacerbate the divide between the educational elite and those who have previously been non-engaged in further and higher education.

2.4.1 Responding to Change

The need for education establishments to be responsive to change was intimated in the Dearing Review of Education that culminated in the Report from the National Committee for Inquiry into Higher Education (NCIHE:1997) entitled *Higher Education in the Learning Society*. The report called for an in-depth examination of the purpose, organisation, and funding of higher education, the first such call for 35 years since the Robbins report in 1963 (Evans and Abbot, 1998:2).

The Dearing Review comments on the *shape, structure, size and funding* of the twenty first century university, educating more students from increasingly varied backgrounds with divergent attainments: a broader spectrum of the population (NCIHE, 1997:2). The education customer profile has to change; the market must move from an elite to a mass system, to accommodate a *Learning Society* (National Institute for Adult Continuing Education, 1997: 9):

The expansion of higher education in the last ten years has contributed greatly to the creation of a learning society: that is a society in which people recognise the need to continue in education and training throughout their lives. The

United Kingdom must progress further and faster in the creation of such a society to sustain a competitive economy.

As shown by the quotation above the post-modern era of rapid change and uncertainty requires a population able to change and adapt with speed, competence and skill to changing work environments and requirements. Management theorists such as Peters (1988:34) actually recommend career change as stimulating and beneficial to the individual. *Re-training, Continuous Professional Development (CPD) and Career Change* are the new words underpinning the paradigm of *Life Long Learning*.

But is it only up to those who have traditionally been engaged in the work process to be able to adapt to meet the needs of the changing economy? There is a need for a fully productive workforce. A competitive global economy requires full employment. A dependency culture is expensive and damaging (Tebbit, 1997). A global economy needs full participation by as many who are able, to produce the requirements of survival in a capitalist market economy world (National Institute for Adult Continuing Education, 1997: 9).

2.4.2 Social Change

Toffler (1980), described by Webster (1999:12) as a great futurist, suggests the world has been changed by three waves of technological innovation, each as unstoppable as the mightiest tidal force. The first of these was the *agricultural*, the second the *industrial* and now the *information*. The third such wave is engulfing us (Toffler, 1980:12; Castells, 1996:2). The Dearing Review of Higher Education

(National Institute for Adult Continuing Education, 1997:5) echoed this view:

We believe that developments in communication and information technologies will prove eventually to be as revolutionary an innovation as the printing press.

Toffler (1971:23) describes the use of information technology in industry as the *prime mover of capitalism, the great glowing engine of change*. Through the use of technology, the nature of work and the learning and teaching processes can be transformed to benefit the economy (Toffler, 1971:23). Information technology, with its associated flexibility, increased speed and accessibility, becomes an inevitable component of a capitalist-designed education system. Technology as an enabling agent makes possible new structures, new organisations and greater economic gains. In a highly competitive environment the delivery of courses using information technology to reach more students becomes virtually essential to ensure competitive survival (Dicken, 1992:45).

2.5 Government Rhetoric

Three government sponsored reports produced at the close of the second millennium focused on the educational needs of students currently not participating in the *Learning Age Agenda*: namely the Dearing Review of 14-19 Education (NIACE, 1997), the Tomlinson report on Inclusive Learning (FEFC, 1996a) and the Kennedy Report on Widening Participation (FEFC, 1997a). The key theme underlying the government response to these reports seems to give heavy emphasis to information communication

technology as the tool to stimulate a demand for learning (National Institute of Adult Continuing Education, 1997:4):

The power of the media and new technology must be harnessed in a concerted national effort to stimulate a mass demand for learning.

Further government reports (as studied in Chapter 3 of this thesis) take this one stage further and suggest that ICT should be used not only to stimulate the demand, but to be the tool for delivery as well.

In support of the technological vision of lifelong learning, the government has set aside funding for ventures such as the Information and Communication Technologies Learning Centres Initiative (DfEE, 2000). This initiative will help to establish approximately seven hundred government funded ICT centres over three years *focused on people living and working in disadvantaged communities*, to help bridge the gap between *the haves* and the *have nots* by providing access to ICT for all (DfEE, 2000:67).

The drive towards widening participation and inclusion in education has been articulated in the Green Paper, *The Learning Age* (DfEE, 1998), and taken forward in the White Paper *Learning to Succeed* (DfEE, 1999). The objectives are knowledge acquisition, skills development and student-centred flexible education and training.

This emphasis is also set out in *The Education and Training Development Agenda*

2000-2001, to:

Help develop a “learning society” in which everyone, in whatever circumstances, routinely expects to learn and upgrade skills throughout life (DfEE, 2000:5).

All of these developmental agendas are suggesting a positive and powerful regenerative link between up-skilling people in ICT and fostering widening participation, inclusion and lifelong learning. To support access to emerging technologies, the government has fostered and developed *enablement through technology* strategies (Fitzsimmons-Hunter and Moran, 1998:158). Additional funding has been made available to support educational and community organisations aiming to implement on-line learning to reach more diverse populations. It is initiatives such as these which are the external driving forces for change in education institutions (Elliott, 1999). It is through fiscal incentive that policy is being promoted and change encouraged from outside the organisation (Elliot, 1999:23). Monetary reward is given to those organisations who adapt to meet the requirements of the Learning Age (DfEE, 1998). This is how change is being promoted to ensure that institutions rely more heavily on ICT in learning and teaching.

2.6 The ICT Potential

The potential for ICT to promote new learning opportunities is routinely regarded by both government and educators as substantial, amounting to an *engine of educational*

change (Thorne, 2000:23). Recent developments in the FE sector initially articulated in the Higginson Report (FEFC, 1996b), which outlined the need for continuous updating in information learning technology skills, culminated in an announcement by the then Secretary of State for Education and Employment in December 1998 of a £74 million three-year government investment in information learning technology in FE (www.dfee.speeches.uk/11.11.98). The *National Learning Network* (NLN), the overall term for the range of actions comprising this initiative, will be enhanced by the £100 million that the FEFC estimates colleges are already spending annually in hardware and connectivity. The expenditure was intended to support staff and learning material development and the management of learning, teaching and IT usage, managed at local college level through colleges' Information Learning Technology strategies.

The government development agenda has been clearly articulated (DfEE, 2000a). Colleges have responded to FEFC requirements (FEFC, 1999/45) by producing locally-based action plans to allocate spending and progress ICT initiatives. The College researched here started moving towards greater reliance on ICT without such funds (see Timeline 7:1 in Chapter 7 of this thesis) but was well positioned to access available monies for growth and development (see interview data, Chapter 7).

Introducing ICT facilities does not necessarily mean that local learners will automatically become *creative and enterprising scholars* (Seale, 1999:61) through the use of computer based technology, nor will the culture of widening participation and

inclusion necessarily be developed. Rowntree (1992:277) provides some salutary advice pertinent to this research:

Technology can take on a life of its own if we forget what it is here for.... At the start it was intended to bring new kinds of learning to new (less privileged) kinds of learners. Unless you keep on driving, your local restraining forces can push you back to delivering much the same old learning to learners pretty much like those who have already had the lion's share of education and training in the past.

It is this sentiment, so aptly expressed by Rowntree (op cit) that gives the focus of the concerns which underpin this research which considers how the introduction of information technology based teaching and learning methodologies can be managed to provide the potential for widening access.

2.7 From the National Agenda to the Local Picture

As mentioned previously, the educational institutions selected for this research had begun to respond in different ways to the policies articulated at a national level. Mapping change in institutions where change is constant, rapid and complex is very difficult. In some cases it is impossible to identify the actual catalyst for change. Change is the outcome of many different elements such as external policy, internal interest groups and institutional dynamics. This research tries to identify some of the precipitators of that change, whilst focusing on the staff and student responses to

experiencing the outcomes of the changed environment. Prior to considering the research methodology (see Chapter 6), the language applied to discuss the use of ICT in learning and teaching is presented and discussed.

Chapter 3 The Technology Discourse

3.1 Introduction

At the turn of the twenty-first century, learning and teaching is being increasingly discussed in terms of technological delivery (Morris, 2002:14). In order to consider the feasibility of such a suggestion the historic context of technologically enhanced learning and teaching will be examined. However, primarily this section deals with the history of approaches central to learning known as *Distance Learning*, *Flexible Learning*, *Open Learning*, *Resource Based Learning (RBL)* and *Virtual Learning*. The aim is to establish the context behind current developments which have led to the wave of technological changes in the teaching and learning environment. Terminology associated with the new learning wave of *virtuality* in course preparation is also considered.

3.2 Terminology

Readers who are unfamiliar with the global, virtual highway could not be criticised for thinking that a futuristic mentality had perpetrated the minds of education managers introducing technological change. The use of the terminology of *Distance Learning*, *Flexible Learning*, *Open Learning*, *Resource Based Learning* and *Virtual Learning* is complex and confusing (Bosworth, 1991:7). The common strand unifying the terminology is the description of structural change it embodies with regard to the

accessibility of learning materials to the learner (Bosworth, 1991:9):

People have difficulty in differentiating between resource-based learning and supported self study: each has its personal characteristic but they overlap in offering a non classroom orientated scheme of study.

Issues of definition were highlighted by MacKensie three decades ago when attempting to define Open Learning (MacKensie et al.,1975:15):

An impressive phase in which a range of meanings can be, and are, attached. It eludes definition but as an inscription to be carried in a procession on a banner, gathering adherents and enthusiasts, it has great potential.

Clarification of terminology is key in any research. Education has been subject to much change (Bush, 1998:5). Change is endemic and has impacted on organisation, community and working practices. Education has become market led, and is seen as a product for consumer purchase in a competitive economic environment. In such times it is crucial that policy makers, managers, lecturers and the consumers speak the same language. The consumer needs to be aware of the product that s/he is purchasing from the market place of available courses. It is therefore crucial that those involved in change discuss the issues within conversational frameworks which contain mutually understood discourses of meaning. Theoretical support for this argument is drawn from the work of Lyotard (1984) who argues that knowledge and language are seen as components of power in the post-modern age. For Lyotard, (1984:12) communication between

individuals involves the use of *language games* which are themselves sites of power. If we accept that speech involves the manipulation of definitions of power, then the terminology involved with all aspects of the ICT world needs to be well defined and generally understood. However, an apparent lack of clarification when discussing this initiative may be in some way excusable if it were not for the fact that the use of different learning and teaching methodologies discussed here is by no means new. Rowntree (1992:12) quotes a Pitman's Journal of 1924 which discussed distance and open learning as *one of the most interesting developments of recent years in the educational world*. An interesting comment given that Issac Pitman first taught shorthand by postal correspondence in 1840, with language teaching by correspondence soon to follow in 1856 (Rowntree, 1992:12).

3.2.1 Applying the Terminology

The twentieth century witnessed great advances in the use of photographic material, radio, video and television to enhance the experience of the learner. The National Computer Development Conference in 1971 (12th July, 1971) predicted that by the 1980s the computer would be, *a commonly used tool* (NCDC, 1971:49). By the 1980s Jamison et al., (1985:25) record new technologies making, *no significant difference* with technology as an *add on*, to enrich experience rather than the central piece of the learning activity.

After a brief period of slow development, mainly on a commercial basis, the momentum for change was harnessed by government intervention. It has been said that the current Open and Distance Learning debate has been stage managed by government sources (Rowntree, 1992:56). It was indeed the Wilson government in 1969 which gave great financial and political support to the Open University, the organisation which is the very embodiment of open and distance learning, and seen as a great socially inclusive organisation opening the doors of higher education to those who traditionally had been unable to access degree level qualifications. The word *Open* in *Open University* was used to embody *access for all*. Over time the organisational structures of learning have been viewed in *open* terms leading to confusion as language mutates over time.

The Open University offers opportunity for learners to study at a distance at an individually designed time and pace for degree level qualifications whilst the learner still keeps a foot on the full-time career ladder. The organisation claims that in more than thirty years of operation it has opened the door to higher education for more than two million people (www.open.ac.uk). The Open University is the embodiment of open, flexible and distance learning and their publicity material uses these terms synonymously.

The Open University has been very much involved in harnessing the power of new technology to deliver courses (Hargreaves, 1998:41) and it is the use of such technologies in the learning and teaching process which is being studied in this research. Currently, more than one hundred and fifty Open University courses use Information Technology to enhance learning in various ways including virtual tutorials and discussion groups,

electronic submission of assignments, multi-media teaching materials and computer mediated conferencing (www.open.ac.uk/background). At the time of writing the organisation maintained that *five courses are delivered via the internet* (www.open.ac.uk/background).

The model of using technology to enhance learning and teaching and the assumed benefits associated with this approach are articulated in many government reports (see Chapter 4 of this thesis). It is hardly surprising given government support for the Open University, the Open College and the Open Technology Unit, that government reports in the 1990s (DfEE, 1998; DfEE, 1999a) are focusing strongly on the benefits of enhancing new technologies in support of the Learning Age (Forsyth, 1997:10).

3.2.2 Resource Based Learning

A term that has structural connotations, and used to describe the use of information technology as the main medium for course delivery, is commonly referred to as Resource Based Learning (Thorne, 1999:45). The term was first applied to describe independent learning through the use of a variety of different paper based sources such as lecture notes, handouts, text and reference books, journals, magazines and newspaper articles (Beswick, 1988:12). Teaching materials necessary for the delivery of set elements of a course were prepared in advance and brought together as a self-contained product. In the third millennium the term *Resource Based Learning* has come more and more to be concerned with electronic formats of learning resources (Dalglish, 2000:1). The use of

computer technologies to deliver packages of teaching and learning are examined as the College in this research established a Resource Based Learning Centre.

3.2.3 Virtual Learning

Huge advances have been made in the use of information technology during the last decade (Thorne, 1999:1). Potential is said to be even greater than that realised to date (Thorne, 1999:56). It is now possible to access data and present information sources from almost anywhere in the world. Multimedia capability now extends to video, dynamic graphics, simulation and other presentational techniques. The potential of Resource Based Learning has been further enhanced through the capability of technology to include interactive multimedia computer based learning (CBL) courseware linked to the World-Wide Webb (Thorne, 1999:57). In addition, technology based learning can be integrated by means of electronic conversion and development of learning materials and supported by computer mediated conferencing (CMC), video conferencing, discussion groups, formative and summative assessment (Thorne, 1999:57). Computer and Information Communication Technology can be a powerful tool to facilitate learner centred learning with materials easily accessed by the learner any time and anywhere. Such a broad range of potentiality for teaching and learning is being referred to as *Virtual Learning* (Thorne, 1999:14).

3.3 Discussion

The terminology used to describe the different practices involved in teaching, which differ from the traditional ones of set time, place and pace, is various. The issue is not simply one of structural difference either, for the different methods of delivery involve different approaches to learning, different philosophies and different beliefs about the relationship between learning and teaching and those involved in the process. Lewis (1998:12) refers to the *constructive model* of learning which these methods involve. In this model, learners negotiate knowledge and meanings, multiple perspectives are encouraged and information is wide-ranging and ever changing (Lewis, 1998:12).

The challenges to pedagogy resulting from the changing nature of course content and the academic debate around what actually constitutes knowledge (Hargreaves, 2002:1) can be addressed, it is suggested (Calder and McCullum, 1998:2), through the use of computer designed packages which give the learner the freedom to negotiate each section of the required course one stage at a time. The new delivery methods encroach on our traditional approaches to teaching and learning (Holt and Bonnici, 1988:87). There are however subject domain differences which make some subjects more adaptable to technological delivery than others although the regular references to ICT, present in government policy documents, fail to address this issue (Elliott, 1999:5). In fact, policy directives can be shown to pay minimal attention to learning and teaching and to the needs of the student in the learning process (Elliott, 1999:5).

It is feasible that the new technologies may become the tools of the already powerful to maintain their power. Kenway (1992:14) refers to the *markets /education/ technology triad*. This triad is the basis of the theoretical critique offered in this research. However, it is also feasible that the use of technologies could foster a less socially divisive education system which opens up opportunity for all by limiting the effects of labelling (Becker, 1995:12), the self-fulfilling prophecy (Rosenthal and Jacobson, 1971:10), and the selection and de-selection of culturally accepted knowledge (Bernstein, 1977:10). It is not the purpose of this research to critique any development which provides greater opportunity for those denied access in the past. However, the theoretical model proposed here suggests that education will still function and still be used by the powerful to maintain their power. This can be illustrated by reference to the Dearing Review of Higher Education (NCIHE, 1997) which highlights concern about the increasing proportion of the population in lower socio-economic groups who experience greater disparity in income and wealth from their employed neighbours leading to a perceived polarisation of society. The emergence of this *underclass* is seen as a threat to social cohesion and inclusion (National Institute for Adult Continuing Education, 1997:63).

The concern, the researcher suggests, is not for those individuals who experience a limited quality of life, but for social stability and the economic prosperity of the powerful. The change to new technologies is being advocated as part of the government rhetoric of globalisation, marketisation, and economic prosperity (Schetley, 1990:13). New technologies are being presented as imperatives in the 21st century for economic prosperity and survival. The focus is no longer on skills for a job for life, but on

adaptability, flexibility, change and a life-long commitment to learning new skills for all the socially included and those previously excluded (DfEE, 1998:2). The changes that ICT will bring to learning and teaching cannot be ignored (David Melville, then Chair of the FEFC keynote speech to National Institute of Learning and Teaching 09-11-00):

I consider that the continuing strategic development of ILT (Information Learning Technology) in colleges is unstoppable: not necessarily because it is the right thing to do,, but because the world outside will make it so. Inexorable change is in the air and most of it is information and technologically focused. Our students will demand that we fully embrace and exploit ILT for their benefit.

Traditionally in Post-16 education, the lecturer has controlled the extent of information imparted to the participating students. In Higher Education, students have been encouraged to seek out information and to question within established boundaries (Laurillard, 1993:13). New technologies take away the authority and power of the academic as giver and controller of knowledge. The selection and de-selection of views presented by different parties may no longer be publicly ignored (Laurillard, 1993:45).

3.3.1 Is Resistance Likely?

As the main messages of popular culture are today transmitted through resources such as television, records, videos, and information technology linked resources such as email, and web technology (media which are owned and controlled by the powerful), it begs the

question as to whether out-right resistance to proposed curricula change is ever likely.

ICT may have been used to create minor disruptions as in the case of world virus attacks (for example, 14th February, 2001 when the email message *I love you* spread a virus to millions of computers) but global control was soon re-established and checks put in place to guard against future disruptions. With the monopoly of power in the hands of the already powerful (i.e. those in positions of established authority within the capitalist system so clearly identified in the work of Bowles and Gintis, 1976:23), it might be helpful to adopt Elliott's view that resistance to the use of ICT in learning and teaching will be futile (Elliott, 1999:23).

For the sceptics who think that ICT is a trend or current fashion, it might be useful to remind ourselves of what Socrates said about the ability to record information in handwritten form (Socrates quoted in Beswick, 1988:4):

Those who acquire it will become forgetful; they will receive a quantity of information without proper instruction and be a burden to society.

Today, we see a complete reversal of the situation: those who do not acquire the ability to record information are generally reliant on a welfare system to provide for their needs (Murray, 1998:23). The next question to ask is whether the same will happen in the education system to those unable to access computer technology, for whatever reason. If *face-to-face* teaching has failed to engage a percentage of the population who then find themselves excluded by an inability to find employment, will computer technology be

better equipped to engage this section of the population? Will technology succeed where personal contact has failed, or will the result be a greater polarisation in society between those who can access the cultural capital required to *succeed* and those who cannot?

The National Institute for Adult Continuing Education (1997: 9) indicates that:

The new technologies have great cost implications and require more training, resulting in greater exclusion for those who do not have the confidence or financial support to succeed.

A greater reliance on computer aided technology is an ubiquitous phenomenon of everyday life (Atkinson, 1987:2). Couture (1987:34) suggests that in organisations where those in managerial roles need to implement change, new technology is often introduced to enhance productivity. The introduction of technology causes disruption and gives managers an advantage over the workforce. The underlying conspiracy theory is complex and, although interesting, is not the main focus of this research. There is an alternative theory which suggests that the economically and ideologically powerful have taken the means of those who might resist and harnessed it for their own requirements (Gunter, 2000).

Information technology as a source of knowledge delivery puts power firmly back into the hands of those who rule and control the educational system. Gramsci's identification of culture and ideas of hegemonic control will lead, later in this thesis, to an assessment

of management theories which acknowledge the significance of culture at the organisational and individual level (Fidler in Fidler et al., (eds)1997:35-51).

3.4 Use of Language

During the period of this study, the terminology to describe learning and teaching using computer technology has itself developed to accommodate the multi-faceted nature of the medium under discussion. As we see in David Melvilles', speech part of which is quoted above, the use of the term *ILT* (Information Learning Technology) is applied. This change was reflected in a number of other papers presented at the same conference (Learning and Skills Conference, Warwick University, 12th December, 2000). Another illustrative example of this can be found in the Moser report (DfES, 2000b) where mention is made of *ILT* enhancement of learning through the potential of technologies to support the learner (DfES, 2000b:12).

The examples above represent a shift in the use of language with no supporting definitions to give clarification. Government rhetoric appears to be moving the *ICT* debate away from structural issues of *ICT* as a support to the learner to ones of pedagogy, with *ILT* as a learning delivery tool, without any reference to teaching practice or learning theory. This document will continue to use the term *ICT* but this has been a useful illustrative example of how language and terminology are being manipulated without the associated clarity to encourage debate about these issues.

The language used to describe learning and teaching using ICT has been discussed. It is ever changing and re-forming (Mann and Stewart, 2000:12). The next chapter moves to examine, at a macro level, government policy which is linking ICT to increased access and participation in education.

Chapter 4 Examining the Policy

4.1 Introduction

This chapter reviews the policy directives which are implying a strong association between the use of ICT and increased opportunity for a wider group of the population. The need to offer education to a wider socio-economic group of the population is seen as key to economic success and social stability (DfEE, 1997; DfEE 1998). The thread which links together the documents presented in this chapter focuses on policy, in relation to prosperity, and the role that ICT will play in the educational advancement of a wider section of the community than has participated in education and employment before.

4.2 Government Policy

The FEFC defines widening participation as increasing access to learning and providing opportunities for success and progression to a much wider cross-section of the population than now (FEFC circular 1997/08). The potential for ICT to widen participation and promote lifelong learning (see glossary) is routinely regarded by many as substantial (Elliott, 1999). The links between the greater use of technology, widening participation, lifelong learning and social inclusion have been clearly established in a number of key reports (DfEE, 1997; DfEE, 1999), to the extent that few challenge the assumption (Elliott, 1999).

If educationists can regard it as potentially plausible that *access to emerging technologies is a function of wealth* (Fitzsimmons-Hunter and Moran, 1998:158), then proactive funding linkages between ICT and the Learning Age may foster *enablement through technology* (Fitzsimmons-Hunter and Moran, 1998:159) for the socially excluded. Strong encouragement from government provides, potentially, a situation rich with opportunities for the development of ICT to widen participation and enhance lifelong learning (DfEE, 1997; DfEE, 1999). The rhetoric, it is argued, has been so strongly articulated, that few stop to question how, or indeed whether, the vision is to be achieved (Elliott, 1999:24).

Careful examination of the relevant policy documents which support the *Learning Age* (DfEE, 1998) illustrates how the links between ICT and learning and teaching have been established. The Kennedy report, *Learning Works: Widening Participation in Further Education* (FEFC 1997a), commits very definitely to the role of Further Education, using innovative technologies, to recruit many young people who have previously not engaged in education. A warning sentence, however, emphasises the importance of lecturer contact and tutorial supervision (FEFC 1997a,:17):

A coherent system of information, advice and guidance is essential to widen participation. The design and delivery of learning programmes must include extra help for people who have previously not succeeded.

The Tomlinson Committee report on Inclusion (FEFC, 1996) identifies ICT as a tool to support learning for students with specified difficulties. However, there is within the report a clear message concerning the role of the teacher and the significance of that relationship in the learning process (FEFC, 1996:33). The teacher's relationship with the learner is identified in the Tomlinson report as one of the major factors in determining how successful learning will be.

The outcome of these reports can be seen in the Connexions strategy (DfEE,2000c) and the Basic Skills Agenda (DfEE, 2000b), both of which have been designed to support learners who have not traditionally participated in or benefited from education.

Reports specific to the Higher Education sector have also focused on attracting different learners. Close examination of policy documents reveals the same strand of thought identified above which links access for different learners using ICT to support need. The discussion below illustrates how policy relating to higher education institutions is advocating the same agenda as that identified for the FE sector.

The review of Higher Education, led by Sir Ronald Dearing (NCIHE, 1997), as discussed in Chapter 2 and 3, presented a vision of higher education for the new millennium in which lifelong learning is to be the norm. The report gives recommendation to a number of initiatives to promote higher education as the tool for achieving a learning society.

The report links to, albeit not explicitly, the Kennedy report on widening participation

(Elliott, 1999:99) and makes the point that the objective of future recruitment should not simply be *more* students but *more, different* students (NCIHE, 1997:107).

4.3 Widening Access

The Fryer report develops the theme (Fryer, 1997c:1) set out in the government reports of that time:

Both the Dearing and Kennedy reports focus our attention on the problem of the social composition of post-school education. If we want to shift to lifelong learning for all, for the many and not for the few, as Labour says, we have to correct the problem of the skewed population in colleges and universities.

The Dearing report has been much criticised (Trow, 1997:15; Elliott, 1999:5) for missing the opportunity to reflect the needs and concerns of those working as students and teachers in the university sector and to link these concerns to those of their counterparts in further education. As Trow records (Trow, 1997: 26):

There is an extraordinary amount of exhortation to staff to do more with less, but very little feeling for academic life as students and teachers live and experience it.

The Dearing Review of Higher Education (NICHE, 1997) extols the power of ICT to reach out and include sections of the population who have previously been

under represented in the university sector. The recommendations made by Dearing are very thorough and include specific reference(Recommendation 9:23) to the responsibility of those working in HE to ensure that the benefits of ICT are explored and applied in educational institutions (NICHE, 1997:34).

Trow maintains that the Dearing report (Trow, 1997:26):

In those large sections that address the private life of higher education, the life of teaching and learning, simply does not know what is going on inside the colleges and universities, but still pronounces with an air of great authority about what should be happening.

4.4 The Learning Age

The Green Paper entitled *The Learning Age* (DfEE, 1998) was seen by many as the paper to bring together the policies advocated in the early to mid 1990s (Elliott, 1995:5). The paper sets out a vision of a knowledge based economy with investment in human capital such to establish the UK at the cutting edge of economic change in the millennium. The modernisation of post-compulsory education in the FE and HE sectors is seen as a prerequisite for economic prosperity and social cohesion. The report calls for increased participation from social groups who have hitherto not been engaged in the education process. Strong links are made between engagement in the education process and the ability to achieve national social stability, individual prosperity and personal success.

The Learning Age (1998) links the policies of the last decade and articulates a direction for educational developments in the second millennium. This thesis presents a critique of this ideology through the theoretical perspective of cultural hegemony which sees those in power intent on creating a market approach to education, in order to stabilise the economy and secure their own power position (Gramsci, 1971:14).

4.5 Theoretical Critique

Gramsci's (1971:13) perspective of cultural hegemony provides a useful tool to assess the power that government policy (as the voice of the powerful) can have on what happens in society today. Gramsci argues that dominant ideology influences us at an entirely unconscious level to the extent that the policies of the powerful become commonsense. In Gramsci's model of society (1971:23) once something is regarded as a fact, truth, or commonsense, it is at the same time regarded as inevitable and therefore unchangeable.

It has been shown that a clear statement of intention in relation to a greater use of ICT in learning and teaching, pervades the reports here studied. The Green Paper (DfEE, 1998), falls into the same genre. The stated intention within the document is to use ICT to drive forward dramatic change in the British education system. Increased access is to be achieved through the use of technology (DfEE, 1998:2).

The same Green Paper (DfEE, 1998:56) declares the intention to facilitate the improved network connectivity of all FE and HE institutions working to meet the widening

participation agenda by rewarding institutions which have made progress towards greater reliance on ICT. The British Education Council for Technological advancement (BECTa) was directed by the FEFC in 1999 (soon after the opening of the Resource Based Learning Centre in the FE college here researched) to give substantial grants to institutions that had already made some move towards ICT delivery of learning and teaching (FEFC, circular 1999/06). Any manager responsible for an educational institution would find the promise of such incentives very difficult to ignore. It is feasible that offers of such financial support prompted the dramatic change to the structural organisation of learning and teaching in the FE institution.

The agenda for change has been well articulated in government circles (DfEE, 1997, DfEE, 1998). Change has to be achieved, *How?* is the crucial question. In order to answer the question, a number of models and theoretical propositions are explored which give greater understanding, not only of change as a process, but of the institutions here under investigation.

Chapter 5 Theoretical Context

5.1 Introduction

This chapter describes the theoretical underpinnings of the research and introduces a number of models that give insight into the nature of institutions (Fullan, 1999:26; Lewin, 1993:43; McNay, 1995:6; Perrow, 1976:35). Management theories are rooted in a variety of different disciplines, for example sociology. In this thesis sociological approaches are used to provide an underpinning critique to discuss power structures and social change. Management theories provide a further dimension of criticality in offering practical models to be applied to the research of educational institutions (Gunter, 2001:5). This chapter provides a summary of sociological theory that describes social change. Management models are explored and assessed for the insight they provide into the research data.

5.2 Context

Much has been written about the potential of computer technology to provide flexibility for the learner (see, for example, Calder and McCollum, 1998:12; Hott and Bonnici, 1988:10; MacKensie, 1997:5). Government rhetoric is giving full support to the virtual dimension offered by computer technology (DfEE, 1998).

5.3 The Sociological Perspective

Underpinning this research is the sociological theory that proposes a correspondence (articulated by Bowles and Gintis, 1976:12) between new thinking about learning and teaching and the economic imperatives of a market economy (Elliott, 1998:34).

The ideas rooted in correspondence theory were first formulated in the 1970s when social scientists began to question why liberal education reforms did not appear to work (Paci, 1973; Karabel and Halsey, 1973). Theorists such as Althusser (1968:2), who saw education as part of the state apparatus, and Bowles and Gintis (1976:12), who described a direct relationship between the economic needs of capitalism and the structure and organisation of education, proposed a link between education and the needs of capitalism. This theory critiques the motives of those in power and interprets education as designed to reproduce the existing social class system. Such a critique gives insight into the rhetoric supporting the virtual dimension. Correspondence theory provides a vehicle for a better understanding of the ideas behind widening participation, the learning age agenda and drives towards virtual learning, in that it illustrates the underlying principles of self-interest in a market led approach to education which protects the position of the powerful, whilst gainfully employing the less fortunate. The theory supports the conclusion that the marketisation of education, as discussed in Chapters 3 and 4 of this thesis, represent an undercurrent of a capitalist philosophy of *more for less* (Elliott, 1998:34).

According to Bowles and Gintis (1976:47), the education system exists to produce the labour force for capitalism, both to produce the abilities and skills as well as the attitudes and values likely to endorse capitalist practices. For capitalism, and those who benefit most from its power to thrive in a global market place, a fully productive workforce is essential. The way to engage the disengaged, whether they be young adults or those older, who lack skills and are seen as a costly component of the dependency culture, is to teach them the skills necessary to be fully productive. The skills for the future are, according to government policies (DfEE, 1998), deliverable through ICT rather than by traditional face-to-face methodologies.

One of the criticisms levelled at correspondence theory is its failure to address issues of human activity such as resistance to the structural forces of capitalism as demonstrated by many individuals in various situations (O'Donnell, 1992:23). This is relevant to the consideration of ICT, since a number of cases may be cited when ICT has been used to create organised opposition to government policy (Mann and Stewart, 2000:4). The issue that comes to mind is the use of the Internet to co-ordinate lorry driver and farmer opposition to increased fuel prices (Times Newspaper, 12th October, 2000) in the United Kingdom. Using Internet communication, the lorry drivers and farmers were able to co-ordinate complete road closures and a motorway convoy, which had a considerable impact on the speed of the nation's traffic. By these actions they were able to make press headlines (Times Newspaper, 12th October, 2000) for their cause, thus embarrassing the government to concede on fuel price rises.

5.3.1 Cultural Hegemony

A more thorough critique might be gained by applying Gramsci's ideas of cultural hegemony (1971:34). This theory suggests that class conflicts and power struggles are sometimes fought out through culture. Gunter (2001) develops this critique in her work on *Leaders and Leadership in Education* in an attempt to understand the tensions and contradictions involved in the everyday workings of institutions. She identifies organisations as places influenced by external as well as internal power structures. For Gunter, Gramsci's work is important in identifying the positioning of educationists identified as *traditional intellectuals* (Gramsci, 1971:9) operating within external structures of power and the internal workings of the institutions (Gunter, 2001:11). Gunter applies Gramsci's theory to engage in a debate about education leaders and leadership styles. Leadership issues are addressed in more detail near the end of this chapter.

5.4 Theories of Change

This chapter reviews a number of management theories that support our understanding of change. Selection has been on the basis of perceived relevance to this thesis. In taking a chronological approach it is Weber's theories that are first addressed. Weber's well respected writings (Weber in Cosin, 1972) on organisations form the basis of much of the management theory applied in academic circles today (Weil, 1994:10). Weber's categorisations of power support an understanding of social change with power in organisations seen to rest with interest groups in an elite position in the organisational hierarchy. Many education institutions conform to Weber's specification of a bureaucracy in that they follow the described internal division or separation of tasks, and have

hierarchical structures (as is the case in the two institutions in this thesis, and discussed in Chapter 1) with rules and regulations, and impersonal procedures and employment practices (Hughes, 1985:8). The identification of bureaucratic models in is seen as supporting a greater understanding of how institutions function to achieve their goals (Lunga, 1985:45). Management structures that adopt a Weberian approach focus on rational decision making, predictability and centrally directed control (Davies et al., 1990:5). Such theories written many years ago may seem dated when applied to complex organisations. However Davies et al., (1990:7) indicate that the classical theorists have never been seriously challenged. Weber's view of the control function of management remains central to the understanding of organisations.

Theories of bureaucracy focus on the power of those in the hierarchical organisational structure to bring about change. Change is seen as homogeneous and centrally directed. As outlined in Chapter 1 of this thesis, change in this thesis is discussed in terms of directives emanating from those in power at the pinnacle of the hierarchy who give *top down* instructions for changes to be carried out. The terminology of structure and central control borrowed from the Weberian classical approach enables theorists to interpret the power structures, change directives and decision making sources in an organisation.

This focus on structure and process does, however, tend to detract from any consideration of internal conflict or the formation of heterogeneous groups whose ideas might be at odds with the organisational hierarchy. This thesis acknowledges that professionals working within institutions may exhibit elements of autonomous action (as is the case in the Higher Education initiative reported here in Chapter 7) and as such, be a force for

change. Here the change cannot be seen as emanating from the top but from those within the hierarchical structure of the organisation. In this case the term *bottom up* has been applied.

The term *bottom up* recognises (Ellison and Davies, 1990:33) that in the case of education institutions individuals may exhibit a wide degree of autonomy when deciding how best to achieve change. In the University case the *bottom up* initiatives are illustrative of what Fidler identifies as:

The existence of micro-political rivalry (Fidler, 1997:93.)

The interview data in this thesis (see Chapter 7) are illustrative of conflicting views and perspectives among the staff implementing and responding to change in the case study institutions.

As a response to the focus on structure, many management theorists today consider the Weberian classical approaches as providing only a partial description of the life of organisations (Morrison, 1982; Fullan, 1992). This, it is argued, is particularly the case in education institutions where employees may experience a tension between professional demands and the conflicting demands made by those in the hierarchy (Hughes, 1980:243). Such tensions are visible in the research data as lecturers try to balance the financial demands of efficient course management with the requirement to maintain a quality learning experience for their students.

To address the critique of theories of bureaucracy, the thesis turns to the work of Perrow (1976:37) who defines organisations in terms of a four dimensional model with two axes of definition: namely, *problem analysability*, and *task variability*. Perrow describes his work as drawing upon a *neo-Weberian* approach to organisations (Perrow, 1972:171) which acknowledges the importance of organisational structure but also adopts a human relations (Perrow, 1972:89) approach to organisational analysis. It could be argued that these theories are dated. However the researcher suggests that Perrow's ideas be reassessed for the focus they give to the role individuals play in shaping organisations.

Perrow maintains that organisations are complex entities requiring understanding and definition. This view has its roots in what is generally referred to as a subjective model of management theory (Bush, 1995:93) which is discussed in more detail later in this chapter.

For Perrow, understanding the complexities of organisations is crucial to the way they should be managed (Perrow, 1972:91). He proposes the understanding of organisations in terms of their purpose, with the work performed seen in terms of tasks, some of which could be perceived as routine with well established procedures. Therefore, these procedures can be understood with ease (*well defined*, and followed routinely) and others which are more *non-routine*, having no established process to support their achievement (defined as, *few exceptions*, not commonly followed with a variety of approaches adopted by different people within the organisation). To provide a further dimension to support the understanding of complex organisations (particularly those

subject to change), Perrow defined a change element of *problem analysability*, which refers to the way of solving an issue, whether this be by standard practice or through newly developed procedures (Perrow, 1972:90). The research data in this thesis focus on change in the two chosen institutions, which, involved routine and non routine tasks associated with a variety of institutional concerns (or *problems*). The usefulness of Perrow's model lies in its ability to provide a structure to combine analysis of organisational change requirements (*task variables*) with the need for clear understanding (*problem analysability*). Perrow's model supports assessment of the organisation in terms of the stakeholders involved and, in so doing, provides insights to the different perspectives presented in the data. Perrow's terms of definition might usefully be compared with Campbell's identification of *complexity, diversity, perceptions* and *practices*, as associated with education management (Campbell, 1999:641). Campbell suggested that when problems are thoroughly analysed and tasks associated with the management of change publicly articulated, to facilitate greater understanding, then change will be managed more effectively. Support for this view can be located in the work of Blandford (1997:83).

Perrow (1976:45) refined his theoretical model to suggest that problem and task may be located within one of four categories namely: *well defined, ill-defined, few exceptions* and *many exceptions*, the result being a two-by-two diagram of categories. See Figure 5:1 below.

Figure 5:1 The Perrow Model for Change

Task Variables

Problem analysability	Well defined	Few exceptions
	Ill defined	Many exceptions

Perrow, 1976:45

The categorisations of task and problem in relation to definition and exception will be discussed in more detail in Chapter 7 of this thesis as these categories are used to support the analysis of the research data. The thesis returns to Perrow's model again in Chapter 9 where it is argued that the model has application today and can be used to plan change in education institutions.

There are some theorists who find Weberian and neo-Weberian models give inadequate explanation to change (Lewin, 1993:23; Fullan, 1999:66; Kauffman, 1995:45) in what is being referred to as a period of post-modern uncertainty (Morrison, 1998:2). For this reason, other models and explanations are now explored, the aim being to apply these models to support even greater understanding of the research data.

It would be contrary to the basic ideology of post-modernism to suggest a prescriptive definition of its composition. For Morrison, it implies *fragmentation, unpredictability* and *uncertainty*. When applied to education institutions it leads Morrison to declare

that change is inescapable (Morrison, 1998:3). Morrison calls for a *paradigm shift* in our world view to encompass an ever changing, unfixed world (Morrison, 1998:3).

Those who subscribe to the post-modern condition call for theoretical approaches which acknowledge rapid change and dissolving boundaries of order and control (Lewin, 1993:23; Fullan, 1999:66; Kauffman, 1995:45). The theories they expound are known collectively as *chaos* or *complexity* theories, to permit a perspective that challenges the rather ordered approach implied by more traditional models as offered by Weber (in Davies et al.,1990).and Perrow (1976).

Central to the understanding of chaos or complexity theories is the acceptance that education institutions exhibit certain common characteristics. For Morrison (1998:5) post-modern institutions exemplify four elements: namely, *transformation, evolution, turbulence* and *change*. These elements are synonymous with chaos theory (Fullan, 1999:23). Change in education institutions is endemic (Bush, 1999:11). It is appropriate to pause here and review the focus of the changes discussed in this study.

5.4.1 Change Issues

The focus of this research is change management to a greater use of ICT in learning and teaching. Such a change involves embarking on a journey of discovery. Our understanding of the impact of ICT on learning and teaching is immature and the

circumstances surrounding the impact unknown and somewhat volatile (Noss and Pacher in Mortimore, 2001:45). Interestingly Fullan (1999:66), in the light of the available research data which focus on managing changes to the organisation and structure of learning, argues that the closer change comes to impacting on learning and teaching the less successful it will be. Elmore (1995:5) maintains that educationalists are, in the main, incapable of developing, incorporating and extending new ideas involving learning and teaching.

For Fullan (1999:66), change such as that discussed in this research requires *re-culturation* which, he argues, is more difficult to achieve than *re-structuring*. By the term *re-culturation*, Fullan means a complete re-conceptualisation of professional practice and ideology. The changes under discussion in this research are complex, involving a re-conceptualisation of the ideology at the core of the teaching process. Fullan (1999:18) clearly states that the more complex a change the less it can be forced. Fidler argues that managers working in hierarchical structures need to draw on a number of approaches of which coercion might be one (Fidler, 1996:33). The issue of coercion is one that promotes much debate among management theorists (Fidler, 1996:33; Blandford, 1997:46). The term *coercion* as applied to organisational change is attributed to Weber's writings on power which state that power can be achieved through the charismatic personality of the leader, through universal acknowledgement of his/her authority, or by coercion (Bottomore and Nisbet, 1979:169). The use of the terminology *coercion* is discussed in Chapter 7 of this thesis.

5.4.2 Approaches to Change

Education management theorists advocate a number of planned interventions to support institutional change and improvement (Everard and Morris, 1996; Fidler and Cooper, 1992). In many education institutions today it is apparent that managerial approaches such as the use of strategic planning, appraisal and other strategies have been used to support the everyday running of the organisation (Turner, 1993:5-9). The two education institutions discussed in this research were steeped in the practices associated with management practice as advocated in the 1990s (Browne, 2002:176). Both were heavily involved with strategic planning, staff appraisal and *new managerialism* (Morrison, 1998:56, Browne, 2002:166). The task of introducing ICT was as an additional change element (see Figures 7:1 and 7:2 of this thesis) following a period of great change. It is, therefore, crucial to understand the context and rationale for the changes that occurred in the two institutions in this thesis in order to be able to identify more effectively with the perceptions of the individuals within the institutions here under study.

As Greenfield (in Bell and Harrison, 1997:8) comments:

The self cannot escape the organisation.

Greenfield's approach quoted above highlights the benefits of what are known as *subjective* models of change management, which acknowledge the status and perceptions of the individuals who inhabit the social world of institutions. This perspective is accredited to Greenfield (Bush, 1995:93), who criticises conventional

theory for its simplistic focus on the structural nature of organisations at the expense of ignoring the perceptions and beliefs of those who work within them. Subjective models of analysis place individual understandings at the heart of the organisation, thus permitting the voice and the understandings of those involved to be heard (Bush, 1997:93).

Subjective models acknowledge that the articulated rationale for change can very much impact on the processes adopted and indeed affect the success or failure of the change itself. Reddin (1976:23) identifies five reasons why an organisation and individuals within them may embark on change. The reasons identified are outlined below to facilitate application to the analysis of the research data (Reddin, 1976:23).

The first reason given is *pain*, with the organisation finding its existing state painful. This might involve financial overspend, as in the institutions here under study. A second reason relates to possible *potential*, perhaps to increase student access through providing more flexible teaching methods; a third to *outside influences* (such as government policy directives) and a fourth to a *desire for achievement*. The fifth, labelled *let's do something* is the change which emanates from the lecturing staff at the student interface (Reddin, 1976:23). The fourth and fifth categories might usefully be applied to the University in this thesis. The *let's do something* category cannot be applied to the FE case since the change was planned and clearly explained to the staff (see Appendix 9). Reddin's categories (1976:23) are discussed and applied to research data in Chapter 7 of this thesis. Reddin (1976) suggests that a *let's do something* approach is likely to lead, in the long run, to more rather than less pain. This model,

although somewhat simplistic and open to individual interpretation, provides useful insight into the institutions in this thesis.

5.4.3 Do Subjective Models Provide a Full Picture?

It is important to record that the mission, vision and culture of education institutions, and those who work within them, are influenced by a number of internal and external factors (Fullan, 1999:12). The external elements are present in the articulation of political and economic imperatives, as with government policy on, for example, widening participation where the needs of the economy may be seen to override consideration of the needs of the individual (Elliott, 1999:24). The internal factors are determined by the local and social context (for example, a proposed merger which was the situation in both institutions) and the beliefs and values of the personnel involved (Turner, 1993:5-11). At the time of the study the chosen institutions were responding to external policy directives some of which are outlined in Chapter 4. The personnel involved in both institutions were changing and future stability was also uncertain (see Chapter 1 which discusses the similarity of the two institutions in terms of factors impacting on their existence).

Wallace (1998:45) identifies the pressures that can exist in education establishments where change involves the *life blood* of the organisation, as in the case of the two institutions in this research, namely learning and teaching. Change introduced whilst organisational members are coping with everyday operational demands can be, according to Wallace, even more problematic (Wallace, 1998:45). For this reason it is suggested by the researcher that the management models discussed so far paint only a partial picture thus requiring further exploration of management models in order to

develop more thorough understandings.

5.4.4 Paradigm Shifts

It has been suggested that in times of great change institutions experience a *paradigm shift* (Morrison, 1998:3), during which time the values, ethos and culture of the organisation can become confused, poorly framed and misunderstood (Johnson, 1992 : 29-30). A paradigm in Johnson's terms is a set of core beliefs which are specific and relevant to the organisation and learned over time. These might usefully be compared with Perrow's definition of *well defined routine tasks and problems* (Perrow, 1972: 90). As Bell and Harrison (1997:4) indicate, change has been endemic in all education institutions in the UK in recent years, as government circulars:

Have regularly carried out veiled (or in some cases, plainly stated) threats on the lines of 'conform and improve or perish.

Developing out of, but different from the subjective models, are approaches known collectively as *cultural models* (Bush, 1998:131). Bush (1998:131) suggests, that subjective models support understandings of organisational change but do not give a complete picture. To address this, the thesis now turns to examine cultural models used to support our understandings of education institutions.

5.4.5 Cultural Models

Cultural models facilitate the identification and analysis of the values and beliefs held by those working within the organisation. Such values and beliefs may be competing or

complementary but will also be supported by shared norms and meanings. The main elements of cultural theory include the identification of the intangible ideas and values given credence by those working in the organisation (Bush, 1995: 130).

For Fidler, the culture of an organisation may be a powerful stabilising force (Fidler in Fidler et al., (eds) 1997:35). The culture of the organisation can be seen in the routine way that the organisation appears to operate (Fidler, in Fidler et al.,(eds) 1997:35). Bush (1998:133) identifies the use of *specific language, certain behaviour patterns* and *material artefacts* as part of the identifiable culture of a given institution.

This thesis will focus on the identification of shared values and beliefs identifiable in the value systems of those interviewed. A further dimension of discussion is borrowed from Fidler (Fidler, in Fidler et al., (eds)1997:35) who provides a helpful distinction between culture, seen as:

The way in which organisational members go about their work

and climate:

The reaction of organisational members to their organisation's culture.

The opportunity afforded the above approach is the focus it gives to the perspectives of the staff working in the organisation and, as an outcome, in providing access to *unofficial* or unrecorded information which Bush describes as the *informal existence of the institution* (Bush, 1995:131). Interpretation of the research data (see Chapter 7) is greatly enhanced by the use of the above definitions of *culture* and *climate*.

It will become apparent through the analysis of the research data that there are a number of competing cultures existing side by side in the two study institutions. This finds

resonance with the work of Fullan and Hargreaves (1992:71-72) and Sergiovanni (1984:8) who identify the complex web of understandings that constitutes the culture of an organisation. Of specific interest is Sergiovanni's research into university subcultures where many areas of conflict and tension become apparent (Sergiovanni, 1984:8). Here universities are compared with a multicultural society consisting of many subcultures seeking to promote and maintain their individual values. Such a tension between perceived groups of staff can be observed in the data collected from the higher education institution surveyed in this research (see Chapter 7 of this thesis).

The focus of cultural approaches on participant values and attitudes is seen to provide a more balanced picture than one which focuses only on the formal elements of the organisation (Bush, 1995:130). Bush critiques traditional models for their focus on structure and hierarchy and their neglect of individual influences. The cultural theory approach recognises that cultural models provide a genesis for organisational action. This is perceived as possible in that, with a clearer understanding of the values held by those working in the organisation, leaders might be able to find greater support for their policies (Bush, 1995:140). Campbell suggests that education management theorists should apply models which are detailed in their understandings of change in order to provide insight into educational change in complex times (Campbell, 1999:641).

Arising from the cultural approaches to change, McNay (1995:6) identified four forms of institutional culture (see page 80) in educational establishments which align with the forms identified by Handy (1993:34). Fidler (in Fidler et al.,(eds)1997:40) provides a

detailed discussion of Handy's four cultural forms and highlights the significant part they can play in supporting the creative and political process of organisational change. Handy describes organisational management as a creative process influenced by existing culture and tradition. To be effective, change managers need to understand the dominant culture of the organisation, so that they can motivate the people within them to promote change. The models need to be understood in terms of the impact of the power and influence possessed by individuals, the work of the organisation and the organisational context. The four cultures are as follows:

- The **power** (or **club culture** Handy, 1985:11) represents the manager as the main control agent making decisions which are entrusted to those she/he entrusts to carry them out;
- The organisation which follows rules and has clearly defined functions is seen as operating with a **role culture**;
- The **task culture** involves teams working on tasks to achieve short term goals and outcomes;
- The **person culture** involves individuals operating for themselves in terms of their goals and needs as individuals.

McNay (McNay, 1995:5) adapted these four cultural identifications to describe organisational forms and produced the following definitions and models. They are as follows with Handy's classification shown in italics:

- The **corporate model** (corporation) (*Power*) involves strong leadership from the top with the senior manager supported by advisory working
-

parties;

- **The bureaucracy (bureaucracy) (*Role*)** an organisation with constitution and rules. Committees deal with exceptions, resolve conflicts and set precedents for future reference;
- **The enterprise model (enterprise) (*Task*)** with operations delegated to project teams who have responsibility for change management;
- **The collegial academy (collegium) (*Person*)** with academics operating autonomously.

The translation and application of McNay’s (1995) model gives the following picture, presented here as Figure 5:2.

Organisational Forms.

Figure 5:2 McNay’s Theoretical Model

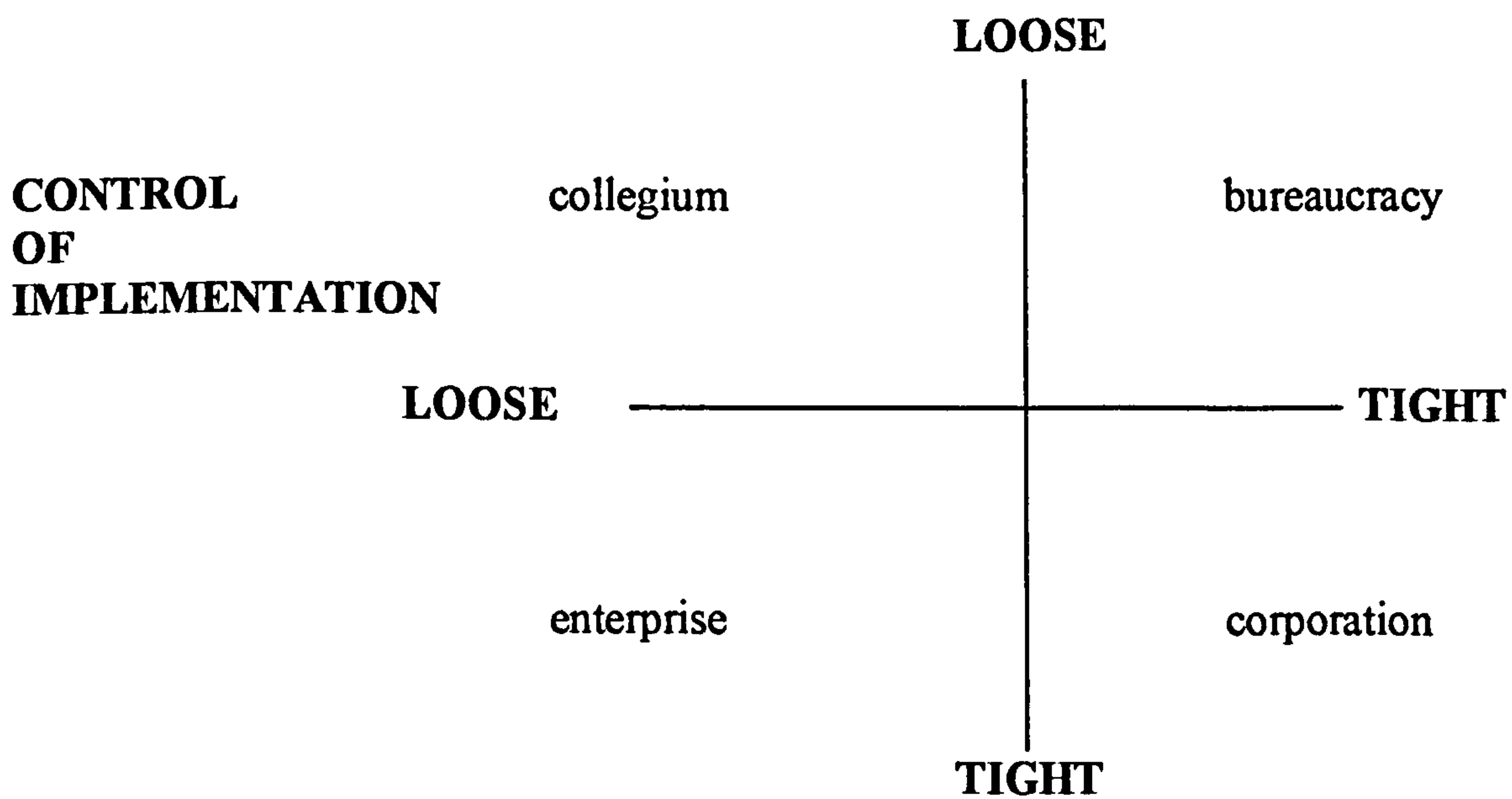


Figure 5:2 According to McNay (1995:5).

5.4.6 Understanding the Model

The theoretical model outlined above takes the four organisational cultures as defined by McNay (1995) and suggests four typologies of organisational structure which emanate from the four cultural forms. Each form is seen in terms of a continuum of control from loose to tight. It is here proposed that the two institutions under study are illustrative examples of two of the categories identified, namely the *collegium* in the University and the *corporation* in the College. This is exemplified further in Chapter 7 of this thesis. McNay's (1995) model represents an attempt to bring together both structural and cultural models in that it supports the categorisation of organisational form and proposes typologies of cultural beliefs and values seen to operate within them.

The cultural model discussed above will be applied to support an analysis of the data.

Prior to this, consideration is given to theoretical models which support an assessment of the rationale for change.

5.5 Leadership Studies

A significant benefit of cultural theory is the opportunity it affords to focus on educational leadership. In recent years, there has been a great deal of interest in leadership studies as part of the movement for school effectiveness and school improvement (Gunter, 2001:32; Jenkins, 1997:1999; Southworth, 2002:79). Fidler (1997) records that the leadership imperative experiences an upsurge in interest when new challenges are presented. This view is supported by a

number of recent initiatives including the creation of the National College for School Leadership based in Nottingham. For Gunter (2001), the key theme of leadership studies is the agency of the leader combined over both self and others. Sergiovanni (1998:39) identifies three types of leadership:

- Bureaucratic, focused on mandated outcomes such as student achievement and financial performance;
- Visionary leadership, focused on bringing about change;
- Entrepreneurial leadership, focused on competition within the marketplace.

Jenkins (1997 in Fidler et al., 1997:198) records that as a result of change and unpredictability, leadership studies have been subject to a reformulation and reassessment. He argues, as does Bergquist (1993), that post-modern uncertainties are resulting in greater collaboration and partnership in institutions with leaders required to empower their staff through creating a culture for change. Jenkins maintains that the role of the leader becomes *educative* in that s/he is required to involve others in the vision that they hold (Duignan, 1990:338). Such a model of leadership requires the individuals concerned to be closely involved with all aspects of the education institution with specific focus given to learning and teaching. Sergiovanni (1998:38) proposes another leadership form be added to his three branched categorisation (see above), that of *pedagogic leadership* which:

Invests in capacity building by developing social and academic capital for students and professional capital for teachers.

Southworth (2002:87) maintains that in the future leaders will need to:

Re-focus on learning.

The request for a re-focus is seen as crucial at a time when new ideas about learning and teaching, such as those developing from the socially constructivist approach (see Chapter 3 of this thesis), begin to have an impact on learning and teaching.

The constructivist approach (Lewis, 1998), which frames learning in terms of predetermined outcomes, is being introduced by what Gunter refers to as *political society* (Gunter, 2001:10). Gunter (2001:10) argues that teachers are currently seen in education institutions as curriculum technicians rather than professionals, carrying out the requirements of charismatic leaders whose interests have been focused, not on learning and teaching, but on managing budgets and marketing (Gunter, 2001:45). Using Gramsci's ideas, which identify hegemonic control through culture, Gunter challenges the divide between teachers and leaders and proposes (as does Southworth, 2002) a focus on learning and teaching. The intention is to create learning organisations which put pedagogy at the centre of their existence (Gunter,2001:45). Such a move is seen to create a culture and climate where collaboration can thrive (Southworth, 2002:88).

Much of the writing on leadership, particularly instructional (or pedagogic) leadership, is relatively new in any assessment of management theory. It is generally applied to the study of the school sector. The researcher proposes that it has relevance in the study of

colleges and universities. This is specifically the case in relation to this thesis since a chasm between structural change (as directed by the manager of the College under study) and pedagogy (as identified in the learning and teaching change initiated in the University) has been identified (see Chapter 1). Leadership models that propose a synergy between things structural and those pedagogic (Gunter, 2002) provide a useful support for the recommendations arising from this thesis (see Chapter 9). This thesis will show that changes involving curricula change, such as those created by a reliance on ICT, require leaders and pedagogues to work together with clear understandings as to how ICT impacts on learning and teaching.

5.6 Summary

This chapter has described a number of management models which support our understanding of change in education institutions. These models will provide insight into the forces at work within the two institutions and as such support the process of data analysis in this study. Watson (2001:56) maintains that all too frequently change is brought about by recourse to what is seen as *common sense* or *common practice* and minimal attention is paid to research models or accepted theory. Glasser and Strauss (1973:34) identify the interconnected links between practice and theory which, they maintain, we neglect at our peril.

The next chapter of this thesis provides information as to how the research was carried out and provides detailed discussion of the choices made in determining the approaches used to carry out the research.

Chapter 6 Research Methodology**6.1 Introduction to the Chapter**

A justification is provided in this chapter for the choice of research methodology. A discussion of possible research methods provides explanation for the use of a Case Study approach. A detailed discussion of the research process provides an opportunity for an explanation of the procedures involved in carrying out this research.

6.2 Rationale

A number of possible approaches to carrying out this research were given full consideration. The final decision was based on what was perceived to be the best solution for the 'problem' under discussion (Busher in Coleman et al, (eds) 2002: 75).

A scientific-deductive paradigm arising out of the classical hypo-deductive experimental tradition was rejected on the basis that there was no initial theory to test. This method which aims at following a scientific method advocated by the philosophical school of positivism is best applied in cases where the evidence is apparent and can be measured in concrete or quantifiable terms. Positivism starts with the idea that the world exists as a

reality, with organisations as real entities, somewhat independent of the people who serve them (Cohen et al., 2000:9). A more subjectivist approach permits research into individual perceptions and allows for the study of people and their interpretations of situations. It was important to research *how* change was impacting on the people involved in the change and to understand individual interpretations of what was happening in the two chosen research institutions. So, a qualitative methodology was selected.

The researcher had limited knowledge of the change processes underway and the changes themselves were innovative at the time that the change was planned. The research method which was preferred was one which focused on natural settings, to enable a full description of the situation and provide opportunity for greater understandings. The approach, known as the *enlightenment model*, (Hammersley, 1999:45) allows description and supported the research aim which was to make recommendations for policy makers and practitioners. The most commonly used research approaches within the enlightenment perspective are Action Research (Stenhouse, 1975:10) and Case Study (Yin, 1989:23). Action Research was rejected on the basis that the researcher had little control over the changes that were underway. The choice of Case Study, as the most appropriate methodological tool, was arrived at based on this being the best method to understand the culture of change in a change environment. The choice of Case Study was made with confidence that it was indeed the most suitable method available to begin to answer the research questions as outlined in Chapter 1 of this thesis.

6.3 Justification for the Choice of Case Study

The research adopted the case study method in an attempt to produce deep and meaningful data that provided a complementary link between research and practice in two education sectors that have not by tradition been well researched (Green and Lucas, 1999: 23; Ainley and Bailey, 1997:12). This is supported by Colin Flint, Principal, Solihull College, (quoted in Ainley and Bailey, 1997:12) who describes Further Education as the 'best kept secret' in our education system.

Cohen and Manion (1994:106) clearly support the purpose of case study as being:

To probe deeply and to analyse intensively the multifarious phenomena that constitute the life cycle of the unit with a view to establishing generalisations about the wider population to which that unit belongs.

A recent example of case study which involves a pre-disposition towards claims of generalisation from the case is found in Bloomer and Hodgkinson's (1999:34) case study based on the progress, or otherwise, of a group of teenagers in education and training.

For some researchers, case study is criticised for lacking generalisability, as required of the so-called 'scientific method' (Atkinson and Delamont, 1985:67). However the advantages case study offers in assisting interpretation and illumination in a complex situation make it a totally appropriate tool for this research. Further-more attempts are

made in this thesis to produce recommendations arising from the investigation, to support others undergoing change (see Chapter 9).

The focus of this research is on institutions and change. Robson (1993:147) identifies a number of typologies for case study and its possible uses. Of the types suggested, this research fits the category of *studies of organisations and institutions* and meets Bassey's definition of education research in that it is a critical enquiry (Bassey, in Coleman and Briggs, 2002:108):

Aimed at informing educational judgements and decisions in order to improve educational action.

At the start of the research the use of ICT to deliver learning and teaching was innovative in educational institutions. Case study was the chosen approach for providing a depth of insight and rich information to map the specific research interest which was the study of how changes involving a greater reliance on ICT were managed. Case study research allows the researcher to delve deep into the cultural webs of the organisation and gain insight into processes, people and perceptions that are influenced by the organisation (Yin, 1989:234). Since the research interest was in how change was perceived by those within the research institutions, case study was considered the most appropriate research methodology.

Parlett and Hamilton (1972:79) state that case study provides *illuminating evaluation* and for Adelman et al., (1976:59) it is *strong in reality*. The strength lies in the researcher's experience providing a strong situational description to interpret and from which to generalise. Another strength lies in the attention to subtlety and complexity of the case in its own right, as well as its possible application elsewhere.

Through case study it is possible to represent discrepancies or conflicting viewpoints of participants, allowing support for alternative interpretation. Adelman maintains that data from case study can be more accessible (Adelman, 1976: 6) than many other forms of research. The language and form used are usually less esoteric and specialised than those of more conventional research reports, and are capable of serving multiple audiences.

As mentioned previously in this chapter, some theorists see case study as providing *illuminative evaluation* (Alderman, 1976:6). Other theorists from a more *scientific* persuasion are less convinced as to the outcome of such research (Atkinson and Delmont, 1985: 67):

The approach denies the applicability of so called "scientific" methods of inquiry, as exemplified for instance in experimental or quasi-experimental research designs. The emphasis is firmly - even exclusively- on "process" rather than "product" or outcomes

In this research project, the exclusivity claims levelled at case study are rejected and the focus is on the illumination provided by gaining insight into the case presented.

The *product* or *outcomes* consist of recommendations and an operational model (see Chapter 9) to support the management of change in institutions undergoing change.

The benefits of case study for research include the aspect that it is *strong in reality* (Alderman et al., 1976:45; Cohen and Manion, 1994:56). The strengths of such reality lie in the researcher's own experience, providing a strong situational description to interpret from and generalise. Also, because case studies are often in harmony with the experience of the reader, they lend themselves naturally to re-interpretation. Case study recognises the complexity and embeddedness of social truths (Tyler, 2000:45):

Case study should contribute to the democratisation of decision-making, by making situations and facts accessible and, at their best, allowing the reader to judge the implications of the study for him or herself.

Attempts at enhancing the *democratisation of decision-making* (Tyler, 2000:45) can be made without drawing attention to the particular case through the publication of research outcomes which make general recommendations without identifying the particular.

Consistent with this approach is the formulation of tentative theories as the research progresses. This approach to case study is discussed by Miles and Huberman (1984:67)

and supports the conceptual underpinning of the research conclusions presented here.

The conclusions in this research are not presented as *laws* in the natural scientific sense of the term but as representations (Shaw, 1979:87) of *an informed point of view* to assist others in planning their responses to similar change issues. The proposals, presented in the form of a model, provide advice and guidance for those managing change which is complex, involving both structural and pedagogic issues (see Appendix 9).

6.4 Objectivity

Since the researcher has had close contact with the institutions here under study, having been an employee in both at different stages of the research, the issue of objectivity must be addressed. Every attempt has been made to present the story as it was told, to design the research to give voice to multiple perspectives and to present the data in an unbiased way. Awareness of the likelihood of allegations of subjectivity have led to great caution on the part of the researcher and continuous self examination as to the credibility of each claim made.

Objectivity in case study research is possibly more difficult to achieve than in other research models. Yin (1994) argues that the researcher has a duty to ensure that if a later investigator followed exactly the same process as that adopted by the first researcher, the findings would be the same. Attempts to achieve such reliability have been the aim of the researcher throughout the research process. The research has been conducted with the researcher always mindful of the particular problems associated with an insider relationship as is the case in this research project.

6.5 Research Design

Case study research involves the use of several different data collection methods (Johnson, 1994), the main ones being interviews, observation and documentary analysis. The methods used in this research are discussed below. They include the more traditional approaches of interview and document analysis, common to the case study approach. Newly emerging research tools, developed through the innovative use of ICT, have also been adopted to provide a number of additional sources for collecting research data.

The researcher was interested in understanding how the change from traditional course delivery to the application of ICT as a tool for learning and teaching had been perceived. In order to measure the impact a number of traditional data gathering techniques were adopted. In-depth interviews were carried out with staff in the two institutions and a questionnaire was given to the students. The questionnaire was tightly structured in the main, with opportunity provided for participants to expand on issues in a final open question. Content analysis (discussed in more detail in this chapter) was carried out on a limited sample of available documentation from the two case study institutions.

Further data were collected electronically as described below. The use of electronic techniques provided access to numerical usage data in the College and conversational data from a conference web site, in the case of the University.

6.6 Sample Selection

The interview candidates from the education institutions were staff chosen on the basis of their position in relation to introducing or being most affected by the ICT initiatives which were under study. Positions of influence in relation to involvement with the courses and students involved in the research became a key determining factor where large numbers of staff were involved. To aid comparison, the four interviewees from each institution were selected according to role within the institution so as to give as many elements of similarity as possible. Given that the two institutions were very different, one senior manager was interviewed from each institution. The course leaders of the selected student groups were also interviewed, as were two lecturers who were involved in the course. The interviewees were selected on the basis of involvement with course implementation in the two institutions.

The students in the research were all mature (that is over the statutory age for claiming free education which is 19), involved in gaining an additional qualification and required to use ICT as part of their course. The University students were studying for a masters degree using virtual technology, while the College participants had enrolled on an access programme designed to provide opportunity for mature students to enter university without the traditionally required GCSE and A Level qualifications.

Twelve students were included from the University, a small sample, but the only students known to the researcher to be using ICT in their programme at the time of the research.

Since all the students in the College had been required to use the RBL Centre as a replacement facility for ten percent of what was traditionally face to face teaching, then a group of similar size and ambition, in that they were involved in Continuing Professional Development (CPD), was selected to aid comparison. The College students, 19 in number, were all studying for an access qualification to gain entrance to university. They were, like their University counterparts, all mature and motivated to learn, representatives of the emerging *learning society* (DfEE, 1998b:24).

The process for selecting the student sample was different in the two institutions. In the Higher Education institution the sample was self-selecting as all who had selected to study using the flexible learning masters programme were chosen in the sample. In the second institution one specific course was selected for study. The determining criterion for selection was comparability with the self-selection group in size, age and course focus. The students in the Higher Education sample were not necessarily computer proficient and were all studying for a further qualification at higher degree level.

The access students from the College were approximately the same age spread with only one member under the age of 25. They were not computer proficient and were studying at a new academic level for them, in order to gain access to a degree level qualification. The match was not exact but as near as could be found in the two different organisations, given that the main student group served by the College would be students under the age of 18. The access students were unique to the College in that they were the only mature group studying at an academic level that could lead to higher education. The University

students were unique in that they were the only students using computer conferencing to achieve a higher level qualification. The College students were expected to study in the RBL Centre for two hours a week in a 20 hour week timetable. The HE students were completing their course using virtual technology as a replacement for traditional classroom delivery, although they had all met for a two week summer school at the start of their course.

Clearly, this method of sample selection is far from ideal, as the HE cohort, as a group, had chosen the ICT option for course delivery and were by their existence an audience who were likely to be in favour of the initiatives under investigation. However, it is my considered opinion that students who have selected a programme or who are involved in a successful programme, are still able to provide constructive feedback to support further developments. Indeed, such students may be more interested in improving the facility because they have seen some of the initial benefits.

The choice of group in the FE College was determined on the basis of finding another adult group, interested in educational advancement, of similar size, who might for pedagogic reasons be motivated to respond. Interestingly a 100% response to the questionnaire was achieved in both cases, although data collecting techniques might have helped since both questionnaires were given out during teaching sessions and returned immediately to the session leader.

6.7 Student Programme

The programme of study undertaken by the FE cohort in this research was designed to provide an opportunity for mature students to enter higher education. The course, named appropriately as an 'Access' course was offered as a national programme validated by the Open College Network, who monitor the academic standards of the qualification, to provide a route into university for mature students who do not possess traditional entry requirements. The programme is considered to be an intensive academic course which encourages the students to develop critical and evaluative skills in preparation for entry to university. The course is externally examined and a pass is recognised by a high percentage of universities as an acceptable qualification for entry into higher education at undergraduate level. The course itself contains compulsory modules in Mathematics, and English as subjects of study. A choice of modules available in the College enabled students to specialise in one of a number of academic strands such as Language, Sociology and Psychology and Science.

The students in the University were completing a masters degree in education which operated in tandem with a taught *Home* MA (see Glossary). This meant that the two University programmes followed the same structure and content, were delivered by the same team of staff and differed only in that one did not use computer conferencing to support course delivery. The University students participating in the study originally enrolled on the MA *Home* programme and had attended a summer school in 1998, during which they were offered the opportunity to study *on-line* should they wish to do so.

Twelve of the forty-five students chose this option, meaning that their programme of study following the summer school would use ICT in the form of computer conferencing, to support them in the completion of their course. The traditional route involved paper correspondence in the form of a distance learning model (Beswick, 1988:25).

The University programme required that participants pass nine modules. A module, is defined by the University, as a discrete unit of study. The module of study is outlined in terms of aims, learning outcomes, assessment and student effort. The allocation of credit and level of achievement is predetermined and is awarded on successful completion. Each module followed a similar structure of theoretical input from a tutor, a workshop activity, set tasks, participant led seminars in a *chat room*, followed by one-to-one individual tutorial with a tutor to refine the focus of the assessed work. Set paper based texts formed the basis for the work studied in each module. Throughout the course an open discussion board enabled the staff and students to discuss their concerns. The conferencing facility could not operate synchronously since the students came from all over the world, across boundaries of hemisphere and time zone. This added the opportunity for reflection and time for consideration not available in other *chat* situations such as face-to-face group sessions.

6.8 Research Aim

The aim of this research is to explore change involving the use of ICT in two education institutions, to reflect on the impact of change in meeting current education objectives

and make recommendations for future change strategies involving the introduction of ICT in learning and teaching.

6.8.1 Objectives

The specific research questions to be addressed were:

- What factors were promoting change in the two education institutions?
- How was change to greater reliance on ICT introduced in the two institutions; what strategies were adopted; what were the motivations, the driving forces and the outcomes?
- What institutional factors impacted on the change to ICT and how did the staff perceive the change? What were seen to be the advantages, disadvantages, issues and future potential?
- Was the use of ICT in learning and teaching perceived to be improving access for the student, widening participation and supporting greater inclusion?
- How did the staff respond to a greater reliance on ICT in learning and teaching; how did they perceive the change in terms of student experience and quality issues?
- How did the students respond to the ICT initiative, who were they, what previous experience did they have of using ICT for learning and what were their current experiences of the use of ICT to support learning and teaching?

As mentioned in Chapter 1, the focus of the research is ICT use in learning and teaching in education institutions, with the purpose of investigating how change is introduced and the concomitant effects on staff and students.

6.9 Methodological Approach

The study sought answers to the research questions by means of semi-structured interviews with four of the key personnel from the two institutions. A pilot study was used to trial the questions to be used during the interview. Data were collected from the students by means of a questionnaire which was first piloted and then given to one cohort of students from each of the two institutions. A further research method was adopted which involved the use of cyber-ethnography and technologically produced usage data. Explanation of these methods is provided later in this chapter.

The pilot interviews revealed a number of factors of similarity in the two institutions such as financial difficulty, merger discussions and indications of change amongst those in senior management posts. The information gleaned in the pilot interviews was used to support the design of the research interview and modify the questions put to the interviewees. The identified similarities and differences between the two institutions are recorded in Figures 1:1 and Figures 1:2 in this research.

Wiseman and Aron (1994:82) describe the pilot interview as being, *like a fishing expedition*. Having carried out two pilot interviews, one in each institution, an interview

schedule was designed with broad themes of interest closely linked to the research questions. It was then crucial to interview personnel within the two institutions who had broadly similar roles in relation to the change issues under study.

Questionnaires provided another data gathering method, this time to elicit student opinion about the changes involved in the use of ICT. The aim was to design the questionnaire to pose the same questions to both cohorts of students. General introductory questions were asked about age, gender and rationale for choice of course. Interest in these data was linked to a need to understand the student cohort in relation to government gender targets for widening participation. A number of other questions were related to ICT usage and access to other facilities. These questions were posed within a closed structure to support numerical assessment and comparison. A final open-ended question provided the opportunity for respondents to reflect, in more detail, on their experience of using ICT in relation to the course of study undertaken.

The computer generated cyber-ethnographic data were collected by accessing the Masters degree *chat line*. Access was provided through the course tutor's access code once the course tutor had confirmed with the course leader and the participants that those involved with the course had no objections. The chat sessions for one term were downloaded and analysed. The actual data are available in Appendix 6. The computer generated ICT usage data from the College were printed out after a research period of one term and taken away for analysis.

6.10 Choices

As the two institutions were researched in parallel time it was not feasible for the researcher to *go native* and participate as a student or staff member in both institutions at the same time. The researcher had full approval from the senior managers in both institutions and complete access to all public domain institutionally produced information in both institutions, had been or was employed in both institutions at some stage during the research period, and had been or was a student in both institutions at the time of the research. Issues of confidentiality prevent complete identification here: suffice to say that the researcher is aware of the need to protect the identity of those involved in this research, to safeguard working relationships with all involved, and to protect the continuing success of both institutions, whilst presenting an accurate picture. As discussed earlier in this chapter, the closeness of the researcher to the organisational operation of both institutions raises issues of objectivity which were at the forefront of the researcher's mind at all stages of the research process.

Given that the research was located in two education sectors, it was crucial that the data collecting tools not only matched together as closely as was possible, but produced a depth of analysis which enabled the research to reveal multiple sources of evidence that could be analysed for recurring patterns and themes and to provide evidence of reliability. The aim was to produce a research design that was: *relevant, rigorous and understandable, able to produce useful results that were valid, reliable and believable* (Patton, 1990: 67).

The use of questionnaires to canvas the opinion of all the staff was rejected on the basis that the focus was deemed to require depth not breadth. The use of ICT in course delivery was innovative in both institutions and it was, therefore, decided that a research method that incorporated all the staff, whether involved in ICT in teaching and learning or otherwise, would not be beneficial. The research questions were articulated to examine how ICT was being used to facilitate government initiatives to widen participation and support inclusion. The research design naturally leaned towards qualitative ethnographic material, so that the research could tell the story as it was. Evidence from numerical data could then be used to provide triangulation.

6.11 Triangulation

Cohen et al (2001:24) describe multi-data collection as *methodological triangulation* and advocate the benefits of multi-method approaches in giving a holistic view of complex issues. In this research, where two different institutions have been put under the microscope, triangulation between the two institutions has not been possible. To counteract a possible claim of weakness, internal triangulation of the data, collected by a variety of sources such as interview, questionnaire and the analysis of electronically produced data, has been the aim. To strengthen claims of validity a number of contrasting methods have been used. These methods which include content analysis of official internal documentation from the two institutions, interviews carried out with the staff, questionnaires given to the students and electronically produced data are discussed in this chapter.

Theoretical triangulation has also been the aim, with the consideration of a number of theoretical viewpoints pertinent to the themes which form the focus of this thesis. The small scale nature of this study has limited the scope for generalisability. Nevertheless, the content is of practical relevance as when the outcomes of the thesis are extrapolated from the particular to the general, then recommendations arising can guide other institutions involved in managing change involving the use of ICT for the purpose of education.

6.12 Interview Design

The choice of semi-structured interviews as a method of data collection was based upon a concern to uncover and enhance understanding of the motivators for change in the two selected institutions. Structured interviews, where content and procedure are organised in advance (Cohen and Manion, 1994: 273) were rejected for their rigidity. It was crucial that an opportunity was available for further questioning should an issue of relevance arise. There was a need also to be able to adjust questions slightly within the main themes depending on the particular role of the individual within the organisation. To provide depth it was essential to maintain a certain amount of flexibility within the pre-designed themes of the interview schedule. Data which were qualitative rather than quantitative were required to allow the flexibility for probing certain issues that might be raised. The research was in many ways exploratory and the use of semi-structured interviews enabled progressive focusing on the key issues.

The interview questions were designed to:

- Encourage ease of debate;
- Provide an opportunity for the interviewee to respond freely;
- Focus on the research interest in change, the introduction of ICT and issues of increased student access using ICT as a teaching and learning tool;
- Provide answers to the research questions.

6.13 Questionnaire Design

Structured, closed questionnaires were given to the students. Ease of completion and simplified design underpinned the need to provide information about the student cohort and their experiences of using ICT as a learning tool. The questionnaire was of simple design so that it could be communicated electronically if necessary. Questions were asked about level of ICT experience, use of ICT facilities, impact of ICT on teaching and learning, and perceived role of ICT in the future. A final open-ended question provided opportunity for further comment; this facility was used by 27 of the 31 students canvassed.

It was vital to improve the opportunity for comparison between the two institutions as, although they displayed many similarities, they were also different. So rigid categories of response were imposed with opportunity given for further comment should the student require it. A pilot questionnaire was used with a cohort of full-time students in the FE College who were asked to comment on any difficulties they found with completing the

questionnaire. The only criticism received focused on the space available for comment. This was adjusted in a new design and some problems associated with question interpretation were addressed in a re-wording of one question. Copies of the questionnaire can be found in Appendices 1 and 2. A breakdown of the results is in Appendices 3 and 4.

The choice of questionnaire as a method, presented to the students face to face rather than electronically, enabled full research coverage of every participating student from the selected cohorts. The electronic option would have been used had any of the students been absent during the research period: this did not prove necessary. One of the strengths of questionnaires is their ability to reach large numbers of respondents with relative ease but response rates may be low (Cohen et al., 2001:23). This was not a problem in this case as the researcher had direct access to the students.

6.14 Cyber-ethnography and Computer Generated Data

The research method chosen provided the opportunity to employ two other data collection methods. These were the use of *cyber ethnography* and computer generated research data. Both methods have resulted from the increasing use of ICT as a medium to support learning and teaching and although different methods were used in each institution the data produced were revealing. Cyber-ethnography involves overt or covert observation and even participative discussion over the net with respondents involved in using virtual methodologies (Ward, 1999:9):

A considerable amount of research time is spent observing within virtual communities. Researchers can become immersed in the culture they are studying and gain valuable insight into the various social processes that occur within that particular group.

The process of carrying out cyber-ethnography has not been well documented in textbooks. Cyber-ethnography is not well known within established research circles but it has been used in very specific situations in which researchers are examining interaction, communication and community on the Internet (Jones, 1998:23). The cyber-ethnography web site defines the research method as *a study of online interaction* (<http://www.pitt.edu-gajjala/define.html>: accessed 01/08/00). This data gathering method is very new in the realms of sociological and educational research (Ward, 2000: 41):

In a rapidly changing global society new demands are made on sociology. In order to effectively document and critically analyse these changes a suitable method must be developed.

Cyber-ethnography involves the researcher in observing within virtual communities. The researcher can become immersed in the developing culture s/he is studying and gain insight into the social processes that occur whilst students are participating in their teaching programmes. The researcher can be a hidden observer in the *chat room*, can participate in discussion if they wish or just watch as the virtual conversations develop in front of their screens. This type of observation allows the researcher to grasp the nuances

of virtual culture and the social processes that occur on a particular web site. Cyber-ethnography is used in this research to provide useful insight into the teaching and learning experience of a small cohort of students using virtual communication as a learning medium.

6.15 Numerical Data

The opportunity to use cyber-ethnography was not available in the FE College as the students were not using virtual communication to participate on their programme.

Another methodological approach had to be applied. It was decided that 'best match' could be achieved by using data that were available as a result of the use of ICT. This involved interrogation of computer generated numerical data from the network system.

All the computers in the RBL centre were connected to the College Intranet with a recording mechanism attached to monitor usage. A record was produced of all the 'log on' information available for the winter term of the 1998/1999 academic year.

The result was an electronically collated record of access to the operational systems and CD-ROMs in the Resource Based Learning Centre. The data produced were not student cohort specific in the case of the virtual data but they did provide information on whole College usage which could be used to triangulate against the staff interview and student questionnaire data.

The computer generated access data provided numerical information about student computer usage down to the detail not only of number of accesses but also the type of programs being used. To give a specific example, a complex print out of data when interrogated revealed that on a specific date a CD Rom for teaching French had been accessed three times. Analysis of these data provided usage information and demonstrated the functional use that students were making of the ICT facilities that were provided.

The use of two different methodological approaches is difficult but necessary in the circumstances as no *virtual data* were available from the FE College. It is intended that the data produced from the two different methods, which provided technical data about how ICT was being used as a resource, be accepted as relevant and revealing. This is done not only for the story they told, but to exemplify emerging data collection methods to be considered as tools for future research.

6.16 Content Analysis

Content analysis was carried out on the policy paper which launched the ICT initiative in the FE College. To aid comparison, an official document from the University, in the form of the strategic plan was also assessed. The two documents are different in focus and style and this could be seen as a weakness. The lack of information available from the University, however, made this the document most likely to provide

evidence to compare with the College policy paper, since planning for change was a theme common to them both.

Document based research is considered low key and non-invasive, revealing and reliable (Robson, 1994:243). Busher, writing in Coleman and Briggs (eds) (2002), identifies documentary analysis as *indispensable* in case study research. To carry out the analysis, tools provided as standard in Microsoft computer packages, were applied to the documents so that an assessment could be made of the language, style and structure.

6.17 Legitimacy and Credibility

Every attempt has been made to design a research project that can include data that will help shed light on the issues being researched (Patton, 1990:12). The qualitative paradigm, selected as the framework for this research, was based on the belief that through research, detailed stories have to be told so that research can lead to the promotion of action. Various data collecting methods have been employed to support this. The aim has been to present the situation as it was and to provide advice to other institutions undergoing similar changes.

6.18 Ethics

This research has been completed within the boundaries established by the examining University's Ethics Committee and the ethical guidelines of British Educational Research

Association (BERA, 1999). Every attempt has been made to protect the identity of those involved in the research. Names and initials have been changed to protect the identity of those mentioned in the research. The author feels confident that professional integrity has been maintained throughout the process and that nothing produced here in any way compromises the position of the staff or students under study. Agreement to participate in the research was gained from all those involved and permission given to use the data as presented by all whose words appear here. Approval was gained from the authors to use the two internal documents presented in Appendices 9 and 10 and referred to throughout this thesis. Attempts have been made to safeguard the identity of the two institutions as well as the staff and students working in them.

The research was designed to investigate the life experiences of those undergoing change and to portray the situation in two education institutions. The next two chapters include a discussion of the research findings, in relation to the theoretical models and ideas presented in Chapter 5. The chapters are divided to provide clarity and are presented as one chapter focusing on the data provided by the staff (Chapter 7) and one focusing on the data provided by the students (Chapter 8).

Chapter 7 The Research Findings : Staff Perceptions of Change

7.1 Introduction to the Chapter

This chapter summarises the results of the research investigation. To avoid data overload and aid analysis, the qualitative data produced during the research process have been categorised using a classification process to produce typologies associated with the research themes of Change, ICT as a change issue, the policy themes of Widening Participation and Inclusion and ICT in learning and teaching. A further process of analytical induction (Denzin, 1970:192) was used to refine the data and produce the sub-headings of research category found in this chapter. Each of the four themes named above is presented in the light of the questions that focused the scope of the research. The data are assessed in the light of the models identified in Chapter 5 of this thesis.

7.2 Data Analysis

This chapter focuses primarily on the qualitative data produced from the interviews with the staff. Interviews were transcribed and transcriptions used as the basis for drawing up a grid of responses. This data reduction was an incremental process, involving several levels of coding, focusing increasingly on narrowing categories of increased specificity. The first level of coding sorted data into four broad themes as identified above: Change; ICT and

change; Widening Participation and Inclusion, ICT in Learning and Teaching. Further refinement identified a number of other specific issues which are present in the discussion of each theme presented below. Patterns emerging out of the coding process revealed evidence of what may be broadly categorised as *typologies* which were used to heighten and reveal underlying commonalities.

To provide greater insight, content analysis was carried out on documents produced internally by the two institutions in this study. Document based research is discussed in Chapter 6 with detail provided as to how this research method was executed.

A second section of the research findings (Chapter 8) analyses the data which have been gathered to present insight into the experience of a number of students. The student data are mainly numerical, gathered through a questionnaire approach to data collection. The data have been analysed using computer program analysis to give graphic presentation to the statistical data collected. Responses to open questions were recorded in tabular form to enable comparisons to be drawn. The process is discussed in Chapter 6; the findings are presented in Chapter 8.

7.3 Presenting the Research Data

The themes defined above are taken to give support to the organisation of this chapter. The research themes are explored in detail through the separate investigation of each case, first the College and then the University. At the close of each thematic section, a summary section allows for reflection and comparison of the data findings. The member of staff

contributing to the research is identified by the relevant job title: Senior Manager (SM), Course Leader (CL), and Lecturer (L). S/he is also identified by the coded initials used in the full transcripts of the interview data to be found in Appendix 5 in the case of the College data and Appendix 6 of the University data. During the discussion of the data, reflective commentary is used to illustrate how staff and student perceptions interrelate.

7.4 The Research Findings: Theme One-Managing Change

The first theme of *Managing Change* is discussed below. The research questions which promoted the collection of the data were as follows:

How was change introduced in the two institutions, what strategies were adopted: what were the motivations, the forces, the outcomes? What institutional factors had promoted the change and how was the future perceived?

7.4.1 Different Approaches

The two institutions selected for this research were chosen on the basis of demonstrably different approaches to the change required to deliver learning and teaching using ICT.

These approaches have been described as *bottom up* and *top down* change management approaches (Weil, 1994: 9). The terminology finds its roots in hierarchical approaches to organisations as first attributed to the work of Weber (in Parsons, 1947:24). Such theories focus on the structural formation of institutions and tend to see power located with identified senior staff at the pinnacle of the organisational hierarchy. The structure is seen to support the process of change that usually emanates from the top, hence *top down* change strategies are commonplace in hierarchical organisations (Bush, 1995:14). The term *bottom up*, used to

refer to change promoted by the core staff team, is borrowed from the work of Weil (Weil, 1994 :4). By definition it acknowledges the existence of hierarchy but permits discussion of influence from others within the organisation to promote change.

The HE institution was experiencing change prompted by a small staff team who wanted to introduced ICT to increase accessibility for students studying at Masters level. The FE institution was experiencing change prompted by a management directive which had structural impact on the delivery of course hours. Both initiatives were in the second term of operation when the research started in January 1998. Within the category of *institutional change management* a number of sub-headings were apparent namely: events leading to change; forces for change; process; outcome; financial issues and implied future developments. The data relating to the College case that falls into this category of analysis will be assessed first. To give background information, the document which launched the change in the FE institution is examined.

7.4.2 The College Document

In the College, a policy document (Appendix 9) entitled *Proposals For Changes in delivery of FEFC Funded Student Programmes* launched the introduction of computer aided learning and teaching. This document has been analysed as part of this research to support better understandings of the proposed change. Computer aided analysis using software provided as standard on all Microsoft systems revealed the document to contain 32% of the sentences in the passive voice. The ease of reading, or Fleish score, based on an average within a 0-100 scale was 30.4. The Fleish system allocates a score on the bases of readability, with a higher

score indicating ease and accessibility from the point of a likely reader. The higher the number, the more easily will readers be able to understand the document. With a score of 30.4 this would not be considered an easy document to understand.

To gain a more detailed understanding, further research was necessary. The methods applied by N.Fairclough in his book *Language and Power* (1995) seemed appropriate to support the analysis of policy and power in the use of language (Fairclough, 1995:114):

Some words are ideologically contested, the focus of ideological struggle.

The *Fairclough* method of content analysis suggests three areas of study: Vocabulary, Grammar and Textual Structures.

7.4.2.1 Vocabulary

The vocabulary used in the College document draws heavily on government policy: reference is made to *national government imperatives, national proposals* and a *nationally agreed framework*. This constant reference to an authority outside of the given text is identified by Fairclough as a method used by writers to give power to discourse. There is a certain amount of *over wording* with heavy emphasis on the word *need* and use of what Fairclough might term as *forceful words*, for example the document refers to a *shifting* rather than a *transferring* of course hours. The use of such terminology, according to Fairclough, gives strength to the document such that those reading it may find it hard to disagree with the message presented (Fairclough, 1995:22).

7.4.2.2 Grammar

The document uses the third person to give it more authority and status. For example, *the College, the Senior Management, Library Learning Resources, Student Services*. The use of the third person makes the reader an:

Inanimate agent in the action process (Fairclough, 1995:115).

In two cases the computer analysis showed that the words did not constitute a sentence. The verb was missing in each case and therefore the subject of the sentence, ownership and responsibility, was not clear. Three long sentences were recorded, as were a number of examples of the use of the passive voice. The use of the passive voice is, according to Fairclough, *suspect*. This grammatical form may be used as a means of hiding true intention (Fairclough, 1995: 22):

In all cases one should be sensitive to possible ideologically motivated obfuscation of agency, causality and responsibility.

7.4.2.3 Textual Structures

Headings are used in the Policy Document to give clarity and to separate argument. Certain assertions are made which remain unchallenged: for example, it is stated quite categorically that RBL will support moves towards greater inclusion. The text assesses the *drawbacks* and *benefits* of the proposed changes. The terminology used here is interesting. The term *benefits* suggests considerable gain whereas the term *drawbacks* has a minimal negative weighting suggesting small issues which can be resolved. Fairclough draws our attention in his assessment of language and power to what he calls *expressive modality*. By this he means the writer's evaluation of the truth, or hidden expression of what they wish to express

as the truth, of a particular matter. The words *may* and *could* are said to have association of possibility where-as the term *will* is associated with *certainty*. Interestingly, the majority of points made as drawbacks in the policy document are expressed as *could* whereas the benefits section makes heavy use of the word *will*.

A summary of the findings produced from the application of Fairclough's method indicated that the language used in the document is powerful. Analysis of the grammatical structure, vocabulary and textual design illustrates a policy document that is forcefully written with a strongly expressive modality making the proposed change an expression of what will occur, rather than the articulation of a proposal that can be modified by consultation or discussion. In other words, it was a *top down* directive.

The policy document was presented at a number of committee meetings and specially timetabled lunch time seminars. This was, according to the Manager (see interview data) to ensure all staff were informed about the planned changes which involved reducing course hours on all full-time courses by 10% and the establishment of a Resource Based Learning Centre to replace the loss in teaching hours. Large claw-back from the FEFC for under recruitment in previous years and a financial deficit had led to drastic action with what was described as a *10% volume shift* of traditional teaching away from the classroom and into a large Resource Based Learning Centre. The period from announcement to implementation was just nine months, as is illustrated in the Timeline 7:1. The Timeline outlines how the policy document was disseminated to staff and illustrates how the initiative relates, from a time perspective, to the external policy directives discussed in Chapter 4 of this thesis.

Timeline to Illustrate the Context for Change in the Further Education College
Timeline 1

<u>Date</u>	<u>Source</u>	<u>Internal Documentation</u>	<u>Internal Outcome</u>	<u>External Outcome</u>	<u>Additional Information</u>
03-93	Government Report	'What incorporation means to us'	-	The Further and Higher Education Act	Colleges removed from LEA control and set up as separately funded organisations independent corporations under FEFC auditory inspection.
02-96	Government Report			Fryer Report	Report to launch Lifetime Learning Initiatives
04-96	Government Report			Tomlinson Report	Report to launch Inclusive Learning
06-96	Government Report			Higginson Report	Report by the Learning and Technology Committee
06-97	Government Report			Kennedy Report	Report by the Widening Participation Committee
04-98	New appointment		An external appointment was made to the senior team		New appointee commenced role in 09-99
10-98	Policy document	Policy document to launch RBL presented by new member of Management Team	Policy presented to all committees within the organisation		Additional lunch hour session called for any staff who did not sit on a College Committee
09-99	Launch of RBL Centre				Official launch party; RBL opened to students as new academic year began.
01-00-04-00	RBL usage survey carried out	Computer survey using data collected electronically by a monitoring system	Survey made of student use of the Centre		Data available in the appendix to this research and analysed in this research

7.4.3 Staff Perceptions of the Change

The interview data collected as part of the research process are analysed in the belief that they can reveal information about the organisations here under study and the ideas of the people working in those organisations. The data are assessed in terms of Perrow's (1976) organisational model, Mc Nay's (1995) change model, and Fidler's (1977) categorisations of culture and climate, as discussed in Chapter 5 of this thesis in the analysis provided below. Use is also made of Riddin's (1976) five reasons for change.

Table 7:1 The College Strategy

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	We had a strategy for informing people, of raising the issue on a number of occasions in a variety of forms. We also, through the Bulletin (<i>a weekly newsletter</i>), invited staff to a public forum.
CL-JR	One has to look at the motive for opening this place (<i>the College</i>). While I understand the motive, there is too much emphasis on saving money.
L-SR	It should have been sold to the staff as a new facility to help them promote learning rather than; 'We are going to do this whether you like it or not'. It caused a lot of ill feeling. I was dragged into it and I don't like that.
L-RW	The initiative is indefensible. I do not see how you can talk about inclusion and then cut hours. They are thieves taking away the opportunity that these students have to make something of themselves.

The interview data and the documentary analysis of the document (*Proposals for Changes to FEFC Funded Programmes*) which heralded the changes in the College reveal a strategy that was informative but non-negotiable. This might be described as the *culture* of the organisation (Fidler, 1997:35), with structural changes introduced and driven by the senior manager and his team. In terms of Perrow's model for change, the change relating to the structural organisation of the College was well-defined. A systematic process had been set in motion to ensure that all of the staff were informed and aware of the impact of the new

Centre. The *vision* was declared and actions completed to ensure that the changes took place. The ten percent volume shift (as outlined in the Policy Document, Appendix 9) was discussed and implemented. The change had an impact on all elements of the system because it involved a major shift in course delivery methods for both staff and students.

The interview transcripts reveal staff resistance to change and an inability to understand the changes other than as a financial imperative: *There is too much emphasis on saving money* (see Table 7:1). Change in the FE College was strategic and major and, it is suggested, had dramatic effects. The climate (Fidler, 1997:35), in terms of the reaction from the members of the institution, was reflected in the interview transcripts where staff feelings were of being *dragged* into a change which was *indefensible* (see Table 7:1).

The change in the FE College was far reaching: there were to be few exceptions in that the change applied to all FEFC funded programmes in the College (approximately 97% of all courses delivered in the institution). The task was defined in the Policy Document (Appendix 9): it involved a major component of the College operational focus. The benefits and pitfalls (problem analysability) were identified at the initial stage of the change process and set out in the Policy Document which was presented to the staff at a number of planned venues.

When seen in terms of Perrow's model (1976:45), as presented and discussed in Chapter 5, the change can be visually presented as shown in Figure 7:2.

Figure 7:2 The FE College-Structural Change

		Task Variable	
Problem analysability	Well defined √	Few exceptions √	
	Ill defined	Many exceptions	

Figure 7:2

Adapted from Perrow, 1976:45.

7.4.4 Forces for Change

The table below (Table 7:2) illustrates the summary analysis of the data that meets this category in that it identifies the Manager's and the staff's perceptions of what drove the change in the College.

Table 7:2 Forces for change in the FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	Two driving forces – this became known for only one aim, to save money. I don't believe we could have taken people with us; coercive methods had to be employed. The style of coercion I might re write but it was necessary.
CL-JR	The staff were very resistant, they are not stupid. RBL was introduced to save money. The whole initiative was pushed forward far too fast.
L-SR	There was nothing philanthropic about the RBL Centre; it was set up to save money. Issues to do with Widening Participation and Inclusion were secondary and peripheral.
L-RW	The staff are not happy about the RBL Initiative. This College has conned staff by talking about helping students and then cut course hours. This is another change introduced by management to make lecturers' lives more difficult.

In the FE College, change had been instigated by the senior management team with the Manager justifying his actions on the basis of the college being behind the times. It is interesting that he was aware of the staff opposition but defended the need for coercive

methods to achieve his ends. The Manager has applied coercion as a strategy for managing change. Fidler (1996:33), acknowledges that coercive strategies might be necessary in some circumstances. In adopting a strong leadership role, the Manager in the College conforms to the power culture model (Handy, 1988:11) found in organisations defined by McNay (1995:5) as the corporate model. Organisations where such a leadership strategy is applied are seen as experiencing tight management control with rigorously controlled implementation of change.

The interview data reveal that the College Manager was aware that he had applied coercive strategies. He records that the circumstances surrounding the need for change made coercion necessary. The response from the staff indicates resentment at the strategy adopted, phrases such as *resistance, making life difficult, nothing philanthropic* pervading the data. One lecturer comments that *the staff are not stupid* indicating great antagonism and micro-political rivalry (Fidler, 1997:93) between those perceived as staff and those seen as managers. Concern was also expressed at the speed with which the change was introduced. The course leader specifically commented on financial drivers while the lecturers displayed a cynicism that was highly critical of the perceived motivation behind the initiative.

Mention was made of pressures on staff's personal workloads and a conspiracy is implied, in that the initiative was introduced to save money in the guise of a commitment to government policy:

There was nothing philanthropic about the RBL Centre.

Issues to do with Widening Participation and Inclusion were secondary and peripheral.

The comments of the Senior Manager indicated an awareness of the concerns articulated by the staff but also steadfastness in his commitment to what was achieved.

The senior management team drove the process of change in the College: *Coercive methods had to be employed. The style of coercion I might re write but it was necessary* (Table 7:2). It was perceived by the staff as being introduced purely for economic reasons, and not acknowledged as having real connection with, as far as the staff were concerned, the needs of the student body: *This College has conned staff by talking about helping students and then cut course hours* (Table 7:2). Application of Reddin's five reasons for change (1976:23), as discussed in Chapter 5 of this thesis, enables the categorisation of the Manager's response as one which saw necessary pain which would lead to *potential*, whereas the staff had understood the change in terms only of *pain* (the terminology is borrowed from Reddin 1976:23).

In research carried out by Cowham (1994:81), reference is made to the *extreme turbulence* present in the Further Education sector obvious at times of change.

Cowham proposes an *implementation gap hypothesis* in ineffective learning communities where changes are not implemented within the expected timeframe. Cowham applies a version of chaos theory (Cowham in Carlson (ed) 1975) to describe the mismatch between the organisationally declared aims, as articulated in planning documents, and the *reality* as perceived by the operational staff. The research data provide evidence of dissonance in the perceptions and understandings of those

interviewed.

7.4.5 The Process

The Manager in the FE College identified the strategy for change as a planned and considered one, conceived as the most achievable option among many. The staff interviewed cast doubts on the completeness of this plan which was seen as ill conceived. The criticisms levelled relate not to the structural change but to the pedagogic implications and impact on student experience: *How are students going to succeed with a reduction in their teaching hours (Table 7:3)?*

The data imply that although a structural change had been achieved, the impact on learning and teaching had been perceived as minimal other than leading to a reduction in the hours allocated for teaching.

The Manager (BC) in Table 7:3 below mentions that the College has not made progress towards flexible learning initiatives. His leadership style in this case could be identified within Sergiovanni's categories as *entrepreneurial* (Sergiovanni, 1998:39) as his focus is on *falling behind and likely competition in the education market place*.

Table 7:3 The Process in the FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	We had a strategy with many strands. To secure our long term health we decided on RBL. We were falling behind in flexible delivery terms and we had an economic crisis.
CL-JR	Staff are not using the facility appropriately
L-SR	I'm not sure if it was ever thought through properly: what we were going to put in there, how we were going to use it?
L-RW	They are using RBL as a con-to reduce teaching hours. How are students going to succeed with a reduction in their teaching hours?

7.4.6 The Outcome - The Further Education College

In reviewing the results of change, the Senior Manager in the College reflected on technical issues that had hindered progress towards greater use of the RBL centre. The evidence is presented below (Table 7:4). The lecturers' comments focused mainly on quality issues. They raised concerns about student experience, staff professionalism and financial issues dominating the focus for change. The data below reflect opposition from the Course Leader (JR), on the basis of a reduction in quality and from the Lecturer (RW) based on reduced professionalism.

The Course Leader (JR) mentions a situation of students abandoned to work alone, and one *experiment* using a technician to facilitate learning that was a disaster. Kedney and Brownlow (1994) record the appointment to a number of para-professional roles in the FE sector, a reduction in time spent in formal classroom settings and an increase in learning supervised by associate staff (Kedney and Brownlow, 1994 :11). Brown and Rutherford (1998), researching into the role of heads of department in schools, quote a situation involving the appointment of a licensed teacher. The argument was won against the appointment by the head of department on the basis that such an appointment would

undermine teacher professionalism. Bush (1997:12) identifies the complexities involved in managing such changes which he perceives as resulting from the financial crises current in many education institutions.

Table 7:4 The Outcome in the Further Education College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	If I would have done anything differently it would have been to sort out the technical issues earlier
CL-JR	You cannot cut costs and keep quality in education We tried to deliver key skills with a technician. It was a disaster.
L-SR	Talk about setting it up to fail. It was to save money for the College which was the wrong focus. They have not been honest about all this
L-RW	The staff supervising the students are untrained and have not had any professional advice in how to support students.

7.4.7 Financial Issues: Further Education College

Although financial issues did not feature in the conceptual design of the research, the case study interviews made it a necessary feature of the research report. Managers and lecturers alike made unsolicited reference to financial issues as a driver or otherwise for change. In the FE institution there was divergence of opinion concerning the introduction of RBL. The Senior Manager openly discussed the financial drivers which prompted the 10% shift of course hours into the RBL Centre.

The Course Leader (JR) (Table 7:5) expressed resentment that the financial problems of the College had not been honestly declared. There was criticism of the management strategy and a view that RBL was not providing a quality experience for students. The lecturers' comments reflect anger at the students having been *sold* a less than acceptable model of teaching delivery. The Senior Manager, however, maintained that the staff were informed

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and argued that the only change he might have made, if given the opportunity, would have been to deal with technical problems at an earlier date (there were problems associated with connection to the Internet and the stability of that connection).

The linking of a change in curriculum delivery to a financial necessity, although honestly declared, in a number of public arenas, according to the Senior Manager had caused great opposition. There was no evidence here that the management had *taken the staff* with them. One lecturer mentioned *expansion funding* to support developments. The other interviewees were sceptical about the initiative, doubting whether it would save money. Research has identified that change involving learning and teaching is difficult to implement (Fullan, 1999:66; Elmore, 1995:5). The conflict present in the data reveals divergent thinking about how students learn and how their learning experience should be structured.

Table 7:5 Financial Issues FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	The economic driving force was a £600,000 clawback to FEFC for under recruitment or deficit to target in 1996/97 so the 10% volume shift was introduced. The idea was to take 10% from A to create B to equal a long term saving. Many other strands were adopted to effect savings and secure our long term health, although 10% was quite dramatic. We kept staff informed at every stage and declared our position in relation to economic necessity and the need to meet government imperatives, at every stage, at every opportunity.
CL-JR	The RBL Centre was built to save money. Why were we not told the truth?
L-SR	The FEFC through BECTa has allocated expansion funding to Colleges that already have RBL in place. I have applied for funding for the College.
L-RW	The RBL Centre is not going to save money. The outlay in resources to attract a limited number of extra students is not worthwhile. We have financial problems so be honest about it. Don't Management realise how hard we are working? It is hard to cope. We are at our limits. The RBL Centre represents a spending of thousands to increase Special Needs students by 3 or 4 per year. ICT is not for students with learning difficulties.

The data presented above illustrate the scepticism shown by the lecturing staff who could see no connection between this initiative and student need. There was also a plea for managers to appreciate that lecturers felt oppressed by the demands that were being made on them. The lecturers focused on a financial critique whereas the Manager referred to the need to meet government policy. From the perspective of the Manager the staff were kept informed at all times. One member of staff, however, maintained that they had not been told the truth. The data illustrate that the lecturing staff and manager had completely different perceptions of the way change was managed and the rationale for that change.

7.4.8 Future Developments in the Further Education College

The data collected in the FE College demonstrated divergent thinking about future potential and further change. The Senior Manager saw the potential for expansion in the physical size of the Centre and in its opening times. Technical problems were acknowledged, as was the fact that full potential had not yet been realised. The staff held different views: one lecturer working in the Centre was *passionate* about the potential; the other two staff interviewed were more cynical about usage and achievement of the widening participation and inclusion goals. There was criticism (Table 7:6) of the association of RBL with government initiatives. Comment was made about spending thousands to increase minimally student numbers. The Course Leader focused on Centre use and indicated that it was not being used appropriately as a facility to support learning and teaching.

Table 7:6 Future developments in the Further Education College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	JJ(<i>the Learning Resource Manager*</i>) is about to report back on her usage survey. We need more staff to have Saturday and Sunday opening. It is not big enough and we have had some technical problems which need resolving. Full potential has not been realised.
CL-JR	The RBL Centre is becoming a dumping ground for all our problems. It is seen incorrectly as the panacea for all our problems.
L-SR	The motives of Management were wrong (<i>linking RBL to financial savings</i>) but we still had to do it. I feel quite passionate about what we are doing here.
L-RW	We have spent thousands and not increased student numbers at all. Linking RBL with Widening Participation and Inclusion was a con to make us work harder.

**Supporting commentary is provided in the Tables to provide greater clarification. Where this is applied the comment appears in italic writing within the table.*

The comments made by the Senior Manager (BC) can again be assessed against Sergiovanni's (1998) leadership categories. The focus on monitoring and evaluation implies a bureaucratic leadership style (Sergiovanni, 1998 : 39), as does the use of coercion discussed in Table 7: 2.

7.4.9 Summary of the College Data

A number of management models have been applied to the data to support a clearer understanding of the issues involved. The research now turns to the analysis of the interview data collected in the Higher Education Institution. The changes that took place in the University are described at 1:7:4 and 6:7. To give clarity the research questions are articulated again below:

How was change to greater reliance on ICT introduced in the institution, what strategy was adopted, what were the motivations, the driving forces and the perceived outcomes?

7.4.10 The University Case

The only written document available from the University which might be compared with the Policy Document from the College (Appendix 9) is the University Strategic Plan. This document has been analysed in the same way as the College document in order to support comparisons although it is acknowledged that any comparison can only be tentative since the two documents are different in purpose and design.

The University Strategic Plan contains a much lower percentage of sentences in the passive voice than the College document (2% as opposed to 32%) and has a much higher Fleish reading score, rated at 72.5 as opposed to 30.4. This higher score makes the University document much more accessible to the reader.

It might be considered appropriate to carry out further analysis using the *Fairclough* (1995) method of content analysis, as was applied to the College document, in relation to the use of Vocabulary, Grammar and Textual Structures. This exercise, however, would not have a purpose as the reason for the inclusion of this document in the thesis is to identify the lack of reference to the University course here under study. This omission (see Appendix 10) serves to illustrate the argument presented in Chapter 5 that the University lecturers acted autonomously and failed to engage in the bureaucratic procedures involved in course validation and course planning. The extent to which they acted in *secret gardens*

(McNay, 1995) is apparent by the lack of reference to the programme in the University strategic plan. This omission supports the research findings which indicate that the management team were not involved at the course planning stage and helps to explain why the course did not enrol students until 2000, one year after the validation event (see Timeline 7 2).

The Timeline (Figure 7:3) illustrates the different stages involved in the course changes in the Higher Education Institution. There are no team committee meeting minutes available to support understanding of the motives behind the introduction of the initiative. A search of official documentation serves to highlight the absence of any policy planning. The strategic plan for the organisation (as discussed above) contains no reference to on-line delivery with no mention made of any plans to even investigate computer aided delivery in the future (see Appendix 10).

Timeline To Illustrate the Context for Change in the Further Education College

Timeline 1

<u>Date</u>	<u>Activity</u>	<u>Internal Documentation</u>	<u>Outcome</u>	<u>External Issues</u>	<u>Additional Information</u>
03-93	Government Report	'What incorporation means to us'	-	The Further and Higher Education Act	Colleges freed from LEA control and set up as separately funded organisations independent corporations under FEFC auditory inspection.
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04-98	New appointment		An external appointment was made to the senior team		New appointee commenced role in 09-99
10-99	Policy document	Policy document to launch RBL presented by new member of Management Team	Policy presented to all committees within the organisation		An additional lunch hour session was called to invite any staff who did not sit on any college committee
01-00-04-00	RBL usage survey carried out	Computer survey using data collected electronically by a monitoring system	Survey made of student use of the centre		Data available in the appendix to this research and analysed in the research findings

The lack of documentary evidence of change in the University, as recorded in Timeline 2 and in Appendix 10 supports McNay's (1995) findings that universities at the time of writing operate as loosely structured organisations where the implementation of change was rarely controlled or structured in any way. This category, identified with the structures that operate in universities, represents change as occurring by chance, brought about by academics acting somewhat autonomously. McNay (1995:7) records:

The collegial academy is the classic concept of the university, with academics operating in "secret gardens".

The collegium, as the university model for change, with lecturers acting without reference to the University managers, can be seen to operate in the case study example presented here.

The concept supports clearer understanding of the research data collected from the staff working in the University.

7.4.11 The Staff Perceptions of Change

The data available from the interview transcripts reflect different perspectives on the course changes as implemented in the University. The University initiative has been described in this research as *pedagogic* since staff involved in an MA course, wanting to enhance course delivery, prompted the initiative. The catalyst for change was a concern with learning and teaching. The lecturers involved in the initiative reported negative responses from senior management, a structure within the University that hindered change and the need for a project management approach.

Table 7:7 The University Strategy

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	It was GH and SL's idea . The Course Leader went ahead without permission. We were left with no choice. They were very naughty.
CL-SL	The Head of School identified a cohort from his consultancy work. I was not comfortable with management issues but GH is very robust at asking strategic questions.
L-MM	GH is very good at applying a strategic approach. The University bureaucracy to do with validation hindered progress. The Management expressed minimal interest –was short sighted, no faith expressed in what we were doing, every initiative seems to have to start from the bottom. The isolation of the School of Education doesn't help.
L-GH	We wanted to use IT more effectively to enhance the International MA. The Collegiate structure in another School within the University aided change, the hierarchical structure in the School of Education limited change. What we needed was a project management approach.

7.4.12 Forces for Change

The data reveal that the new course provision had not been introduced using the agreed procedures. This explains why the initiative is not discussed in the institution's strategic planning document (see Appendix 10). One member of staff (GH) blamed the hierarchical structure in the institution for limiting opportunities for change. The lecturers are critical of the structural mechanisms in place intended to regulate organisational change (such as validation procedures), seeing them as hindering the change process rather than providing support. The climate (Fidler, 1997:35) of the organisation presents as one which challenges the culture and sets up alternative ways of achieving change (Fidler, 1997:124).

The Senior Manager expressed concern that procedures were not followed: *The course leader went ahead without permission* (see Table 7:7). He was maintained that the course varied very little from existing provision and that the instigators were self-motivated, having used coercive means to obtain their ends (see Table 7:8). It is interesting that the vocabulary of

coercion features in these data as well as that derived from the College. Here the coercion can be described as *bottom up* rather than from the top. This time it is a member of the course team who is accused by the Senior Manager of using inappropriate change methods. The description of the Course Leader *throwing tantrums* presents an interesting picture of the change process being dragged by the lecturing staff rather than being subject to any planned or considered process. Application of Reddin's model (1976:23) is again useful. The Manager's perception was that the change was the result of academics thinking *let's do something*, whereas the staff argued that the initiative had potential.

Table 7:8 Forces for change in the University

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	The course was not introduced using proper procedures. SL and GH showed great enthusiasm then at validation all that appeared were the same materials as the Home MA – but discussed over the Internet. A group of buddies for their benefit, to progress their careers. The Course Leader threw tantrums and coerced management to agree.
CL-SL	I hadn't been through a validation before. It is a very steep learning curve. I found it difficult and very long-winded. You have to form committees and call meetings. I don't feel at ease with the management role.
L-MM	We had no real help in drafting the course, just lots of meetings about finances. It was as if procedures and finances were nothing to do with the course.
L-GH	It was very clear management didn't know why or what we wanted to do.

The Manager perceived the project as being conceived by the lecturers wanting academic recognition. Handy's (1985) model of *person culture* (see Chapter 5 of this thesis) identifies an institutional typology where individuals operate in terms of their personal goals and needs.

The articulated motivation for change, according to the lecturers', had been the application of ICT to support learning and teaching. It was pedagogic issues which had dominated. Structural issues, such as University approval, the requirement to produce documentary

evidence about how the course would operate (a validation document), had not been considered crucial to the proposed change. In the HE Institution, the change had not been strategic but prompted by the interests of a few lecturers wanting to trial a new methodology to deliver a course to a wider audience.

The change was strategically ill-defined, non routine and, more specifically, not understood by those in a strategic role. The interview data illustrate that the strong character of the Course Leader was the driving force behind the initiative. The drive and enthusiasm of certain personnel had been responsible for a pedagogic change that had not been located within the strategic plan of the study institution (ie the School within the University). The outcome was one course which operated completely differently from any other within the institution. As such it presents *many exceptions* in terms of task variables and problem analysability. Application of Perrow's model of change (Perrow, 1976:45) in relation to structural issues in the HE Institution is given below:

Figure 7:4 HE Institution - Structural Change

		Task Variables	
Problem analysability	Well defined	Few exceptions	
	Ill defined √	Many exceptions √	

Figure 7:4

Adapted from Perrow, 1976:45

7.4.13 The Process

The lecturers made clear reference to the bureaucratic procedures operating within the University which, from their perspective, restricted change. In the data from the College and from the University there was no evidence of a collegiate approach to change. In both institutions the data reflect differences of priority and understanding between the lecturers responsible for pedagogy and the managers concerned with structural issues.

In the University case, the lecturers and Course Leader challenged the usefulness of the hierarchical organisational structure, seeing official procedures as hindering rather than supporting the change process. The agreed way of managing the organisation, the culture (Fidler, 1997:35), is not accepted by the group in the study. This supports Sergiovanni's findings that universities operate with many factions and subgroups, all fighting to maintain their individual ideologies (Sergiovanni, 1984 : 8).

Table 7:9 The Process in the Higher Education Establishment

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	To introduce something like this you need a measured approach with everything in place. The University has procedures which have to be followed
CL-SL	There was no willingness from management to take it on. I had to beg for hours. I don't see the point of controlling hours so that courses don't develop
L-MM	If anything, Management created hurdles.
L-GH	We were struggling from one crisis to the next. The whole structure of the school of education limits development. The School of Business is not controlled by hierarchies like we are.

The data presented above are illustrative of the conflict present between the Manager and the lecturing staff involved in moving forward the initiative. The lecturing staff had interpreted the actions of the Management as deliberately hindering the introduction of the course. The

lecturers demonstrated a complete lack of understanding of issues to do with planning, preparation and community in the management of change. The tactics employed by the staff team have produced a change, but not one that was agreed or planned for within the organisation. The data reflect attempts at bureaucratic leadership approaches (Segiovanni, 1998:5) in the requirement to meet University procedures such as gaining approval, establishing a programme development committee and carrying out market research, to make sure there is a likely demand for the proposed provision. The lecturing staff appeared to reject the requirements designed to support this type of change; such requirements were very much part of the bureaucratic procedures of the University. There was a distinct feeling among the staff team that the hierarchical and bureaucratic structure of the organisation had limited the potential of the new development.

7.4.14 The Outcome - The Higher Education Establishment

In the University, the introduction of the new course had led to a great deal of conflict between the Manager and the lecturing staff. Personal issues seem to have been presented as obstacles in the progress towards change. Here the Senior Manager felt ignored, whilst the lectures recorded the need to use forceful strategies to achieve their ends. There is clear evidence in the data of *micro-political rivalry* (Fidler, 1997 : 93) and *chaos management* (Fullan, 1999 :54) with limited understandings of role and function, and failure by all concerned to manage the change process other than through conflict and struggle.

Table 7:10 The Outcome in the Higher Education Institution

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	I was the senior member of staff but in their eyes I knew nothing. The Course Leader didn't let us find a niche market before she went her own way and did what she wanted to do.
CL-SL	Every initiative seemed to have to start from scratch-that is the problem with bottom up strategies. I didn't feel at ease with managing friends, expecting colleagues to do things by set deadlines. GH is very forceful when it comes to getting things done. I am not like that.
L-MM	It was as if people were saying it was a good idea but no one in management was prepared to do anything about it
L-GH	There wasn't any willingness in Management to take it on. It was quite clear we would have to do it, if it was going to happen at all. We could be in a niche market here but no one is helping us to say that.

The data reveal further conflict between the Manager and the lecturing staff. The Senior Manager (DG) had taken the team's inability to consult with her as a personal affront. She explains the low uptake on the programme (12 students enrolled two years after the formal programme validation) as due to poor pre-planning. One lecturer recorded token verbal support (MM) but no commitment to action. Another lecturer, GH commented that the programme could be in a *niche market* but organisational issues were limiting potential. The Manager appeared frustrated by the failure of the staff team to acknowledge her seniority or value her professional opinion. The lecturers clearly have seen the Manager as a member of a hierarchical management team rather than as a professional colleague with a view about learning and teaching that might be worthy of consideration. The evidence points to a team rejection of the manager's viewpoint and the organisational procedures she is required to impose. The result is an organisational response to change that concurs with the ideas of chaos and complexity theory (Lewin, 1993; Kaffman, 1995; Fullan, 1998).

7.4.15 Financial Issues – HE Institution

Financial issues appeared to dominate the interview transcripts from the HE Institution.

Here, the newly created course was highly criticised by the Senior Manager for not being viable (Table 7:11). The lecturing staff criticise the lack of finance available to support course development, whilst the interview with the Manager indicated the Course Leader had failed to follow financial procedures, thus creating problems. It was revealed that the lecturers used other sources of income to market the course, finding a way around organisational procedures. There was a serious conflict of understanding here, with the management representative concerned about profitability whilst the lecturing team had manipulated financial procedures to promote the development.

There is no evidence of either the Manager or lecturing staff having discussed issues to do with viability prior to the purchase of the ICT package which was used to deliver the programme. The data reveals just how *loose* (McNay 1995 : 5) the operational structures were within this part of the University.

Table 7:11 Financial Issues in the HE Institution

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	The costs were phenomenal. I couldn't believe it, £18,000 up front with no guarantee of students. No return yet on the money spent. A huge bill, Course Leader ordered package without approval. Not cost effective.
CL-SL	We had no money to market the course. The web page advertising it was not updated. I had no budget to market the course because I didn't have any students. It was topsy turvey. We had to supplement funding for the new degree with money from the Home MA.
L-MM	The aim was economy of effort in setting up the course. We had to keep costs low. The ICT package was chosen for reasons of finance and simplicity. We had an 18 months' delay getting the finances.
L-GH	We were preparing a number of 'one-offs', this was a way to reduce time and effort. The Acting Head of School didn't see it as relevant. We had no budget.

7.4.15 Future Developments in the University

In the University, the views expressed were as divergent as those found in the FE sector, illustrating conflicting perceptions and understandings between the Manager and the lecturers in both institutions. The Senior Manager (DG) in the University expressed concern that the new provision would have a negative impact on existing provision. The lecturers' views were mixed, with predictions of a brighter future, whilst one lecturer (who was leaving) identified limited support from the Senior Management Team for this group.

One lecturer, who was not leaving the institution, was rather more optimistic and considered the new Head of the institution to be more aware of potential. An additional positive comment was made about the ease with which students were able to access the programme.

Table 7:12 Future developments HE Institution

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	Teaching using ICT is not versatile enough for CPD. We are with computers now where we were with the car at the turn of the century. There is a danger of threatening a very good traditionally run Home MA. ICT is not for everyone and we must not forget that.
CL-SL	The potential is great as long as you have access. If people have ICT at home it will work, demand will grow. We applied for support from the Central University but because we had already done the ground work we didn't qualify.
L-MM	I am leaving. At my interview they were really interested in what we were doing. Central University has still not acknowledged what we have done.
L-GH	With the merger the new Head of Institute seems interested.*

**During the time of the research the institution was in merger discussions with another provider. At the time the interviews were taking place, a new management team was being appointed.*

7.4.17 Summary of the Data

The research data revealed opposing views from Management in the two different institutions where the change management had been facilitated in different ways. The *top down* structural change initiated by the FE senior management team had met with opposition; the *bottom up*, pedagogically driven change in the HE institution had been misunderstood by senior management. What was clear in both cases was that the lack of understanding of role and perspective had limited progress towards change. There was a clear failure on the part of the management and staff in both institutions to acknowledge the focus for change and to work collaboratively to use their respective skills and understandings so that an effective workable outcome was achieved. Unpublished case study research by Tyler (2000:6) draws on Fullan's (1989:34) view of planning and implementing change. Tyler (2000:6), proposes that:

Significant innovation requires individual implementers to work out their own meaning. Significant change involves ambiguity, ambivalence and uncertainty for the individual about the meaning of change...effective implementation is, therefore, a process of clarification.

Conflicting understandings between the staff existed whether the initiative had been prompted by *top down* or *bottom up* management drives, whether the focus was strategic or pedagogic. Clarification to reduce ambiguity was required in both institutions.

7.5 Theme 2 Information Communication Technology as a Change

Issue

The link between government directives and a proposed greater reliance on ICT, and the call for widening participation and inclusion, has been discussed in Chapter 3 of this dissertation.

To analyse the data collected within this overarching theme the following areas which emerged during the categorisation process will be explored: namely, advantages, disadvantages, organisational issues and perceived future potential for the use of ICT. The research questions that promoted the focus presented here are as follows:

What institutional factors impacted on the change to ICT course delivery and how did the staff perceive the change?

What were seen to be the advantages, disadvantages, issues and future potential?

The data from the College that provides a response to the above question will be assessed first.

7.5.1 Perceived Advantages in the College

All staff interviewed in the research were convinced of the potential of ICT both to provide greater physical access to those denied qualification opportunities in the past and also as a tool to support learning and teaching. The data illustrated that staff perceived students as having responded favourably to the RBL initiative and, despite

concerns about how the change had been managed, the staff were prepared to accept that ICT had a number of clear advantages in enhancing the student experience.

One lecturer (RW), interested in students with learning difficulties and disabilities (SLDD), saw ICT as a great equaliser; another lecturer (SR) recorded how such students are enabled to produce presentable work when using a computer. The Senior Manager (BC) linked the use of ICT very closely with increased learning opportunities created by increased access to learning resources. His response shows a perceived link between increased physical access to learning resources and student achievement. The Course Leader believed that ICT could give students a good experience (JR). There are specific comments in the data about how ICT can provide support to students with learning difficulties and disabilities. One lecturer who worked in the learning centre identified the need to give students more personal responsibility in the learning process.

Table 7:13 Perceived Advantages in the FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	RBL meets most of the dimensions of flexible delivery. We need to give students alternative modes of learning. There was a strong argument that we needed to be more flexible, to give students more opportunities to learn.
CL-JR	ICT has the potential to give students a better experience. I have worked for the OU and seen it work well there.
L-SR	The students were responsive to the changes. ICT can help SLDD students to produce work they can be proud of. This is a great enabler for them. I want to be able to give students more responsibility for their learning.
L-RW	Students with LDD like using IT. It is a great equaliser, they can use spell check. There is scope for numeracy and literacy to be delivered through ICT. I am not sure about communication skills – you can't teach skills for life through a computer. Students can play computer games and learn without realising.

7.5.2 Perceived Disadvantages

Perceptions of disadvantage as identified by the staff in the FE institution seemed to differ depending on the individual's role in the institution. The Senior Manager (BC) identified technical issues as the main problem. He was aware of staff concerns around quality of teaching and the reduction in teaching hours.

The Course Leader (JR) identified *a few* exceptions where ICT was enhancing student experience, otherwise he painted a negative picture. He expressed concern that the professional advice of the head of ICT had been ignored when, during the planning stage, he warned of the scarcity of ICT packages available to support delivery of the FE curriculum. The lecturer (SR) identifies a need for more packages to be made available thus illustrating that the advice from the professional lecturer had been correct but ignored by the Manager. Gunter (2001) raises similar problems in her work with teachers whose opinions she maintains are not valued in the schools sector (Gunter, 2001: 10). The lecturers interviewed perceived the changes in terms of a reduction in the quality of the student experience. Requests were made for staff training and more specific ICT packages (Table 7:14) to support learning and teaching.

Table 7:14 Disadvantages in the FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	RBL is not a form of learning, it is a particular frame of mind. The offence of the 10% shift was not a cunning plan but a necessity. Staff have been concerned about quality and the reduction in teaching hours. There have been delays in sorting out the technical problems.
CL-JR	The Head of ICT was against the initiative. There are not enough packages available on the market yet to use ICT as a replacement for teachers. Staff are channelling students away from the classrooms. The RBL Centre is being used as a dumping ground. There are some exceptions where student experience is being enhanced.
L-SR	We need to be aware of curricula content so we can help but staff use the RBL Centre as a dumping ground. The mature students don't like the noise in the RBL Centre. Staff don't like facilitating learning in a public arena. Staff need training. We need to buy more teaching and learning resources. We need more curriculum specific packages.
L-RW	Those who think this is going to work will be disillusioned. RBL may improve access for a limited few. There will be a reduction in the quality of teaching. Resource Based Learning has potential for part of the curriculum and only for some of the students.

One of the lecturing staff also reported that students were sent to the centre at un scheduled times. The RBL Centre was used to *dump students* when staff were unavailable or unprepared to teach. This occurrence might be interpreted as evidence of what Bush (1997:13) refers to as *the human consequence of multiple change*, with staff suffering from dysfunctional stress or burnout.

One lecturer indicated that adult students did not appreciate the open access policy in the RBL Centre that enabled the 16-19 year olds to use the centre freely as a workshop facility, rather than a quiet working area.

The financial drivers for large scale change that resulted in a blanket reduction to all courses seem to have overridden individual and group student need. It is important that change management takes account of the needs of all learners and does not threaten what has been appreciated before. The same respondent reflected on the need for staff training and staff reluctance to facilitate learning in a public arena. Application of Perrow's model for change in relation to pedagogic concerns shows understandings to be *ill defined*, with *many exceptions*. This classification is based on the analysis of available data which illustrates poor preparation for the change in terms of the availability of teaching materials coupled with the identified need for staff to receive training to support new delivery mechanisms. These points indicated that pedagogic issues had been given minimum attention in the change process.

Figure 7:5 FE Institution Pedagogic Issues

		Task Variables	
Problem analysability	Well defined	Few exceptions	
	Ill defined √	Many exceptions √	

Figure 7:5

Adapted From Perrow, 1976:45

In this model the tasks associated with changes in learning and teaching are ill defined with many exceptions. The change failed to address the various needs of a wide

group of students using the RBL Centre. The issues or problems associated with course delivery in a large centre were ill defined, resulting in many unforeseen problems for the different users. The research has specifically identified problems with noise levels and access to the new technologies. Change had been enforced with limited time and opportunity for the consideration of the tasks associated with learning and teaching.

The interview data refer to two failed occasions where a technician had been employed to deliver an element of provision. Mention is made of a lack of teaching packages to support learning and a head of ICT who had warned that this would be the case.

The pedagogic potential of the centre had not been realised. Resistance to using the centre had been strong with no apparent evidence of staff using the new facility to support pedagogic issues. The research demonstrated that the Centre was being used more as a place to send students to reproduce their work, as a workshop facility, rather than as a resource for learning (Computer collected data presented in Chapter 8 demonstrate minimal use of the ICT learning packages as opposed to heavy use of word processing packages). Failure to address the complex pedagogic issues associated with the tasks of learning and teaching had led to minimal change.

The member of staff interested in inclusion (RW) expressed deep concern about the structural shift of course hours and expressed a view that a large computer room, such as the RBL Centre, was totally inappropriate as a facility to support students with specific learning needs. She was aware of the use of ICT from a pedagogic view as a great enabler for such students, but expressed strong feelings of negativity about

the change to RBL methods and the way the change had been implemented. Further concerns were expressed about the quality of student experience, particularly for those who had experienced problems with education in the past: the very group of students that the Learning Age agenda is attempting to reach (Learning Age, 2000:5). One lecturer made specific reference to changes which now meant that students with learning difficulties were taught in the resource base without the additional individual support they had traditionally received for their learning needs. Small group teaching was considered the only suitable approach for this student group.

7.5.3 Organisational Issues

The interview data from the FE institution revealed the Senior Manager had a clear picture as to how the RBL Centre was being used. He refers to the commissioning of a user report, the data from which are discussed in this research (Chapter 8) and reproduced in Appendix 7. He expresses awareness that the Centre is being used as a workshop, as a casual *drop-in* facility rather than timetabled as part of a course, used to word process work, rather than as a facility to replace teaching hours lost in the 10% course reduction.

Table 7:15 Organisational Issues in the FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	The need for financial saving and RBL came together. A user report has been commissioned. The Internet is not yet installed. Usage is casual not scheduled, word processing rather than learning.
CL-JR	We need better course materials. The tutor's role is still important. We will keep having opposition if we expect staff to teach 800 hours and still prepare materials for the Learning Centre as an addition to their work.
L-SR	We need to do research to see who is using the RBL Centre and determine whether they are staying on their programmes longer. Are we helping students to succeed?
L-RW	ICT can help students present their work better and do basic skills. ICT is a tool but it is not the whole thing. It cannot teach skills for living.

Concerns about Centre usage were apparent in other comments recorded above. One lecturer expressed the desire to research the impact of the RBL Centre on student achievement; others expressed concerns about the role of the tutor, the high expectations on staff time, the need for better materials and the importance of remembering that ICT is a tool. The work of Elmore (1995) and Fullan (1999) has been cited already in this research to illustrate that change involving learning and teaching is hard to achieve. The data reveal that staff need time to adjust to change and time to produce ICT based learning materials if change is to occur that does not compromise the student experience.

7.5.4 Perceived Potential

The interview data from the FE College revealed that more change was inevitable.

The senior manager and all the lecturers, apart from the one responsible for students with learning difficulties, identified further growth and greater potential. The member of staff with doubts argued that resource based learning has its limitations (see Table 7:16).

Table 7: 16 Perceived Potential in the FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	We are within the envelope of acceptability but still need to produce more change.
CL-JR	The Learning Centre needs to be bigger
L-SR	There is potential to use on-line facilities for students to learn at home, in the evenings with flexible access.
L-RW	Resource Based Learning has potential for part of the curriculum, but not for students who have already been labelled by the system as failures. We will not drive forward the government agenda for inclusive learning in a RBL Centre

The University Case

The data collected in the University are now presented to address the following research questions:

What institutional factors impacted on the change to ICT course delivery and how did the staff perceive the change?

What were seen to be the advantages, disadvantages, issues and future potential?

7.5.5 Perceived Advantages in the University

The data collected in the University reflected great enthusiasm with staff experience beyond all expectation and a staff belief that the students were also very positive about their experience. The interview with the Senior Manager in the HE Institution provided a slightly different view with ICT acknowledged as a communication tool but not a tool for learning and teaching particularly for courses involving professional development, which she maintained required *communities of practice* (Seely-Brown and Duguid 1996 : 67).

Table 7:17 Perceived Advantages in the University

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	ICT is fine as a communication tool to aid contact between teacher and student but not as a teaching tool. ICT delivery of teaching and learning misses out on all that personal contact stuff on communities of practice. ICT is OK for email communication.
CL-SL	The students come to the university just like the international students for the Summer School; then we use the computer conferencing in place of seminars, discussion groups etc. Students chose a text for discussion; this appears on the screen, the students enter comments on the text and make a contribution. You don't need to be a computer wizard to use the conference facility, you just need access to a computer. It is not technology for technology's sake: it is functional to meet student need.
L-MM	We were all excited about the potential this had. ICT provided an opportunity to be creative. The students are so in love with the method We had advice from the central IT people and we played with it but it didn't come alive until we had real students. It has exceeded our expectations, we never quite imagined how good. I expected it to be missing all the non-verbal stuff, the touchy, feely atmosphere stuff in the classroom, the group dynamics, but it wasn't. S did all sorts of classic things like writing, 'I'm setting up the classroom and opening the windows, if you tune in tomorrow there will be something for you to read'.
L-GH	We wanted a model which focused on discussion which provided the same dialogue opportunities to support learning that was available on the Home MA. Discussion was central. We can mirror best practice from the classroom. Students have more personal communication time, more time for reflection, better and richer than in a fully taught course. We wanted to teach at a distance but still be close to the students.

Staff involved in the course delivery can be seen to be very enthusiastic. The enthusiasm for course delivery using ICT appeared to be contagious (Table 7:17). For the staff, the course had *exceeded all our greatest expectations* (Table 7:17). Concerns expressed by the Senior Manager regarding communities of practice had been considered and approached using a classroom modelling technique which mirrored classroom practice. The results were reported to be very effective. The data revealed a favourable picture from the perspective of the staff team, with lecturing staff complementing the teaching approaches adopted by their colleagues. The Manager (DG) acknowledged that ICT had potential as a communication

tool but not for teaching. The course leader (SL) praised the simplicity of the technology as a facilitator for learning.

7.5.6 Perceived Disadvantages

The disadvantages voiced in the College were specific to learning and teaching.

The disadvantages identified in the HE Institution related to organisational factors, student choice and time factors: that is issues to do with course design and structure.

Table 7:18 Disadvantages in the HE Environment

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	We can't hope to compete with the OU. We won't attract extra home students. It is not appropriate for pedagogic issues to do with practice. ICT is not appropriate for everyone, we should not force it.
CL-SL	Students are needing more contact time than we expected. Because they are working on their own, they have time to produce work with more depth, more profound and thought provoking.
L-MM	Management provided the hurdles and blocks which prevented it (ICT) from going ahead sooner. The central university showed little interest.
L-GH	I looked at some packages. They were ghastly, all singing, all dancing. It took us a long time to find the right one for us. The central university is going ahead with virtual learning but is using a different package.

The data presented above (Table 7:18) provide further evidence of limited co-operation between staff and management. One issue that needs further discussion is the comment of the Course Leader who, unsupported by colleagues, needed to expend time finding appropriate materials, with the outcome that a central policy decision had led to the University using a different package of materials. This illustrates the need for a team

approach to the management of change with clear guidance provided by managers to support staff wishing to introduce new initiatives.

7.5.7 Organisational Issues

Issues for the HE staff (Table 7:19) centred on the impact of the course on recruitment to existing provision, quality of student experience, and technological issues. The Manager in the University expressed similar concerns to those expressed by the lecturing staff in the College in respect of the importance of student contact. Her comments gave clear support to resource *enhanced* learning, rather than resource *based* learning, the difference being the use of ICT to support traditional methods rather than as a replacement for them.

Further discussion appears to centre around course title and issues of competing with the Open University. The debate about the course title is interesting as the Manager comments on the team wanting to call the programme *Open Learning*. The tension appeared to locate in the discussion of *open* in the sense of being geographically available to all as opposed to the implication that it might be academically open to all. The Course Leader also identified some of the internal tensions around the issue of definition, arguing that the term *flexible* was used to describe such provision. Here we see evidence of debate and lack of clarity associated with ICT in learning and teaching. Terminology must be clarified. The course leader was very clear in her mind, the provision was *open learning* in the sense that it was geographically accessible across boundaries of time and place. Other staff were using different terminology, such as *distance learning* to describe the same provision.

Table 7:19 Organisational Issues in the University

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	<p>This provision has a place but not for CPD. You cannot get that mutual bonding and rich learning experience on a course that you do through the computer.</p> <p>They have bastardised a good course</p> <p>They wanted to call it Open but it is not. The University have agreed with me on this one.</p> <p>The OU does distance learning; no one can compete with them.</p> <p>Students send work as attached files and expect you to waste time downloading their work.</p> <p>I think it is impertinent.</p> <p>I like the notion of resource enhanced learning rather than resource based learning. It is a wonderful addition to but not instead of.</p>
CL-SL	<p>We had no support to get the course put on our timetables. I had to beg for hours to be able to teach the course.</p> <p>We had some problems in deciding what to call it.</p> <p>This is Open Learning, it is available to different people all over the world.</p> <p>Course delivery enables choice. It is flexible, but then it is not flexible, you have to make sure everybody has a good grounding for their dissertation. It is flexible in that people sort out what paradigm they are working in and that design then becomes their choice. Assignment work is sent in hardcopy otherwise there is a danger with formats and printing, also for moderation, we need hard copies. People send email drafts.</p>
L-MM	<p>Two of the students are teacher trainers and they comment on what we are doing and how we are learning.</p> <p>When the Net went down there was a whole dialogue from Australia to USA about us being out of touch. Real heart warming stuff.</p>
L-GH	<p>We looked at the OU model. they were having problems at the time.</p> <p>Management didn't understand why or what we were trying to do.</p> <p>You would have expected a School of Education to be innovative.</p> <p>The central university is now using a different package but still supporting us with technological issues.</p>

The staff involved in teaching the course recorded lack of support from the Management within the University as an issue which had limited progress and reduced possible potential. There is no evidence of *visionary leadership* (Sergiovanni, 1998:5); the lecturers were not being motivated to change other than through their own personal interests

in bringing about a change in learning and teaching.

One lecturer expressed an expectation that educationalists might be innovative in introducing new teaching methods but pointed out that managers failed to understand the what or the why of course development. Fullan (1999) reminds us how innovations involving learning and teaching are difficult to implement. As in the FE institution, a barrier had been created through the inability of staff and managers to discuss change issues within a framework which acknowledged the concerns and agenda of the key players giving equal attention to issues to do with strategy, and learning and teaching, in educational institutions.

7.5.8 Perceived Potential in the University

The management representative interviewed in the University was critical of the experience that students on the MA course received and pointed to the newness of the technology being used to provide a student experience. Staff concerns seemed to rest on the issues of staffing, failed support from Management and a short-sighted approach on their part (see Table 7:20).

Table 7:20 Perceived Potential in the University

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	Bill Gates says we are with ICT now where we were with the car at the turn of the 20 th century. There is a long way to go. We should not be experimenting with students. This University has a good reputation for quality courses. Where is the quality here?
CL-SL	The course is available to different people all around the world. It is Open and flexible at the same time.
L-MM	Management were short sighted. I am not sure about the future of the course; two key people are leaving. What will the students feel about that?
L-GH	We could be in a real niche market here but no one is helping us to say that. The new Head of Institute is interested in what we have here.

Here again, as in the FE institution, we can identify conflicting views and a culture of blame between manager and staff which, it is suggested, is non-productive in the change management process. Application of Perrow's model to the University data permits the conclusions that the pedagogic issues to do with learning and teaching in the newly formulated course were well defined and understood by the course team delivering the programme, such that for the students who elected to study via this approach there would be no divergence in what was presented to them as a pedagogic experience.

Figure 7:6 HE Institution Pedagogic Issues

		Task Variables	
Problem analysability	Well defined	Few exceptions	
	√	√	
	Ill defined	Many exceptions	

Figure 7:6

Adapted from Perrow, 1976:45

In the University case, the problems associated with delivering learning and teaching using ICT had been thoroughly discussed at the planning stage and the tasks linked to the course delivery, well planned in advance. All the students were experiencing the same computer system to provide access to the ICT facilities which had been harnessed as a tool for learning and teaching.

The problems associated with this innovative method were openly discussed during the conferencing debate (see Chapter 5 for a discussion of the methodology and Chapter 8 for a summary of the research findings) and attempts were made by the staff to solve any problems. An illustrative example of such a discussion is provided in Chapter 8 which illustrates how a team member works with the students to negotiate the role of the tutor within this course delivery approach.

7.5.9 Summary of the Data

The Perrow model (1976:45) has been a useful tool to discuss the research findings and give pictorial presentation to the issues involved. The model supports identification of the complexities of issues involved in change management. From the research carried out, it is apparent that even when task variables involve few exceptions (whether they relate to a strategic or pedagogic change), increased participation was still not achieved.

7.6 Theme Three: Widening Participation and Inclusion

The potential identified in government policy documents for ICT to reach different learners has been discussed in Chapter 4. The links between the Learning Age agenda and a greater reliance on ICT, in the eyes of policy makers, have been presented in Chapter 5 of this thesis.

Does the research then illustrate that ICT is indeed widening participation and supporting inclusion? This question will be addressed by consideration of widening participation issues, increased access, student responses and quality issues. As has been the case in the research themes considered so far, the data from the College will be discussed first.

The research question being addressed is as follows:

Was the use of ICT in learning and teaching improving access for the student, widening participation and supporting greater inclusion?

Each sub-section of this question- access, participation, inclusion-will be discussed in turn.

7.6.1 Increased Access

The data concerning increased access are interesting. The Manager in the College did not believe that the Centre was, at that stage, widening participation. He records usage as casual word processing. Scepticism as to whether ICT would improve accessibility for the student and thereby increase numbers can also be detected in the lecturers' comments about the geographic region not providing the students targeted by the widening participation agenda. The Manager's views on hub developments had obviously not been articulated to the members of staff. One lecturer identified the opportunity for more *home learning*, whilst the other maintained that access would not be increased (see Table 7:22).

Table 7: 21 Increased access in the FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	Usage is casual rather than scheduled, word processing rather than learning.
CL-JR	There are big markets out there, but not in this region. The main motive was to save money, not to introduce curricula change.
L-SR	With the drives for Lifelong Learning we can help students to learn from home.
L-RW	You won't increase student numbers dramatically by offering computers to do the teaching.

7.6.2 Widening Participation and Inclusion Issues in the College

The Senior Manager in the FE College was committed to the use of ICT to widen participation and saw further potential for the College to be used as a local hub to support access and reach out to students living at a much greater distance. This view had great resonance with the ideas suggested in the prospectus material for the University for Life (DfEE, 2000c:1) further supported in the prospectus for the new Learning and Skills Council (DfEE, 1999b:7).

The staff involved were critical of the associated links made between helping more students and the use of ICT. They seemed unable to view the new Centre as other than for financial reasons and were critical of attempts to use technology to reach students who had not participated in education in the past. The method of introducing change by reducing taught course hours was criticised forcefully as a misinterpretation of government policy. The Senior Manager however maintained that RBL was the way to meet government imperatives.

Table 7:22 Widening Participation in the Further Education Sector

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	I am still of the view that this (<i>RBL</i>) is the way to widen participation, to support the curriculum changes that are needed as we move to the year 2000. With the Internet we could be a hub, with other groups using our materials to achieve their learning goals.
CL-JR	The real mistake was linking the volume shift with widening participation and cuts to hours. Staff were suspicious.
L-SR	The staff were very resentful of me: they saw me as stealing their course hours. It has not worked well from that point of view.
L-RW	Addressing the issues raised by Tomlinson et al by setting up a Resource Centre with computers doing the teaching is missing the point. Tomlinson was advocating more integration in the classroom, more equal treatment, not separation working at a computer.

7.6.3 Perceived Student Response

The Manager in the FE College identified the opportunity that ICT provided to reach more and different students, acknowledging also the need for tutorial support. The Centre Manager reported increased usage of the Centre and another lecturer concluded that in parts of the country where higher pockets of unemployment exist, ICT was supporting new learners. The lecturer with responsibility for students with learning difficulties highlighted the need for personal contact and support, particularly for students who had not succeeded in mainstream education (see Table 23). Much of her interview focused on the role of the teacher in the learning experience. Research certainly supports the significance of the teacher and learner relationship in student success (Harkin and Turner, 1997:89; Martinez, 1998:56).

Table 7:23 Perceived Student Response in the College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	I don't believe we are widening participation yet; we aren't set up yet. I would be very surprised if this was happening.
CL-JR	Students are being dumped by staff – the students will leave, vote with their feet, like they did with the key skills disaster. We have been able to raise the profile of Learning Support by holding sessions in the new building rather than shutting the students away.
L-SR	We have purchased some specific packages to support numeracy and literacy, but they are not well used.
L-RW	RBL will mean my students will become more isolated, less able to cope with the real world.

The interview findings collected from the college support the internal electronically produced data which showed that specifically designed ICT packages were not being well used. Here the lecturer (RW) is sceptical about the likely outcomes suggesting the RBL Centre would limit the development of *real life* skills needed by students with Learning Difficulties and Disabilities necessary to support their integration into society (see Table 7:23).

The issue raised by the interviewee is whether a widening participation agenda which focuses on skills for employment should also be considering the social, cultural and values dimension of education. It is suggested by the researcher that these components of the education experience are vital and a considerable amount of thought needs to be given as to how these aspects of the curriculum are to be delivered if government strategy to encourage a greater reliance on ICT in learning and teaching is to succeed (HMSO 1998:2).

The University Case

The University data were also analysed in relation to the research questions identified below:

Was the use of ICT in learning and teaching improving access for the student, being perceived by the staff to be widening participation and supporting greater inclusion?

7.6.4 Increased access in the University

In the University, ICT appeared to be improving access for students in the mind of the Manager, but, at the same time, threatening the viability of established provision. The course was not seen therefore as widening participation, just changing it. The data revealed confusion about the target group for the government agenda and a lack of agreement between the perceptions of the Manager and that of lecturing staff (see Table 7:24).

There is a need for clarification for academics and others as to what is intended by widening participation in the HE sector. Only when the target group is clearly understood and agreed can internal policy motivate change.

Given that the University provision had the potential to reach across boundaries of nation and state there were still restrictions in access. Participants had to be English speakers and have access to a computer. The course seemed to be increasing participation for those needing to study at a distance but not necessarily reaching students of the kind targeted in the Dearing Review of Higher Education (NIACE, 1997:5). Costs and access to computers were limiting factors which had reduced potential here.

Table 7:24 Increased Access in the University

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	There is a real danger that this course could take numbers from the successful high profile MA International course and damage its viability.
CL-SL	The students were the same people who would come on the ordinary Masters. They just couldn't get here, they were teachers, librarians etc.
L-MM	We have to have English speakers. Your oyster may be global but it is not really global because students have to be English speakers and have access to the technology and have money to pay for the course. All that cuts out a fair proportion of world nations and even UK resident students. We were not clued up on cultural and time differences in different parts of the world. Assignment deadlines were difficult and some had to be adjusted.
L-GH	Students who might not normally contribute are joining the debate and gaining confidence.

The last comment in Table 7:24 is interesting from a pedagogic point of view. The computer conferencing facility was enabling students who might not normally contribute to a debate to do so with more confidence. Research concerning communities of learning, established in cyber space, is beginning to have an impact on the research community's understanding of ICT in learning and teaching (Fallows and Bhanot, 2002).

7.6.5 Widening Participation in the University

The picture painted in the University interview data (Table 7: 25) focused more on structural change management issues rather than pedagogic ones. Here the Management is seen as the main problem in limiting change. The Manager in the interview sample was clear that the course, as she perceived it, would not widen participation despite the declared intention of the staff to reach students who could not attend the University. The University staff mentioned the need to reach students from all over the globe and had been concerned to keep

the cost of the provision as low as was possible. There were clear differences in perception and philosophy between manager and lecturers which had impacted on the change process.

The University lecturers had a much broader global view of the potential that ICT had to offer on a world wide basis. The senior manager identified issues more close to home in relation to the widening participation agenda (see Table 7:25).

Table 7:25 Widening Participation and Inclusion in the University

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	We cannot compete with the OU. I am not sure why they (<i>the course team</i>) have done it. The Government agenda isn't to do with this group of people.
CL-SL	We wanted to reach students who couldn't come to the University.
L-MM	We had to keep the costs low. We had two women from India on our programme funding themselves with great difficulty, scraping money together, so we wanted to keep costs as low as we could. We reduced the key texts to three so that costs were not increased.
L-GH	We had a real battle to make people listen to us.

Issues of widening participation are complex as the data reflect confusion amongst the university staff as to government definition and intention. Flexible provision provided through the use of ICT was supporting access for students but not necessarily, according to the Manager, reaching students who would not otherwise have participated in education. The data revealed a confusion about the target group for the government agenda and a lack of clarity between the perceptions of the Manager and that of the lecturing staff.

National data published in March 2000 (HMSO, 2000:78) identified a misrepresentation of the partly skilled and unskilled socio-economic category of students in Higher Education Institutions across the UK:

People from the partly skilled and under skilled socio-economic group are particularly under-represented in HE in Great Britain. The participants from the skilled group more than doubled from six percent in 1981/2 to 13 percent in 1998/1999. However their participation rate is still only a fraction of that for the children of professional families.

It needs to be affirmed that widening participation is very much part of the government agenda for HE institutions as well as for the FE sector. The government response to the Dearing Report, *Higher Education for the 21st Century* (NCIHE, 1999:3) declares the intent of increasing and widening participation, particularly from groups who are under represented in higher education, including people with disabilities and young people from semi-skilled family backgrounds and from disadvantaged localities.

The agreed definition of a *widening participation* participant makes it very clear that the student cohort on the MA degree did not, as the manager quite rightly indicated, fall into the appropriate category. The MA course was, however, reaching different types of students across the globe, and was perceived by the participants to have great potential to reach other types of learners. At the time of the research, ICT was not reaching the category of student targeted by the Dearing Review of Higher Education (NCIHE, 1997). Since this was the only course in the University using ICT for course delivery it can be

concluded that ICT was not widening participation in the HE institution.

Managers in both institutions were cynical about achievements in widening participation at this stage, the College Manager identified the need for more developed technology whereas the University Manager was sceptical about costs.

7.6.6 Perceived Student Response in the University

In the University where the staff had been responsible for the initiative, the staff reported that the students were *in love* with the method, as opposed to *voting with their feet and creating a disaster* in the College. It has to be suggested that change management which has the enthusiasm of the staff is much more likely to succeed than that which does not (Casey, 1996:78). The University lecturers reported that the students were benefiting from the time period between conference debates, this had created time for thought and reflection, not available in a weekly three-hour classroom session. The quality of the work produced by this cohort had exceeded all expectations.

The praise for the method from the University lecturers was profuse (see Table 26). The same enthusiasm will be recorded when attention turns to the student data. This leads to the following conclusion: it is a mistake to underestimate the role of lecturing staff when it comes to initiatives associated with learning and teaching and crucial that they play a major part in the change management process. For change to succeed those who have to implement the change must agree, or at the very minimum, understand the changes that are being proposed.

Table 7:26 Perceived Student Response in the University

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	The numbers so far are low; they hardly justify the expenditure to date.
CL-SL	We want students to talk to one another. What we have is functional and practical.
L-MM	The students are so in love with the method. Two of the students are teacher trainers and they comment on what we are doing and how they are learning.
L-GH	The students have time to think. The quality of what is being produced has far exceeded my wildest dreams.

7.7 Theme 4 ICT in Learning and Teaching

It is important when creating a new learning environment that careful thought is given to how it will impact, positively or negatively, upon students, teachers, and the learning process (Elliott, 1999:56). The research now moves to assess the impact that new technology has had on learning and teaching and to question whether due attention has been given to the issues of student experience in the two case study institutions under the microscope. The data were analysed using the themes of *quality issues* and *student experience*. The specific questions addressed in the research were as follows:

How did the staff respond to a greater reliance on ICT in learning and teaching; how did they perceive the change in terms of student experience and quality issues?

As has been seen in Chapter 4, the rhetoric of policy documents (DfES, 1997a; DfES, 1997b; DfES, 1998) presents ICT as the mechanism by which the government agenda for improved

access, for students who have not previously engaged effectively in the education system, is to be achieved. How this is to be achieved is not clear. The research community has debated and continues to debate the use of ICT in learning and teaching (Thorne, 1999; Calder and McCulum, 1998). In respect of pedagogic issues in the College, there was minimal understanding of how ICT could be used in learning and teaching, and limited resources available to support the curriculum. In the University, the resources were available and teaching strategies understood by the course team

7.7.1 Teaching Quality Issues in the FE College

The Manager interviewed in the FE institution identified advantages gained by introducing flexible learning opportunities using ICT in terms of a geographic location in the institution set aside for students to work. This was one of his justifications for the RBL Centre (see Table 7:27). He makes no comment, however, about how learning is to be achieved. The comments from the staff also relate to issues of *place* and physical access. The staff reported that most students liked using the facility. Concerns were expressed about Centre usage (see Table 7:27). There was an awareness of the potential that ICT had to offer, but one lecturer expressed concerns about how some staff were using the facility, failing to support students with limited awareness of resources. The Course Leader identified a need for providing training in teaching strategies which support flexible learning delivery approaches. The impact of ICT on pedagogy was not understood.

Reference was made to staff inability to use the Centre appropriately. One lecturer commented, as did the Course Leader (see *Disadvantages in the FE College Table 7:14*) that the Centre was being used as a *dumping ground*. The comment implied that students were unsupervised and undirected, left to their own devices to explore the learning environment unsupported. Staff interviewed recorded the need for all staff who send their students to the Centre to be responsible for ensuring that some form of learning takes place. Quality had been compromised according to the lecturers by mass provision which failed to consider specific learning needs.

Table 7:27 Teaching Quality Issues FE Sector

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	<p>RBL means some of the dimensions of flexible learning – time, place and pace. Full potential has not been realised. We have had problems.</p> <p>We had an under resourced library, nowhere for students to do written assignments, no study area.</p> <p>There was a powerful argument to have flexibility in a RBL Centre, computer based resources had developed along the way and we had a clear need to be competitive in this area.</p>
CL-JR	<p>Students like the RBL Centre but the staff don't realise what we can do here. Staff are not directing students appropriately. Staff need training and awareness. They need to be trained in how to access what is available and adapt their teaching styles to meet the changing technological advances. We need more materials which are curriculum course specific.</p> <p>Students can have more responsibility for their learning but they need to be monitored as well.</p> <p>Staff still have to be responsible.</p> <p>Staff are using this as a dumping ground.</p>
L-SR	<p>RBL should improve quality but not the way we are doing it. In the Senior Management Team, the Director of Student Programmes is keen about quality for students but the others up there are not. They just want to save money.</p> <p>The Centre is being used as a dumping ground.</p> <p>Staff have to support the changes and we have created opposition in the way we have approached it.</p>
L-RW	<p>Students like using ICT to word process. No one has really asked if using a computer actually helps students to learn. We all have different learning styles and a mass shift of course hours does not take that into consideration.</p>

7.7.2 Student Experience as Perceived by the Staff

The Manager in the FE College identified the opportunity that ICT provided to reach more and different students, acknowledging also the need for tutorial support. The Centre Manager reported increased usage of the Centre and another lecturer concluded that in parts of the country where higher pockets of unemployment exist, ICT was supporting new learners. The lecturer with responsibility for students with learning difficulties highlighted the need for personal contact and support, particularly for students who had not succeeded in mainstream education (see Table 28). Much of her interview focused on the role of the teacher in the learning process. Research certainly supports the significance of the teacher and learner relationship in student success (Harkin and Turner, 1997:89; Martinez, 1998:56).

Table 7:28 Perceived Student Experience in the FE College

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-BC	When we have the Internet, demand will increase. People will come and learn with appropriate tutorial back up, who might not in the past have come to the College. This is the way to widen participation.
CL-JR	Students like being here. The usage survey shows increased access. Students like being with people. I am not sure if students like the isolation of working at home but they like working here. We have specific programmes at all levels: 'Hamlet', Chemistry, Physics and a package to help students pass their driving test.
L-SR	The RBL Centre should improve student experience, reach people out there. In areas where there is high unemployment it is working well.
L-RW	With students with learning difficulties you cannot use a large Centre. How can the remoteness of a computer help learning where teacher contact has failed before? You cannot teach SLDD in a RBL centre. You have to have 8-10 in a room with a teacher and a helper. Students who have failed before need constant help and support.

The University data are analysed below following a clarification of the research questions which gave focus to the data analysed in this section of the thesis.

How did the staff respond to a greater reliance on ICT in learning and teaching; how did they perceive the change in terms of student experience and quality issues?

7.7.3 Teaching Quality Issues in the University

The co-operative model of learning underpins the design of the MA programme discussed in this thesis (Lin and Huish, 2000). Co-operation Theory, when applied to situational learning environments, can result in greater collaboration between learners, sharpened judgments and extended knowledge (Cowie and Ruddick, 1998:13). Learning is seen to take place as individuals interact with one another (Slavin, 1990). Through communication, participants are able to articulate their understandings and try them out with others, thus building on their knowledge using the support of the learning community. In the learning process, ideas become more clearly formed so that greater knowledge and understanding is achieved. From the discussion and sharing of information patterned branching and concentricity results and greater depths of learning can be achieved (Flyn, 1992).

The co-operative learning model starts with two basic assumptions that:

1. the learner has the prior knowledge to contribute to the discussion;
2. all learners will be prepared to participate in order to learn.

Co-operative learning shares many similarities with what is known as:

Conversational learning (Pask, 1976: 23).

Conversational learning theory, as originally posed by Gordon Pask (Pask, 1976) proposes that learning occurs through conversations that seek to make knowledge explicit. The learning process is further enhanced through discussion and the testing out of understandings with another person. This model is used to investigate the processes involved in learning complex subjects under controlled conditions. The starting point for conversational theory is the idea that:

Complex human learning is a concept involving communication between the participants in the learning process, who commonly occupy the roles of learner and teacher (Pask, 1976 : 24).

In designing virtual learning programmes which provide bulletin board communication opportunities, as present in the course programme under study, the learning model developed can be seen to mirror the advantages observed in other less ethereal learning communities (Mann and Stewart, 2000). These advantages include greater access to the social components of learning identified by Mann and Stewart (2000:45) as key to motivation in the learning process.

During the interview the Manager from the University identified some major concerns about the quality of student experience. The social and support side of the learning and teaching relationship seemed to be of major significance for her (see Table 7: 29). She seemed

unaware of the course structure and design, unaware that the context for learning, including the opportunity for *learning communities* (Pask, 1976:24), had been taken into consideration during course planning.

The importance of the context for learning is illustrated by the work of Argyris and Schon (1978:78) who developed the concept of *deutro-learning*, which involves the provision of opportunity for students to reflect on their own learning styles (Brookfield, 1986:65). The term provides a focus on the learning process, with students developing their potential through the opportunity to revisit their experiences of learning and evaluate what was effective for them through discussion.

According to the lecturers, the virtual course had overcome the pedagogic concerns raised by the University Manager. The lecturers reported great enthusiasm for the way the students were responding to the course. Contrary to the scepticism of the Manager, the course was providing opportunity for reflection and had far exceeded the expectations of the staff in respect of the intimacy it had produced between the staff and student group (Browne, 2000: 10).

This difference of opinion between the Manager and the lecturers about learning and teaching is interesting, in the light of Gunter's model of pedagogic leadership (Gunter, 2001:69) that advocates greater focus on learning and teaching in approaches to managing change. Gunter's argument supports the researchers suggestion that change involving ICT requires clear understanding of issues of pedagogy, and an awareness of how learning can be

promoted and enhanced when communities of learners co-operate together to support the achievement of their goals.

Table 7:29 Teaching Quality Issues HE Sector

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	Learning isn't entirely a cognitive process, it is an affective process and I don't see how the affective side of learning can be picked up and that is all part of the process. You need people contact to establish communities of learners.
CL-SL	Because the students are working in their own time they are producing work with more depth, more profound and thought provoking.
L-MM	The particular aim is economy of effort on the part of the design. We have not created new modules just used the MA Home*modules and delivered them differently. This did involve us in a lot of preparation and searching for new materials.
L-GH	We wanted personal contact and support. We were looking for something, right from the beginning, that gave the same dialogue opportunities to support learning that was available on the Home MA.* What we are developing mirrors best practice in the classroom. We can teach at a distance but still be close to the students. We are producing richer and better communication and reflection.

**The reference to MA Home modules relates to the Masters degree programme offered to UK students who study using the traditional face to face course delivery model.*

The lecturer's choice of computer conferencing using a notice-board had grown from a desire to mirror as many of the social elements of face-to-face learning and teaching as was possible. The researcher suggests that the Manager's lack of understanding as to how the course was designed was impacting on her ability to see potential. To accept this point is to acknowledge support for the advocates of transactional leadership, who require learning to be given more focus in educational management. The Manager was of the opinion that the students would require more opportunities to reflect on their practice than a computer chat

room could provide. The lecturing staff, more directly involved with the programme, commented on how the course has exceeded their expectations in providing opportunities for such discussion.

Table 7:30 Student Experience in the HE Institution

STAFF	EXTRACT OF INTERVIEW TRANSCRIPT
SM-DG	Students want a more focused teaching and learning experience than this. Teaching is a very social activity and people who go in for teaching are social animals, and it is not simply a body of knowledge that has to be imparted, it is a whole learning experience. 'M' level work is about reflective practice. How do you achieve that on a computer?
CL-SL	We have this touchy, feely group, so although we've got this electronic link we've got close, not cold and distant but quite intimate. We have a two week summer school then modules with 12 computer conferences and 12 hours' input.
L-MM	It exceeded our expectations; we never quite imagined how good it could be. I expected it to be missing on all the non-verbal stuff, the touchy, feely atmosphere in the classroom, the group dynamics but it wasn't. A conference message might say, 'We haven't heard from J. Are you out there J? Is everything OK?' This is powerful stuff. Things happen at work,. This makes the theory and practice link together to produce something really worthwhile. We are getting far more interaction about practice, bringing it back to a debate and developing the argument. People who might not be confident to talk in the seminar group have time to consider their responses before they reply.
L-GH	We use asynchronous conferencing with a fortnightly response rate. This is proving invaluable. We have an initial discussion, then go back to our work environments and students then reflect on their practice and put up discussion points for us to consider.

7.7.4 Perceived Student Experience in the University

As can be seen from the data above (Table 7.30), those involved in the delivery of the course emphasise the way in which interpersonal communication and inter-group support has become a specific feature of the virtual group relationship. The lecturers and Course Leader comment on the power of this medium and its ability to bring people close together. Its

ability to allow time for thoughtful reflection on issues to do with everyday practice is also seen as a strength. The lecturing staff had identified the need to provide opportunities for dialogue and support. The outcome they describe as *powerful*, able to mirror best practice in the classroom (see Table 7:30 for details). The Manager did not appear aware of the pedagogic potential of the facility. It is useful to draw once more on Tyler's interpretation of Fullan's work to record that during an implementation period of major change, a process of negotiated realities takes place between implementers and other interested parties. Quoting from Fullan (1989:34), Tyler (2000: 67) discusses the diversity of perception that exists between policy makers and implementers and calls for clarification if change management is to be successful.

Research into the pedagogy of ICT is revealing the potential that the ICT medium has to provide data about how students form communities of learners to support their experiences of learning (Mann and Stewart, 2000).

7.7.5 Summary of the Data in Theme 4

The data in this category of ICT in Learning and Teaching can best be summarised as illustrating that lecturers in the College and managers in the University are uncertain as how ICT can support learning and teaching. They were unaware of the potential of the medium to simulate opportunities for learning and to increase student participation. Such findings lead to the recommendations arising from this research to be found in Chapter 9 of this thesis.

7.8 Setting the Scene for the Next Chapter

The data have revealed that the management of change to a greater reliance on ICT has been problematic both in terms of what has or has not been achieved in relation to widening participation and in terms of the perceptions and understandings of staff involved.

A more detailed analysis is available in Chapter 9.

The data collected from interviews with the staff have been analysed using a thematic approach. The data have been assessed in the light of the management theories described in Chapter 5 of this thesis. The data collected from the students involved in using ICT in their courses are reviewed in the next chapter.

Chapter 8 The Research Findings: The Student Perception of Change

8.1 Introduction

The research findings in part two of this study relate to the data gathered from the students. This chapter refers to the results of the questionnaire data given to the two specified cohorts of students, to the cyber ethnographic data collated by *observing* the on-line communication between the University students, and to the electronically produced data gathered in the College which records student use of the ICT facilities. Apart from the specifically designed questionnaire, which produced mainly numerical data with some opportunity for a more detailed response, the data presented in this chapter were what might be defined as *routinely occurring* since the University bulletin communication board provided one source and the electronic monitoring data in the College provided another.

These routinely occurring data from the two institutions were treated rather differently, with the College data analysed in tabular form and the University ethnographic data handled using the same principles and method applied to the interview data (see Chapter 6 for more detail).

The cyber-ethnographic data were collected by accessing the Masters degree *chat line*.

Access was provided through the course tutor's access code once the course tutor had confirmed with the course leader and the participants that those involved with the course had no objections. The chat sessions for one term were downloaded and analysed. The actual data are available in Appendix 6.

The computer generated ICT usage data from the College were printed out after the designated research period of one term and taken away for analysis. The data were analysed on the basis of *issues arising* and a summary given of all the key points. The computer generated data were collated to illustrate the number of *hits* made by program accessed on each of the 56 computers located in the Centre. The raw data are available in Appendix 7.

8.2 The Focus of Interest

The focus of interest in each of the research approaches was to discover how ICT was being used, who the students were, and what their perceptions of ICT were when it was used in learning and teaching. There were three themes of inquiry: namely general information, questions about experience of using ICT and finally questions concerning the use made of specific software to support learning. These three areas will be taken in this chapter as headings to permit discussion of the research data. Further analysis will be provided where the findings, as discussed in the last chapter, show significant similarities and/or differences in perspective. A full breakdown of the data is available in Appendices 3 and 4. The research questions that informed the data analysis were as follows:

How did the students respond to the ICT initiative; who were they, what previous experience did they have of using ICT for learning and what were their current experiences of the use of ICT to support learning and teaching?

8.3 Course Participant Information

The students canvassed in the research were *mature* (over 19) and studying for qualifications that would provide them with the opportunity to study at undergraduate level in the case of the College cohort, or Post-graduate in the case of the University cohort.

three male and sixteen female students, the HE institution recruiting only one male participant. The research data indicate that strategy planning goals had not been achieved in this case, thus indicating failure of planning strategies to reach their targets. This is broadly in line with the national picture, where adult enrolments for men in 1998 were at 298,200 and 845,500 for women (HMSO, 1998:56).

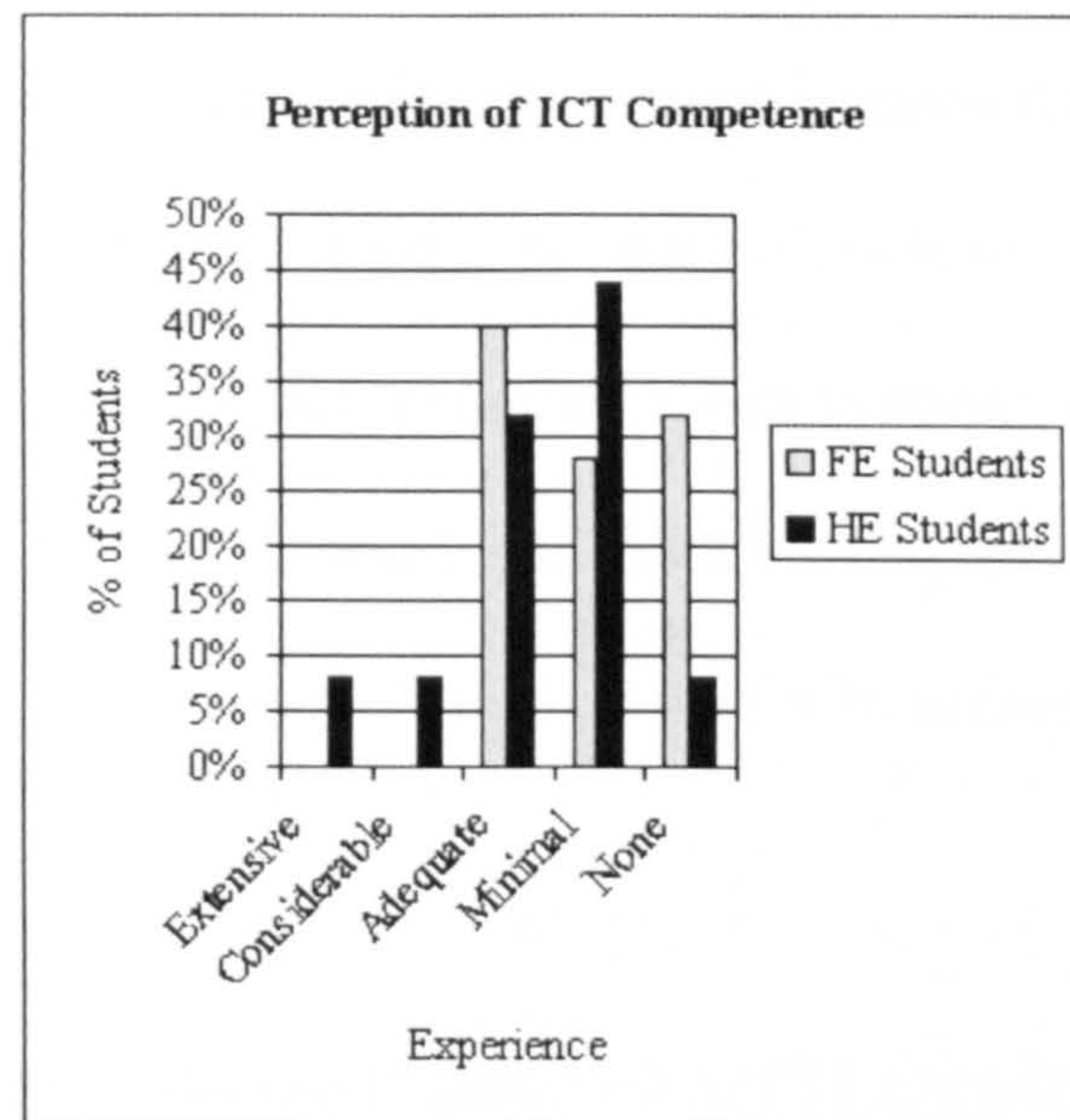
Given current research into non-participation in education by males, as identified in government publications which launched the Connexions initiative (DfEE 2000c), the gender balance of participating students implies that ICT is not, as yet, reaching the specific group targeted in the widening participation agenda. The data collected from this research were too few to enable any reliable conclusions to be drawn, but the gender phenomenon should not be ignored and is worthy of further research. It would seem from this analysis that ICT is not at this stage widening participation. These findings concur with the interview data in which the Senior Manager at the College stated that he did not feel that ICT was meeting strategic objectives in supporting increased participation from designated groups of the population. As recorded in Chapter 7, the staff interviewed in the University applied a global interpretation to widening participation identifying the need to keep course costs low to support the inclusion of participants from the under-developed world.

8.4 The Student Experience of ICT

The research set out to discover more about the students themselves. To gain insight into their previous experience they were asked to rate their competence in using ICT on a scale from extensive to none. The data were based on personal perceptions and can only be analysed on

that basis. The data revealed that the College students rated their competence in ICT as much lower than did those from the University.

Figure 8:2 Perceived Level of ICT Competence



The data from the College cohort illustrate that none of the students rated their ICT skills as more than adequate, with 58% of the Access Course students evaluating their competence in ICT as either *minimal* or *none*. This is of particular concern when it is considered that structural changes within the College had transferred 10% of the course time into the RBL Centre for computer based learning and teaching. The students in the University cohort record more personal competence with 60% considering their competence to be *adequate*, *considerable* or *extensive*. The data in figure 8:2 reflect a pattern that might be predicted given that the University cohort comprised postgraduate students employed in *service industries* and likely to use ICT in their operational activities. There is still a worrying issue about the lack of perceived skill on the part of the College students given that ability to use ICT was essential for their course, 10% of course time having been allocated to the RBL Centre. The researcher would like to highlight a problem here, by suggesting that computer literacy (as with reading literacy) soon becomes a skill taken for granted by those who have acquired it. Once a

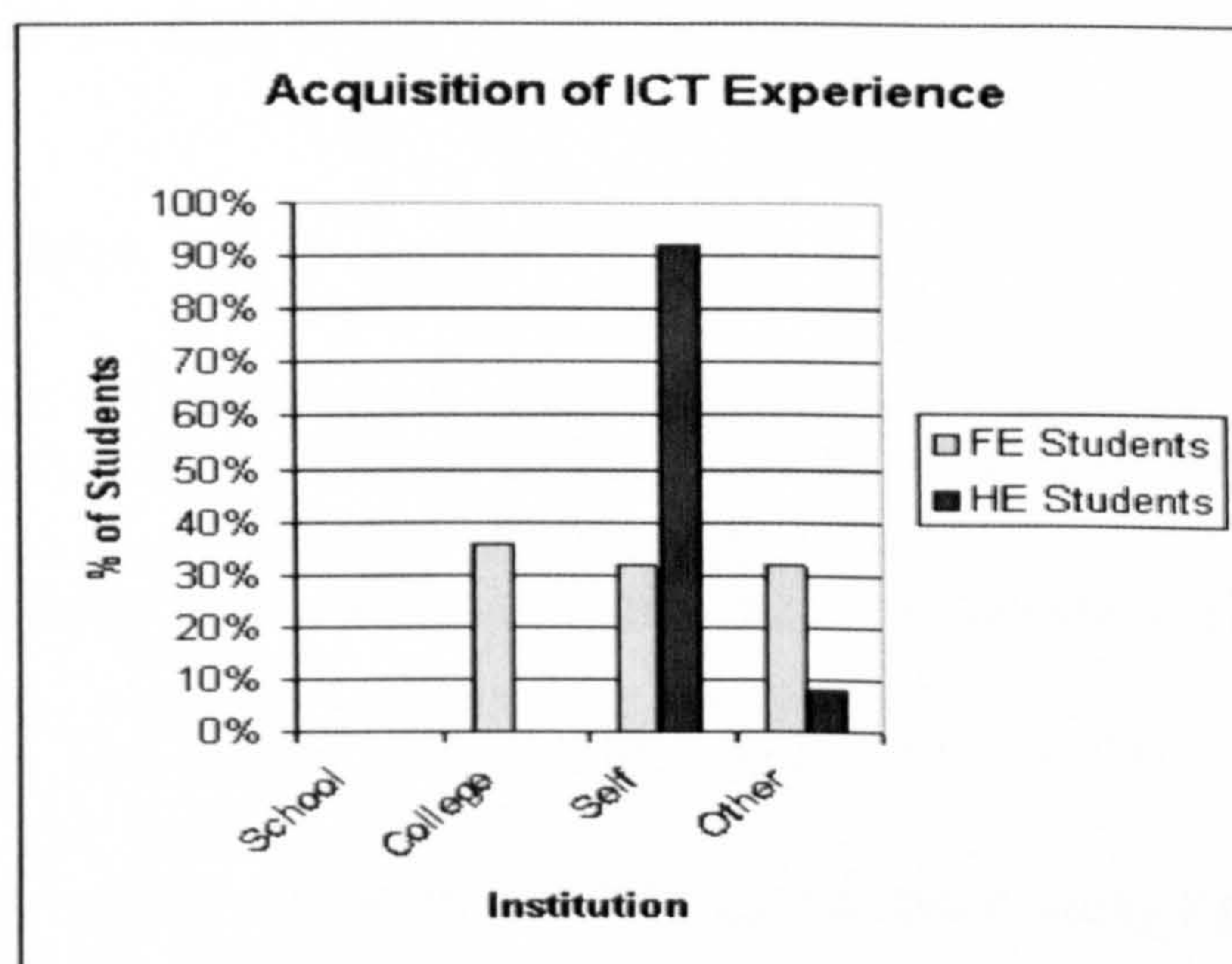
competent ICT user, it is easy to forget how difficult it is to make the first steps towards computer literacy. Any structural changes to a greater use of ICT cannot assume, as appears to have been the case in the College, that computer literacy is common to all.

The data revealed that 11 of the University students had gained the major part of their ICT experience by self-tuition, one had gained experience *elsewhere*. More interestingly, five of the University cohort also felt that their experience was minimal, even though they were using ICT for their course. The University staff, when interviewed, stated that minimal skill levels in ICT were required to participate on the virtual course, with access to a computer all that was needed.

The majority of the College students had gained their ICT experience at College, six claiming to be self taught and six ticking the category of *other*. This information was sought to determine whether a lack of taught input into how to use ICT might impact on a student's willingness to participate in ICT delivered courses. The data showed that none of the Access students had gained his or her experience at school. ICT was a new skill to them, gained after leaving full-time compulsory education. Figure 8:3 describes in percentage data, where the different cohorts gained their experience of ICT.

Figure 8:3

Acquisition of ICT Experience



Sixty four percent of the College cohort were either self-taught or gained their ICT competence elsewhere. It is worth noting that the staff interview data revealed that this group of students (the Access cohort) did not like the noise levels in the RBL Centre, the only location in the institution where ICT training was available and the place to which 10% of their course time had now been relocated. One of the College lecturers also expressed concern that group teaching in a RBL Centre was not appropriate for all learners (see Table 7:14):

Resource Based Learning has potential for part of the curriculum and only for some of the students.

Further issues to do with access to the technology will be discussed in more detail as data from an open question on the questionnaire are analysed.

A question was included in this open section of the questionnaire to establish if any of the course participants had a specified learning difficulty or disability. This was linked to the research focus on inclusion. The data revealed that no students in the University group considered themselves to have any difficulties but three of the College cohort claimed to be dyslexic. Only one of these three students had used the RBL Centre to support him/her with College work stating that word processing was a useful ICT tool for assignment work. The interviews with the lecturers found support for this view.

8.4.1 Course Choice

The research set out to discover the impact of the use of ICT on the students. Questions were asked of the students to gain insight into this issue. Whilst the College students had no choice other than to use ICT as part of their course, another option of traditional delivery was available to the University cohort in that they could study using a pre-prepared package of

distance learning materials. For this reason the questions asked of the two groups differed slightly. The College students were asked if the existence of the RBL Centre impacted on their choice to study at the College. All but one stated that the Centre had had no impact on their choice of course. The question asked of the University cohort focused on the rationale behind their choice of course. Contrary to those surveyed in the FE institution, existence of the ICT delivered programme in the University had influenced student choice with nine of the 12 students acknowledging that the flexibility provided through *virtual* learning had been the main factor in their choice of course. A tenth respondent identified a stronger commitment in the desire to research ICT as a learning tool as part of his course.

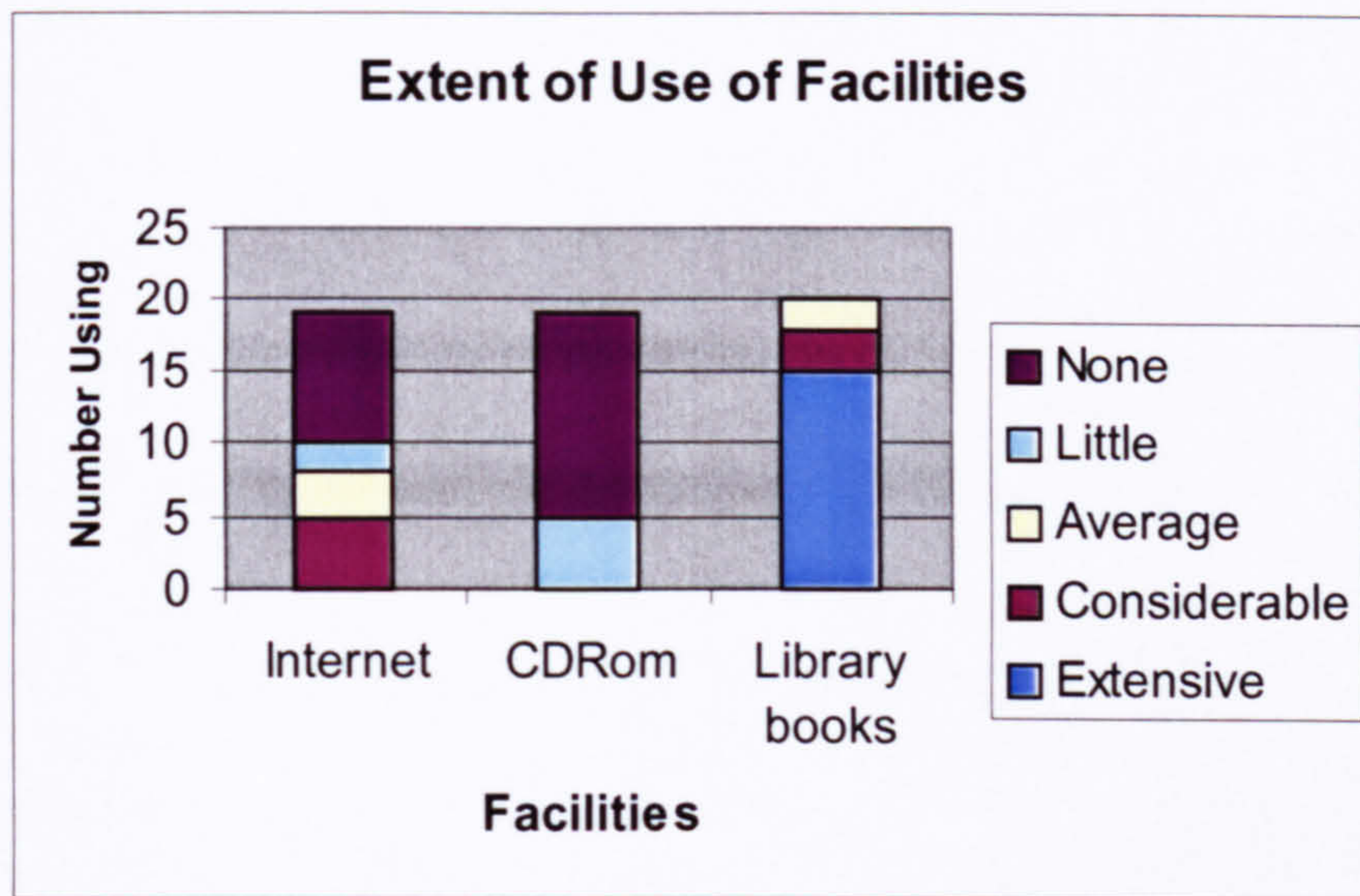
In summary, the driving force behind the introduction of the MA virtual course had been staff interested in pedagogy. The move towards greater reliance on ICT in the College had been prompted by structural changes which reduced teaching hours and created a move away from the traditional classroom environment to the RBL Centre. The level of ICT skills, as perceived by both cohorts of students, was not strong. Expert use of ICT was not essential for course delivery. A further research question was designed to assess how the students were using the technology.

8.4.2 Use of Technology to Support Learning and Teaching

To provide insight into the impact of ICT usage on the students, a question was asked to investigate the extent to which they were applying new technologies to support learning and teaching. This question was designed to measure the impact on the students of the changes under investigation. In the College the perceptions of the selected student cohort were that they were still relying heavily on traditional teaching materials such as text and articles. The

data here between the two cohorts of student show stark differences. The College data reflect heavy reliance on books, very little use of CD Rom and *considerable use* of the Internet being made by only five of the 19 College students.

Figure 8:4 Use of Facilities : Access Data from the College



The data show that despite the availability of the RBL Centre, the Access students were relying heavily on library book resources to support their learning. Some use was being made of the Internet but since this had not been installed in the College (see interview data with the Senior Manager, *Access will increase when the Internet is installed*) it can be concluded that this group of students was making little use of the RBL Centre, other than to access traditional paper based resources. This view is confirmed by the evidence presented below which illustrates the type of use made of the Centre by all College enrolled students. A full transcript of this electronically collated data is available in Appendix 7.

Table 8.1 on the next page represents a summary analysis of the internal usage data collected in the FE institution as part of a survey commissioned by the Principal. The data shown below are a summary analysis, on a weekly basis, for a period of one term between 6th January 1999 and 22nd March 1999, illustrating the use made of each of the 58 computers installed in the Resource Based Learning Centre. The next chart identifies all the networked facilities available, from installed hardware to CD Rom Learning materials.

The data were further analysed to illustrate the percentage of usage as a total of usage for each facility. To give an example, a 57.8% usage of Word 97 with 21,337 accesses compared with a 0.1% use of Chemistry Set, World War Archive and French Assistant illustrates that the Centre was being used more as a facility to reproduce work using *Word* programs than as a Centre for learning. The data reveal that in its second term of operation the Centre was operating as a workshop, not as a resource for learning. This supports the view of the Manager that usage for *word processing rather than learning*. The staff interview data reflected a variety of thoughts on this, including a view that computers were not a substitute for teachers. It was also mentioned that staff, to ensure that the Centre was not perceived as a better place to be than a classroom, were adopting certain strategies to limit the Centre's acceptability. The researcher refers specifically to research data in Chapter 7 which refers to *attempts at sabotage and being used as a dumping ground* (see Table 7:6, Table 7:23).

Table 8:1 Technologically Produced Data from the FE College

Resource / IT System	Number of Accesses	Popularity % of Usage
Access 97	743	2.0
All the Right Type	118	0.3
Breakthrough French – CD	122	0.3
British Sign Language	47	0.1
Chemistry Set	54	0.1
Colliers	496	1.3
Driving Theory Test	607	1.6
Ecctis	1	0.0
Encarta 98	1591	4.3
Excel 97	2700	7.3
French Assistant	30	0.1
French Experience	99	0.3
Individual training for Access 97	100	0.3
Individual training for Excel 97	41	0.1
Individual training for Outlook 97	11	0.0
Individual training for Powerpoint 97	20	0.1
Individual training for Word 97	56	0.2
Internet Explorer	1438	3.9
Job Search Reading Disk	42	0.1
Journey Planner	121	0.3
Learning to Learn	33	0.1
Mosby's Medical Encyclopaedia	354	1.0
Omnigraph	14	0.0
PageMaker 6.5	1739	4.7
Payroll	17	0.0
Photoshop v5	724	2.0
Powerpoint 97	588	1.6
Sagev5	30	0.1
Skill Assessment (Individual training)	54	0.1
Slides for Driving Theory Test	85	0.2
Word 97	21337	57.8
Works 4.5	3080	8.3
World of Sport	219	0.6
World Travel Guide	152	0.4
World War 1 Archive	47	0.1
TOTAL	36910	100.0

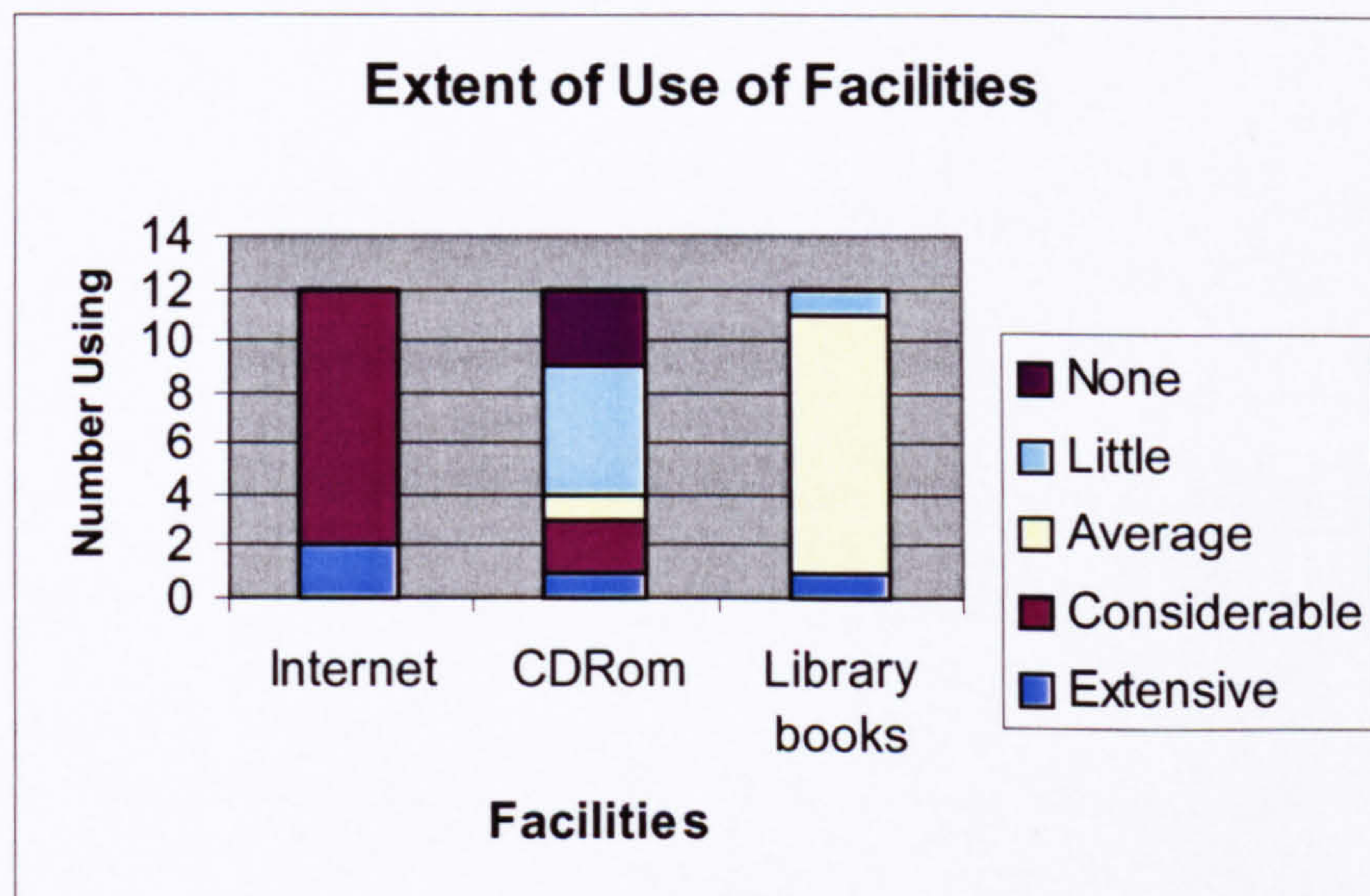
Popularity is defined as usage of the system as a percentage of total usage.

ICT self-help packages which supported the newcomer in the use of the technology (such as

the individual training packages) had minimal usage, with individual training for Word at 0.2% involvement, Access training at 0.3% and the other three training packages at 0.1% or less. ICT packages of the encyclopaedia style had some use (1% for the medical dictionary) but, overall, it is reasonable to conclude that major structural change in location and timetabling had impacted minimally on the students' approaches to learning.

The data reveal a different story with the University cohort. Here Internet use was judged by the students in the questionnaire to be considerable and library books used by the majority of the students. The picture for the use of CD Roms was much more varied, with five students making little use of this facility while the other seven judged their use to be average, considerable or extensive.

Figure 8:5 Use of Facilities : Data from the University



Where the students evidenced an enthusiasm for ICT, as was the case with the University students, usage was greater than where the response was less enthusiastic. The data demonstrated that staff enthusiasm created, it is here suggested, by involving lecturing staff directly in the change management solution, led to increased student

enthusiasm and willingness to use a variety of technologically produced learning resources.

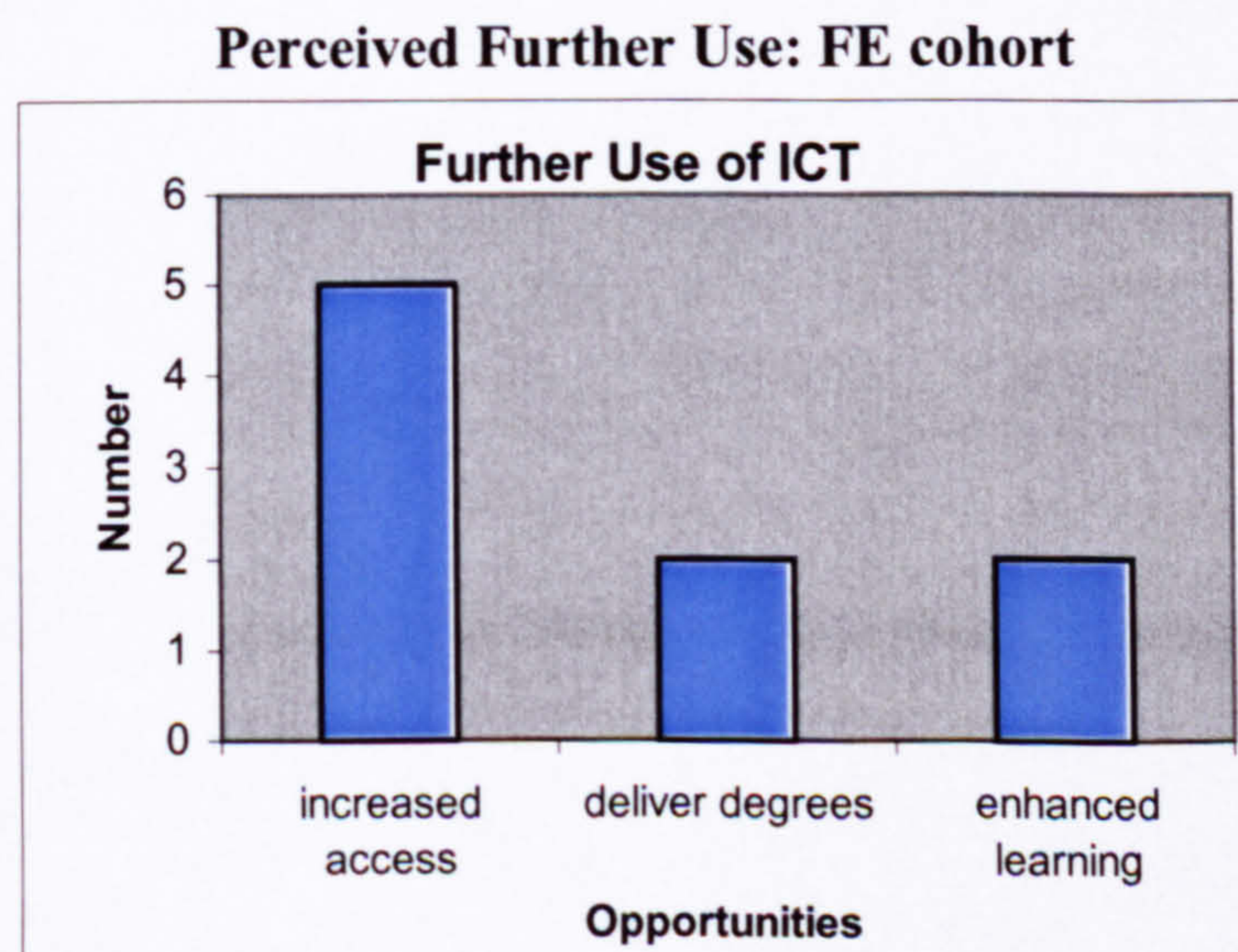
8.5 Student Perceived Potential for ICT Usage

To understand the impact that ICT usage had had on the student cohort a question was asked concerning the students' perceived view of the future use for this medium. This question, which focused on perceived future potential to increase student access, elicited different responses from the two cohorts of students.

8.5.1 Potential for ICT as Perceived by the FE Students

Based on their experience of the course, out of 19 College students only five saw any further potential for ICT to increase access, two perceived the potential for ICT to deliver degree courses and two its ability to support learning. In the HE institution the picture was different with every student surveyed seeing full potential in all the identified areas of access, degree delivery and enhanced learning. Figure 8:6 below represents the data from the FE College.

Figure 8:6



The data demonstrate that fewer than half of the students in the FE cohort were aware of the potential of ICT to increase access; few saw the potential for further developments.

Data collected from the College cohort from an open question illustrated that the students felt that the RBL Centre was responsible for promoting inequality and leading to disadvantage (Table 8:2). Rather than providing flexible, any time, place or pace access (Bosworth, 1991), the need to gain access to the Centre was disadvantaging those who had a family commitment or limited experience of using computers.

Table 8:2 FE Student Data

I wish I could be at home more. I have kids to collect from school at three o'clock, I can't stay to use the learning centre. I have to carry large books home and work when the kids are in bed.
 It was difficult trying to learn so much so quickly. I don't have the time to learn how to use the computer software.
 Those who can use computers are at an advantage. The facilities are good but I don't know how to use them.
 It is easier for some people to gain access to the resources than it is for others.
 Those who can use computers get better marks. It is not fair on the rest of us.

Implicit in the research findings is the view, at the time the research was carried out, that ICT was perceived to create barriers rather than break them down.

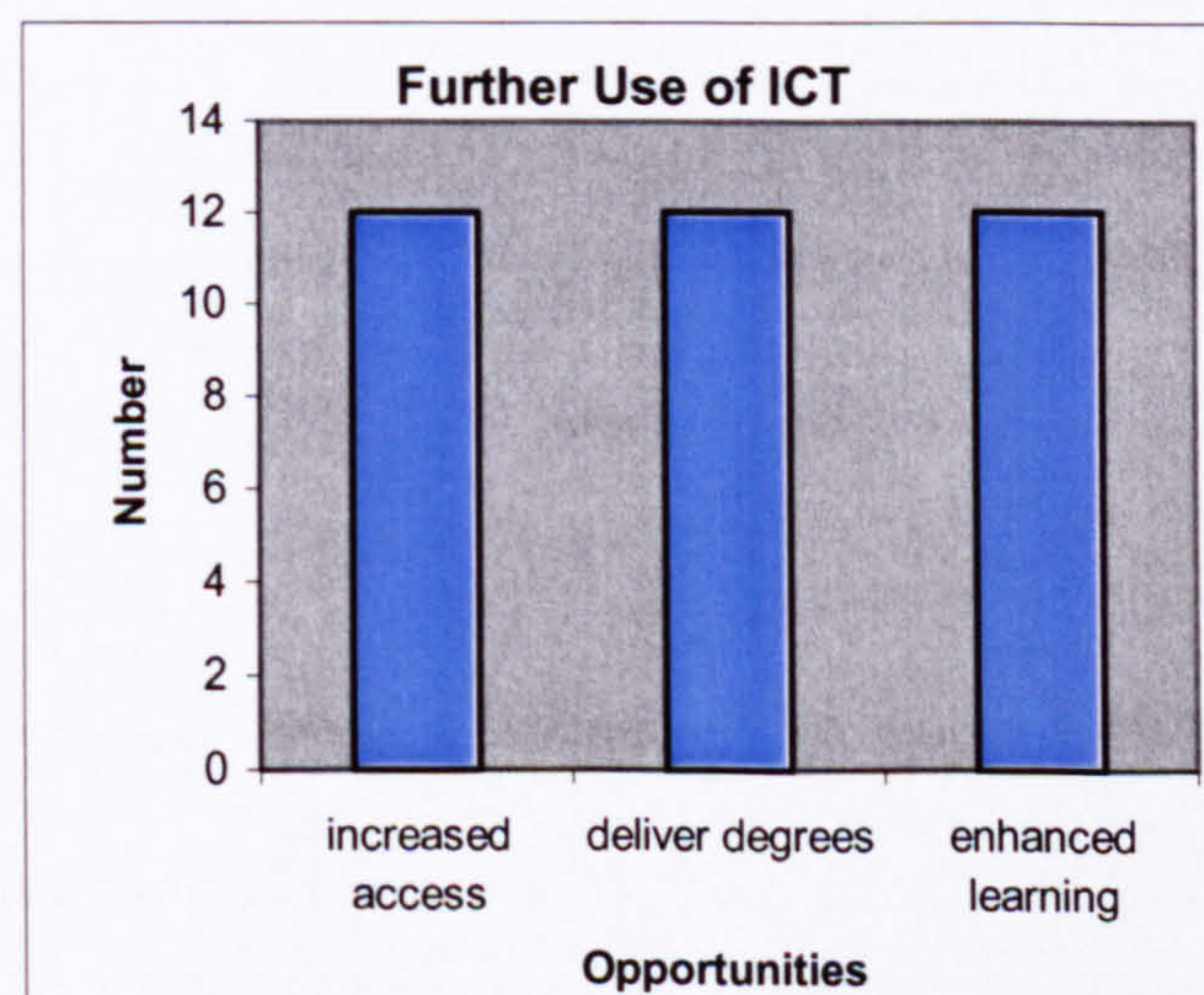
Opinion expressed by the College staff in respect of the access issue differed depending on the individual's role in the structure. The Senior Manager identified technical issues as the main problem, whereas a lecturer stated that the RBL Centre was not an appropriate learning environment for reluctant or disadvantaged learners.

It is important that the needs of all learners are considered in change management situations. Those who understand the learning needs of the adult returner must be consulted in the planning process. The concerns of all learners must be taken into consideration. Issues of pedagogy cannot be separated from those of structure when change is introduced.

8.5.2 Potential for ICT as Perceived by the University Students

The whole cohort of HE student were agreed on the great potential that ICT had to offer, all perceived an increase in opportunities through the greater use of ICT in learning and teaching. What is worth noting is that where the initiative for change had been driven by pedagogic concerns, the potential was realised: where the change had been structural, the opportunities for enhanced learning were not well understood. Although, of course, there are a number of other variables here that might have influenced the outcome such as staff personnel and student motivation.

Figure 8:7 Perceived Potential : University Students



All student course members from the University agreed that ICT had great potential.

8.6 Course Satisfaction

The data revealed that the students were satisfied with their programmes of study. In both the College and the University, the question about course satisfaction received replies of *satisfactory* or *more than satisfactory*. This is interesting in comparison with the views of the staff, particularly those from the College, who expressed concern about the introduction of ICT in learning and teaching. This is an area that requires more investigation. It is suggested that the concerns of the lecturers in the College focused somewhat on how change had been introduced, and their negative responses were linked more to their own feelings of reduced control over the learning and teaching process than the actual experience of the students. It is only possible to surmise here; more research is required. When asked about their course, the University students reported universal satisfaction, with one respondent feeling the course to be more than satisfactory.

The University lecturers reported great enthusiasm for the way the students were responding to the course. Contrary to the scepticism of the Manager, ICT delivery was providing opportunity for reflection and had far exceeded the expectations of the staff in respect of the intimacy it had produced between the staff and student group (Browne, 2000:4).

In reply to an open question on the research questionnaire, the University students offered reflective comments about how they were learning and how they supported one another. The data in Table 8:3 illustrates this point.

Table 8:3 University Students' Perceptions

This doesn't feel like learning but we are.
 This is an extremely lazy and surreal way to study, by talking to people across different continents but it works!
 The conferencing is so much fun, we support one another, when it comes to having to produce the assignment it becomes more difficult
 Having time to consider and respond on line is particularly encouraging for me, a hesitant learner.

The comment from the self-labelled *hesitant learner* is supported by the lecturer who identified a benefit of asynchronous (see Glossary) conferencing in providing time for considered responses. This provides further evidence of an advantage in ICT learning for the less able or less confident learner or any learner to reflect on their experiences.

Virtual learning using a conferencing site had provided a solution to issues of community of practice, had enabled reflective practice (Seeley-Brown and Duguid, 1996) and had, for one student, provided the added benefit of time for considered responses rather than perhaps no reply at all. It was apparent that for those who did not like to speak in public, ICT delivery was providing greater time for thought and was supporting the learning process (Browne, 2000:5).

In the University, it became possible to access data produced through technological means. The research now addresses the findings from this part of the research.

8.7 Cyber-ethnographic Data

This section of the research reviews the virtual conferencing data produced by the MA students in the University. The data, as collected, are comparable with the usage data collected in the College in that they are naturally occurring data available as a result of the use of technology in the learning and teaching relationship. The College data, however, refer to all users, whereas the data below relate specifically to one cohort of students studying for an MA degree using computer conferencing, referred here to as *Open Learning*.

The data collected in the College were examined earlier in this chapter. The conclusion reached was that little use was being made of the specifically purchased CD Rom

packages intended to support learning and teaching. The RBL Centre was being used as a workshop facility (see Chapter 7) rather than providing alternative opportunities for directed or research based learning and teaching.

The virtual data from the University used here were produced during a conferencing period at a point in time when the tutor for the group had just changed. This particular conferencing sequence is interesting in the light of issues raised by the Manager and lecturing staff about the nature of the on-line teacher/learner relationships. The data show a divergence of opinion about the ability of ICT course delivery to support *communities of practice* (Seeley-Brown and Duguid, 1996). The provision of a *virtual learning community* (Hine, 2000:23) on line, incorporated into an educational framework, opens up opportunities for an enriched learning experience which can transcend the barriers of time, place and, if asynchronous (see Glossary), also, pace.

In the case of the virtual MA course the participants have two weeks in which to respond to the discussion board. Issues of relationship and personal tutoring played a central role in the learning process and, as is shown in the analysis which follows below, can distract from issues more closely connected with gaining a qualification. The summary (Table 8:4) represents the text of a discussion which took place in cyberspace between a new course tutor appointed in March 2000 and the student group.

The summary below is attributed and dated to illustrate sequence. The Course Leader, tutor, and the students gave permission for these data to appear unadulterated in the research. The discussion started on 6th March as a newly assigned tutor, who had met the students only briefly during the summer school, launched the Personal Development Profile (PDP) module. At the close of the previous module, the students

had been asked to evaluate the course, and it is to their comments that the tutor first referred:

Table 8:4 Date 06/03/ Category Forum Feedback Author LA

Thank you for your contributions which I have read with great interest.
As a starting point I think M's comment about the online conferences not being enough of a debate would be useful to discuss.

The tutor has specifically focused on the conference facility and the issue of debate. This message from the tutor contained further information about report writing and referencing, which received a response from B. who replied on 08/03. M. replied on 09/03 to say that he was interested in dynamic debates and would be making that the subject of his MA dissertation. On 11/03 J. joined the discussion by requesting less academic content in the discussion papers and more summary reports with questions provided to direct the discussion. On the 12/03 Jo. provided support for J's idea and offered another dimension to the discussion related to the use of practical work experience and its application to the course. One day later the tutor added her thoughts to the debate. Some additional messages appeared that are linked to practical course issues such as assignment feedback and size of the page layout. On 19/03 M. raised a new issue about the role of the tutor. It is worth focusing on this, since it highlights issues raised in the interview data (see Chapter 7) about the use of ICT as a learning and teaching tool. The data provide insight into the student and staff experience of working on-line.

Table 8:5 Date 19/03. Category Forum Feedback Author M

The role of the PDP tutor seems undefined. Sometimes I feel that the tutor should be someone who will listen to ideas and then give feedback and direction. Other times, I feel that because this is a class the tutor has a more formal role is assigning and grading work.

This comment promoted a lengthy response from J. about PDP tutor support.

Table 8:6 Date 02/04 Category Forum Feedback Author J

I must admit that I have been depending on my boss at work, my course colleagues and friends here in Sri Lanka for moral support, answers to my questions and guidance on assignment writing. I prefer to rely on people with easy access, and whom I know quite well, for advice, so I find the long-distance occasional tutor system quite off-putting.

I must say the change of tutor has fazed me a little as well. I think the reason is that we didn't have enough time to spend 'getting to know you' during the summer school.

Also the change of tutor was done 'out of sight' so we had no opportunity to contribute to the process of change and become accustomed to it.

The change of tutor has caused concern. *Long distance* tutoring is also critiqued by this student, thus supporting the Managers view that *communities of learning cannot be created at a distance* (DG, Table 7:22).

What is also interestingly revealed here is that where there is a perceived shortfall in personal tutorial support, the student, J, has found an alternative and is relying on a local network for advice, moral support and guidance.

A reply from the tutor followed three days later. She, interestingly, picked up on the issue of tutorial support in relation to J. having found alternative support mechanisms. She opens the discussion by presenting the position from her perspective and summarises the issues raised by J. The key points in her reply are summarised below.

Table 8:7 Date 05/04 Category Forum Feedback Author LA

I am glad you have developed a good support system locally, but I am concerned if you feel that the tutoring system here is not really meeting your needs.

I am sorry that you feel there was insufficient consultation about the change of personal tutors.

It is important to remember that this discussion had been open to all course participants and was permanently *in print*, unlike an informal discussion during a face-to-face tutorial. The response from the tutor appeared to allay fears as the next transmission from the student was far more positive. It is necessary to pause here and comment on the interpretation of how the tutor responded. It could be said that her comment is somewhat defensive; however, this is a matter of interpretation. Research by Mann and Stewart (2000) identify the need for great care when communicating in cyberspace.

Table 8:8 Data 08/04 Category Forum Feedback Author J

Thank you for your response to my reflections. I do believe the problem of tutor support is mine and not really yours. ... You have been so caring and helpful in offering both emotional and academic support during the past few weeks of conferencing that my initial concerns are dissolving fast and I'm feeling quite secure again in the knowledge that we have an understanding ear/eye on the other side of the 'screen'.

I have the unfortunate trait of always being on the defensive until I'm comfortable in any situation!

I much appreciate your concerns for us all. I know we can rely on your support in the months to come. Thanks.

A number of issues were discussed in this communication with some solutions posed. What was clear was that personal contact and communication involving a personal debate with someone who was known to the student was still important, if not more so, to the student learning at a distance. The interview with one of the staff indicated that the students seemed to be *a touchy, feely group* in need of personal support. It is difficult to determine how much of this is to do with group identity and how much is the impact of the virtual course. The point is however that this group needed personal support and was well able to articulate this need.

The level of openness about the relationship between student and lecturer was fascinating. It is tempting to draw a number of conclusions from this level of debate about the quality of interaction over the Internet and the importance of clarity of role. However, this is only one small piece of evidence which may have been influenced by a number of different factors, some of which may relate to the size and membership of the group. What the openness of debate clearly had done was to open a door for J. to make some quite hard hitting comments about the new tutoring arrangement. The research reveals the student need for personal support .

The cyber-ethnographic data illustrated that the tutor was working hard to deal with inter-personal issues arising from the method of delivery and the distance in the learning relationship. The change of tutor, at a distance, had had quite an impact on the student experience.

During the cyber-ethnographic discussion (12 March) J. stated that she enjoyed the debate much more when the discussion focused on an issue related to specific practice. The staff interview data revealed that the lecturers had chosen the course design specifically to model

the major elements of traditional course delivery to include opportunity for reflection, and a chance to relate theory to practice (see GM, Table 7:22):

We wanted a model which focused on discussion which provided the same dialogue opportunities to support learning as the traditional MA.

The criticism levelled against the virtual method as voiced by the University Manager when interviewed is worth emphasising (see DG, Table 7:10):

This method is not appropriate for pedagogic issues of practice.

It seems rather too critical to claim that a pedagogy of practice (Laurillard, 1993:12) is not established. J. maintained that this, for her, is the most interesting part of the student learning process on this course (see Appendix 7:12th March).

The use of computer technology as a learning tool is relatively new, as is the virtual conferencing methodology. The work of Laurillard provides a useful structure to support the analysis of virtual data. In her categorisation of 'conversational frameworks' she identifies four elements involved in the learning process when virtual communication is underway; these are (Laurillard, 1993:12):

Interactivity, adaptivity, discursiveness and reflectivity.

The work of Laurillard clearly illustrates how virtual communication can accommodate the traditional elements of 'face to face' teaching and learning communities. This framework has been applied to an analysis of the virtual data in this research to give insight into the learning

involved in this process (Browne, 2001:21). As the focus of this research is the process of change it is not appropriate to focus in detail on this.

8.8 An Overview of the Research Finding from the Student Data

The researcher set out to discover what was driving change towards a greater reliance on ICT in learning and teaching and how staff and students perceived themselves to be affected by its introduction. The findings from the research are discussed in Chapter 9, however a brief summary is provided here to give focus.

Students involved in the research could see the potential for ICT to support and enhance learning. The use of virtual conferencing had proved successful from the point of view of the staff and students involved. The Manager had failed to understand its potential. Contrary to the view of the manager, data collected from the lecturing staff and the students illustrated that virtual learning was supporting the CPD course and allowing discussion of practical application. It is suggested that misunderstandings resulted from the way change to using ICT had been introduced in the HE institution. The course team had taken forward the initiative without the involvement of the Management. As a consequence, shared understandings and consideration of structural as well as pedagogic issues had not been achieved. There is evidence of ambiguity (Tyler, 2000:56) and lack of understanding on the part of the Manager, in respect of the potential of ICT in learning and teaching but there is also evidence of a failure on the part of the lecturers to consider operational and planning issues.

This research explored change in relation to the use of ICT in learning and teaching.

Consideration was given to understanding the process that was driving the change when seen

in terms of pedagogic and structural issues. Pedagogic issues involving students and how they can benefit from ICT delivery cannot be ignored as a result of minimal understanding (as appears to be an issue in the University). Neither can the desire to make structural changes to improve physical accessibility (as is the case in the College) override the consideration for the learning needs of the students.

8.9 The Concluding Chapters

The next two chapters together represent the final part of this thesis. The penultimate chapter, Chapter 9, contains a review of the research findings and makes recommendations to support practitioners in the management of change. The final chapter contains a number of personal reflections from the researcher.

Chapter 9 Conclusions

9.1 Introduction

In this penultimate chapter of the thesis the research questions are revisited and discussed in the light of the data that have been presented in Chapters 7 and 8 of this thesis. In an attempt to give full analysis to the questions as posed, the discussion that follows draws on the theory and literature studied in Chapters 2, 3, 4 and 5 of the thesis.

9.2 The Focus of the Research

This research has been a study of change in two education institutions as ICT was introduced to support learning and teaching in response to government directives to widen participation and support inclusion. The aim of the research was to reflect on the impact of change and to make recommendations for future approaches to change involving the introduction of ICT in education institutions.

Change cannot be understood unless it is set in the context of time, policy and purpose (Bush, in Coleman and Briggs, (eds) 2002 :59). The first part of this thesis (Chapters 1 to 4) considered these issues; Chapter 5 reviewed a range of theory and a second section

(Chapters 7 and 8) discussed the data collected as part of the research process. The data produced as part of this thesis have been analysed at the macro level in terms of a hierarchical approach to change management using the theories proposed by Weber (in Cosins, 1972) and other structuralists such as Perrow (1976), Fullan, (1999) and McNay (1995). Interpretative theories known collectively as subjective models (Bush, 1995; Sergiovanni, 1984) have also been applied to give greater insight. The application of two approaches has added depth and breadth to the research process. This final section of the thesis draws upon the research data to make recommendations for future change. As part of the process of evaluating the research outcomes; the questions posed at the start of this study are now revisited.

9.3 Question 1: What factors were promoting change in the two education institutions?

Education institutions cannot be understood without reference to the historic and the contemporary externalities which impact on the existence of the organisation (Gunter, 2001:2). To support an understanding of the factors promoting change in the two institutions, the research is located historically in the context of the educational changes first mooted by James Callaghan in the 1976 Great Debate (Whitty, 1985:23). The focus has been two education institutions which have been subject to a number of changes in their structure and organisation. These changes have been discussed in the light of government policy and analysed through a Marxist critical approach using the theoretical models of Bowles and Gintis (1976:23), Althusser (1968:67), and Gramsci (1971:52). Changes to

the curriculum, and the very nature of learning and teaching described in terms of pedagogic change, have been assessed from the post-modern perspective of uncertainty with the dissolution of boundaries of time, place and space (Ranso, 1998:67).

To facilitate understanding of the changes underway, a number of theoretical models of change have been applied to a range of complementary issues which feature prominently in government policy papers published in the last six years (NCIHE, 1997; FEFC, 1996; FEFC, 1997; DfEE, 1996). Common in all the reports identified above is the articulation of the need for educational change in the 21st century to be achieved through harnessing Information Communication Technology in learning and teaching as a tool to widen participation and support inclusion. It is this policy context, it is suggested, which forms the historic context for change in the case study institutions.

Change within the two education institutions has been analysed in terms of theories that identify the complexities of the changes underway. Models of change collectively identified as 'chaos' or 'complexity' theories (Lewin, 1993: 23; Fullan 1999: 66; Kauffman, 1995:45) have provided greater insight into the analysis of the institutions.

As well as the required response to external changes, a number of internal factors are worthy of mention. Both institutions were experiencing a period of great change. Figure 1:1 in Chapter 1 identifies that both had recently been re-structured, were in merger talks, had declared financial deficits and were required to respond to government initiatives by increasing student numbers through the use of technologically designed teaching

approaches. These were all potentially major elements, and separate from the ever present internal changes seen as part of the functioning of an organisation (Howarth, 1988:15; Scott, 1987:12). Change is a recurring theme in education today (Blandford, 1997:5).

Conclusion 1: The factors promoting change emanated from external policy directives (as discussed in Chapter 4). The research institutions were also experiencing internal change due to financial issues, changing staff personnel, merger discussions and the requirement to recruit more students. ICT was introduced in both institutions at a time of great internal and external change.

9.4 Question 2: How was change to greater reliance on ICT introduced in the two institutions; what strategies were adopted, what were the motivations, the driving forces and the outcomes?

An interesting feature of the research was that the approaches to change adopted in the two institutions were very different. The change in the FE sector resulted from a *top down* management directive (Weil, 1994:7), described here as *structural*. The change recorded in the HE institution had taken a different approach with a *bottom up* (Weil, 1994:7) process which has been referred to in this research as *pedagogic*. For Fullan (1999:18), both top down and bottom up strategies are necessary to bring about change.

9.4.1 Change in The College

In the FE College, the change was planned with a published strategy document and structured procedure to inform the staff. Change was produced by cutting course hours and building a new Resource Based Learning Centre to facilitate learning and teaching for large groups of students. The staff involved at course operational level had no choice other than to allocate their teaching groups to the RBL Centre for some of the timetable (Appendix 9 identifies a 10% volume shift in course delivery hours). The change has been defined as strategic since it impacted on the organisational structure of course provision. The evidence available in the College case leads to the assertion that *tight* leadership control (McNay, 1995:5) has operated within a *club culture* (Handy, 1984:10) with the Manager leading from the top, making policy changes to be carried out by those in positions of authority within the organisational hierarchy.

In producing and disseminating the strategy document (Appendix 9), the College change (or *task*) (Perrow, 1976:34) was declared and the structural re-organisation (*problem analysis*) clearly described. Issues of *how* the change would impact on learning and teaching were not addressed. The policy document gave detailed explanation of the structural changes required, whereas issues of pedagogy were poorly framed.

9.4.2 Change in the University

In the HE institution, senior management had minimal involvement strategically in the

developments. The focus for change was located clearly with staff delivering the programmes. The strategies adopted by staff to achieve their ends were indeed interesting with procedures ignored and tempers displayed when staff did not achieve their aims. In the University case, the Manager was isolated, and not in agreement with, and dismissive of, change.

The University approach to change has been described as pedagogic since the lecturing staff invested time in designing a new programme delivery of an existing course. The interview data revealed that the pedagogic components or tasks (Perrow, 1976 : 34) were well defined . It was structural issues such as funding, marketing and course validation that proved problematic.

New provision in the HE Institution developed out of a wish to deliver the same curriculum in a different way, to a wider audience, and thus offer more flexible provision and widen participation. Here, the research identified a commitment to using technology to provide greater access whilst attempting to maintain the same approaches to learning and teaching, and delivering the same curriculum content as was delivered in the established Home MA course. Scholfied (1995:23) defines this type of approach to new technology as *incrementalist*, rather than *transformative*.

The motivation for change came from the University lecturing team who showed resilience and determination to achieve the goal. The Manager described the team's approach rather less positively and implied stubbornness on the part of the Course Leader who drove

through the change without consideration to the operational and strategic requirements of the institution. Here the organisation has been defined as *loose* (McNay, 1995 : 5), operating within a *person framework* (Handy, 1985:10) where individuals tend to operate autonomously. In the University, change had been prompted by the lecturing staff operating in *secret gardens* (McNay, 1997:23) with a desire to do something innovative (Reddin, 1976:23). The Manager when interviewed described the initiative as being prompted by the desire for the self-glorification of those concerned (Reddin, 1976:24).

9.4.3 Motivations for Change

The motivations for promoting the change differed in the two institutions. In the College, the Manager argued that two factors impacted on the decision. One was financial necessity, the other the need for the organisation to be more responsive to flexible learning provision in the wake of competition from other providers. Application of Sergiovanni's leadership models (1998:38) led to the categorisation of the FE Manager's leadership style as exhibiting *bureaucratic* and *entrepreneurial* approaches.

In the University, the change was promoted by a team of staff who wanted to trial more innovative teaching methodologies. Their staff team approach, when categorised by Reddin (1976 23), can be seen in two ways, either as *let's do something* or a *desire for achievement*. The leadership style operating in the University is difficult to define. The research data from the perspective of the staff show it to be reactive in that the manager is presented as using bureaucratic procedures to delay change. The evidence gathered from

the Manager supports the view that the *loose* operational character (McNay, 1995:5) of the organisation has hindered the operation of intended bureaucratic practices.

In terms of outcome, the Resource Based Learning Centre in the College was built, and in operation for student use within a very short period of time (see Timeline 7:1).

The validation of and recruitment to the University programme took much longer, with an interim period of one year from validation to enrolment (see Timeline 7:2).

Conclusion 2: The methods adopted in the two institutions to introduce change differed. The change in the College emanated from the Manager and is described here as *structural change*. Change in the University was driven by the lecturing staff and is described here as *pedagogic*. The motivational factors driving the change can be understood in terms of the *tight* leadership models operating in the College as opposed to the *loose* operational structures apparent in the University.

9:5 Question 3: What institutional factors impacted on the change to ICT and how did the staff perceive the change? What were seen to be the advantages, disadvantages, issues and future potential?

The theoretical context of the research has been set in the philosophical realm of post-modernism using the theories of chaos and complexity. Within this framework, Robbins (1994:50) proposes a number of models to analyse organisational change starting with Lewin's (cited in Robbins, 1994:56) three stage process of *unfreezing, changing* and *re-*

freezing. This model Lewin later rejects as too simplistic for the current *white water rapid* changes that are occurring in society today. Robbins (1994) identifies the post-modern response to change as manifested in characteristics such as fear, insecurity, reversion to habit and selective information processing. Reddin proposes a number of responses to change exhibited by people in organisations depending upon their perspective and understandings (Reddin, 1976:23). In both institutions, organisational resistance is apparent.

9.5.1 The College Case

The data contained many comments from conservative teachers in the FE College resistant to the institutional change being imposed by managers. The research data also revealed a variety of responses to the imposed changes. The staff in the College expressed great cynicism about the changes, seeing them as prompted only by a need to save money. Resentment was strongly voiced against a management body that had not, in the opinion of the staff, been totally honest. In the College, lecturing staff were reportedly limiting the impact of the RBL Centre (see Table 7:8). Lawson and Comber (1999:56) record that teachers are often seen as resistant to technology, only deploying it when forced to do so. In the FE College, the coercive approach had alienated the staff who, through what appeared to be a type of *sabotage*, were abandoning their students to work in isolation in the newly built RBL Centre. There was evidence of structural inertia with staff exhibiting elements of *limited focus*, with *concern* that their professional expertise was under threat (Lawson and Comber, 1999:56). What has to be asked is whether this was a deliberate

strategy or an outcome of lack of confidence, knowledge and skill, making lecturing staff reluctant to engage fully in computer aided learning? Fidler (1997:44) reminds us how difficult it is to change the culture of an organisation and refers to work by Watson (1994) where organisational members adopt an unofficial culture when proposed change is not accepted or understood. In the College case, it would appear that the unofficial culture was one of resistance to change. What has not been researched here, and it would be a sensitive issue to broach with educationalists, is how much an apparent resistance was linked to the lecturers having limited skills in ICT usage? Further research is required to investigate this.

9.5.2 The University Case

In the University, the Manager was reluctant to support an initiative that had been introduced by staff rather than himself. The HE example, which had a pedagogic focus, had developed out of a wish to deliver the same curriculum as available for another similar course, in a different way, to a wider audience and, in so, doing to offer more flexible provision and widen participation.

In the HE institution, the staff instigating the changes felt a lack of support from managers. One lecturer called for a *project management approach* to change. The interview data with the Manager in the HE institution revealed some confusion concerning the potential of ICT as a course delivery method. In the University, the lecturers had failed to consider the structural issues of change management which required strategic planning, budgeting and appropriate allocation of other resources.

The coercive approach adopted by the lecturers produced a negative response from the Manager. The way the change had been instigated had led to difficulties. Resistance from the Manager was perhaps the result of an inability to perceive potential. It is suggested that his understanding of the model that was being applied, was limited, and that this was influencing his ability to see the potential that the course had to offer. The Manager also expressed concern for the protection of existing programme which she saw as under threat from the new innovation.

Conclusion 3: The reasons for change were not well understood. There was evidence of overt and covert resistance. In the College case, the change was made explicit; in the University, the lecturers used subversive approaches to bring about the change. Perceptions as to the success or otherwise of each initiative varied, depending upon the role that the individual had played in promoting the change.

9.6 Question 4: Was the use of ICT in learning and teaching perceived to be improving access for the student, widening participation and supporting greater inclusion?

The two institutions provided evidence of different approaches to the use of ICT in the support of learning and teaching. In the HE institution, a virtual conferencing Masters level programme was providing cross hemisphere tuition to a group of 12 students who were *in*

love with the method (MM, Table 7:20) but who still very much needed the support of their tutor.

9.6.1 Institutionally Perceived Potential

The data collected as part of the research provided evidence that staff in both institutions understood the potential that ICT had to increase student numbers through improved access. The power of the medium to remove the boundaries of time, place and pace (Bosworth, 1991) that can be limiting to some learners was accepted by lecturers and managers in both institutions. It was pedagogic issues to do with how learning can be facilitated and developed that was not understood by the lecturers in the College and by the Manager in the University. It is suggested that until pedagogic issues are given greater focus in changes involving ICT course delivery, staff resistance will limit the potential that the medium has to widen participation and support inclusion.

All staff and students involved in the research saw benefits in using ICT in learning and teaching. The extent varied, depending on their experience and understanding of the medium. Where ICT was used in the Higher Education Institution, the staff and students were able to see greater use. The Manager who had not been involved with the course was less able to see the benefits. One member of staff in the University saw language barriers as limiting potential, and technological issues were causing frustrations.

9.6.2 Widening Participation and Supporting Inclusion

The FE lecturers could see the possible advantages of using ICT to reach a wider and different student population. Concerns were expressed, however, as to how the needs of this student group could be met through a reduction in face to face contact time. The general feeling was one of concern for a student group who needed more personal support not less (see Table 7:23).

In the University, the staff seemed unclear as to the target group identified in the Widening Participation and Inclusion agenda (DfES:1997, FEFC:1996). This is discussed more fully later in this chapter.

Conclusion 4: When policy directives impact on the structural organisation of an institution and result in changes to learning and teaching, then time has to be allocated to support staff in coming to a better understanding of the policy implications.

9.7 Question 5: How did the staff respond to a greater reliance on ICT in learning and teaching; how did they perceive the change in terms of student experience and quality issues?

Mention has already been made of resistant responses on the part of the Manager in the University and the lecturers in the College. There is no evidence of collaboration between

lecturers and manager in the process of change. In the College, it is apparent that continued resistance was also impacting on greater progress towards the use of ICT in learning and teaching. The research demonstrated that where lecturers had direct responsibility for instigating changes involving ICT delivery (as in the University), the staff and students were positive about the initiative. Where the change was imposed (as in the College), the impact was perceived to be less effective and certainly less well received by the student body and the lecturing staff.

9.7.1 The College Case

The Manager in the College, whose only regret was that technological problems had not been addressed earlier, expressed similar concerns to those expressed by the University lecturers about the reliability of the technology. The College Manager however saw great future potential. The staff interviewed in the College, although aware that ICT could be a *great equaliser* (RW, Table 7:15) displayed a limited view of the potential of ICT to support the government agendas to widen participation and support inclusion.

The research data revealed that the majority who had been involved with ICT delivery of learning and teaching could see further potential for the approach to reach different groups of learners. Even in the FE sector, where the students did not feel they were ICT competent, they could see the potential use for ICT to improve access for students like themselves (see Figure 8:3). The extent to which the potential of ICT was thought to be

achievable seemed to depend on the respondent's understanding of ICT and awareness of how ICT could support learning.

In the FE institution, many students did not consider themselves ICT competent and felt at a disadvantage when compared with other students who knew how to access the Web for additional teaching material. The staff in this institution also seemed reluctant to use the newly provided Centre and seemed unaware of its capability to support learning and teaching. According to Utley, (1997:8):

Many lecturers are refusing to budge in the face of pressure to step down from the podium and embrace innovative teaching methods that hand authority back to the student.

9.7.2 The University Case

Students in the University cohort had experienced problems in accessing a new tutor and establishing a tutor/student relationship with her. The data showed the tutor having to work hard to establish rapport at a distance, indicating that the tutor role is a crucial part of learning when ICT is employed. Despite having had brief personal contact with a newly appointed tutor, the students still had problems adjusting to change and wanted to form a closer association with her. This research data send a strong message to those working with the University for Life (UfL) and policy makers in the Learning and Skills Council, that personal teacher contact is crucial in the learning and teaching experience. This

assertion is supported by the findings in the FE institution where the importance of teacher contact is highlighted by the teaching staff. The students also identified the importance of the tutorial role in supporting the individual learner.

All the data collected in the HE institution revealed support for ICT as a learning tool, although the Manager saw it more as an addition to support pedagogic delivery not as a replacement for face to face teaching and learning, particularly where the course might involve an element of practice such as a teaching programme. The practice component is considered to be significant in many degrees at Masters level where education is the topic of study (www.open.ac.uk). Student support for the virtual method was very positive even though the participants didn't consider themselves to be competent ICT users.

9.7.3 Similarities

Both institutions provided evidence of the need to maintain the relationship between the teacher and learner as a motivator to support learning. Both also exhibited evidence of minimal understanding and misguided perception as to the capabilities and potential benefits of ICT as a learning and teaching tool. These misunderstandings were present in the data collected from staff and students alike.

The research revealed confusion in the language used to discuss the changes involved in moving to a greater reliance on ICT. An apparent lack of understanding between managers and staff has been termed *ambiguity* (Tyler, 2000:5). Evidence of ambiguity in both the

use and possible potential for using ICT as a tool, gives support to one of the main recommendations arising from this research. It is strongly advised that new conversation frameworks to discuss change associated with the introduction of ICT are needed to clarify expectations and understandings. Confusion of terminology and definition is hampering change. Clarification is needed with regard to what is meant by *distance*, *flexible*, *on-line*, *virtual*, and *e-learning*. A new language of learning is required so that managers and lecturers can communicate with clarity when implementing change. It is likely that this process will require time. Time has to be allocated within education institutions for staff to come together and define the parameters of meaning associated with the change occurring in learning and teaching using ICT.

9.7.4 Differences

The different perceptions of the ICT initiatives studied in this research relate to the lecturers' great enthusiasm for the provision in the University case, as opposed to the negative perceptions of the College lecturers. In the University, the Manager was very sceptical, whereas the College Manager saw great potential. The declarations of enthusiasm emanated in both cases from those involved in the implementation of the initiative. This indicates that involvement in change management prior to implementation is more likely to produce a positive outcome.

Conclusion 5: A response of resistance to change by staff in both institutions was, it is suggested, based to some extent on a lack of understanding of the potential that ICT

has to offer. There was apparent confusion and misunderstanding in the terminology used to describe the application of ICT to learning and teaching. There was a belief that ICT is only a tool to support learning; it was not seen as a replacement for the lecturer as the giver of knowledge. There was resistance, but also agreement that ICT had great potential to support learners. The issue that needs addressing is how this potential is to be harnessed and how best to manage the changes that accompany such a transformation. The impact of the RBL Centre, the researcher suggests, had been severely restricted by staff resistance to change. The way in which the Centre had been launched, as part of a cost saving activity, had left staff suspicious, resentful and reluctant to change. Rather than encouraging the staff to investigate ICT as a tool to support their role as teachers, the change management process had alienated them. Staff in the FE institution perceived ICT initiatives as part of a plot by managers to reduce teacher autonomy and teacher contact time with students, and as a way to reduce costs. In the University, the impact of the new course was perceived as limited due to managers controlling access to the marketing budget; as a result, the course had only recruited twelve participants. Managers and lecturers failed to communicate effectively with each other to articulate the issues associated with the proposed change.

9.8 Question 6: What was the perceived impact of the changes on increasing access and inclusion?

Widening participation is very much part of the government agenda for HE institutions as

well as for the FE sector. The government response to the Dearing Report, *Higher Education for the 21st Century* (NCIHE,1997:3), declares the intent of:

Increasing and widening participation, particularly from groups who are under-represented in higher education, including people with disabilities and young people from semi-skilled family backgrounds and from disadvantaged localities.

9.8.1 The University Case

The quotation above makes it very clear that the University student cohort in this research did not, as the manager quite rightly indicated, fall into the widening participation category, and yet the staff when interviewed implied that they did: a very different meaning of widening participation was being used.

This is further evidence of misunderstanding in terminology and perspective. The MA course was reaching different types of students across the globe, but not of the type targeted by the Dearing Review of Higher Education (NCIHE, 1997). Since this was the only course in the institution using ICT for course delivery it can be concluded that ICT was not widening participation in the HE institution. This global view of widening participation is to be found in the thinking of other higher education staff (Matherson and Matherson, 2000:151). Given such confusion of meaning in the academic literature it is no wonder that the views of lecturers lack clarity.

9.8.2 The College Case

The lecturers in the FE institution were sceptical about the power of ICT to engage the unengaged or to support those unable to benefit, for whatever reason, from traditional classroom based education and training. All staff interviewed accepted that ICT had potential to support the government agenda; it was the *how* which was not clearly understood.

The research revealed no clear evidence that ICT had increased participation or supported the inclusion of those students specifically targeted in the reports chaired by Kennedy (1997b) and Tomlinson (1996). The Manager in the FE College agreed ICT had not, as yet, supported the government agenda.

Conclusion 6: At the time of the research, no evidence was found to demonstrate that ICT was supporting the widening participation and inclusion agendas. The case study method, as with other methods, provided an in depth picture which was time locked. What is presented here is a summary of some of the findings and recommendations for action to promote change and support those involved in adapting to change. The ability of ICT to reach the disaffected and disengaged is not well researched. Confusion is to be expected. Knapper (1995:78) suggests that the new technologies can enhance equality of opportunity, provide links between education and real life and encourage self-actualisation and self-development. The

research data did not support these claims. Statements which claim that ICT will widen participation need careful examination. There is much more to be done to support new and different learners than advocates of the technology suggest.

In summary, the research data provided no evidence to show that ICT is widening participation or supporting inclusion in the case study institutions at this stage.

Further research of a longitudinal nature is required; clarification of terminology is essential and support needs to be available to show educationalists just how ICT can stimulate the Learning Age. Research by Field (2000:34) has identified that concrete measures have lagged substantially behind the language and ambition of the policy making community.

9.9 Question 7: How did the students respond to the ICT initiative, who were they, what previous experience did they have of using ICT for learning and what were their experiences of the use of ICT to support learning and teaching?

The students in the research were all over the age of 19 and involved in gaining an academic qualification. A high percentage of them were female and they did, whether they were University or College students perceive their competence in the use of ICT to be high.

9.9.1 The College Case

In the College, the use of ICT was seen to disadvantage those who had not had previous experience. The need to access materials in the RBL Centre had led to those with children (who preferred to work at home) feeling excluded. It is worth noting here that a greater reliance on ICT is intended to remove the barriers of time, pace and place (Bosworth, 1991) from the learning equation, rather than create greater problems.

Evidence from the College students showed that there had been very little pedagogic change in the way study was approached. The interview data and internally collated computer usage data revealed that the students were using the RBL Centre as little more than a workshop. Failed attempts at teaching delivery, with little use made of specifically purchased packages supporting teaching and learning, were also evident. Staff, unable to resist the structural change, had limited the pedagogic potential available. Resistance to using the Centre had been strong with no apparent evidence of staff using the new facility to support pedagogic issues. The research demonstrated that the Centre was being used more as a place to send students to reproduce their work (ie as a workshop facility) than as a resource for learning. Failure to address the complex pedagogic issues associated with the tasks of learning and teaching had led to minimal change.

Research data from the FE College suggested that the RBL Centre had minimal impact on student experience. The data revealed, and the Manager supported the view, that the Centre was being used as little more than a workshop facility. For example, the specifically purchased CD Rom materials were receiving minimal use. From the student perspective,

the use of computers in learning and teaching was exacerbating difference and creating feelings of disadvantage for those who could not access the facilities. Rather than encouraging greater access to those who had not engaged in education before, for them ICT was creating a barrier. Research by Jameson (2000:3) identifies that adult learners new to ICT experience a *problematic but potentially useful period of 'creative mess'* when first using ICT in a learning situation. This highlights the disadvantaged position that new or returning learners might find themselves in.

9.9.2 The University Case

In the HE institution, flexibility and reputation were key factors in student choice, indicating that widening participation was feasible, although at the time of carrying out the research the course was not reaching a different student population than that which might normally have studied for a degree at Masters level. The staff, when interviewed identified the depth of reflection and analysis present in the work of students (see SL, Table 9:29). The students also evaluated the course highly (see Table 8:3). The data showed that the students, despite a perception that their ICT skills were minimal, were using ICT effectively to support their learning experiences.

The HE students were very positive about using ICT in learning and teaching. A problem had arisen when the staffing on the course had changed. It became apparent that students had formed their own support network through personal contact (see Table 8:5). The research revealed that support and guidance are still important to students studying at a distance. More research is required to elaborate the extent to which this is the case. What

was revealed was insight into the students' perceptions of the significance of the tutor in the learning process, as a motivator for learning.

Conclusion 7: The research community and those driving forward change need to consider how the technological delivery of learning material is going to promote the motivation in the learner. This research supports the belief that the role of the tutor in the learning experience cannot be diminished or ignored in courses which use technological delivery. Educationalists need to understand how ICT can best be used to support learning and teaching, whilst maintaining the support mechanisms which enable students to succeed.

9.10 Question 8: What lessons can be learned from the implementation of change within the case study institutions?

The process of carrying out this research has identified one clear message: it is that change is inevitable and any denial of the impact that the information technology revolution will have on the nature of learning and teaching is voiced with *Canute-like* folly (Bosworth, 1991:12). Acceptance of the inevitable doesn't involve resignation that things have to be as they are. Once educationalists have accepted the power of ICT, it can be directed and used to ensure that considerations of pedagogy are central to any ICT developments that are proposed. It is important that ICT stays as a tool to enhance learning rather than the main learning tool (BECTa, 2000:23):

Use of electronic learning resources should not be viewed as an all but as an addition to other resources such as text books, course notes and study guides.

The research has demonstrated that reference to guidance and support is also needed from a professional expert who understands the learning process and can provide help with academic knowledge.

Conclusion 8: What is clear in both institutions is that managers and lecturers failed to work together, with resultant misconceptions. There was evidence of reluctance by lecturers and managers to understand the motivations for change and indeed the requirements of their respective roles. Movement towards change occurred in both institutions. It is suggested that these might have been more effective in terms of widening participation and supporting inclusion had those involved worked more closely together with greater understanding of the *tasks* and the *problems* involved.

9:11 The Research Contribution

Based on the conclusions identified in this chapter, a model for change is proposed to support institutions undergoing major change in complex times. The model, designed to encourage more harmonious working relationships in organisations, draws on the theories of change proposed by Perrow (1976:89). In applying Perrow's model to the structural and pedagogic change issues identified in this research (see Chapter 5) the researcher suggests that change management should involve a consideration of both these components. The contribution of this research is the assertion that change management needs to involve the professional expertise of the lecturer and manager to give equal attention to issues structural and pedagogic when driving forward change.

Perrow's model (1976:45) has been adapted in this thesis and applied in Chapter 7 to the analysis of the research findings. The model identifies the complex components involved in change in terms of problems to be analysed and tasks to be achieved. In taking this model and using it to discuss the structural change in the College and the pedagogic change in the University, it has been possible to show that even when the various tasks (*task variables*) involve *few organisational exceptions* and are *well defined*, the desired change of increased participation was not achieved (see Table 7:22; 7:25).

As a result, it is proposed that future change management approaches in education institutions follow a more complex model which gives equal importance to structural and pedagogic issues in the planning, implementation and development phases. This is seen as essential in post-modern organisations where there are few solid divisions (Toffler, 1990:216):

*only shifting, see-through panels, one behind the other, overlapping,
interconnected....continually blending, contrasting.*

The model for change proposed as a result of this research is presented below. The diagram (Figure 9:1), it is suggested, provides the visual representation of a proposed model for change in education organisations where change is complex and impacts on the operational components of the organisation (see Chapter 5 for clarification of this terminology).

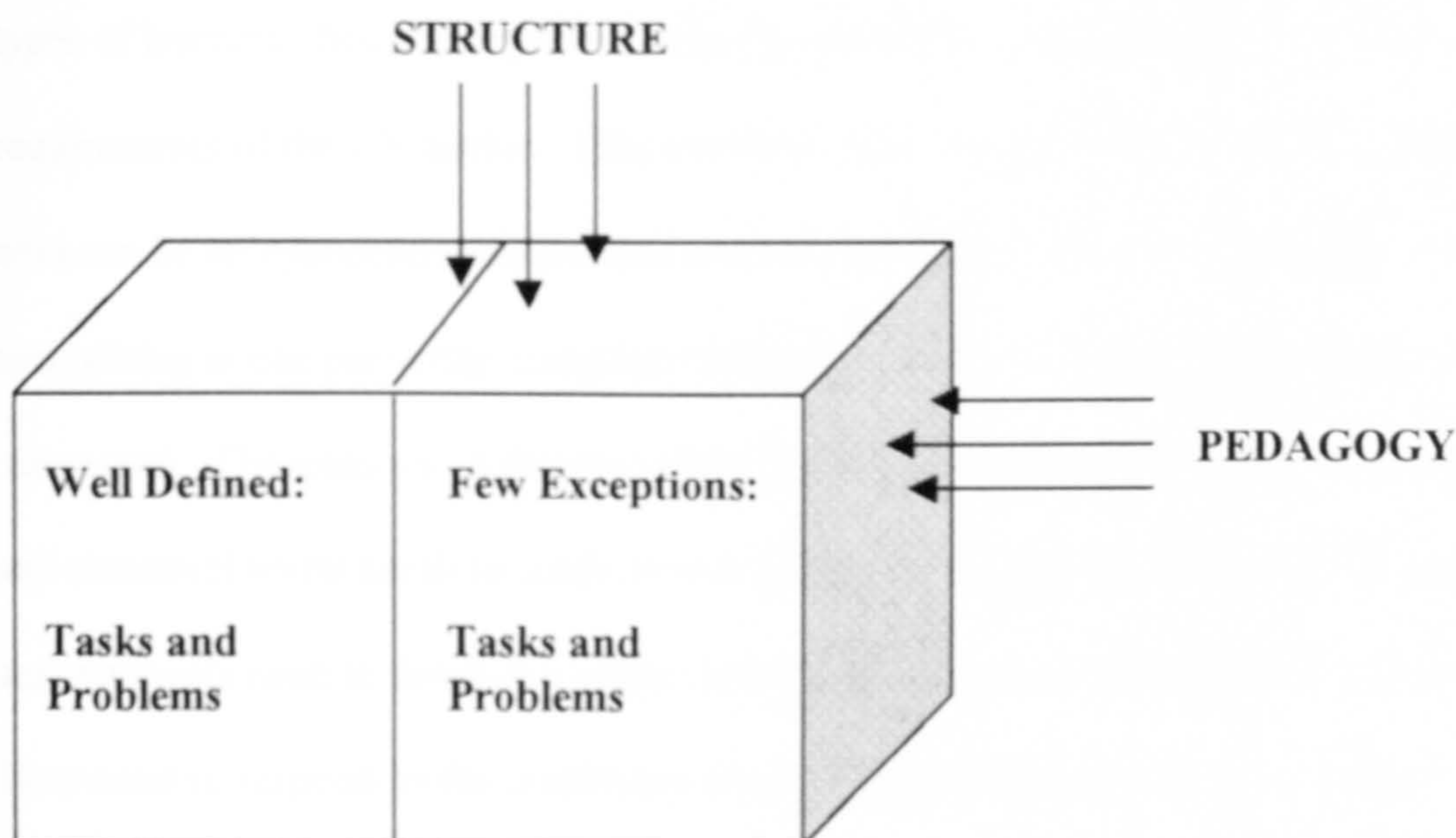
Figure 9:1 Proposed Model for Change

Figure 9.1

The model represents a synergy between structure and pedagogy. It suggests that when change is introduced it should be well defined and modelled on the basis of limited variation. If the purpose and rationale for change is clearly articulated, and designed for simple application with the associated tasks outlined and problems declared, then the change activity, it is suggested, will be better achieved. The model illustrates that in times of change there should be equal focus on issues of structure and pedagogy. This model, it is proposed, is the way to manage complex change, such as that which involves a greater reliance on ICT in learning and teaching.

If education institutions are to meet government imperatives, issues of structure and pedagogy must be given equal importance. It is arguably more important than ever before that we consider the pedagogy of learning, so that the power of technology can be

harnessed to support the learning of those who previously have not participated in education and training. Post-modern economies are demanding new skills and different types of learners. Society requires flexible learners who can meet the fluctuating requirements of the job market. Education has been charged with producing individuals who can be independently minded and draw on a diversity of knowledge bases, rather than specialising in one particular discipline (Schetchly, 1990:45). Knowledge delivery has to be reassessed. The mind set of those working in our academic institutions at both pedagogic and structural levels needs to adapt to the changing requirements of society. Pedagogues and managers need to develop a better understanding of their role, function and purpose. They need to respond to the constraints from external bodies that have, with the marketisation of education, impacted on their individual freedoms. Before that can happen, there needs to be an honest debate between managers and lecturers about the forces driving change, so that the skills of those working in education can be harnessed to produce the changes required to turn the Learning Age (DfES, 1998) from rhetoric to reality.

This thesis supports the view of Harkin (1997:101) that the professionalism and experience of educationalists should be developed and taken more seriously.

The thesis has gone further in proposing a change model that facilitates the need to synthesise the major elements of education change. A model is proposed which gives equal import to the structural concerns of the manager and the pedagogic considerations of the lecturers. When teaching and learning is articulated alongside strategic issues, the resultant change will be built on strong education foundations,

more likely to succeed, it is suggested, than those changes which adhere blindly to government policy or are merely for change's sake.

As this thesis is being completed, management theorists are identifying the need for new leadership approaches in education institutions. The leadership models discussed in Chapter 5 of this thesis suggest radical reforms to the training of education leaders which Make pedagogy central to the leadership training agenda (Southworth 2002:87). This thesis draws on the work of Gunter (2002) and Sergiovanni (1998) to recommend that leaders in education institutions need to exhibit greater involvement in learning and teaching. This view gains greater support when, as is the case in this research, the focus on changes involving ICT in learning and teaching has revealed ambiguity and confusion.

In March, 2002 Estelle Morris (then Secretary of State for Education) launched a document entitled *Success for All* (DfES, 2002) which outlines the strategy for post-compulsory education and training. The proposals in the document include setting up a leadership college for FE managers similar to that operating for school headteachers. This is seen as a positive development, as evidence arising from this research can certainly be cited to support a need. Leadership training such as that provided by the National College of School Leadership, which includes training on the use of ICT in learning and teaching (www.ncsl.org.uk), is required for managers in the FE sector. Interestingly, the *Times Higher Education Supplement* for 27th September, 2002 reported that Sir Howard Newby, Chief Executive of the Higher Education Funding Council for England, has suggested the creation of an international academy for university management, to support

the leaders and managers in meeting the formidable challenges of the next decade (THES, 2002:14). The findings of this thesis concur with this suggestion.

9.12 Recommendations

The following recommendations arise from this research and are made here in the light of the data presented in this thesis. Evidence to support all the recommendations can be found in the preceding chapters of this document.

Introducing change that impacts on the delivery of learning and teaching represents a major change initiative that needs careful planning and consideration. Those involved need to feel part of the change process and professionally empowered by the changes underway.

The research has identified a number of issues of conflict created, it is suggested, by the way change was managed, or not managed, in the two institutions (see Tables 7:4; 7:8).

The speed and complexity of change in education institutions has resulted in poor staff morale and declining professional identities as identified by Gunter (2001:54). The research found no evidence of training and development for the staff in preparation for change. In both institutions, change was coercively driven from different starting points, without opportunity for discussion or debate. The research revealed that managers and lecturers had minimal understanding of how ICT could be used to enhance learning and teaching (see Tables 7:6; 7:10). The data reveal that time is required for those working in education institutions (at all levels) to understand the power and potential of ICT in order to enhance its capabilities. Staff development which links the use of ICT to curriculum

delivery and to learning and teaching is essential. Greater consideration needs to be given to the role of the tutor in the learning equation, and better understandings developed of the motivational factors which currently support the learning process.

Staff need clarification as to the specific target group identified in the drive to widen participation. They need help primarily in understanding the learning needs of those targeted by current policy so that they can adapt their teaching approaches to meet need. A simple *postcode* categorisation of disadvantage, as used in government monitoring data (HETEC, 1997), means very little to the professional teacher concerned about individual learners. No progress will be made in reducing social exclusion and opening up opportunity for the disadvantaged until questions are asked of this group as to their needs in the Learning Age.

Recommendations regarding the enhancement of the professional skills of the lecturer are provided in the closing sections of this research. Training in how to develop and design ICT packages of relevant, appropriate and accessible curriculum material must be made readily available to all those involved in learning and teaching. Furthermore the contribution made by these professionals in producing these materials must be acknowledged and rewarded. The professionalism associated with providing students with a high quality learning experience needs to be celebrated. Computers cannot completely replace the face to face support of a trained professional. Further research that addresses issues of learning style and learning need is required, so that computer materials can be designed to

take account of the needs and motivations of reluctant learners as well as the self-motivated.

It is a mistake to assume that ICT delivery will automatically widen participation and reach the disengaged. There is evidence in this research to suggest that lack of basic ICT skills creates barriers to learning (see Table 8:8). It is recommended that an introductory period to support returning adult students in the use of ICT as a resource for learning should become a key element of all academic and vocational programmes offered in FE and HE institutions. A model of training needs to be developed which explores the use of ICT in a purposeful and relevant learning context, i.e. focusing upon using technology for learning, rather than learning to use technology.

Education institutions are subject to immense change in current times. The potential divide between managers and lecturers can become very great. Managers and lecturers need to understand what is involved in each role and to foster a mutual respect for one another, rather than promote antagonism as was the case between managers and staff in the institutions here under study. Managers, it is suggested, need to take time to understand how lecturers feel threatened by the growing demands for ICT in the curriculum.

Managers need to empathise with the fears, and respect the professional viewpoint of lecturers. A voice must be given to lecturers who understand the appropriateness of ICT for certain groups of students, when supported by strong tutorial time and tutorial activity, must be given a voice. A model for managing change has been proposed which places

equal focus on the concerns of managers and lecturers and suggests that issues to do with structure and pedagogy be given equal importance.

The professional skills of teachers and lecturers cannot be ignored. At a time of rapid change, we need the co-operation and collaboration of professionals to create solutions that will work. Coercive change approaches and bombastic styles of management and leadership must be avoided. The skills of lecturers and managers must be harnessed so as to work together for a common good, with both contributions being given equal importance if change is to be achieved.

Lecturers need to understand some of the financial constraints imposed on institutions and be prepared to show a willingness to work with their managers to ensure that viability is achieved without compromising quality. The research data revealed great antagonism between senior managers and lecturing staff in both institutions and an apparent failure on the part of all staff interviewed to have any understanding of the demands and requirements of the other side's role (see Table 7:5; 7:11).

Successful change requires a clearer articulation of what is involved in delivering learning and teaching using ICT, a more collaborative team approach to plan and implement the necessary changes, greater understanding of the external change factors impinging on the role of staff and managers, and opportunities for staff to develop their own ICT skills within the context of the curriculum for which they are responsible.

New terminology, or clarification of the terminology used, is necessary to support conversational frameworks for discussion between lecturers and managers responsible for implementing change in ICT.

The leadership training model (www.ncfsl.ac.uk), which gives learning and teaching a central place in the training of leaders in schools, needs to be applied to the FE sectors so that changes involving the use of ICT in learning and teaching can be understood and managed in pedagogic as well as structural terms. The program entitled *E. Learning: Transforming Tomorrow's Education Today* (www.ncfsl.ac.uk), described as a conference which:

Explores the key issues involved in leading and managing the e-enabled school, showing how e-learning is transforming teaching and learning,

In the light of this research the program appears to be particularly relevant to those with leadership roles in both the FE and HE sectors. It needs to be emphasised that leadership training is required for those with management positions in the HE sector, as well as for those in schools and colleges.

The findings from this research have support in the work of Weil (Weil, 1994:164):

Every player in an institution is both story teller and audience, engaged in different acts of communication and agency. But how these come together to create a greater whole that is vibrant, has purpose and is

effective on the many fronts now demanded of college and universities is the biggest challenge.

We are experiencing a period of pivotal change in the structure and organisation of society (Murray, 1998:15). The reason for change is being linked to the power of new technologies (Tofler, 1990:45). What has to be remembered is that ICT is a relatively new and un-researched phenomenon. This research accepts the potential of the medium, with a caution against wholesale change without consideration of what is valued by the student in the teaching and learning process. This research has reviewed the student perspective as well as that of the staff. Such a focus on students is supported by Gunter (2001: 138) who recommends recognition, in discussions about change, of the identity of teachers and students. She calls for transformational leadership with:

Less emphasis on restructuring hierarchical leadership, and more courage to enable teachers and students, with managers to work on developing learning processes and contextual settings in which they are located.

She argues that such an approach would politicise educational institutions around pedagogy rather than bureaucracy and competition (Gunter, 2001: 138).

9.12 Final Thoughts

The conclusions drawn here must be regarded as tentative. The research has been small scale in two very different institutions, still undergoing dramatic change, at a time when

the potential for ICT to enhance learning and teaching is still being realised. The research has drawn strongly on the views of staff and students very much caught up in, although perhaps not fully aware of, a major period of technological and educational change.

The research has drawn upon the *practical wisdom* (Hargreaves, 1994:12) of those experiencing change and is, in some respects a witness testimony of how it feels to be part of a new period in learning and teaching at a time when theorists and practitioners are still debating how technology is going to change our lives. As the process of completing this research is drawing to a close, the researcher has been involved in designing a bid to the DfES to support schools facing challenging circumstances (DfES, 2002). Mention is made in the bid of leadership and management, learning and teaching. The model designed as an outcome of this research (Figure 9:1) has been proposed as part of the tender document to explain how the components of structure and pedagogy (ie leadership and management, learning and teaching) will drive the management of change in schools failing to meet their targets.

The final chapter of the thesis has been designed to give opportunity for the researcher to reflect on the experience of carrying out the research and give personal commentary to support an assessment the findings.

Chapter 10 Evaluation**10.1 Introduction**

Working for a doctorate is, in part, a learning process that involves a number of skills including the refinement of research skills, the development of coherent language, the application of logic, the skills of time management but more than anything else, sheer determination. This doctoral account attempts to record the distance travelled by the researcher in completing a five-year journey into the unknown. This research is presented as a contribution to knowledge that can be used by others but it also records a growth in skill and knowledge.

10.2 Limitations

The research followed a case study method and focused on two institutions undergoing change. Attempts were made to provide a detailed assessment of how change in the use of ICT as a learning and teaching tool was managed and how it impacted on student experience. The case study institutions were chosen on the basis of accessibility, similarity (in terms of the changes that they were experiencing, i.e. the possibility of merger, financial difficulties, structural changes, etc). They were also chosen because of their innovative practice, in that, at the time of the research, they were both introducing changes to teaching and learning delivery using ICT as the driver for

change. The choice of case was determined by the potential within the institutions to answer the research questions that have been posed in this study. In the selection of case, consideration was also given to the typicality of the chosen institutions so that greater explanatory opportunities might become available, thus facilitating the development of a proposed model for future change management. Attempts at establishing the validity and reliability of the research (in the use of a number of data collection methods and data sources) and a thorough assessment of the data, provided support for the claims of internal validity which are made in this research. Aware of the theoretical critique concerning generalisability levelled at case study research, any claims of generalisability that are implied in the recommendations arising from this thesis are made cautiously, with the proviso that the reader may not accept general application but will, it is hoped experience *the shock of recognition* (Alderman et al, 1976:56) when encountering the evidence contained in this case study report.

The case study approach does, however, have limitations, as do many other recognised approaches (Coleman and Briggs, 2002). There are issues of honest brokerage which need discussion and the ethical concerns of perhaps having raised issues by carrying out the research that those working in the institutions will not be able, or be prepared, to consider. Yet the research is a selfish act on the part of the researcher if it is not, at least, made public and discussed with those who have contributed to it. The researcher aims to provide a summary of findings for the staff who have contributed to the discussions. It is envisaged that an opportunity will arise to trial the change management model that is proposed.

The research is time locked in a period of rapid change. The focus has been on change in two institutions. There are limitations of case and scale. Sampling has limited the range of views presented from both the students and staff. The students in the study for various reasons, cannot be described as typical of the student body in either of the education sectors under study. The study institutions cannot be described as typical either. The research does not address issues of student achievement when using ICT. It has been possible only to touch upon issues to do with the experience of learning and teaching using ICT. There is a need to research issues of learning style and the benefits, or otherwise, of student learner autonomy for the disaffected learner. It is a concern of the researcher that government policy appears to assume that ICT can enhance learning for all learners without evidence to support this assumption.

The focus of the research has been change in relation to ICT but there is much more that could have been studied. The research process has been subject to particular challenges: the researcher has changed her role a number of times, a personal research relationship was set up in the FE College with a member of staff who then left to gain promotion. Changes in personnel had an impact in the HE institution and this made access to data difficult at times. Such fluidity is common in institutions undergoing change and should be seen not so much as a problem but a normal occurrence in organisations today.

The research is not politically acceptable in some circles: the author was verbally attacked for a *Luddite* approach at a post-compulsory conference (Warwick, 13th, December, 2000). It is not *trendy* to criticise the changes underway, nor the methods

employed to direct these changes.

This section of the thesis will not develop into the *naval-gazing, vanity ethnography* so much criticised by research theorists (Walford, 1999:34), nor will it emulate the type of reflective accounts that detail all the mistakes, problems and meanderings in the research process. The aim is to reflect here on the learning process, the outcomes and the possible future benefits of the conclusions outlined in Chapter 9 of this document.

10.3 Learning Process

Much has been gleaned about how ICT can facilitate changes to learning and teaching. The research has encouraged critical examination of how change has been introduced, the impact of that change on staff and students, and the evaluation of the impact that ICT is having in relation to the government agenda to create new approaches to learning as outlined in the Learning Age (DfEE, 1998).

Personal ideology has been challenged and periods of thought during the research process have been necessary to permit reflection and a re-examination of the author's own philosophies and understandings. The impact that technology will have on learning and teaching should not be underestimated. The impact of changes produced by a heavier reliance on ICT to support learning and teaching will be dramatic. It is vital that we understand the power of the tool we are introducing, and more importantly, that we help those who have worked with traditional teaching methods to harness this power to support their work effectively. If this research is to make an impact then the key message

is that the changes which ICT will produce must be managed effectively, not justified by financial imperative as a top down directive but collaboratively, using the skills of managers and lecturers together, to develop this tool in the way in which it can best support the educational experiences of the students involved. It is crucial that we do not forget that technology is a tool in our hands, to be used to our benefit. It is not the panacea for all problems: it is merely a servant to our needs.

This research has demonstrated, in line with the views of both Kennedy (1997b) and Tomlinson (1996), that contact with a tutor is vital in the learning experience.

The MA students, although capable mature learners, demonstrated severe *withdrawal* symptoms when their original tutor left the course, even though they had experienced minimal face to face contact with her. A new tutor had to spend a number of conferencing contacts establishing a relationship with the tutees, even though she had already met the students briefly, face to face. We cannot ignore the importance of the teacher and learner relationship in supporting student achievement. (Harkin and Turner, 1997:56; Martinez, 1998:76).

Government rhetoric (DfEE 1998:2) suggests implicitly that ICT can engage students who have previously *failed* in the education system. The research reported in this thesis indicates however that students are more likely to *fail* again if their educational experience is not directed and supported by tutorial time from a professionally qualified pedagogue. The sample on which this research is based is small: more research is required on the role of the tutor in ICT course delivery.

10.4 The Future

The research topic was motivated by a personal concerns about learning and teaching in the ICT discussion of the late 1990s. A fear of the unknown and a concern that one's professional autonomy was being challenged led a need for greater understanding of the role that was being discussed for ICT in the future. The cold facts when presented did not add up: how could teaching and learning using ICT succeed when the traditional classroom *one-to-one* had failed? How could the cold communication with a machine be more effective than personal interaction? Further research was necessary so that if ICT were to be condemned by the researcher, as was the initial response, then at least some sound justifications could be put forward for this line of argument. The critique would be based on knowledge rather than emotion. Perhaps the process of discovery might lead to a compromise position, as has been the case, whereby the researcher can see potential use of ICT in learning and teaching but suggests that how the change is managed is the crucial issue.

The research has enabled the exploration of ICT as a teaching and learning tool and identified that many lecturers see great future potential for increased access and greater flexibility to meet the needs of learners irrespective of time, place and pace. What the research was not designed to do is to address issues of teaching and learning in relation to the learning styles and learning needs of the individual learner. Evidence has been found to support the argument for the continuing importance of contact with a tutor or professional learning mentor, whether this be virtual or actual contact. No detailed consideration has been given here as to how students learn using information and

communication technology. This research has focused on the management of change relating to ICT. Issues of learning style and the pedagogic design of learning materials need to be considered in further research.

The research has not identified any evidence that ICT is widening participation.

It is, perhaps, too early to comment on *if* or *how* ICT will be the tool to motivate the disengaged, whether it has the power to stimulate a new learning age and reach a new category of student previously not motivated by learning. This research has shown that for one cohort of students, studying across international time zones, ICT had great potential. Other students and staff involved in the research have shown varying degrees of commitment that are dependent upon their experience, understandings and involvement in the change. In the College, the problems were different from those in the University. There was little awareness on the part of the College students as to the potential of ICT and no evidence that ICT was widening participation.

10.5 To Conclude

The research has focused on a small sample of students in only two institutions. The thesis has pointed to issues that have arisen for other institutions to consider when introducing changes to learning and teaching through the increased use of ICT.

Learning and teaching using ICT has huge potential to support re-training and re-skilling (DfEE:1998) in the post-modern educational market-place. ICT can also open up opportunities for the delivery of training in basic skills. However, as demonstrated here, the management of the required changes to such delivery must be handled carefully.

Leadership theories which focus on pedagogy (Southworth, 2002) need to be considered and applied to support the training of college and university managers.

Those managing our organisations must know how to draw on the skills of their staff, and provide an opportunity for honest dialogue about the way change is to be managed.

Proposals have already been made concerning a need for new conversational frameworks, a language that is mutually understood to clarify what is meant by the terminology that is developing around the use of ICT in learning and teaching. There is a further need to define the terminology of widening participation and inclusion, to present agreed working definitions of the target group and clarify precisely the role ICT can be expected to play in providing opportunity for those who need encouragement to enter the education and training arena.

This research has been a personal journey and its completion a personal triumph. At the end of the journey, the researcher is confident to discuss with some credibility the key issues associated with organisational change and to advise educational institutions where ICT is being introduced to support learning and teaching.

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APPENDIX 1

COPY OF QUESTIONNAIRE USED IN THE FE COLLEGE

Research into the Use of Information Communication Technology (ICT)

The College has a new facility in its Resource Based Learning Centre.
This questionnaire is designed to evaluate the way the Learning Centre is being used to support teaching and learning.

Part A

Basic Information			
Your name (optional)	Age Younger than 17 17 to 19 20 to 29 30 to 39 40 to 49 50 to 59 over 59	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Gender Male <input type="checkbox"/> Female <input type="checkbox"/>
		Course GNVQ <input type="checkbox"/> A Level <input type="checkbox"/> Access <input type="checkbox"/> Other <input style="width: 100%;" type="text"/>	

Part B

ICT Experience	
B1 How would you rate your level of ICT experience? Extensive <input type="checkbox"/> Considerable <input type="checkbox"/> Adequate <input type="checkbox"/> Minimal <input type="checkbox"/> None <input type="checkbox"/>	B2 Where did you acquire the major part of your ICT experience? Primary/Secondary School <input type="checkbox"/> College <input type="checkbox"/> Self <input type="checkbox"/> Other <input type="checkbox"/>
B3 Did the existence of the Learning Centre feature in your decision to choose the College as your place of study? A great deal <input type="checkbox"/> To some extent <input type="checkbox"/> Not at all <input type="checkbox"/>	B4 Do you have any specific learning difficulty or disabilities? Yes <input type="checkbox"/> No <input type="checkbox"/>
B5 If the answer to question B4 was Yes, do you use the Learning Centre to support your College work in any way? Please specify <input style="width: 100%; height: 40px;" type="text"/>	B6 Do you use any particular software to support you with your College work? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, please specify <input style="width: 100%; height: 30px;" type="text"/>

Part C

Use of the Learning Centre																											
C1 How would you rate your use of the Learning Centre? Extensive <input type="checkbox"/> Considerable <input type="checkbox"/> Average <input type="checkbox"/> Minimal <input type="checkbox"/> None <input type="checkbox"/>	C2 How would you rate your use of the following facilities in the Learning Centre? <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;"></th> <th style="width: 33%; text-align: center;">Internet</th> <th style="width: 33%; text-align: center;">CDRom</th> <th style="width: 33%; text-align: center;">Library books</th> </tr> </thead> <tbody> <tr> <td>Extensive</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Considerable</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Average</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Little</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>None</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>				Internet	CDRom	Library books	Extensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Considerable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Little	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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C3 Do you use ICT for any of the following? <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 20%; text-align: center;">Yes/No</th> </tr> </thead> <tbody> <tr> <td>Processing Assignments</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Data Analysis</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Data Base</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Spreadsheet</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Statistical Packages</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table>		Yes/No	Processing Assignments	<input type="checkbox"/>	Data Analysis	<input type="checkbox"/>	Data Base	<input type="checkbox"/>	Spreadsheet	<input type="checkbox"/>	Statistical Packages	<input type="checkbox"/>	C4 Do you use any particular software in the Learning Centre designed to deliver components of your Course? Yes <input type="checkbox"/> No <input type="checkbox"/> If Yes, please specify <input style="width: 100%; height: 40px;" type="text"/>														
	Yes/No																										
Processing Assignments	<input type="checkbox"/>																										
Data Analysis	<input type="checkbox"/>																										
Data Base	<input type="checkbox"/>																										
Spreadsheet	<input type="checkbox"/>																										
Statistical Packages	<input type="checkbox"/>																										

C5 In an average week how much time of your course timetable do you spend in the Learning Centre?

Less than 1 hour	<input type="checkbox"/>
2-4 hours	<input type="checkbox"/>
5-7 hours	<input type="checkbox"/>
8-10 hours	<input type="checkbox"/>
11 hours or more	<input type="checkbox"/>

C6 In an average week how much of your free time' (non timetable) do you spend in the Learning Centre?

Less than 1 hour	<input type="checkbox"/>
2-4 hours	<input type="checkbox"/>
5-7 hours	<input type="checkbox"/>
8-10 hours	<input type="checkbox"/>
11 hours or more	<input type="checkbox"/>

C.7 How are elements of your course delivered?

Traditional Classroom delivery	<input type="checkbox"/>
Classroom workshop sessions	<input type="checkbox"/>
Learning Centre workshop sessions	<input type="checkbox"/>
Through ICT packages	<input type="checkbox"/>
Other	<input type="checkbox"/>

C8 Are any elements of your course delivered through ICT sessions timetabled in the Learning Centre?

Yes

No

If Yes, which of the following are delivered:

Key skills	<input type="checkbox"/>
Mandatory units	<input type="checkbox"/>
Optional units	<input type="checkbox"/>
A level modules	<input type="checkbox"/>
Others - please specify	<input type="checkbox"/>

C9 Can you see further use of the Learning Centre:

(i) to increase access for students with learning difficulties and disabilities	<input type="checkbox"/>
(ii) to deliver parts of your college course	<input type="checkbox"/>
(iii) to deliver parts of your Programme at a distance from College	<input type="checkbox"/>

C10 Please use the space below to comment further on any issues raised in this questionnaire:

Thank you very much for your help in completing this questionnaire.
Liz Browne, Oxford Brookes University

APPENDIX 2

COPY OF QUESTIONNAIRE USED IN THE HE INSTITUTION

Research into the Use of Information Communication Technology (ICT)

As students who have been studying for an MA using the ICT route, you have been experiencing a different method of course delivery. I would appreciate your help with the completion of the following questionnaire.

Part A

Basic Information																								
Your name (optional)	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: center; padding: 2px;">Age</th> <td style="width: 20px;"></td> </tr> <tr> <td style="padding: 2px;">Younger than 25</td> <td style="width: 20px; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">26-30</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">31-35</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">36-40</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">41-45</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">46-50</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">over 50</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Age		Younger than 25	<input type="checkbox"/>	26-30	<input type="checkbox"/>	31-35	<input type="checkbox"/>	36-40	<input type="checkbox"/>	41-45	<input type="checkbox"/>	46-50	<input type="checkbox"/>	over 50	<input type="checkbox"/>	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: center; padding: 2px;">Gender</th> <td style="width: 20px;"></td> </tr> <tr> <td style="padding: 2px;">Male</td> <td style="width: 20px; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Female</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Gender		Male	<input type="checkbox"/>	Female	<input type="checkbox"/>
Age																								
Younger than 25	<input type="checkbox"/>																							
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over 50	<input type="checkbox"/>																							
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Male	<input type="checkbox"/>																							
Female	<input type="checkbox"/>																							

Part B

ICT Experience																			
<p>B1 How would you rate your level of ICT experience?</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Extensive</td> <td style="width: 20px; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Considerable</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Adequate</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Minimal</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">None</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Extensive	<input type="checkbox"/>	Considerable	<input type="checkbox"/>	Adequate	<input type="checkbox"/>	Minimal	<input type="checkbox"/>	None	<input type="checkbox"/>	<p>B2 Where did you acquire the major part of your ICT experience?</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Primary/Secondary School</td> <td style="width: 20px; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">College</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Self</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Other</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Primary/Secondary School	<input type="checkbox"/>	College	<input type="checkbox"/>	Self	<input type="checkbox"/>	Other	<input type="checkbox"/>
Extensive	<input type="checkbox"/>																		
Considerable	<input type="checkbox"/>																		
Adequate	<input type="checkbox"/>																		
Minimal	<input type="checkbox"/>																		
None	<input type="checkbox"/>																		
Primary/Secondary School	<input type="checkbox"/>																		
College	<input type="checkbox"/>																		
Self	<input type="checkbox"/>																		
Other	<input type="checkbox"/>																		
<p>B3 What led you to choose this course?</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px; text-align: right;">Place</td> <td style="width: 20px; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px; text-align: right;">Status/Reputation</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px; text-align: right;">Flexibility</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Other, please expand</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Place	<input type="checkbox"/>	Status/Reputation	<input type="checkbox"/>	Flexibility	<input type="checkbox"/>	Other, please expand	<input type="checkbox"/>	<p>B4 Do you have any specific learning difficulty or disabilities?</p> <p style="text-align: right;">Yes <input type="checkbox"/></p> <p style="text-align: right;">No <input type="checkbox"/></p>										
Place	<input type="checkbox"/>																		
Status/Reputation	<input type="checkbox"/>																		
Flexibility	<input type="checkbox"/>																		
Other, please expand	<input type="checkbox"/>																		
<p>B5 If the answer to question B4 was Yes, do you use the MA (Open) as the only access route available</p> <p>Please specify</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 15px;"></td></tr> <tr><td style="height: 15px;"></td></tr> <tr><td style="height: 15px;"></td></tr> </table>				<p>B6 Do you use any particular software to support you with your studies?</p> <p style="text-align: right;">Yes <input type="checkbox"/></p> <p style="text-align: right;">No <input type="checkbox"/></p> <p>If Yes, please specify</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 15px;"></td></tr> <tr><td style="height: 15px;"></td></tr> </table>															

Part C

Structure of the MA (open)																																			
<p>C1 How would you rate your use of computer conferencing in the course?</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Extensive</td> <td style="width: 20px; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Considerable</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Average</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Minimal</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">None</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Extensive	<input type="checkbox"/>	Considerable	<input type="checkbox"/>	Average	<input type="checkbox"/>	Minimal	<input type="checkbox"/>	None	<input type="checkbox"/>	<p>C2 How would you rate your use of the following facilities to support your course?</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 20%; text-align: center;">Internet</th> <th style="width: 20%; text-align: center;">CDRom</th> <th style="width: 30%; text-align: center;">Library books</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">Extensive</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Considerable</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Average</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">Little</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px;">None</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </tbody> </table>		Internet	CDRom	Library books	Extensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Considerable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Little	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extensive	<input type="checkbox"/>																																		
Considerable	<input type="checkbox"/>																																		
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Average	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
Little	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																
<p>C3 Do you use ICT for any of the following?</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px; text-align: right;">Processing Assignments</td> <td style="width: 20px; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px; text-align: right;">Data Analysis</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px; text-align: right;">Data Base</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px; text-align: right;">Spreadsheet</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="padding: 2px; text-align: right;">Statistical Packages</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Processing Assignments	<input type="checkbox"/>	Data Analysis	<input type="checkbox"/>	Data Base	<input type="checkbox"/>	Spreadsheet	<input type="checkbox"/>	Statistical Packages	<input type="checkbox"/>	<p>C4 Do you use any particular software designed to deliver components of your course?</p> <p style="text-align: right;">Yes <input type="checkbox"/></p> <p style="text-align: right;">No <input type="checkbox"/></p> <p>If Yes, please specify</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 15px;"></td></tr> <tr><td style="height: 15px;"></td></tr> </table>																								
Processing Assignments	<input type="checkbox"/>																																		
Data Analysis	<input type="checkbox"/>																																		
Data Base	<input type="checkbox"/>																																		
Spreadsheet	<input type="checkbox"/>																																		
Statistical Packages	<input type="checkbox"/>																																		

C5 In an average week how much time do you spend working on the MA (open)?

- Less than 1 hour
- 2-4 hours
- 5-7 hours
- 8-10 hours
- 11 hours or more

C6 (i) How would you rate the organisation of your course?

- Less than satisfactory
- Satisfactory
- More than satisfactory

C7 In an average week how much of your time is spent conferencing for your course?

- Less than 1 hour
- 2-4 hours
- 5-7 hours
- 8-10 hours
- 11 hours or more

C6 (ii) Do you have any further comments to make on issues to do with facilities, course management or access to learning?

C8 Can you see any further use of ICT:

- (i) to increase access for students with learning difficulties and disabilities
- (ii) to deliver degree programmes
- (iii) to enhance the learning experience for all students

Yes/No

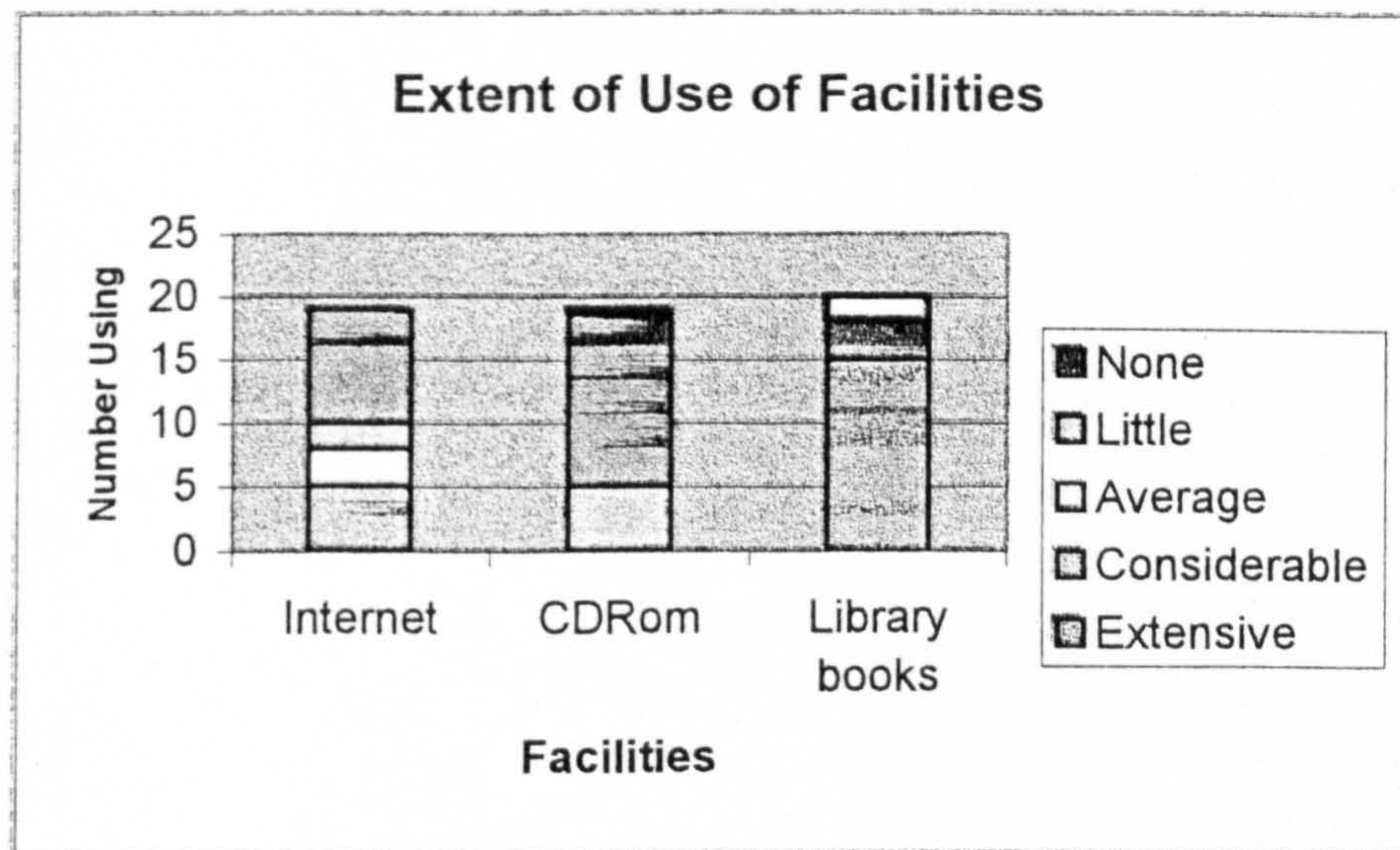
C9 Please use the space below to comment further on any issues raised in this questionnaire:

**Thank you very much for your help in completing this questionnaire.
Liz Browne, Oxford Brookes University**

APPENDIX 3

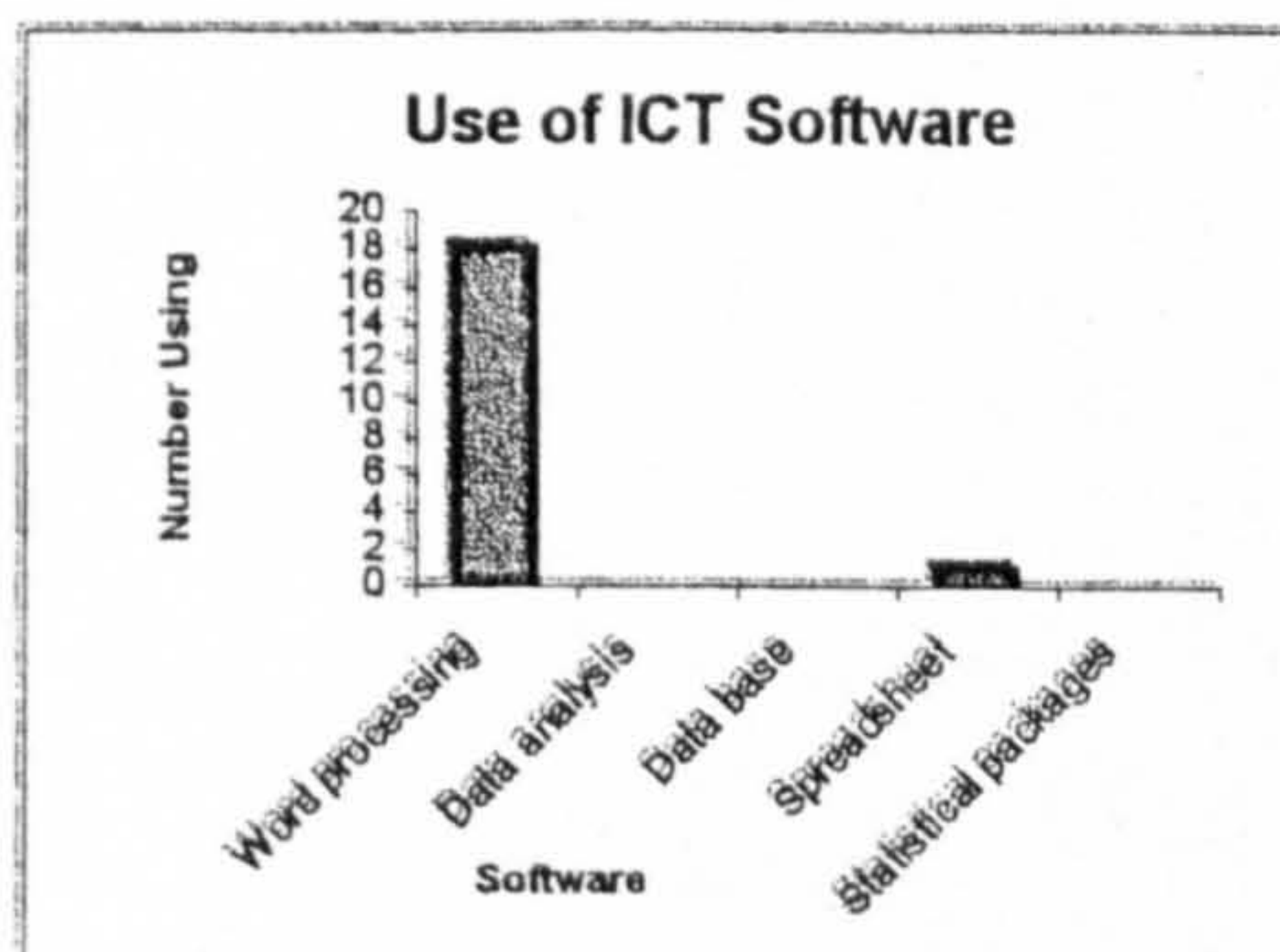
COLLEGE QUESTIONNAIRE DATA

Rate	Internet	CDRom	Library books
Extensive	0	0	15
Considerable	5	0	3
Average	3	0	2
Little	2	5	0
None	9	14	0

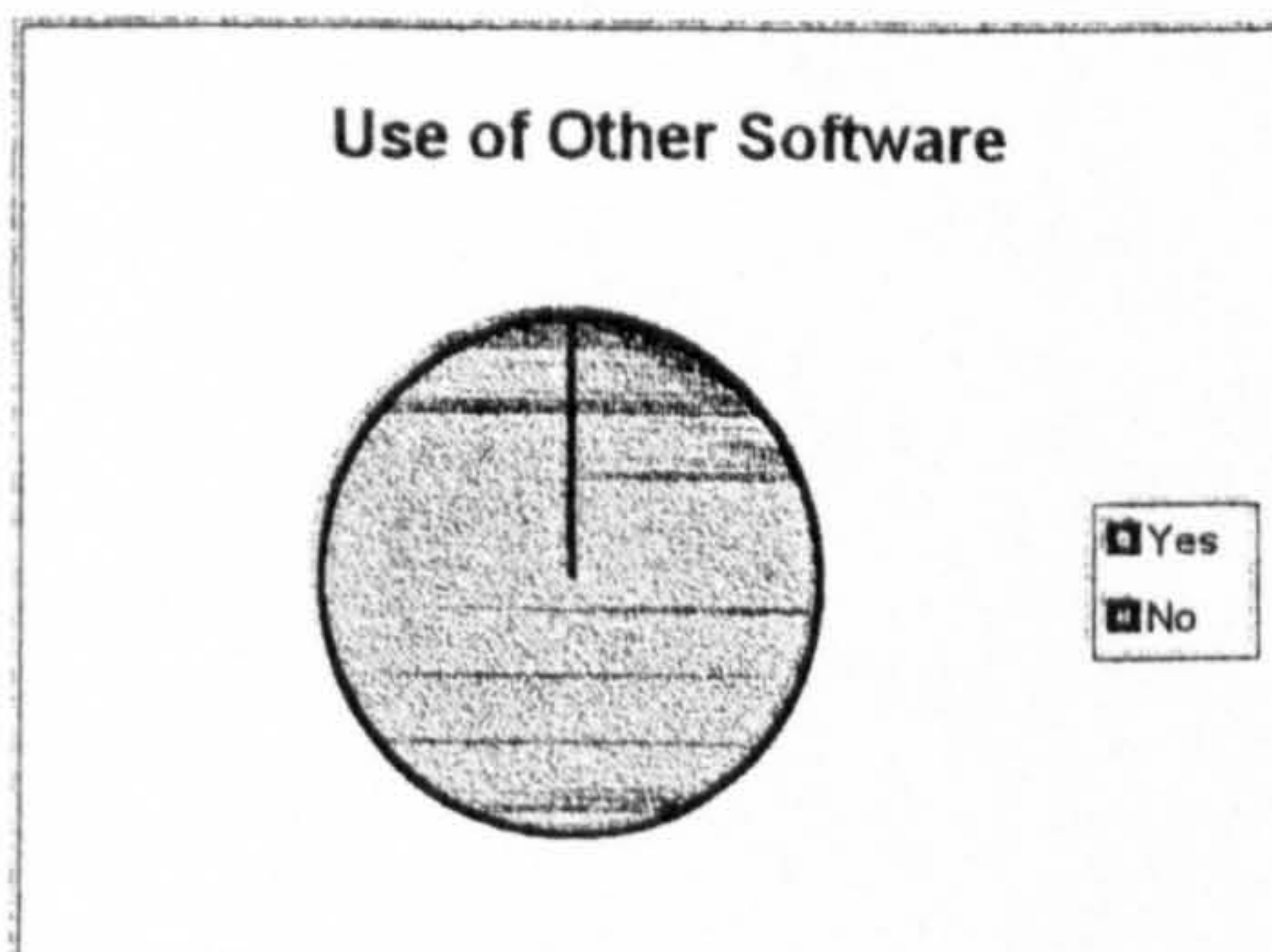


Facility	Number
Word processing	18
Data analysis	0
Data base	0
Spreadsheet	1
Statistical packages	0

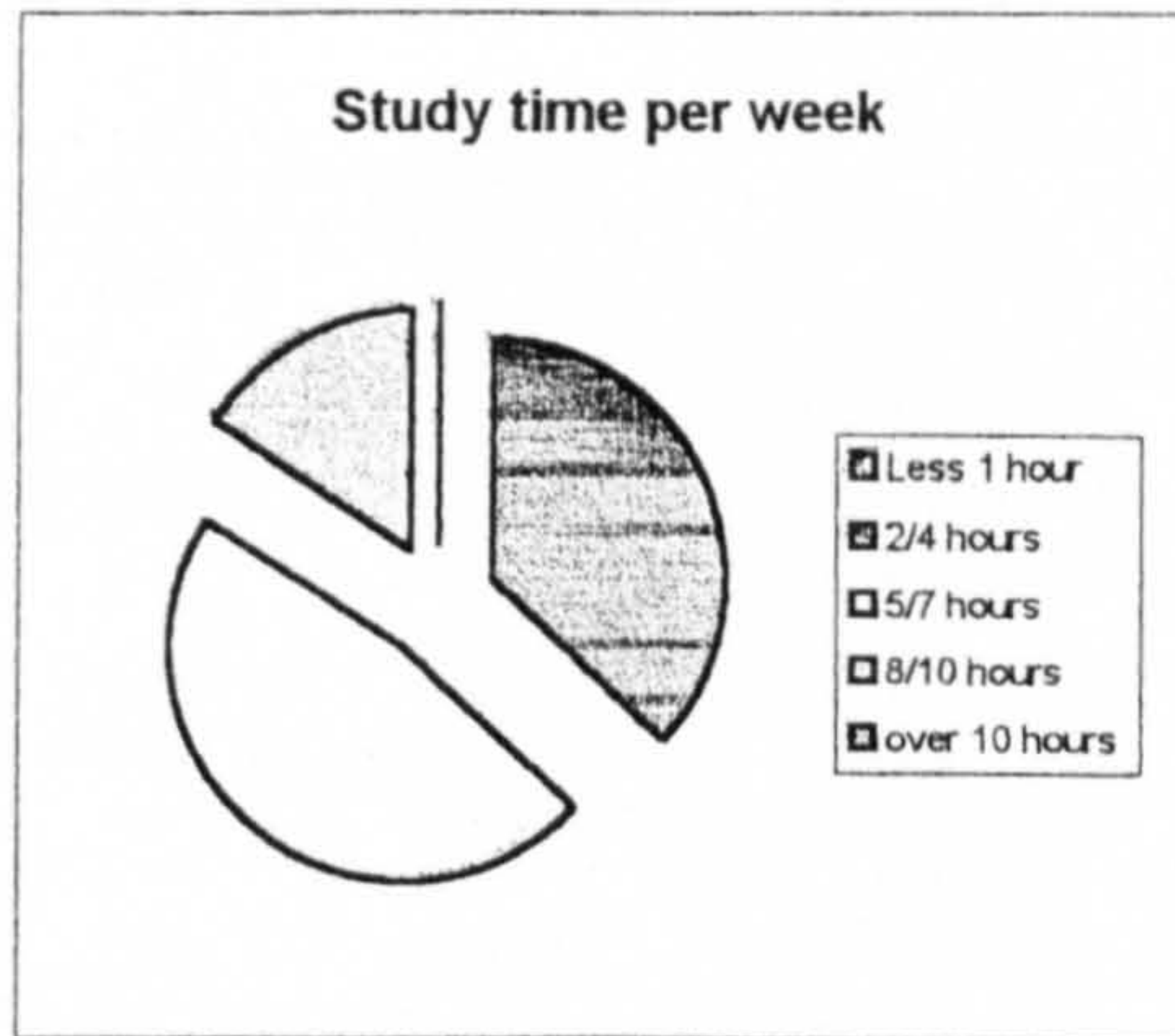
* One student used none of these



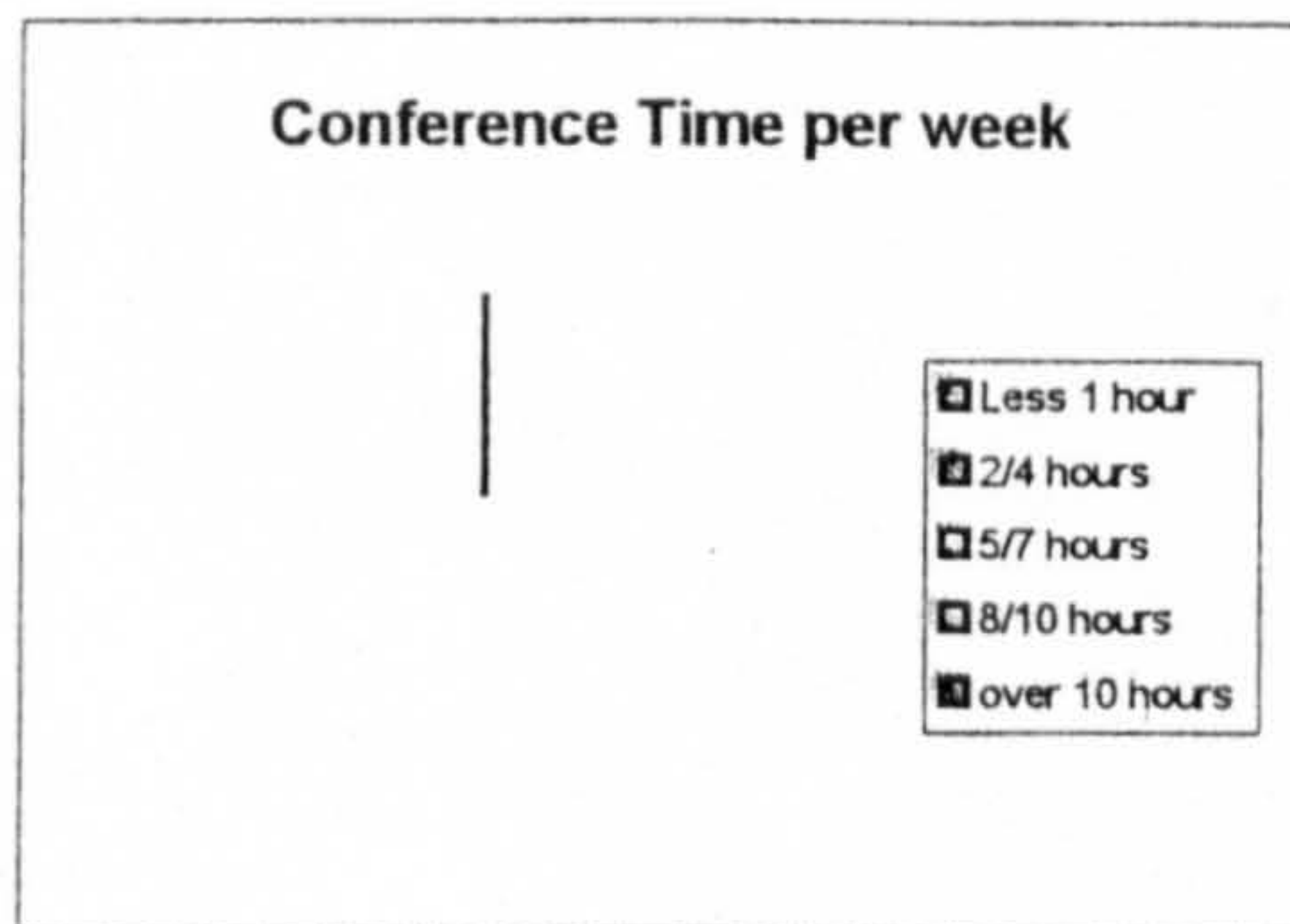
Other Facilities	Number
Yes	0
No	19



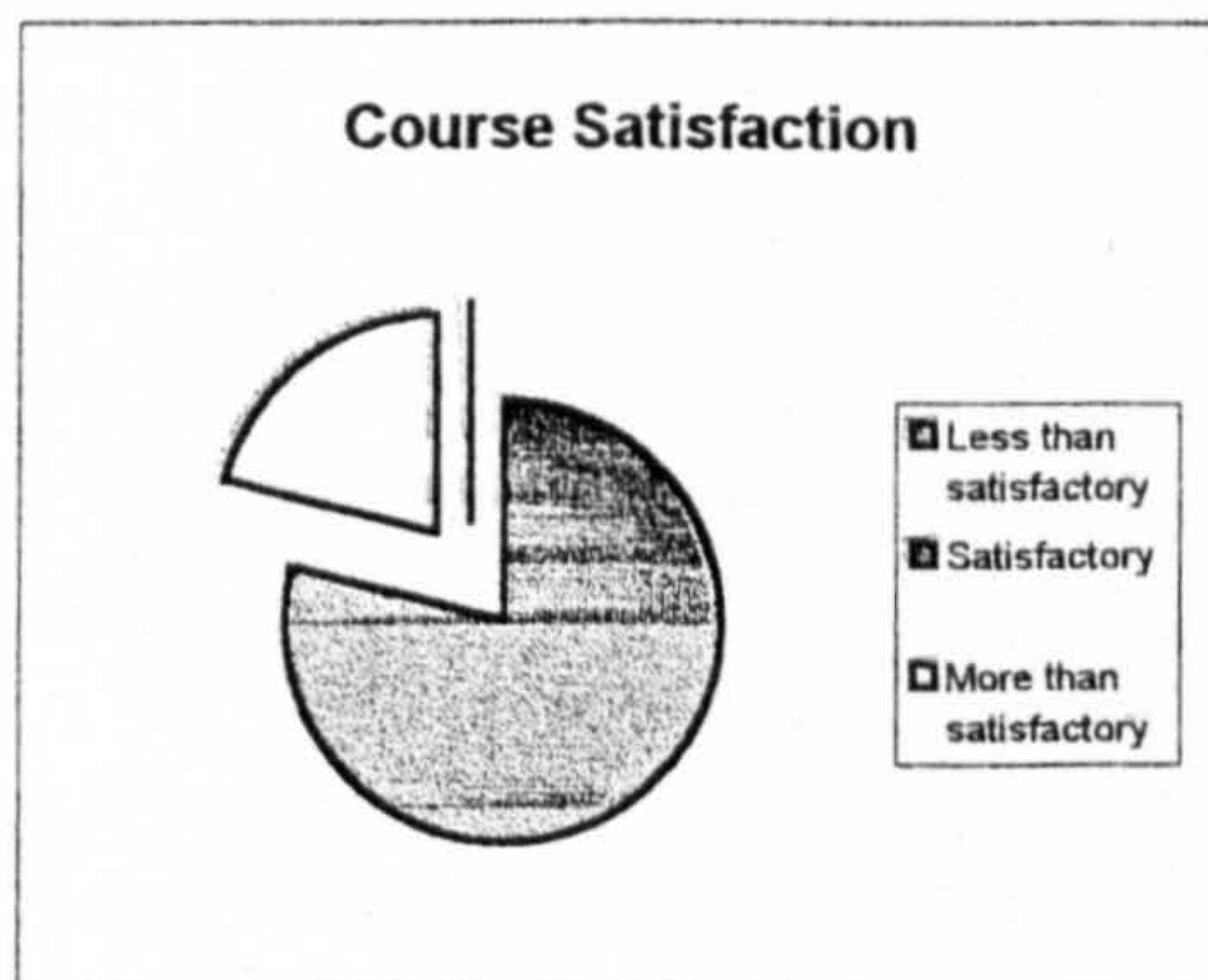
Study Time per week	Number
Less 1 hour	0
2/4 hours	7
5/7 hours	9
8/10 hours	3
over 10 hours	0



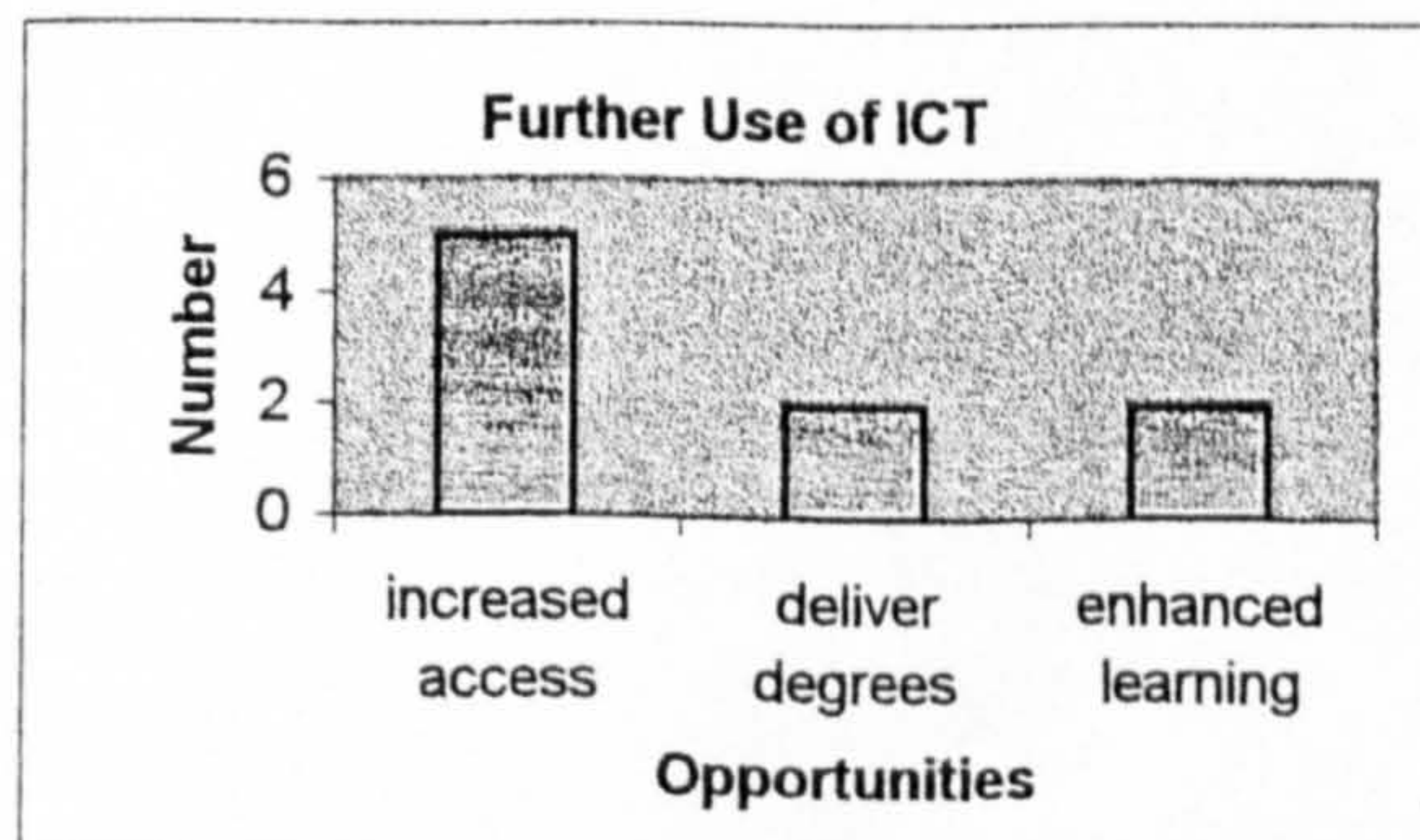
Conference Time per week	Number
Less 1 hour	0
2/4 hours	0
5/7 hours	0
8/10 hours	0
over 10 hours	0



Rating	Number
Less than satisfactory	0
Satisfactory	15
More than satisfactory	4



Further use of ICT	Number
increased access	5
deliver degrees	2
enhanced learning	2
nil response	10



APPENDIX 4

UNIVERSITY QUESTIONNAIRE DATA

ANALYSIS OF DATA FROM ACCESS STUDENTS

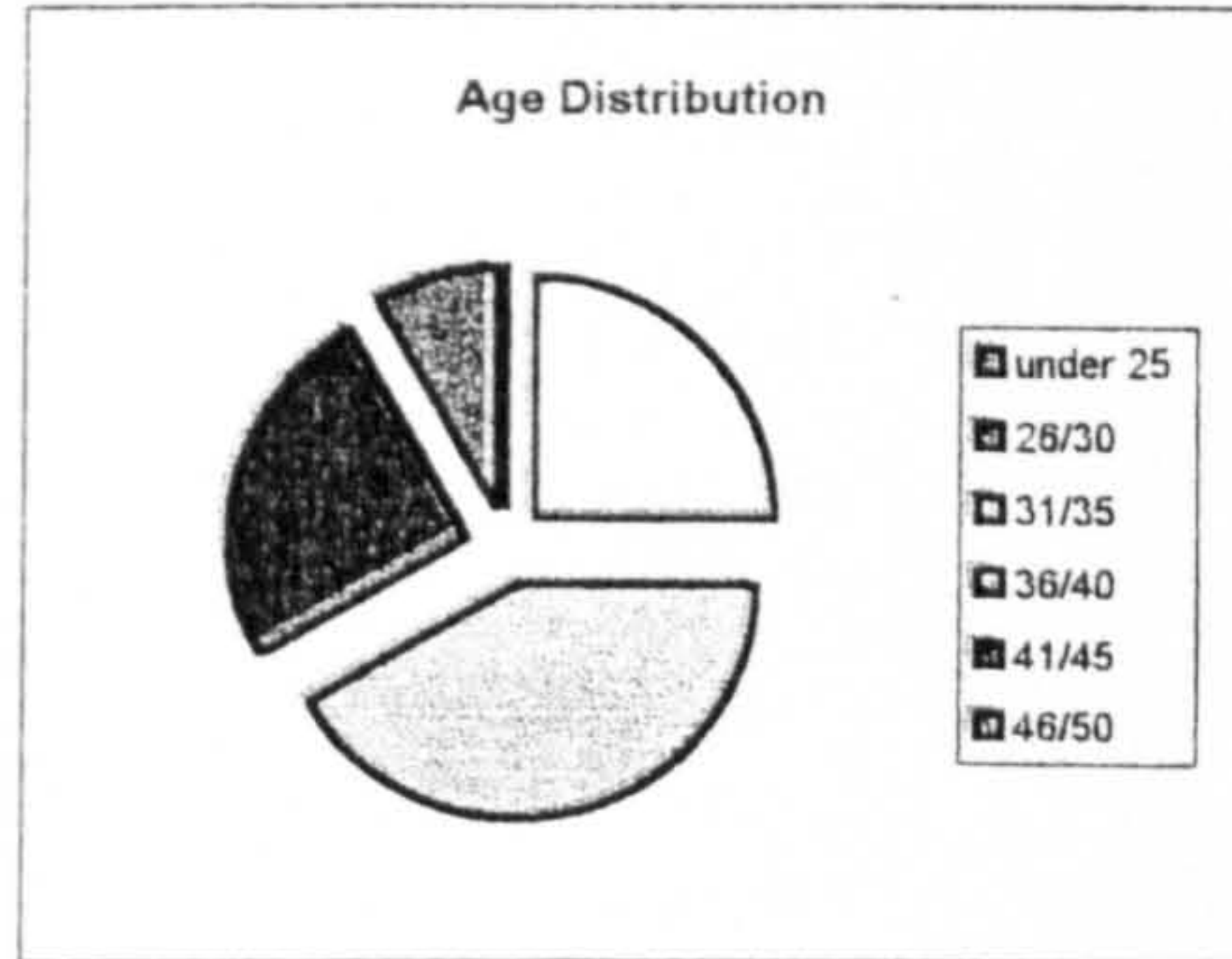
Summary of additional comments made.

- It is very difficult trying to learn so much so quickly, I don't have the time to learn how to use computer software
- Those who can use computers are at an advantage
- The facilities are very good but I don't have the time to use them, I have 3 kids and I am trying to do this course.
- I wish I could do more at home, I have kids to collect from school every day at 3pm, I can't stay to use the Learning Centre. I have to carry large books home and work when the kids are in bed.
- We have to use books for our course and there aren't always enough copies, those who get to the library first are at an advantage and those who can use the internet do even better.
- I am trying to do this course on a limited budget. I can't afford to buy the books but I do 'surf' at home because I have one of those cheap access things it doesn't cost too much.
- The course is really good but it is easier for some people to gain access to the resources than it is for others and that is not fair.
- I want to go to University because I had my kids really young, but it is hard trying to study, being a Mum and a wife, my husband doesn't like it if I study too much when he
- Those who can use computers get better marks because their work looks better

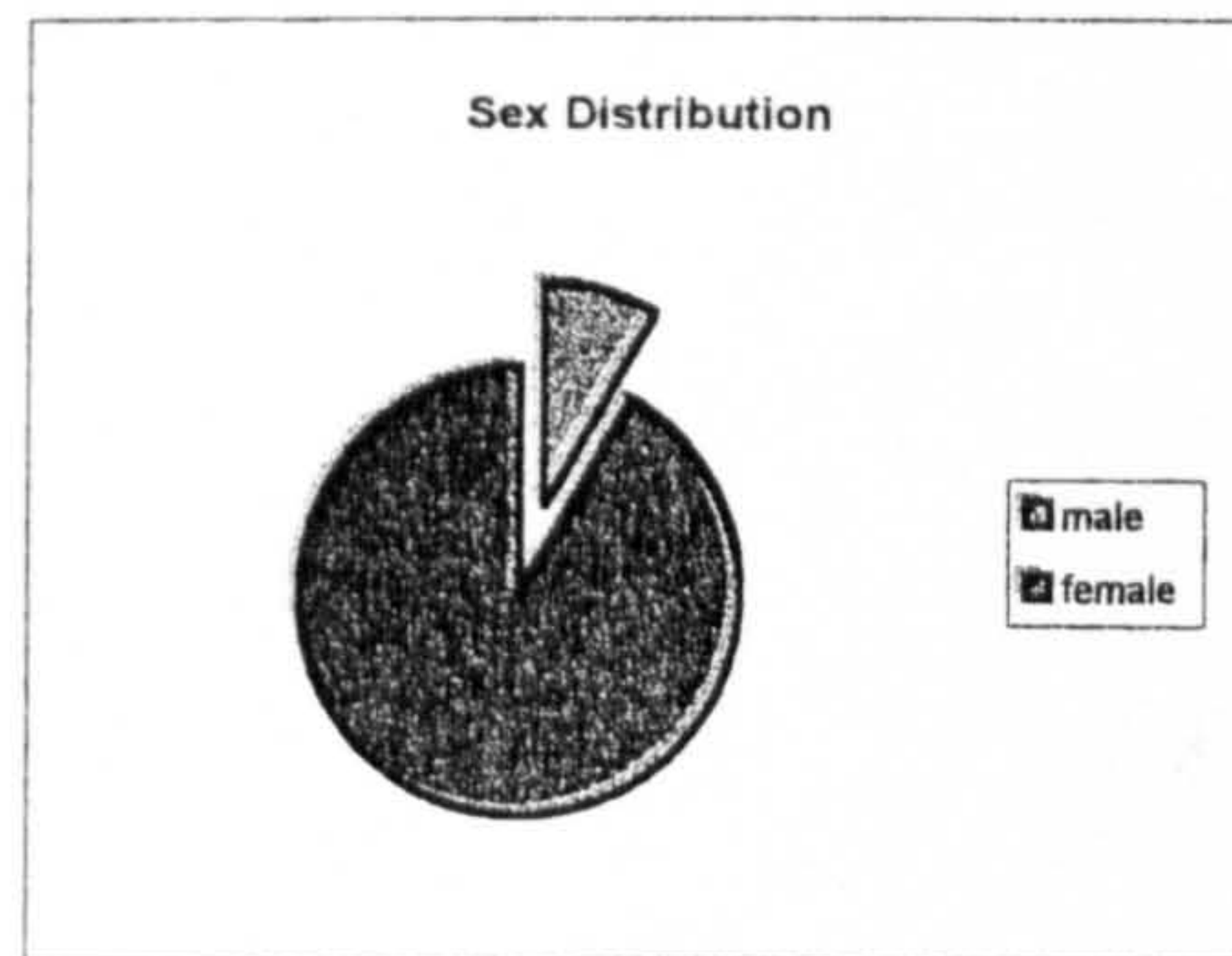
Analysis of Data

Questionnaire Results from Survey of MA (Open) Students

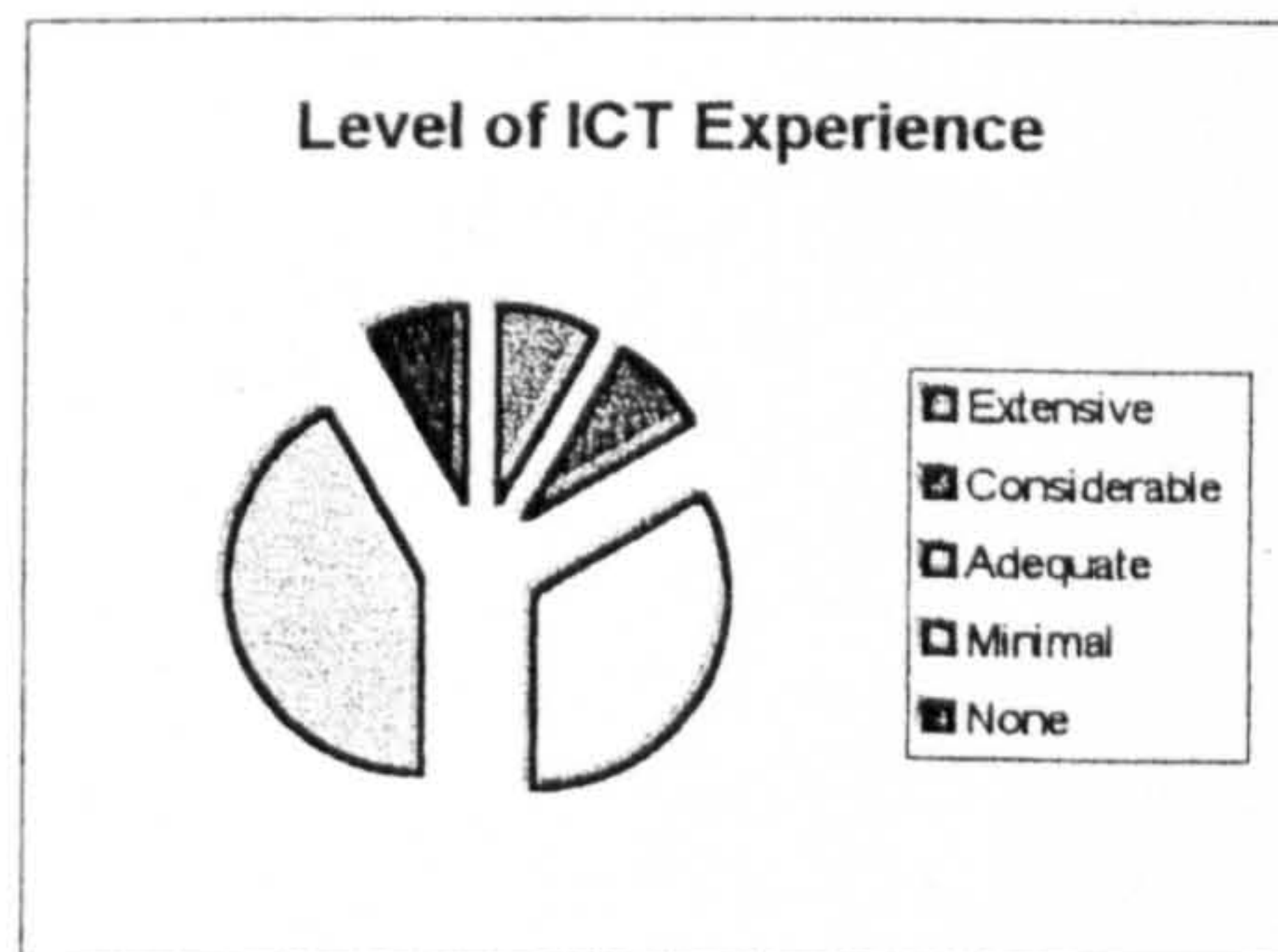
Age Group	Number
under 25	0
26/30	0
31/35	3
36/40	5
41/45	3
46/50	1



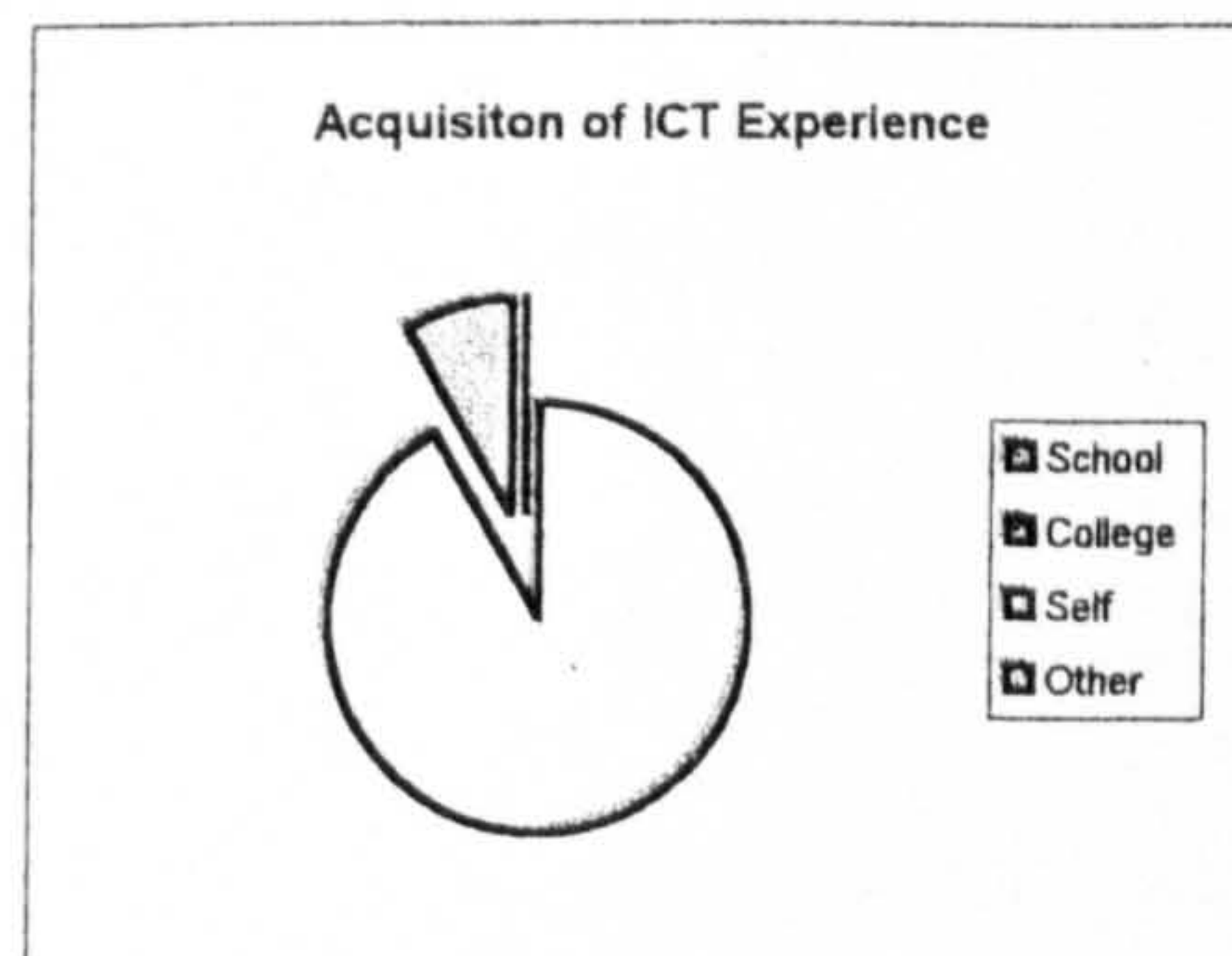
Sex	Number
male	1
female	11



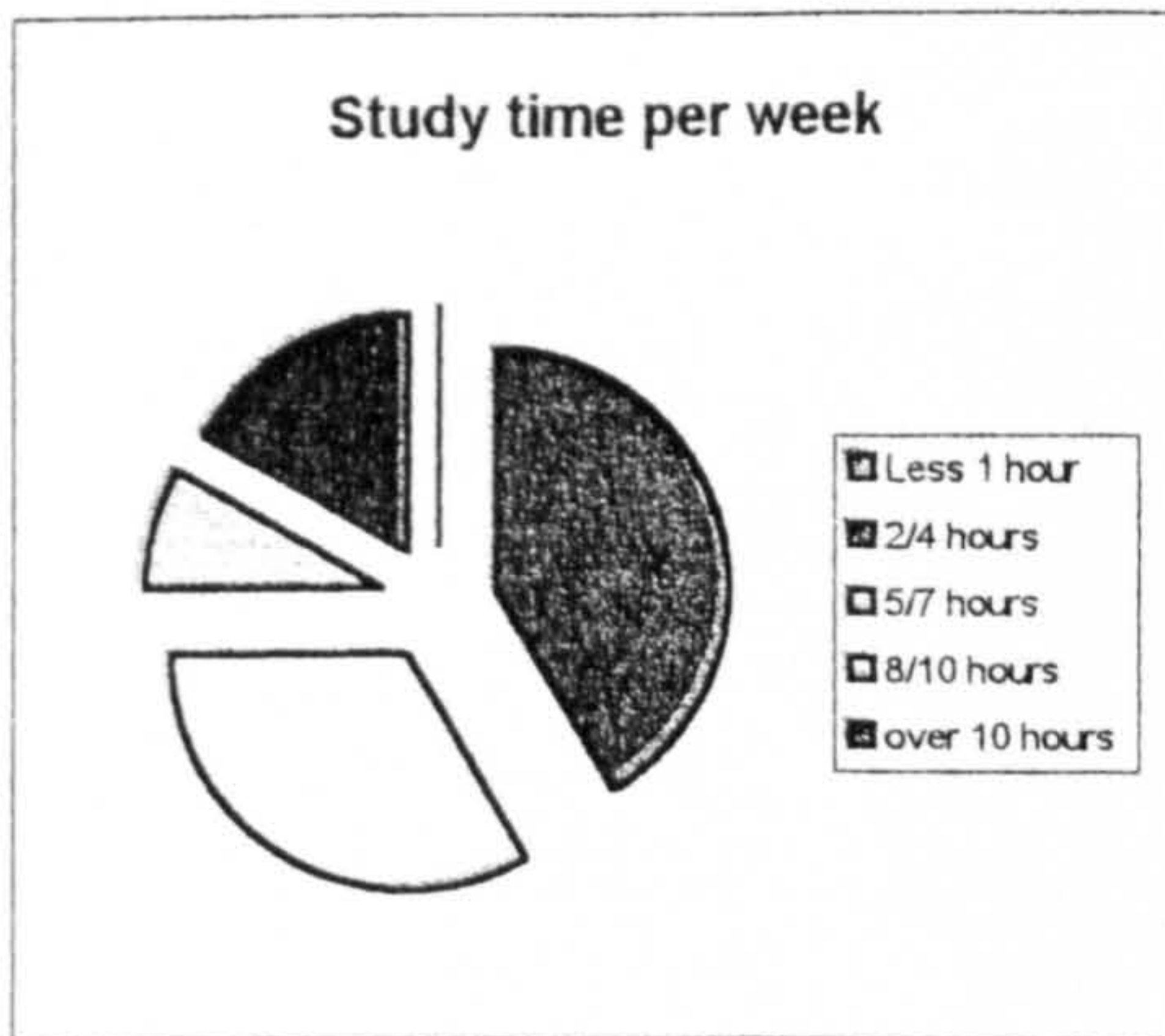
Experience	Number
Extensive	1
Considerable	1
Adequate	4
Minimal	5
None	1



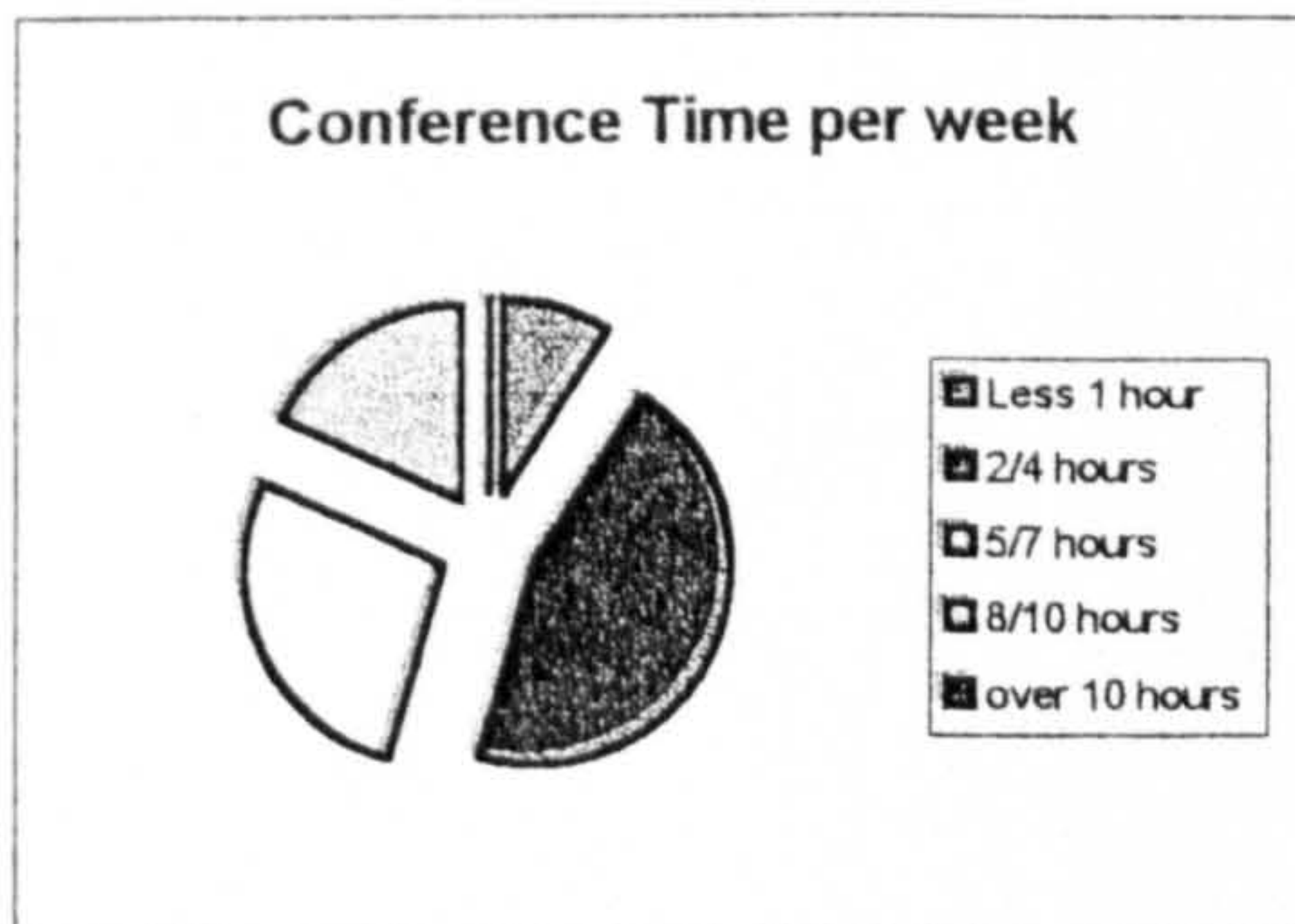
Place	Number
School	0
College	0
Self	11
Other	1



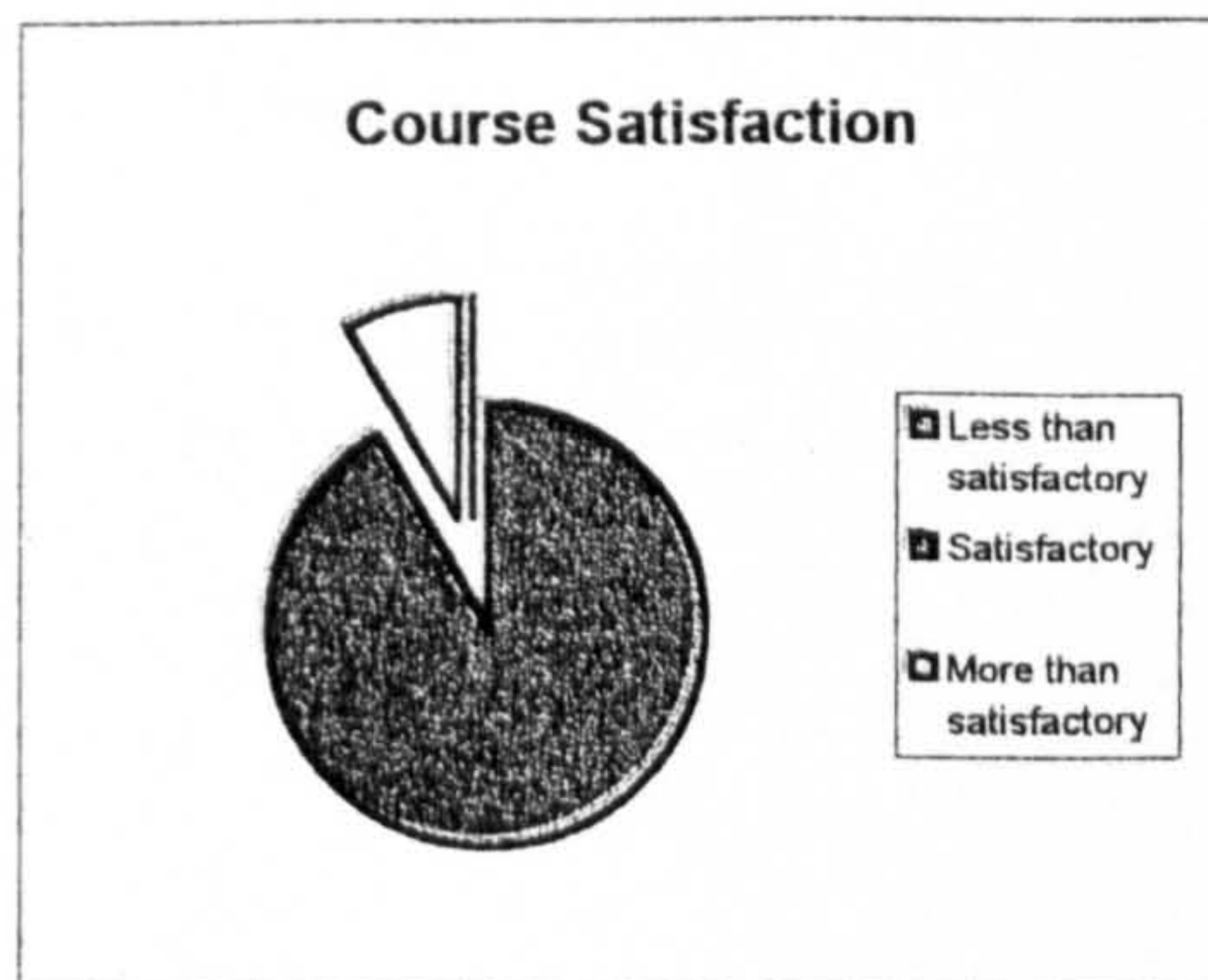
Study Time per week	Number
Less 1 hour	0
2/4 hours	5
5/7 hours	4
8/10 hours	1
over 10 hours	2



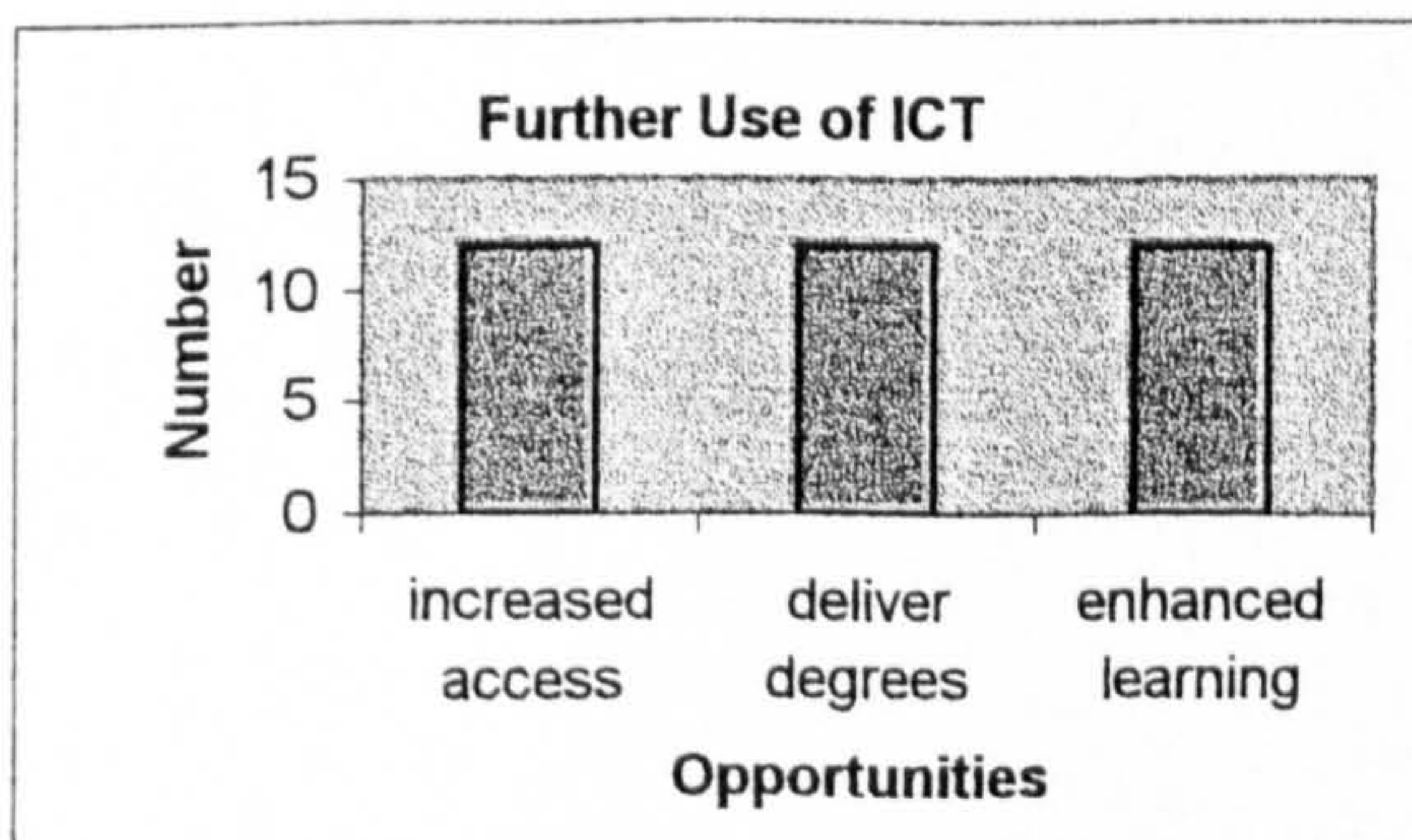
Conference Time per week	Number
Less 1 hour	1
2/4 hours	5
5/7 hours	3
8/10 hours	2
over 10 hours	0



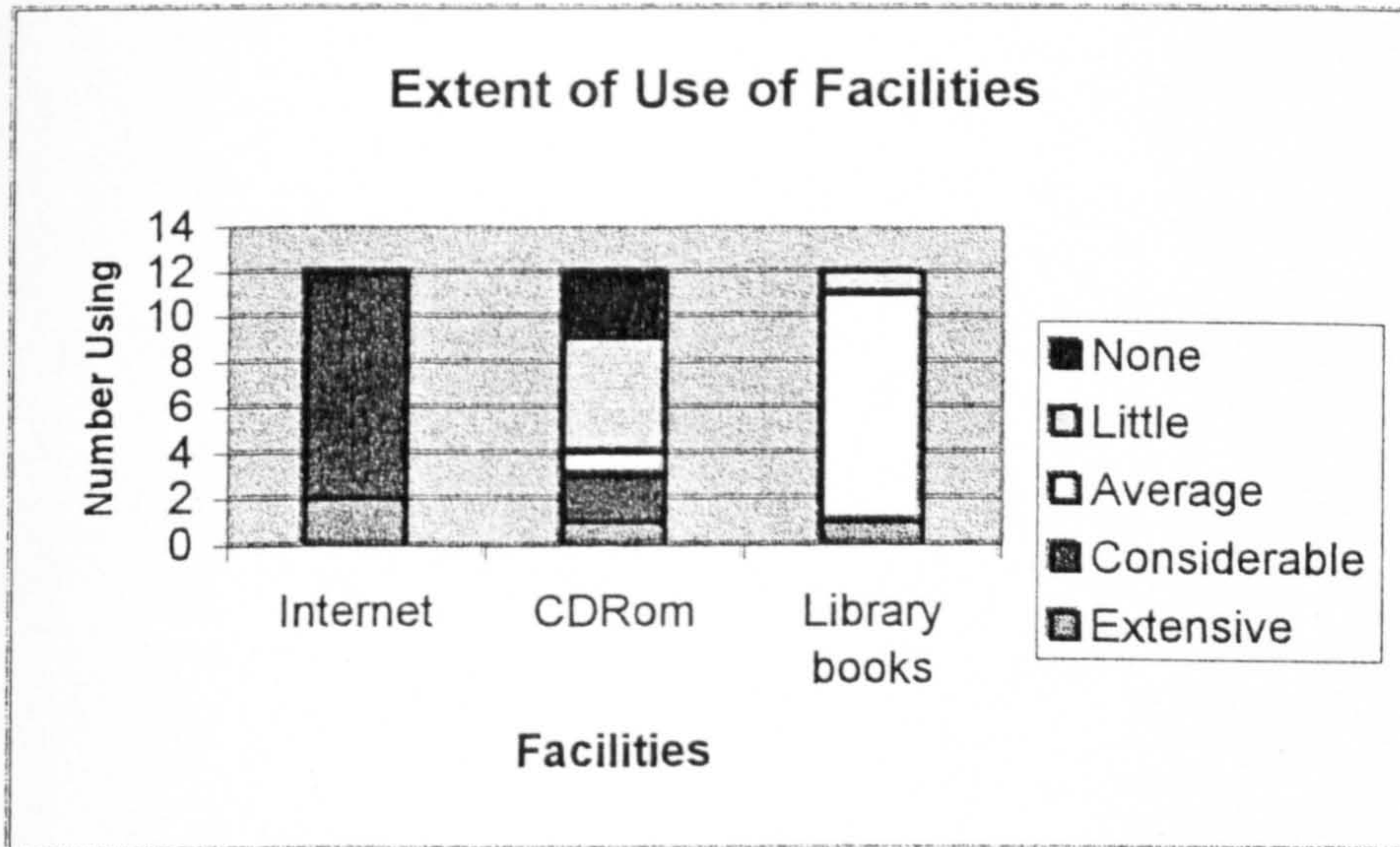
Rating	Number
Less than satisfactory	0
Satisfactory	11
More than satisfactory	1



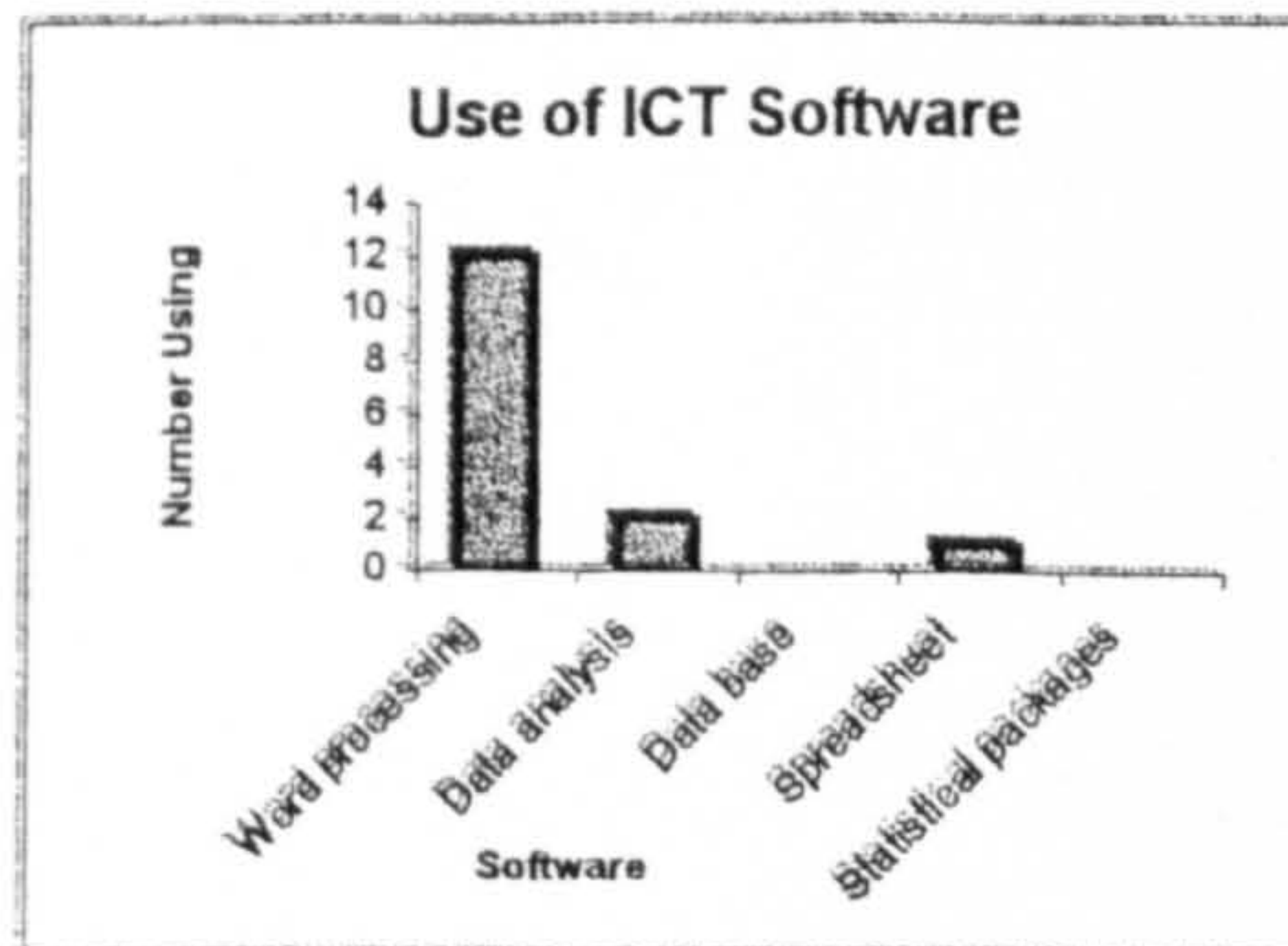
Further use of ICT	Number
increased access	12
deliver degrees	12
enhanced learning	12



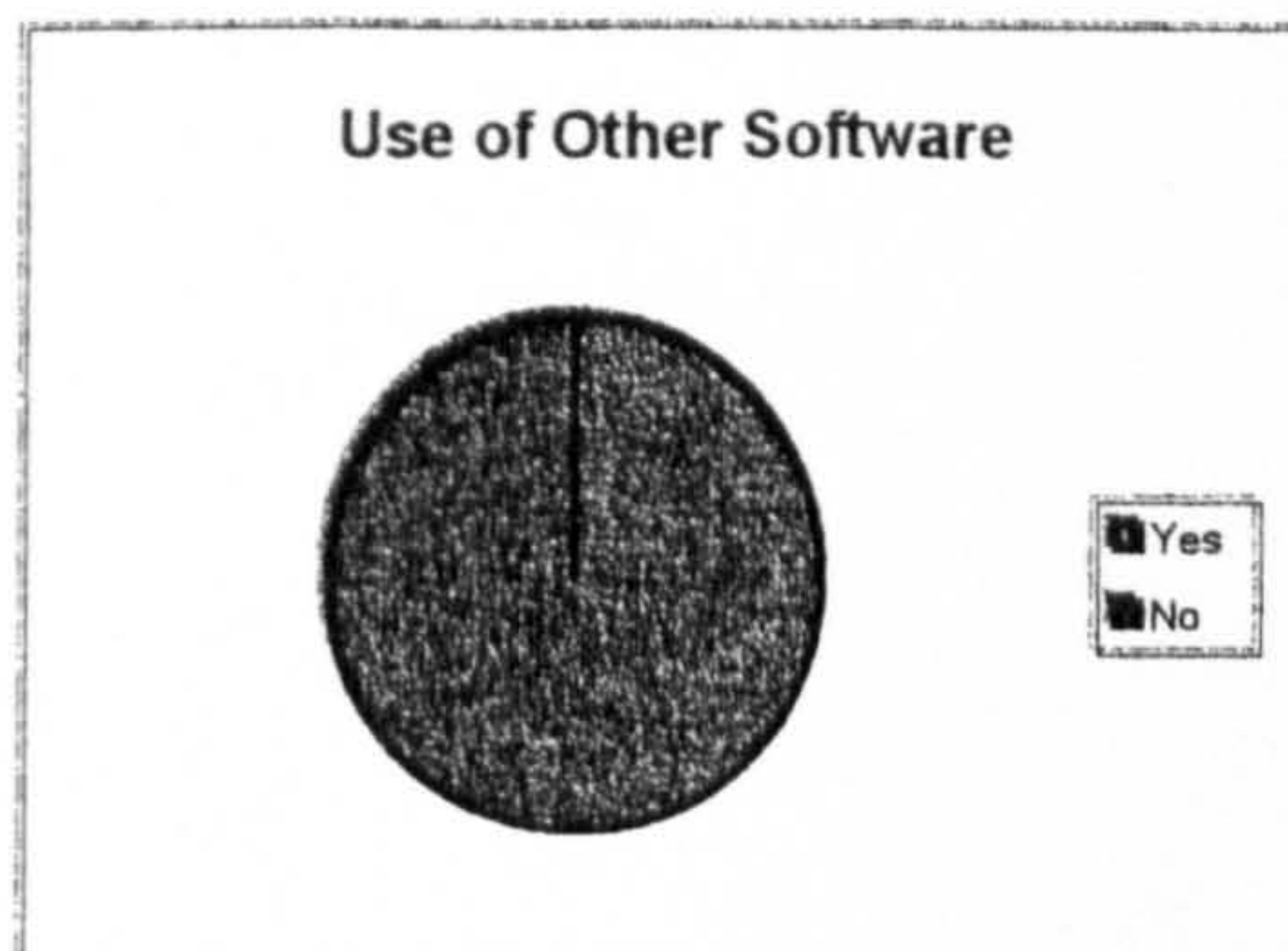
Rate	Internet	CDRom	Library books
Extensive	2	1	1
Considerable	10	2	0
Average	0	1	10
Little	0	5	1
None	0	3	0



Facility	Number
Word processing	12
Data analysis	2
Data base	0
Spreadsheet	1
Statistical packages	0

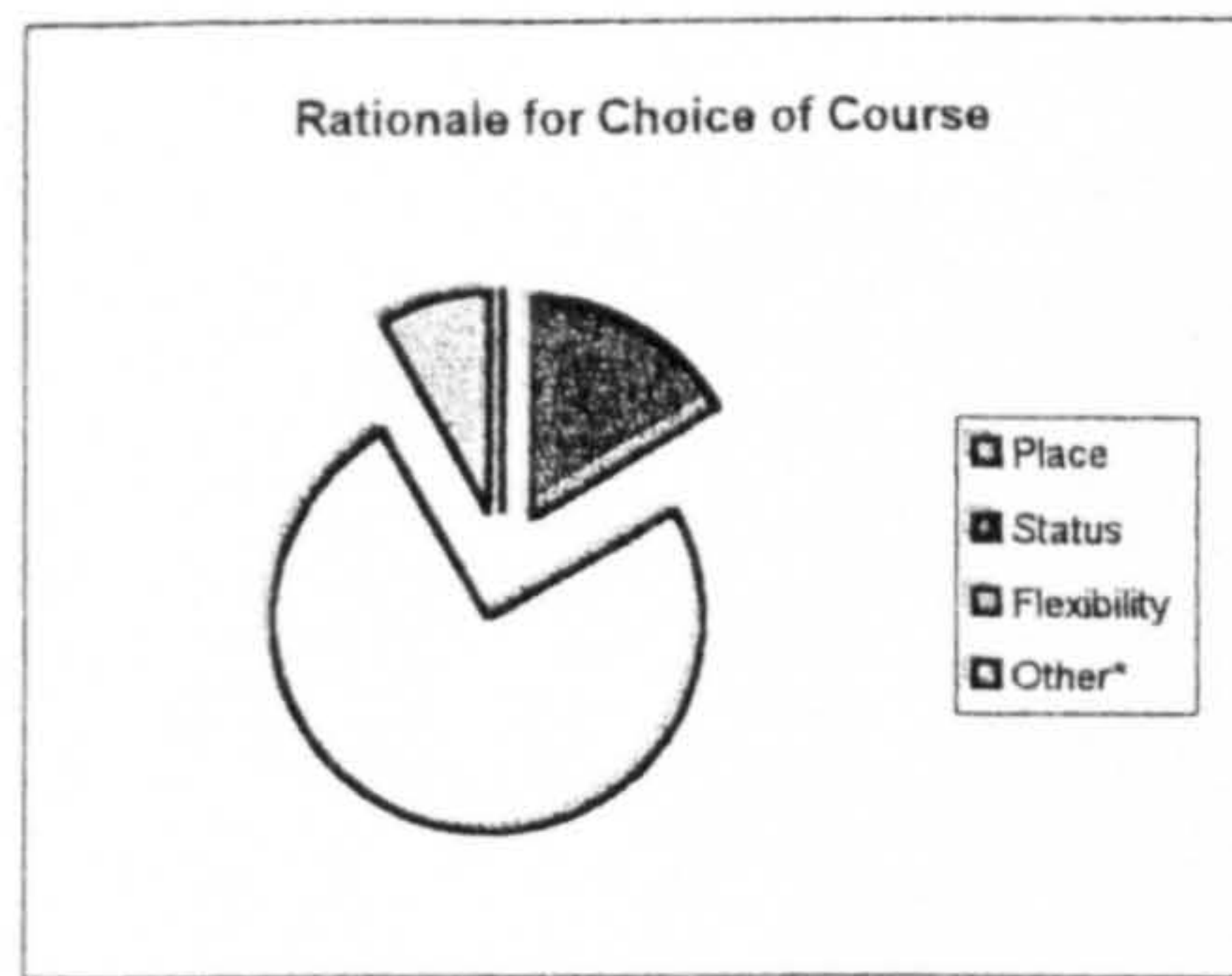


Other Facilities	Number
Yes	0
No	12

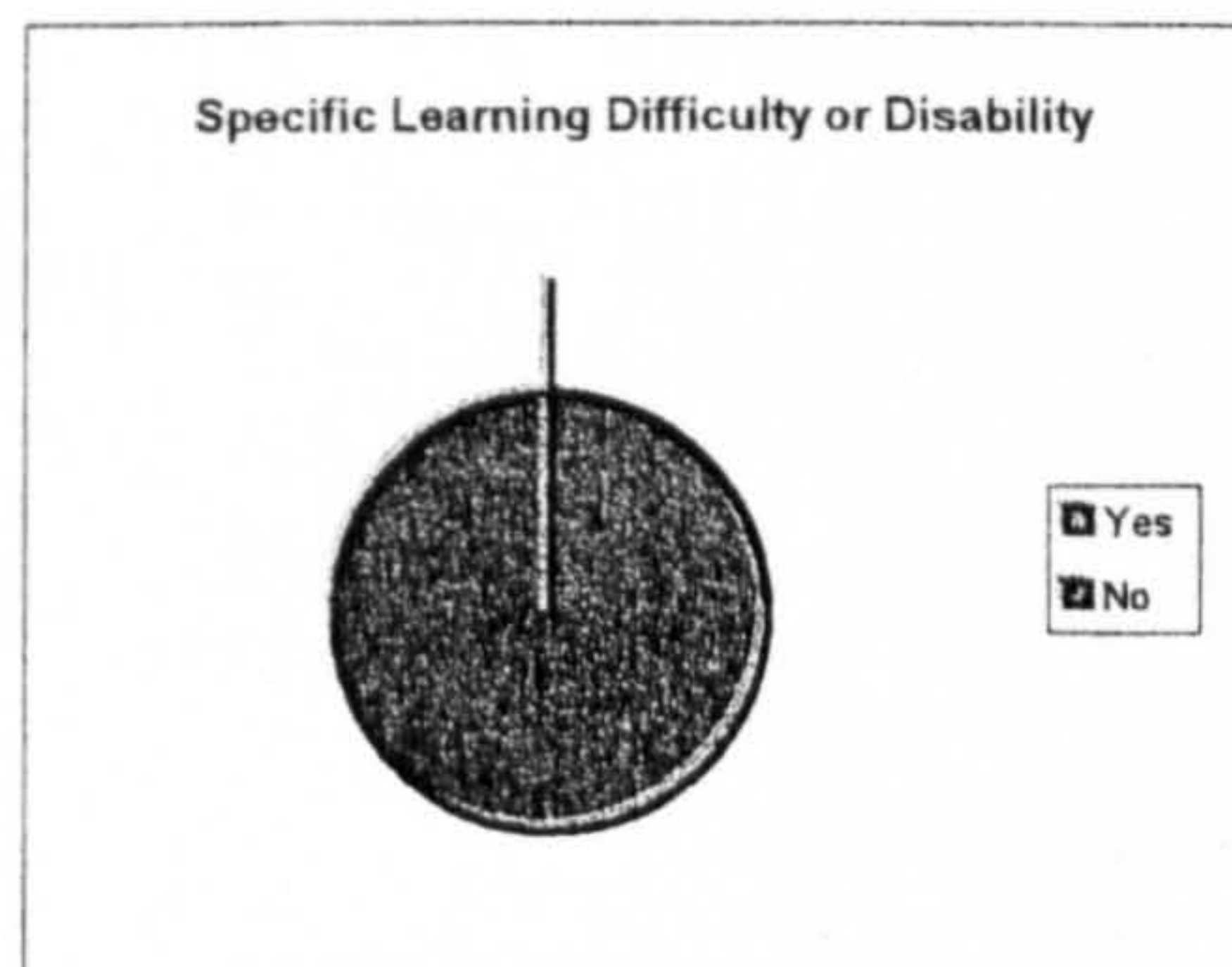


Reason	Number
Place	0
Status	2
Flexibility	9
Other*	1

* Use of ICT

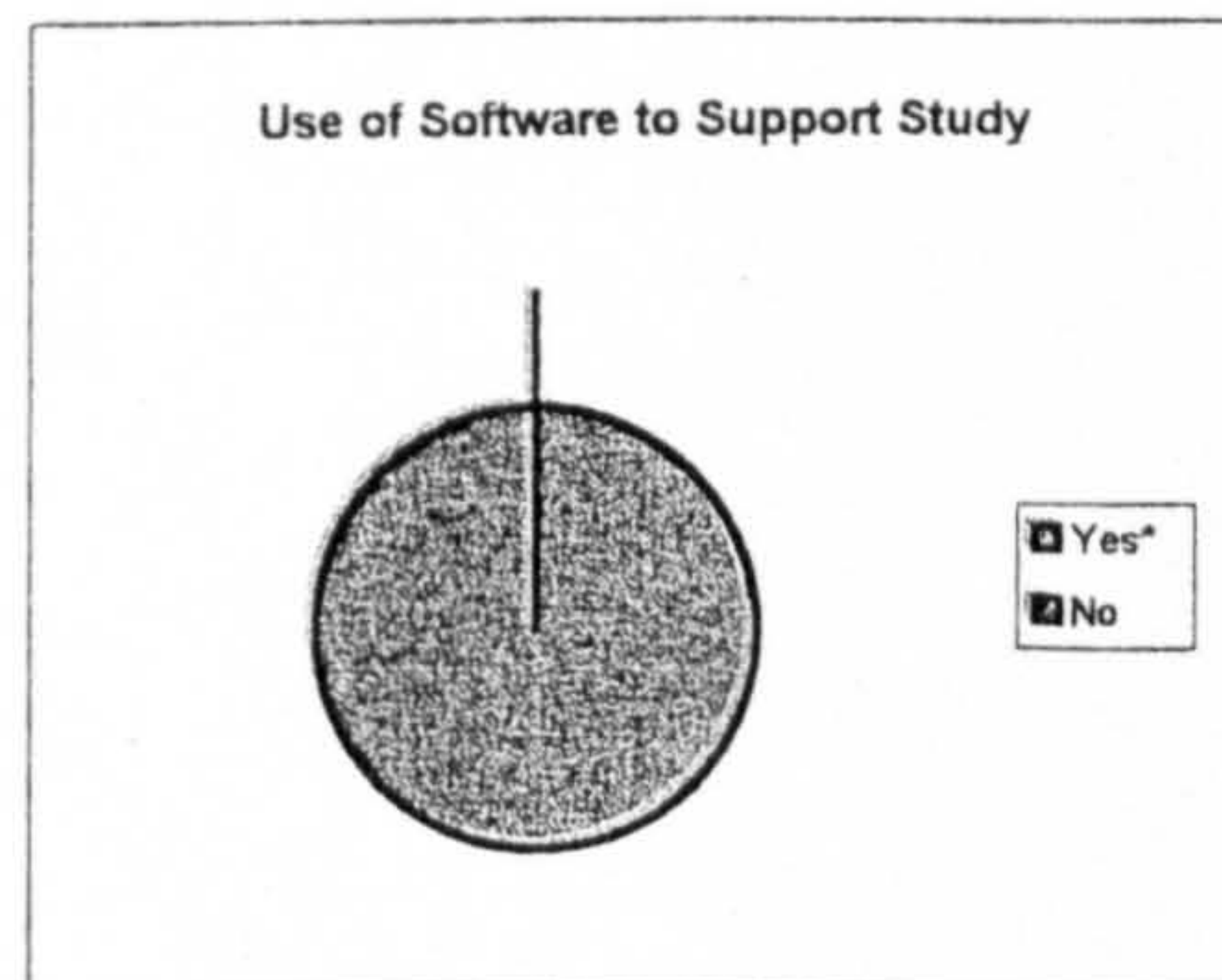


Disability	Number
Yes	0
No	12

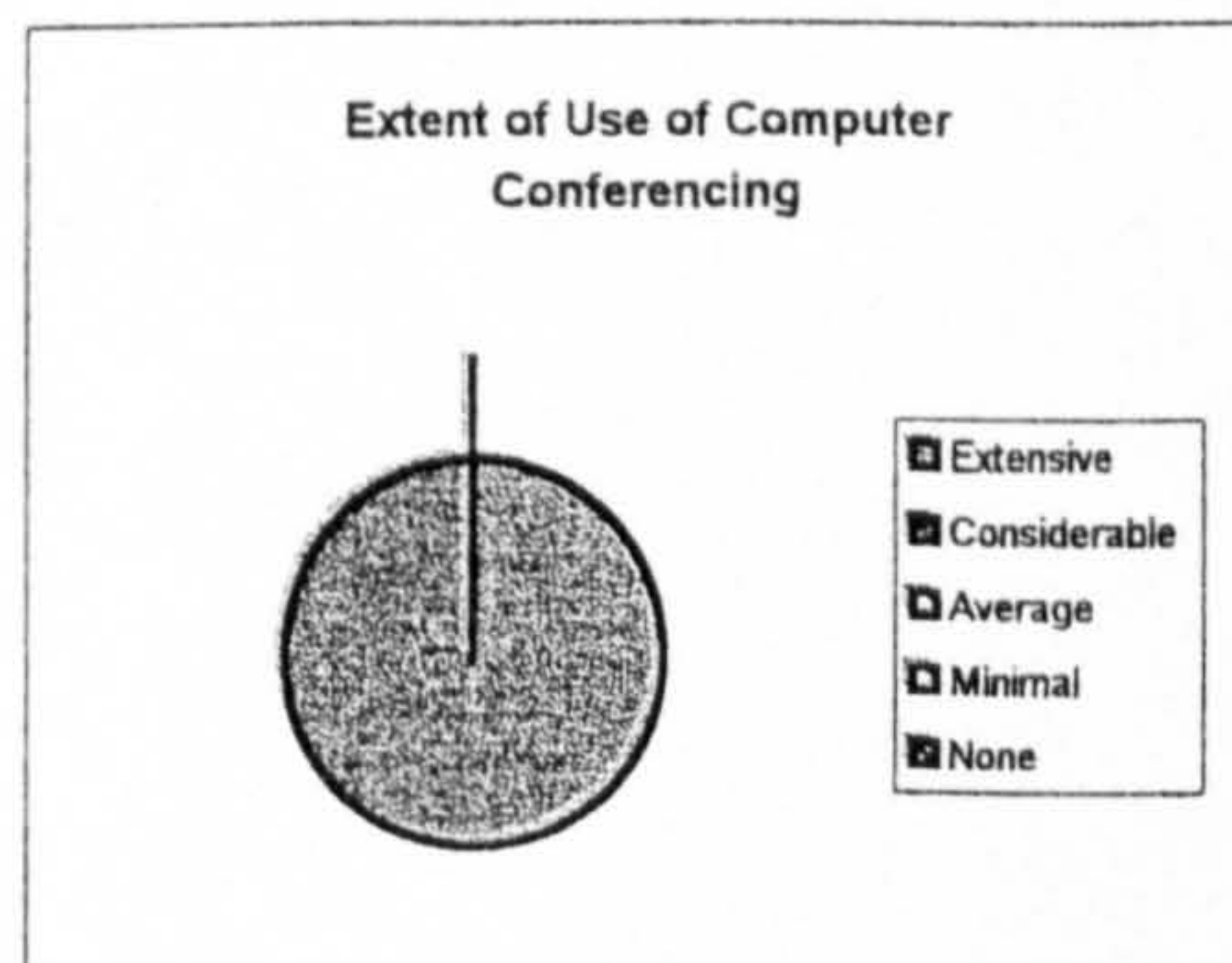


Use of Software	Number
Yes*	12
No	0

* Lotus Notes



Rate	Number
Extensive	12
Considerable	0
Average	0
Minimal	0
None	0



ANALYSIS OF DATA FROM MA (OPEN LEARNING STUDENTS)

Summary of additional comments made:

- The conferencing site is not being used enough
- The conferencing site could be improved and simplified
- All the icons make the conferencing site difficult to use
- The conferencing site is too complicated with too many threads of chat and you get lost
- The conference site could be modified and more direction given to promote discussion. We all tend to write too much and this inhibits discussion
- Having time to consider and respond online is particularly encouraging for me, a hesitant learner
- The course hand in dates have been flexible which is excellent as I am working full time
- This is an extremely lazy and surreal way to study, by talking to people across different continents but it works!
- The conferencing is so much fun that when it comes to having to produce the assignments it becomes much more difficult
- It is too easy not to participate, although if you don't someone soon notices and ask where you are.
- This doesn't really feel like learning, but we are.

APPENDIX 7

FE ICT USAGE DATA

BEST COPY

AVAILABLE

Variable print quality

Station	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31
8-Sep-98	239	294	525	329	555	800	232	449	390	532	541	124	129	1050	958	1065	804	199	416	411	539	824	612	7.05	820	9.11	1276	745	306	819
15-Oct-98	969	910	561	710	455	1119	643	995	868	1289	931	751	976	1049	1514	1377	970	503	4.41	10.68	5.27	5.41	11.89	14.53	15.91	14.37	9.53	12.86	7.73	11.92
12-Oct-98	1161	1522	1265	1210	1267	1874	850	1459	1354	860	1668	1122	1384	1434	1478	1265	1336	7.09	17.41	17.71	17.96	12.64	19.98	14.72	17.54	14.57	12.85	17.12	14.47	11.88
19-Oct-98	1548	1966	1796	1324	1618	1472	1295	1131	1544	1876	2352	1600	1605	2202	1176	1407	1494	11.75	19.97	17.11	16.38	16.51	20.16	16.62	17.44	16.82	17.37	14.17	14.13	13.41
16-Oct-98	000	001	042	029	001	156	001	000	001	138	160	040	003	001	001	001	001	001	001	016	001	001	001	059	1.15	0.16	6.17	0.01	0.00	0.01
2-Nov-98	1667	735	1241	856	854	930	916	1282	985	1231	1483	825	752	1023	748	9.21	6.34	7.02	14.89	13.37	10.70	11.21	16.07	11.57	12.65	16.34	20.04	12.68	14.83	13.61
9-Nov-98	2253	1159	1415	1309	947	1665	974	1446	1374	1601	1577	823	653	1505	1672	1335	11.08	11.53	20.40	15.02	15.25	16.67	16.41	16.44	11.20	17.51	19.14	11.78	12.99	12.96
6-Nov-98	1833	2010	1463	1339	1396	2159	2085	1914	1859	1702	1543	959	1483	1301	1640	12.25	17.62	15.80	19.99	16.71	15.84	7.83	21.14	19.07	21.38	19.92	14.81	21.89	16.82	14.49
3-Nov-98	1652	1413	1273	1396	1086	2101	1695	1012	1439	1702	1664	1385	1215	1205	1927	17.53	18.92	9.41	18.36	18.98	23.56	3.96	15.38	18.64	17.31	19.21	23.52	17.48	20.05	18.22
0-Nov-98	1667	1404	1551	1684	1829	1644	1138	1861	1271	1664	1385	1215	1524	1205	1927	17.53	18.92	9.41	18.36	18.98	23.56	3.96	15.38	18.64	17.31	19.21	23.52	17.48	20.05	18.22
17-Dec-98	1274	1445	1342	1249	804	1765	1091	1372	1325	1633	1904	956	1676	1240	1550	15.66	17.89	13.33	16.26	14.17	17.41	13.49	17.20	23.49	17.06	17.61	18.97	18.25	19.25	16.76
4-Dec-98	1422	1189	1188	1355	1584	1665	960	1153	1290	1594	1633	1003	1401	1324	1502	14.62	11.72	6.06	12.06	18.03	13.88	14.18	16.74	12.78	17.63	13.62	17.74	12.59	13.89	18.97
total	130	140.46	136.62	127.90	131.58	172.53	118.79	140.74	136.98	159.79	170.77	114.50	139.66	160.03	163.01	154.64	155.78	103.41	172.18	167.31	163.05	124.62	186.44	177.24	179.61	180.67	200.10	161.82	161.55	158.80
ln	207	001	042	029	001	156	001	000	001	138	160	040	003	001	001	001	001	001	001	016	001	001	001	059	1.15	0.16	6.17	0.01	0.00	0.01
tax	2010	1796	1684	2159	2101	2085	1914	1859	1876	2352	2032	2032	2381	2667	2135	2087	2617	15.80	24.28	21.26	23.56	16.67	21.68	23.49	22.13	21.42	27.20	21.89	24.33	18.97
lean	306	11.70	11.39	10.66	10.97	14.38	9.90	11.73	11.42	13.32	14.23	9.54	11.64	13.34	13.58	12.89	12.98	8.62	14.35	13.94	13.59	10.38	15.54	14.77	14.97	15.06	16.68	13.49	13.46	13.23

USERS	L	E	A	R	N	I	N	G	R	E	S	O	U	R	C	E	C	E	N	T	R	E	S	T	A	T	I				
8-Sep-98	11	11	9	8	23	25	6	13	7	8	11	5	7	35	31	22	16	5	10	16	11	8	33	23	25	43	19	18	8	9	
15-Oct-98	14	21	14	8	14	47	15	20	23	20	28	13	25	24	28	19	19	16	11	28	13	17	27	30	38	35	21	26	19	17	
12-Oct-98	30	37	19	19	28	37	18	20	26	26	31	14	29	34	25	25	32	19	26	21	33	19	31	28	40	37	24	19	21	16	
19-Oct-98	23	24	24	16	22	30	18	16	25	26	21	22	32	24	16	23	20	20	32	29	33	26	24	26	33	39	23	31	31	29	
26-Oct-98	1	2	3	2	2	3	2	1	2	9	14	8	2	1	2	2	2	2	2	3	1	2	6	3	9	6	3	2	1	2	
12-Nov-98	30	18	16	18	16	34	20	24	28	34	33	16	25	30	27	19	16	12	20	26	31	20	27	21	24	42	33	18	27	27	
19-Nov-98	41	54	24	58	47	57	49	48	54	56	37	32	32	44	45	39	24	30	45	68	57	32	62	43	47	46	58	30	52	40	
6-Nov-98	30	30	23	26	25	59	45	50	43	37	23	38	43	37	35	38	34	29	51	43	48	45	43	35	33	57	57	42	41	31	
13-Nov-98	53	47	33	49	36	47	35	34	40	49	41	32	43	63	50	56	86	57	29	37	37	25	51	35	65	73	59	50	47	46	
30-Nov-98	54	44	44	36	35	51	31	53	49	37	39	41	53	36	53	49	45	40	62	56	53	23	61	58	44	53	60	52	62	65	
17-Dec-98	44	46	31	46	28	51	20	24	23	46	44	20	35	33	47	41	24	24	35	30	36	30	47	33	42	45	57	31	39	35	
14-Dec-98	33	39	30	25	34	53	26	30	21	32	33	24	35	37	24	33	35	33	30	41	29	28	33	52	42	38	57	43	48	51	
total	1	373	270	311	310	494	285	333	341	380	355	265	361	398	383	366	353	287	353	398	382	275	445	387	442	514	471	362	396	368	
ln	3	2	3	2	2	3	2	2	1	2	8	5	2	2	2	2	2	2	2	2	3	1	2	6	3	9	6	3	2	1	2
tax	54	44	44	58	47	59	49	53	54	56	44	41	53	63	53	56	86	57	62	68	57	45	62	58	65	73	60	52	62	65	
lean	4	31	23	26	26	41	24	28	28	32	30	22	30	33	32	31	29	24	29	33	32	23	37	32	37	43	39	30	33	31	

AINUSER	L	E	A	R	N	I	N	G	R	E	S	O	U	R	C	E	C	E	N	T	R	E	S	T	A	T	I			
28-Sep-98	13	16	35	25	14	19	23	21	33	40	28	15	11	18	19	29	30	24	25	15	29	62	11	18	20	13	40	25	23	55
05-Oct-98	42	26	24	53	19	14	26	30	23	39	20	35	23	26	32	43	31	19	19	24	23	19	26	29	25	25	27	30	24	42
12-Oct-98	23	25	40	38	27	30	28	44	31	20	32	48	29	25	35	30	25	22	40	51	33	40	39	32	26	24	32	54	41	45
19-Oct-98	40	49	45	50	44	29	43	42	37	43	67	44	30	55	44	37	45	35	37	35	30	38	50	38	32	26	45	27	27	28
26-Oct-98	0	0	8	9	0	31	0	0	0	9	7	3	1	0	0	0	0	0	0	3	1	0	37	12	8	2	123	0	0	0
02-Nov-98	33	24	47	29	32	16	27	32	21	22	27	31	18	20	17	29	24	35	45	31	21	34	36	33	32	23	36	42	33	30
09-Nov-98	33	13	35	14	12	18	12	18	15	17	26	15	12	21	22	21	28	23	27	13	16	31	16	23	14	23	20	24	15	19
16-Nov-98	37	40	38	31	52	21	28	23	26	30	50	32	33	43	37	33	46	30	29	30	27	19	30	37	40	23	29	22	36	36
23-Nov-98	19	18	23	17	18	27	29	18	22	21	23	18	21	12	20	13	12	17	41	27	26	19	25	33	20	16	15	26	21	19
3																														

Station	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31
8-Sep-98	239	294	525	329	555	800	232	449	390	532	541	124	129	1050	958	1065	804	199	416	411	539	824	612	705	820	911	1276	745	306	819
15-Oct-98	969	910	561	710	455	1119	643	995	868	1289	931	751	976	1049	1514	1377	970	503	441	1068	527	541	1189	1453	1591	1437	953	1286	773	1192
12-Oct-98	1161	1522	1265	1210	1267	1874	850	1459	1354	860	1668	1122	1384	1434	1478	1265	1336	709	1741	1771	1796	1264	1998	1472	1754	1457	1285	1712	1447	1188
19-Oct-98	1548	1966	1796	1324	1618	1472	1295	1131	1544	1876	2352	1600	1605	2202	1176	1407	1494	1175	1997	1711	1638	1651	2016	1662	1744	1682	1737	1417	1413	1341
16-Oct-98	000	001	042	029	001	156	001	000	001	138	160	040	003	001	001	001	001	001	001	016	001	001	369	059	115	016	617	001	000	001
2-Nov-98	1667	735	1241	856	854	930	916	1282	985	1231	1483	825	752	1023	748	921	634	702	1489	1337	1070	1121	1607	1157	1265	1634	2004	1268	1483	1361
9-Nov-98	2253	1159	1415	1309	947	1665	974	1446	1374	1601	1577	823	653	1505	1672	1335	1108	1153	2040	1502	1525	1667	1641	1644	1120	1751	1914	1178	1299	1296
6-Nov-98	1833	2010	1463	1339	2159	2064	2085	1914	1859	1859	1920	2032	2381	2667	2135	2087	2617	1439	2428	2126	2141	1448	2168	2174	2213	2142	2720	1554	2433	1838
3-Nov-98	1652	1413	1273	1396	1086	2101	1695	1012	1439	1702	1543	959	1483	1301	1640	1225	1762	1580	1999	1671	1584	783	2114	1907	2138	1992	1481	2189	1682	1449
0-Nov-98	1667	1404	1551	1684	1829	1644	1138	1861	1271	1664	1385	1215	1524	1205	1927	1753	1892	941	1836	1898	2356	396	1538	1864	1731	1921	2352	1748	2005	1822
17-Dec-98	1274	1445	1342	1249	804	1765	1091	1372	1325	1633	1904	956	1676	1240	1550	1566	1789	1333	1626	1417	1741	1349	1720	2349	1706	1761	1897	1825	1925	1676
4-Dec-98	1422	1189	1188	1355	1584	1665	960	1153	1290	1594	1633	1003	1401	1324	1502	1462	1172	606	1206	1803	1388	1418	1674	1278	1763	1362	1774	1259	1389	1897
total	130	140.46	136.62	127.90	131.58	172.53	118.79	140.74	136.98	170.77	114.50	139.66	160.03	163.01	154.64	155.78	103.41	172.18	167.31	163.05	124.62	186.44	177.24	179.61	180.67	200.10	161.82	161.55	158.80	
lin	207	001	042	029	001	156	001	000	001	138	160	040	003	001	001	001	001	001	001	016	001	001	369	059	115	016	617	001	000	001
fax	2010	1796	1684	2159	2101	2085	1914	1859	1876	2352	2032	2032	2381	2667	2135	2087	2617	1580	2428	2126	2356	1667	2168	2349	1706	1761	1897	1825	1925	1676
lean	306	1170	1139	1066	1097	1438	990	1173	1142	1332	1423	954	1164	1334	1358	1289	1298	862	1435	1394	1359	1038	1554	1477	1497	1506	1668	1349	1346	1323

USERS	L	E	A	R	N	I	N	G	R	E	S	O	U	R	C	E	C	E	N	T	R	E	S	T	A	T	I				
Station	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31	
8-Sep-98	11	11	9	8	23	25	6	13	7	8	11	5	7	35	31	22	16	5	10	16	11	8	33	23	25	43	19	18	8	9	
15-Oct-98	14	21	14	8	14	47	15	20	23	20	28	13	19	24	28	19	19	16	11	28	13	17	27	30	38	35	21	26	19	17	
12-Oct-98	30	37	19	19	28	37	18	20	26	26	31	14	29	34	25	25	32	19	26	21	33	19	31	28	40	37	24	19	21	16	
19-Oct-98	23	24	24	16	22	30	18	16	25	26	21	22	32	24	16	23	20	20	32	29	33	26	24	26	33	39	23	31	31	29	
26-Oct-98	1	2	3	2	2	3	2	1	2	9	14	8	2	1	2	2	2	2	2	3	1	2	6	3	9	6	3	2	1	2	
12-Nov-98	30	18	16	18	16	34	20	24	28	34	33	16	25	30	27	19	16	12	20	26	31	20	27	21	24	42	33	18	27	27	
19-Nov-98	41	54	24	58	47	57	49	48	54	56	37	32	32	44	45	39	24	30	45	68	57	32	62	43	47	46	58	30	52	40	
6-Nov-98	30	30	23	26	25	59	45	50	43	37	23	38	34	37	35	38	34	29	51	43	48	45	43	35	33	57	42	41	31	31	
13-Nov-98	53	47	33	49	36	47	35	34	40	49	41	32	43	63	50	56	86	57	29	37	37	25	51	35	65	73	59	50	47	46	
30-Nov-98	54	44	44	36	35	51	31	53	49	37	39	41	53	36	53	49	45	40	62	56	53	23	61	58	44	53	60	52	62	65	
17-Dec-98	44	46	31	46	28	51	20	24	23	46	44	20	35	33	47	41	24	24	35	30	36	30	47	33	42	45	57	31	39	35	
14-Dec-98	33	39	30	25	34	53	26	30	21	32	33	24	35	37	24	33	35	33	30	41	29	28	33	52	42	38	57	43	48	51	
total	1	373	270	311	310	494	285	333	341	380	355	265	361	398	383	366	353	287	353	398	382	275	445	387	442	514	471	362	396	368	
lin	3	2	3	2	2	3	2	1	2	8	11	5	2	2	2	2	2	2	2	2	3	1	2	6	3	9	6	3	2	1	2
fax	54	44	44	58	47	59	49	53	54	56	44	41	53	63	63	56	86	57	62	68	57	45	62	58	65	73	60	52	62	65	
lean	4	31	23	26	26	41	24	28	28	32	30	22	30	33	32	31	29	24	29	29	33	23	37	32	37	43	39	30	33	31	

AM/USER	L	E	A	R	N	I	N	G	R	E	S	O	U	R	C	E	C	E	N	T	R	E	S	T	A	T	I				
Station	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31	
28-Sep-98	13	16	35	25	14	19	23	21	33	40	28	15	11	18	19	29	30	24	25	15	29	62	11	18	20	13	40	25	23	55	
05-Oct-98	42	26	24	53	19	14	26	30	23	39	20	35	23	26	32	43	31	19	24	23	24	19	26	29	25	27	30	24	42	42	
12-Oct-98	23	25	40	38	27	30	28	44	31	20	32	48	29	25	35	30	25	22	40	51	33	40	39	32	26	24	32	54	41	45	
19-Oct-98	40	49	45	50	44	29	43	42	37	43	67	44	30	55	44	37	45	35	37	35	30	38	50	38	32	26	45	27	28	28	
26-Oct-98	0	0	8	9	0	31	0	0	0	9	7	3	1	0	0	0	0	0	0	3	1	0	37	12	8	2	123	0	0	0	
12-Nov-98	33	24	47	29	32	16	27	32	21	22	27	31	18	20	17	29	24	35	45	31	21	34	36	33	32	23	36	42	33	30	
19-Nov-98	33	13	35	14	12	18	12	18	15	17	26	15	12	21	22	21	28	23	27	13	16	31	16	23	14	23	20	24	15	19	
16-Nov-98	37	40	38	31	52	21	28	23	26	30	50	32	33	43	37	33	46	30	29	30	27	19	30	37	40	23	22	36	36	36	
23-Nov-98	19	18	23	17	18	27	29	18	22	21	23	18	21	12	20	13	12	17	41	27	26	19	25	33	20	16	15	26	21	19	
30-Nov-98	19	19	21	28	31	19	22	21	16	27	21	18	17	20	22	21	25	14	18	20	27	10	15	19	24	22	24	20	19	17	
17-Dec-98	17	19	26	16	17	21	33	34	35	21	26	29	29	23	20	23	45	33	28	28	29	27	22	43	24	23	20	35	30	29	
14-Dec-98	26	18	24	33	28	19	22	23	37	30	30	25	24	21	38	27	20	11	24	26	29	30	30	15	25	22	19	18	17	22	
total																															
lin	0	0	8	9	0	9	0	0	0	9	7	3	1	0	0	0	0	0	0	3	1	0	11	12	8						

	RC32	RC33	RC34	RC35	RC36	RC37	RC38	RC39	RC40	RC41	RC42	RC43	RC44	RC45	RC46	RC47	RC48	RC49	RC50	RC51	RC52	RC53	RC54	RC55	RC56	RC57	RC58	Total	Min	Max	Mean
5.19	3.34	3.54	1.93	7.96	6.52	3.88	3.70	3.46	2.10	5.02	5.60	7.93	9.69	8.08	4.53	3.68	0.00	0.14	0.00	0.00	10.12	0.00	7.86	5.82	4.83	6.27	8.09	305.03	0.00	12.76	5.35
13.21	11.80	9.61	12.94	11.11	15.23	12.20	14.24	10.83	7.63	10.02	8.93	11.23	13.36	8.58	8.81	9.64	0.23	0.01	2.82	2.14	0.00	20.86	18.75	13.38	11.75	19.01	587.72	0.00	21.14	10.31	
13.44	16.94	14.00	13.72	14.35	14.23	20.80	16.14	18.47	16.90	13.03	10.19	11.37	15.80	13.02	13.33	16.48	0.00	0.00	12.70	25.27	9.23	21.84	26.04	14.62	21.58	23.87	828.41	0.00	26.04	14.53	
12.20	12.71	13.81	15.32	16.42	13.52	18.53	12.40	16.80	16.32	7.87	11.41	12.77	13.55	12.76	10.01	11.84	0.00	0.14	9.99	26.16	19.38	18.84	22.24	19.12	16.07	21.84	867.92	0.00	26.16	15.23	
0.00	0.00	2.01	0.08	0.00	0.01	0.01	0.15	0.05	0.01	0.13	0.17	0.12	0.15	0.09	0.00	0.00	0.00	0.00	0.01	5.00	8.23	3.18	6.79	3.86	2.84	5.37	55.93	0.00	8.23	0.98	
11.89	12.42	15.70	17.13	14.99	14.73	7.64	13.32	8.70	11.29	16.69	12.45	14.01	12.27	18.03	11.80	12.35	0.01	0.00	14.35	25.90	22.67	21.11	23.09	18.39	14.35	27.92	739.02	0.00	27.92	12.97	
11.19	19.67	17.45	16.78	10.68	14.74	13.05	14.16	15.75	10.47	10.43	14.01	15.05	17.40	15.51	12.56	16.79	0.05	0.18	19.30	31.35	23.64	26.92	30.12	15.42	16.71	27.28	862.12	0.05	31.35	15.12	
21.80	26.88	23.75	24.43	22.86	26.92	24.81	23.19	26.32	16.93	22.69	22.07	23.64	25.31	24.84	23.02	21.67	0.00	0.40	30.90	39.88	32.53	32.98	35.61	30.40	24.96	36.39	1277.67	0.00	39.88	22.42	
15.51	14.51	18.83	19.95	20.97	14.23	19.34	19.03	19.48	19.23	15.34	14.98	15.40	17.55	16.24	12.72	19.24	0.81	2.80	16.17	28.01	22.71	24.21	25.78	22.76	15.76	29.77	953.82	0.81	29.77	16.73	
14.61	17.54	18.22	14.95	16.15	21.58	16.00	22.08	19.34	15.93	15.15	16.53	13.77	16.16	17.99	14.04	18.60	1.33	0.05	24.82	29.97	25.18	29.28	26.87	19.70	17.48	28.72	982.26	0.05	29.97	17.23	
16.82	21.77	19.33	22.29	16.14	15.69	17.55	18.14	21.15	17.40	12.80	14.09	17.58	17.93	17.69	16.50	12.48	0.01	0.00	21.61	26.61	22.97	18.60	24.38	18.77	14.49	23.88	929.70	0.00	26.61	16.31	
17.69	15.56	17.22	17.52	13.94	16.72	22.25	19.18	20.34	14.97	13.39	12.01	12.15	17.44	11.53	11.73	15.39	0.67	0.07	21.84	23.70	21.61	23.95	23.68	22.61	21.04	27.64	872.94	0.07	27.64	15.31	
153.55	173.13	173.47	177.04	165.59	174.13	176.05	175.71	180.68	149.17	142.57	142.47	155.03	176.61	164.37	139.04	158.16	3.10	3.80	174.50	293.09	208.15	249.62	269.17	203.86	183.27	279.77	9262.53				
0.00	0.00	2.01	0.08	0.00	0.01	0.01	0.15	0.05	0.01	0.13	0.17	0.12	0.15	0.09	0.00	0.00	0.00	0.00	0.00	5.00	0.00	0.00	3.18	5.82	3.86	2.84	5.37				
21.80	26.88	23.75	24.43	22.86	26.92	24.81	23.19	26.32	19.23	22.69	22.07	23.64	25.31	24.84	23.02	21.67	1.33	2.80	30.90	39.88	32.53	32.98	35.61	30.40	24.96	36.39					
12.80	14.43	14.46	14.75	13.80	14.51	14.67	14.64	15.06	12.43	11.88	11.87	12.92	14.72	13.70	11.59	13.18	0.26	0.32	14.54	24.42	17.35	20.80	22.43	16.99	15.27	23.31					

Hours

	O	N	S	M	E	Z	Z	A	N	I	N	E	F	L	O	O	R	R	L	I	B	R	A	R	Y	Total	Min	Max	Mean	
LRC32	14	8	9	12	8	8	10	13	5	9	19	16	13	12	9	5	0	2	0	27	0	36	16	29	22	24	807	0	43	14
21	27	24	17	27	22	26	25	23	18	19	11	20	17	21	23	20	5	3	15	61	0	72	46	50	43	51	1357	0	72	24
26	37	29	27	25	33	21	26	21	26	30	30	30	30	20	18	21	0	0	26	60	37	73	65	47	38	39	1618	0	73	28
19	28	24	25	23	26	20	19	30	19	35	24	27	35	25	21	17	0	1	21	51	45	52	48	52	49	1546	0	52	27	
0	1	2	3	1	2	2	4	1	2	3	4	4	7	2	1	1	0	0	2	14	17	5	7	9	10	225	0	21	4	
18	26	27	27	29	39	18	19	29	21	26	27	29	27	33	23	25	1	0	32	75	71	67	85	57	46	67	1676	0	85	29
34	50	50	38	38	47	47	33	44	42	35	35	46	37	39	27	37	2	8	40	68	75	78	97	64	59	53	2574	2	97	45
20	45	45	39	30	37	37	37	71	31	41	33	36	49	34	29	31	0	18	33	70	78	95	90	73	59	102	2434	0	102	43
40	41	53	59	55	46	44	38	53	33	37	40	61	35	61	38	46	32	23	41	84	92	90	94	82	86	85	2894	23	94	51
25	30	54	37	42	50	42	46	37	49	44	37	40	39	53	55	48	9	4	47	99	71	88	81	108	77	90	2841	4	108	50
41	35	45	48	28	23	39	34	38	50	34	31	36	55	45	51	38	2	0	43	103	82	88	57	49	43	59	2284	0	103	40
33	34	29	28	19	26	35	31	37	29	24	35	44	47	31	28	34	4	5	26	72	84	64	85	46	46	77	2122	4	85	37
291	362	391	353	329	351	351	317	402	320	337	326	389	391	376	323	323	55	64	326	784	652	808	789	660	580	706	22378			
0	1	2	3	1	2	2	4	1	2	3	4	4	7	2	1	1	0	0	0	14	0	5	16	7	9	10				
41	50	54	59	55	50	47	46	71	50	44	40	61	55	61	55	48	32	23	47	103	92	95	97	108	86	102				
24	30	33	29	27	29	29	26	34	27	28	27	32	33	31	27	27	27	5	5	27	65	54	66	55	48	59				

Users

	O	N	S	M	E	Z	Z	A	N	I	N	E	F	L	O	O	R	R	L	I	B	R	A	R	Y	Total	Min	Max	Mean				
LRC32	22	25	24	23	40	49	29	22	16	25	33	18	30	45	40	30	44	4	4	22	13	22	10	17	17	20							
38	26	24	46	25	42	28	34	28	28	25	32	49	34	47	25	23	29	3	0	11	17	24	16	16	16	22							
31	27	29	30	34	34	38	46	43	48	26	20	23	32	39	44	47	47	9	29	25	15	24	19	34	37								
39	27	35	37	43	31	56	39	34	52	13	29	28	23	31	29	42	42	9	29	31	26	22	24	19	27								
0	60	2	0	0	0	0	2	3	3	0	3	3	2	1	3	0	0	0	0	21	29	38	19	33	19	32							
40	29	35	38	31	23	25	42	18	32	39	28	29	27	33	31	30	1	1	27	21	19	16	19	19	19	25							
20	24	21	26	17	19	17	26	21	15	18	24	20	28	24	28	27	27	1	29	28	19	21	14	17	31								
65	36	32	38	46	44	40	38	22	33	33	40	39	31	44	48	42	42	1	56	34	25	21	24	25	21								
23	21	21	20	23	19	26	30	22	35	25	22	15	30	16	20	25	2	7	24	15	16	16	17	11	21								
35	35	20	24	23	26	23	29	31	20	21	27	21	25	20	15	23	9	1	32	18	21	20	11	14	19								
25	37	26	28	35	41	27	32	33	33	21	23	29	20	24	19	20	0	0	30	15	17	13	26	23	20								
32	27	36	38	44	39	38	37	33	33	31	33	21	17	22	22	25	27	10	1	50	20	15	22	17	29	27							
20	0	20	2	0	0	0	0	2	3	0	3	3	2	1	3	0	0	0	0	15	15	13	16	10	11	19							
65	37	60	46	46	49	56	46	43	52	39	49	39	47	44	48	47	47	10	9	56	34	29	38	26	33	34							
34	26	30	29	30	30	29	31	25	28	25	26	26	24	28	27	26	30	4	3	29	20	20	21	20	20	20							

Number of accesses in Term 2, 1999	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Access 97	4	5	2	6	6	8	3	7	6	8	9	0	13	9	13	6	5	6	10	9	12	21	25	5	9	12	11	23	13	14
All the Right Type.	1	0	3	0	0	2	0	3	1	0	0	1	1	2	0	2	0	2	2	0	1	1	4	1	0	3	3	1	1	0
Breakthrough French - CD.	2	0	0	1	1	1	5	3	4	2	3	3	3	1	4	2	3	3	2	2	0	1	2	1	0	1	0	0	2	1
British Sign Language	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	1	2	0	2	0	1	0
Chemistry Set	1	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	1	2	0	0	1	0	3	0	2	2	0	1	0	0
Colliers	8	7	8	7	9	7	4	5	8	6	10	6	4	6	6	5	10	7	4	3	5	6	7	5	15	8	6	3	8	10
Driving Theory Test	12	11	12	10	8	8	3	4	13	9	6	12	8	3	11	6	6	8	12	13	9	10	5	15	8	18	2	8	8	7
Eccitis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Encarta 98	21	23	27	26	27	33	10	24	18	24	23	23	15	18	19	18	27	18	19	13	24	21	22	21	27	33	28	23	27	38
Excel 97	39	32	34	40	49	46	27	43	31	45	34	37	34	41	48	34	62	26	36	54	28	25	44	17	42	28	63	60	61	38
French Assistant	0	0	0	1	1	0	0	1	3	4	3	1	0	0	0	1	0	0	0	2	0	0	0	0	1	0	0	1	1	0
French Experience	0	0	0	3	7	0	0	0	4	8	0	6	9	6	3	5	9	2	0	0	2	2	2	0	0	0	0	2	1	2
Individual training for Access 97	1	0	0	1	1	4	4	4	1	4	2	2	5	6	11	4	2	4	1	1	0	0	4	1	3	4	1	2	1	1
Individual training for Excel 97	1	1	0	0	0	1	1	1	1	1	3	2	1	4	2	2	1	3	0	0	0	0	2	1	0	0	2	0	0	0
Individual training for Outlook 97	1	0	0	0	0	0	2	1	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0
Individual training for PowerPoint 97	0	0	1	1	1	0	1	0	2	1	0	0	1	0	1	0	0	0	0	0	0	1	0	2	0	0	0	0	1	0
Individual training for Word 97	0	0	0	0	1	2	0	0	0	1	0	1	0	2	0	1	0	0	0	0	0	0	3	2	2	3	0	1	1	1
Internet Explorer	26	15	7	23	20	27	26	31	28	52	25	16	6	19	25	21	17	16	35	20	13	22	33	32	50	35	27	33	30	22
Job Search Reading Disk	2	0	1	1	2	0	0	1	0	0	0	1	1	0	1	1	2	1	2	2	0	0	0	0	2	1	0	0	2	2
Journey Planner	0	0	1	1	1	0	4	2	0	1	0	3	3	4	0	1	0	0	5	1	2	8	1	2	1	7	1	3	0	0
Learning to Learn	0	0	0	0	2	1	1	2	0	2	0	0	3	0	2	0	0	0	1	1	0	0	0	1	0	0	0	0	2	1
Mosby's Medical Enc.	5	4	4	4	7	4	3	5	4	5	4	1	2	4	2	5	6	9	4	3	4	2	3	5	21	6	0	4	3	1
Omnigraph	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0
PageMaker 6.5	0	1	0	2	5	15	0	3	1	0	7	3	5	5	5	6	3	1	144	193	135	140	175	200	222	201	8	4	1	1
Payroll	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0
Photoshop v5	0	3	0	0	3	22	0	1	1	0	4	1	4	4	5	5	1	0	87	22	46	84	56	128	68	68	3	3	0	0
PowerPoint 97	15	16	5	12	13	14	7	5	4	8	11	14	4	5	4	2	9	3	8	10	18	7	14	5	12	7	25	12	17	9
SageV4	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	1	0	0	0
Skill Assessment (Individual training).	2	0	0	0	1	2	3	2	0	0	0	2	1	0	2	0	0	0	1	1	0	0	4	2	1	0	1	2	0	0
Slides for Driving Theory Test	2	2	3	0	0	1	1	1	0	1	3	1	3	0	1	3	0	0	1	0	1	0	4	3	0	0	2	2	2	1
Word97	373	334	270	243	266	512	262	340	463	430	382	280	222	238	268	261	235	184	438	445	488	465	465	386	560	478	443	456	298	286
Works 4.5	115	94	51	37	48	88	46	38	87	50	32	36	19	36	26	56	21	37	29	45	27	28	47	44	25	51	51	54	26	44
World of Sport	14	4	1	5	1	1	1	9	2	9	3	2	1	2	1	3	1	0	7	1	0	2	4	1	3	1	7	7	1	2
World Travel Guide	4	2	1	4	6	2	1	0	1	3	0	1	0	1	3	0	1	0	7	0	1	1	2	6	0	1	1	0	0	1
World War 1 archive	1	2	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	1	1	0	0	0	3	1	1

TOTALS		Ratio >	Means for	Means for	Ratio of	* exclude
		2.5	02 - 51*	52 - 58	means*	49 & 50
743	Access 97		13.9	10.4	0.8	
118	All the Right Type.	##	1.6	6.0	3.8	
122	Breakthrough French - CD.		2.1	3.3	1.6	
47	British Sign Language		0.8	1.4	1.9	
54	Chemistry Set	##	0.6	3.7	6.4	
496	Colliers	##	* 6.9	23.4	3.4	
607	Driving Theory Test		* 9.5 rec	21.4	2.3	
1	Ecctis		0.0	0.0	0.0	
1591	Encarta 98	##	* * 23.4	66.4	2.8	
2700	Excel 97		46.6	65.4	1.4	
30	French Assistant		0.5	1.0	2.1	
99	French Experience		1.8	1.6	0.9	
100	Individual training for Access 97		1.9	1.0	0.5	
41	Individual training for Excel 97		0.6	1.4	2.2	
11	Individual training for Outlook 97		0.2	0.0	0.0	
20	Individual training for PowerPoint 97		0.4	0.3	0.8	
56	Individual training for Word 97		0.9	1.7	1.9	
1438	Internet Explorer		26.0	26.6	1.0	
42	Job Search Reading Disk		0.7	1.1	1.7	
121	Journey Planner		1.9	3.9	2.0	
33	Learning to Learn		0.5	0.9	1.6	
354	Mosby's Medical Enc.	##	* 4.5	19.3	4.3	
14	Omnigraph		0.3	0.1	0.5	
1739	PageMaker 6.5		31.6	31.7	1.0	
17	Payroll	##	0.1	1.6	12.6	
724	Photoshop v5		13.3	12.6	0.9	
588	PowerPoint 97		10.4	12.6	1.2	
30	SageV4	##	0.2	3.0	16.0	
54	Skill Assessment (Individual training).		0.9	1.6	1.8	
85	Slides for Driving Theory Test		1.5	2.1	1.5	
21337	Word97		347.7	660.4	1.9	
3080	Works 4.5	##	44.4	133.9	3.0	
219	World of Sport		3.8 rec	5.0	1.3	
152	World Travel Guide		2.3	5.7	2.5	
47	World War 1 archive		0.9	0.9	1.0	

Downstairs / Upstairs

Station	LRC01	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31
06-Jan-99	3.03	3.24	5.84	4.44	4.44	4.44	3.03	9.27	3.90	3.73	4.65	4.73	5.41	6.75	7.57	5.90	3.19	6.58	7.30	8.73	15.96	17.34	15.75	19.06	8.12	10.17	8.70	6.42	4.50	7.34	
11-Jan-99	11.63	12.42	8.09	8.85	8.85	8.85	17.36	13.44	12.89	11.18	7.89	7.72	9.62	8.74	6.48	8.99	7.30	8.73	15.96	17.34	15.75	19.06	8.12	10.17	8.70	6.42	4.50	7.34	11.62	13.09	
18-Jan-99	14.43	11.25	9.00	7.16	7.16	7.16	11.24	14.51	13.60	10.55	11.07	10.93	11.43	8.98	11.44	8.39	8.49	11.22	10.17	17.11	7.61	13.19	16.04	21.43	19.79	17.78	16.16	18.26	13.09	13.09	
25-Jan-99	15.96	11.99	14.53	14.05	14.05	14.05	16.22	8.18	14.84	9.84	10.25	12.68	12.76	9.35	11.87	12.53	10.35	10.12	13.09	13.41	16.77	15.07	15.03	12.26	18.62	13.80	16.03	9.52	13.54	13.56	
01-Feb-99	13.77	16.04	10.17	9.88	9.88	9.88	16.85	11.62	10.37	13.05	11.29	11.62	12.55	16.33	15.49	14.54	11.42	11.13	23.90	23.90	26.03	26.03	26.27	25.84	21.91	20.73	30.26	17.51	18.60	11.38	
08-Feb-99	17.41	8.44	13.07	12.12	12.12	12.12	17.66	10.26	11.52	13.68	10.15	11.84	13.69	8.36	8.91	11.27	10.21	8.53	9.14	22.32	20.16	21.33	22.16	19.61	23.63	22.51	20.39	10.11	15.48	16.64	
15-Feb-99	2.23	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00	1.81	1.90	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.69	4.47	0.32	2.68	0.00	0.00	
22-Feb-99	15.79	11.26	9.28	9.74	9.74	9.74	17.32	15.66	14.09	9.20	14.03	11.16	10.77	7.09	6.10	10.64	15.12	12.07	10.91	21.42	26.15	19.09	22.17	27.54	17.87	22.09	19.81	21.18	21.56	12.56	7.65
01-Mar-99	14.56	17.80	14.96	14.38	14.38	14.38	16.81	11.84	17.73	20.04	19.44	20.78	14.65	15.35	19.47	21.73	16.26	14.57	11.74	17.48	17.26	22.36	20.51	22.98	20.34	23.55	26.15	16.54	22.14	13.57	10.71
08-Mar-99	14.26	14.91	11.54	11.78	11.78	11.78	13.84	7.43	9.60	15.37	11.60	13.36	9.97	10.87	16.81	17.16	18.04	19.27	7.05	21.05	20.94	15.80	22.64	25.24	21.35	30.82	26.05	18.54	15.53	12.95	13.36
15-Mar-99	15.19	8.63	4.71	8.31	8.31	8.31	12.35	4.60	11.79	13.52	14.96	9.31	10.66	10.57	8.72	12.34	12.89	8.33	4.53	21.85	20.16	18.08	14.96	21.12	17.94	25.28	23.72	16.17	10.14	16.03	8.31
22-Mar-99	17.99	16.25	11.53	13.68	13.68	13.68	17.89	7.04	17.43	10.26	14.66	17.49	12.81	16.73	16.64	18.13	21.05	15.04	13.41	19.20	24.95	22.81	20.16	26.59	24.51	27.62	29.04	18.41	9.28	17.83	16.66
Total	156.24	132.21	112.72	114.38	114.38	114.38	162.67	107.61	143.14	128.15	130.31	134.39	120.31	117.18	128.78	143.09	146.13	122.85	97.00	186.83	200.62	209.54	193.24	223.17	198.77	238.92	238.09	176.87	156.60	159.92	130.36
Min	2.23	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.00	1.81	1.90	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.69	4.47	0.32	2.68	0.00	0.00	
Max	17.99	17.80	14.96	14.38	14.38	14.59	17.89	15.66	17.73	20.04	19.44	20.78	14.65	16.73	19.47	21.73	21.05	19.27	13.41	23.90	26.15	26.03	26.27	27.54	24.51	30.82	30.26	21.18	22.14	18.90	16.66
Mean	13.02	11.02	9.39	9.53	9.53	9.88	13.56	8.97	11.93	10.68	10.86	11.20	10.03	9.77	10.73	11.92	12.18	10.24	8.08	15.57	16.72	17.46	16.10	18.60	16.56	19.91	19.84	14.74	13.05	13.33	10.86

USERS	L	E	A	R	N	I	N	G	R	E	S	O	U	R	C	E	C	E	N	T	R	E	S	T	A	T	I			
Station	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31
06-Jan-99	13	8	8	17	17	10	13	16	7	11	15	5	9	11	8	12	9	11	12	10	12	11	14	9	14	19	19	16	5	10
11-Jan-99	28	40	23	19	19	27	16	22	23	29	23	18	18	18	21	14	18	18	20	27	21	32	25	27	37	46	27	16	33	28
18-Jan-99	37	39	21	19	19	30	16	17	15	19	17	22	13	18	23	14	16	14	10	12	21	14	22	18	30	32	37	19	37	31
25-Jan-99	35	32	19	26	26	40	9	23	27	19	19	22	30	17	29	17	21	15	20	17	33	17	27	16	36	25	35	20	17	24
01-Feb-99	28	28	26	22	22	51	18	21	24	15	27	18	26	27	25	25	28	21	36	28	29	26	39	32	36	31	60	28	19	23
08-Feb-99	22	22	26	23	23	52	14	23	27	21	18	23	13	23	23	16	17	24	37	48	31	42	31	29	33	45	34	27	24	
15-Feb-99	1	0	0	0	0	7	0	0	0	2	1	0	2	0	0	0	0	0	0	0	0	0	1	2	5	4	2	0	0	
22-Feb-99	21	16	23	18	18	58	24	32	26	33	28	21	16	15	17	21	21	15	31	34	38	28	26	37	48	35	52	42	19	19
01-Mar-99	24	28	27	23	23	54	40	45	41	43	47	26	28	34	37	29	27	23	61	22	41	34	42	45	42	40	42	26	28	18
08-Mar-99	49	33	23	18	32	55	18	19	30	41	30	21	25	19	23	20	26	17	69	67	29	40	57	40	66	60	63	43	36	58
15-Mar-99	57	22	9	21	34	38	15	22	22	58	34	24	15	18	16	20	21	13	43	47	33	27	24	52	67	32	79	25	29	23
22-Mar-99	39	28	28	29	37	52	11	28	26	30	34	25	28	34	26	28	31	23	46	44	56	41	63	48	46	53	72	20	26	18
Total	354	296	233	235	270	474	194	268	268	321	293	225	223	234	248	216	235	194	385	356	344	312	371	355	460	413	535	291	276	276
Min	1	0	0	0	0	7	0	0	0	2	1	0	2	0	0	0	0	0	0	0	0	0	1	2	5	4	2	0	0	
Max	57	40	28	29	37	58	40	45	41	58	47	26	30	34	37	29	31	24	69	67	56	42	63	52	67	79	43	37	58	
Mean	30	25	19	20	23	40	16	22	22	27	24	19	19	20	21	18	20	16	32	30	30	26	31	30	30	38	45	24	23	23

Min/USER	L	E	A	R	N	I	N	G	R	E	S	O	U	R	C	E	C	E	N	T	R	E	S	T	A	T	I			
Station	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31
06-Jan-99	14	24	44	16	16	27	14	35	30	20	27	56	32	30	51	38	39	17	33	45	64	32	30	54	45	28	21	24	54	44
11-Jan-99	25	19	21	28	28	39	50	35	26	23	24	26	26	32	25	28	30	24	26	35	50	30	46	30	24	21	39	34	27	25
18-Jan-99	23	17	26	23	23	22	54	48	38	33	39	30	48	38	23	49	31	36	67	51	49	33	36	53	43	37	29	51	30	25
25-Jan-99	27	22	46	32	32	24	55	39	22	34	32	35	26	33	25	44	30	40	39	47	30	53	33	46	31	33	27	29	48	34
01-Feb-99	30	34	23	27	27	20	39	30	33	30	25	39	29	36	37	35	24	32	40	51	34	61	40	41	35	51	18	40	60	30
08-Feb-99	47	23	30	32	32	20	44	30	30	29	39	36	39	23	29	38														

Station	LRC01	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31
3-Sep-98	2.39	2.94	5.25	3.29	5.55	8.00	2.32	4.49	3.90	5.32	5.41	1.24	1.29	10.50	9.58	10.65	8.04	1.99	4.16	4.11	5.39	8.24	6.12	7.05	8.20	9.11	12.76	7.45	3.06	8.19	
5-Oct-98	9.69	9.10	5.61	7.10	4.55	11.19	6.43	9.95	8.68	12.89	9.31	7.51	9.76	10.49	15.14	13.77	9.70	5.03	4.41	10.68	5.27	5.41	11.89	14.53	15.91	14.37	9.53	12.86	7.73	11.92	
2-Oct-98	11.61	15.22	12.65	12.10	12.67	18.74	8.50	14.59	13.54	8.60	16.68	11.22	13.84	14.34	14.78	12.65	13.36	7.09	17.41	17.71	17.96	12.64	19.98	14.72	17.54	14.57	12.85	17.12	14.47	11.88	
9-Oct-98	15.48	19.66	17.96	13.24	16.18	14.72	12.95	11.31	15.44	18.76	23.52	16.00	16.05	22.02	11.76	14.07	14.94	11.75	19.97	17.11	16.38	16.51	20.16	16.62	17.44	16.82	17.37	14.17	14.13	13.41	
6-Oct-98	0.00	0.01	0.42	0.29	0.01	1.56	0.01	0.00	0.01	1.38	1.60	0.40	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.01	0.01	3.69	0.59	1.15	0.16	6.17	0.01	0.00	0.01
2-Nov-98	16.67	7.35	12.41	8.56	8.54	9.30	9.16	12.82	9.85	12.31	14.83	8.25	7.52	10.23	7.48	9.21	6.34	7.02	14.89	13.37	10.70	10.70	11.21	16.07	11.57	12.65	16.34	20.04	12.68	14.83	13.61
3-Nov-98	22.53	11.59	14.15	13.09	9.47	16.65	9.74	14.46	13.74	16.01	15.77	8.23	6.53	15.05	16.72	13.35	11.08	11.53	20.40	15.02	15.25	16.67	16.41	16.44	11.20	17.51	19.14	11.78	12.99	12.96	
5-Nov-98	18.33	20.10	14.63	13.39	21.59	20.64	20.85	19.14	18.59	18.59	19.20	20.32	23.81	26.67	21.35	20.87	26.17	14.39	24.28	21.26	21.41	14.48	21.68	21.74	22.13	21.42	27.20	15.54	24.33	18.38	
3-Nov-98	16.52	14.13	12.73	13.96	10.86	21.01	16.95	10.12	14.39	17.02	15.43	9.59	14.83	13.01	16.40	12.25	17.62	15.80	19.99	16.71	15.84	7.83	21.14	19.07	21.38	19.92	14.81	21.89	16.82	14.49	
3-Nov-98	16.67	14.04	15.51	16.84	18.29	16.44	11.38	18.61	12.71	16.64	13.85	12.15	15.24	12.05	19.27	17.53	18.92	9.41	18.36	18.98	23.56	3.96	15.38	18.64	17.31	19.21	23.52	17.48	20.05	18.22	
7-Dec-98	12.74	14.45	13.42	12.49	8.04	17.65	10.91	13.72	13.25	16.33	19.04	9.56	16.76	12.40	15.50	15.66	17.89	13.33	16.26	14.17	17.41	13.49	17.20	23.49	17.06	17.61	18.97	18.25	19.25	16.76	
4-Dec-98	14.22	11.89	11.88	13.55	15.84	16.65	9.60	11.53	12.90	15.94	16.33	10.03	14.01	13.24	15.02	14.62	11.72	6.06	12.06	18.03	13.88	14.18	16.74	12.78	17.63	13.62	17.74	12.59	13.89	18.97	
total	1.30	140.46	136.62	127.90	131.58	172.53	118.79	140.74	136.98	159.79	170.77	114.50	139.66	160.03	163.01	154.64	155.78	103.41	172.18	167.31	163.05	124.62	186.44	177.24	179.61	180.67	200.10	161.82	161.55	158.80	
in	2.07	0.01	0.42	0.29	0.01	1.56	0.01	0.00	0.01	1.38	1.60	0.40	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.16	0.01	0.01	3.69	0.59	1.15	0.16	6.17	0.01	0.00	0.01
ax	20.10	17.96	16.84	16.84	21.59	21.01	20.85	19.14	18.59	18.76	23.52	20.32	23.81	26.67	21.35	20.87	26.17	15.80	24.28	21.26	23.56	16.67	21.68	23.49	22.13	21.42	27.20	21.89	24.33	18.97	
ean	3.06	11.70	11.39	10.66	10.97	14.38	9.90	11.73	11.42	13.32	14.23	9.54	11.64	13.34	13.58	12.89	12.98	8.62	14.35	13.94	13.59	10.38	15.54	14.77	14.97	15.06	16.68	13.49	13.46	13.23	

USERS	L	E	A	R	N	I	N	G	R	E	S	O	U	R	C	E	N	T	R	E	S	T	A	T	I						
Station	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31	
8-Sep-98	11	11	9	8	23	25	6	13	7	8	11	5	7	35	31	22	16	5	10	16	11	8	33	23	25	43	19	18	8	9	
15-Oct-98	14	21	14	8	14	47	15	20	23	20	28	13	25	24	28	19	19	16	11	28	13	17	27	30	38	35	21	26	19	17	
12-Oct-98	30	37	19	19	28	37	18	20	26	26	31	14	29	34	25	25	32	19	26	21	33	19	31	28	40	37	24	19	21	16	
19-Oct-98	23	24	24	16	22	25	18	16	25	26	21	22	32	24	16	23	20	20	32	29	33	26	24	26	33	39	23	31	31	29	
26-Oct-98	1	2	3	2	2	9	2	1	2	9	14	8	2	1	2	2	2	2	2	3	1	2	6	3	9	6	3	2	1	2	
12-Nov-98	30	18	16	18	16	34	20	24	28	34	33	16	25	30	27	19	16	12	20	26	31	20	27	21	24	42	33	18	27	27	
19-Nov-98	41	54	24	58	47	57	49	48	54	56	37	32	32	44	45	39	24	30	45	68	57	32	62	43	47	46	58	30	52	40	
6-Nov-98	30	30	23	26	25	59	45	50	43	37	23	38	43	37	35	38	34	29	51	43	48	45	43	35	33	57	57	42	41	31	
13-Nov-98	53	47	33	49	36	47	35	34	40	49	41	32	43	63	50	56	86	57	29	37	37	25	51	35	65	73	59	50	47	46	
10-Nov-98	54	44	44	36	35	51	31	53	49	37	39	41	53	36	53	49	45	40	62	56	53	23	61	58	44	53	60	52	62	65	
17-Dec-98	44	46	31	46	28	51	20	24	23	46	44	20	35	33	47	41	24	24	35	30	36	30	47	33	42	45	57	31	39	35	
14-Dec-98	33	39	30	25	34	53	26	30	21	32	33	24	35	37	24	33	35	33	30	41	29	28	33	52	42	38	57	43	48	51	
total	1	373	270	311	310	494	285	333	341	380	355	265	361	398	383	366	353	287	353	398	382	275	445	387	442	514	471	362	396	368	
fin	3	2	3	2	2	3	2	1	2	8	11	5	2	2	1	2	2	2	2	2	3	1	2	6	3	9	6	3	2	1	2
fax	54	44	44	58	47	59	49	53	54	56	44	41	53	63	53	56	86	57	62	68	57	45	62	58	65	73	60	52	62	65	
fean	4	31	23	26	26	41	24	28	28	32	30	22	30	33	32	31	29	24	29	33	32	23	37	32	37	43	39	30	33	31	

Air/USER	L	E	A	R	N	I	N	G	R	E	S	O	U	R	C	E	N	T	R	E	S	T	A	T	I					
Station	LRC02	LRC03	LRC04	LRC05	LRC06	LRC07	LRC08	LRC09	LRC10	LRC11	LRC12	LRC13	LRC14	LRC15	LRC16	LRC17	LRC18	LRC19	LRC20	LRC21	LRC22	LRC23	LRC24	LRC25	LRC26	LRC27	LRC28	LRC29	LRC30	LRC31
28-Sep-98	13	16	35	25	14	19	23	21	33	40	28	15	11	18	19	29	30	24	25	15	29	62	11	18	20	13	40	25	23	55
05-Oct-98	42	26	24	53	19	14	26	30	23	39	20	35	23	26	32	43	31	19	24	23	24	19	26	29	25	25	27	30	24	42
12-Oct-98	23	25	40	38	27	30	28	44	31	20	32	48	29	25	35	30	25	22	40	51	33	40	39	32	26	24	32	54	41	45
19-Oct-98	40	49	45	50	44	29	43	42	37	43	67	44	30	55	44	37	45	35	37	35	30	38	50	38	32	26	45	27	27	28
26-Oct-98	0	0	8	9	0	31	0	0	0	9	7	3	1	0	0	0	0	0	0	3	1	0	37	12	8	2	123	0	0	0
12-Nov-98	33	24	47	29	32	16	27	32	21	22	27	31	18	20	17	29	24	35	45	31	21	34	36	33						

	LRC32	LRC33	LRC34	LRC35	LRC36	LRC37	LRC38	LRC39	LRC40	LRC41	LRC42	LRC	FC41	LRC45	LRC46	LRC47	LRC48	LRC49	LRC50	LRC51	LRC52	LRC53	LRC54	LRC55	LRC56	LRC57	LRC58	Total	Min	Max	Mean
5.19	3.34	3.54	1.93	7.96	6.52	3.88	3.70	3.46	2.10	5.02	5.60	7.93	9.69	8.08	4.53	3.68	0.00	0.14	0.00	10.12	0.00	7.86	5.82	4.83	6.27	8.09	305.03	0.00	12.76	5.35	
13.21	11.80	9.61	12.94	11.11	15.23	12.20	14.24	10.83	7.63	10.02	8.93	11.23	13.36	8.58	8.81	9.64	0.23	0.01	2.82	21.14	0.00	20.86	18.75	13.38	11.75	19.01	587.72	0.00	21.14	10.31	
13.44	16.94	14.00	13.72	14.35	14.23	20.80	16.14	18.47	16.90	13.03	10.19	11.37	15.80	13.02	13.33	16.48	0.00	0.00	12.70	25.27	9.23	21.84	26.04	14.62	23.87	828.41	0.00	26.04	14.53		
12.20	12.71	13.81	15.32	16.42	13.52	18.53	12.40	16.80	16.32	7.87	11.41	12.77	13.55	12.76	10.01	11.84	0.00	0.14	9.99	26.16	19.38	18.84	22.24	19.12	16.07	21.84	867.92	0.00	26.16	15.23	
0.00	0.00	2.01	0.08	0.00	0.01	0.01	0.15	0.05	0.01	0.13	0.17	0.12	0.15	0.09	0.00	0.00	0.00	0.00	0.00	5.00	8.23	3.18	6.79	3.86	2.84	5.37	55.93	0.00	8.23	0.98	
11.89	12.42	15.70	17.13	14.99	14.73	7.64	13.32	8.70	11.29	16.69	12.45	14.01	12.27	18.03	11.80	12.35	0.01	0.00	14.35	25.90	22.67	21.11	23.09	18.39	14.35	27.92	739.02	0.00	27.92	12.97	
11.19	19.67	17.45	16.78	10.68	14.74	13.05	14.16	15.75	10.47	10.43	14.01	15.05	17.40	15.51	12.56	16.79	0.05	0.18	19.30	31.35	23.64	26.92	30.12	15.42	16.71	27.28	862.12	0.05	31.35	15.12	
21.80	26.88	23.75	24.43	22.86	26.92	24.81	23.19	26.32	16.93	22.69	22.07	23.64	25.31	24.84	23.02	21.67	0.00	0.40	30.90	39.88	32.53	32.98	35.61	30.40	24.96	36.39	1277.67	0.00	39.88	22.42	
15.51	14.51	18.83	19.95	20.97	14.23	19.34	19.03	19.48	19.23	15.34	14.98	15.40	17.55	16.24	12.72	19.24	0.81	2.80	16.17	28.01	22.71	24.21	25.78	22.76	15.76	29.77	953.82	0.81	29.77	16.73	
14.61	17.54	18.22	14.95	16.15	21.58	16.00	22.08	19.34	15.93	15.15	16.53	13.77	16.16	17.99	14.04	18.60	1.33	0.05	24.82	29.97	25.18	29.28	26.87	19.70	17.48	28.72	982.26	0.05	29.97	17.23	
16.82	21.77	19.33	22.29	16.14	15.69	17.55	18.14	21.15	17.40	12.80	14.09	17.58	17.93	17.69	16.50	12.48	0.01	0.00	21.61	26.61	22.97	18.60	24.38	18.77	14.49	23.88	929.70	0.00	26.61	16.31	
17.69	15.56	17.22	17.52	13.94	16.72	22.25	19.18	20.34	14.97	13.39	12.01	12.15	17.44	11.53	11.73	15.39	0.67	0.07	21.84	23.70	21.61	23.95	23.68	22.61	21.04	27.64	872.94	0.07	27.64	15.31	
153.55	173.13	173.47	177.04	165.59	174.13	176.05	175.71	180.68	149.17	142.47	142.57	155.03	176.61	164.37	139.04	158.16	3.10	3.80	174.50	293.09	208.15	249.62	269.17	203.86	183.27	279.77	9262.53				
0.00	0.00	2.01	0.08	0.00	0.01	0.01	0.15	0.05	0.01	0.13	0.17	0.12	0.15	0.09	0.00	0.00	0.00	0.00	0.00	5.00	0.00	3.18	5.82	3.86	2.84	5.37					
21.80	26.88	23.75	24.43	22.86	26.92	24.81	23.19	26.32	19.23	22.69	22.07	23.64	25.31	24.84	23.02	21.67	1.33	2.80	30.90	39.88	32.53	32.98	35.61	30.40	24.96	36.39					
12.80	14.43	14.46	14.75	13.80	14.51	14.67	14.64	15.06	12.43	11.88	11.87	12.92	14.72	13.70	11.59	13.18	0.26	0.32	14.54	24.42	17.35	20.80	22.43	16.99	15.27	23.31					

Hours

	O	N	S	M	E	Z	Z	A	N	I	N	E	F	L	O	O	R	L	A	R	Y										
LRC32	LRC33	LRC34	LRC35	LRC36	LRC37	LRC38	LRC39	LRC40	LRC41	LRC42	LRC43	LRC44	LRC45	LRC46	LRC47	LRC48	LRC49	LRC50	LRC51	LRC52	LRC53	LRC54	LRC55	LRC56	LRC57	LRC58	Total	Min	Max	Mean	
14	8	9	5	12	8	8	10	13	5	9	19	16	13	12	9	5	0	2	0	27	0	36	16	29	22	24	807	0	43	14	
21	27	24	17	27	22	26	25	23	18	19	11	20	17	21	23	20	5	3	15	61	0	72	46	50	43	51	1357	0	72	24	
26	37	29	27	25	33	25	21	26	21	30	30	30	30	20	18	21	0	0	26	60	37	73	65	47	38	39	1618	0	73	28	
19	28	24	25	23	26	20	19	30	19	35	24	27	35	25	21	17	0	1	21	51	45	52	48	52	49	1546	0	52	27		
0	1	2	3	1	2	2	4	1	2	3	4	4	7	2	1	1	0	0	2	14	17	5	21	7	9	225	0	21	4		
18	26	27	27	29	39	18	19	29	21	26	27	29	27	33	23	25	1	0	32	75	71	67	85	57	46	67	1676	0	85	29	
34	50	50	38	38	47	47	33	44	42	35	35	46	37	39	27	37	2	8	40	68	75	78	97	64	59	53	2574	2	97	45	
20	45	45	39	30	37	37	37	71	31	41	33	36	49	34	29	31	0	18	33	70	78	95	90	73	59	102	2434	0	102	43	
40	41	53	59	55	46	44	38	53	33	37	40	61	35	61	38	46	32	23	41	84	92	90	94	82	86	85	2894	23	94	51	
25	30	54	37	42	50	42	46	37	49	44	37	40	39	53	55	48	9	4	47	99	71	88	81	108	77	90	2841	4	108	50	
41	35	45	48	28	23	39	34	38	50	34	31	36	55	45	51	38	2	0	43	103	82	88	57	49	43	59	2284	0	103	40	
33	34	29	28	19	26	35	31	37	29	24	35	44	47	31	28	34	4	5	26	72	84	64	85	46	46	77	2122	4	85	37	
291	362	391	353	329	351	351	317	402	320	337	326	389	391	376	323	323	55	64	326	784	652	808	789	660	580	706					
0	1	2	3	1	2	2	4	1	2	3	4	4	7	2	1	1	0	0	0	14	0	0	5	16	7	9	10				
41	50	54	59	55	50	47	46	71	50	44	40	61	55	61	55	48	32	23	47	103	92	95	97	108	86	102					
24	30	33	29	27	29	29	26	34	27	28	27	32	33	31	27	27	5	5	27	65	54	67	66	55	48	59					

Users

	O	N	S	M	E	Z	Z	A	N	I	N	E	F	L	O	O	R	L	A	R	Y									
LRC32	LRC33	LRC34	LRC35	LRC36	LRC37	LRC38	LRC39	LRC40	LRC41	LRC42	LRC43	LRC44	LRC45	LRC46	LRC47	LRC48	LRC49	LRC50	LRC51	LRC52	LRC53	LRC54	LRC55	LRC56	LRC57	LRC58	Min	Max	Mean	
22	25	24	23	40	49	29	22	16	25	33	18	30	45	40	30	44		4		22		13	22	10	17	20	4	62	25	
38	26	24	46	25	42	28	34	28	25	32	49	34	47	25	23	29	3	0	11	21		17	24	16	16	22	0	53	27	
31	27	29	30	34	34	38	46	43	48	26	20	23	32	39	44	47			29	25	15	18	24	19	34	37	15	54	33	
39	27	35	37	43	31	56	39	34	52	13	29	28	23	31	29	42		9	29	31	26	22	26	24	19	27	9	67	36	
40	29	35	38	31	23	25	42	18	32	39	28	29	27	33	31	0			0	21	29	38	19	33	19	32	0	123	10	
20	24	21	26	17	19	17	26	21	15	18	24	20	28	24	28	27	1	1	29	28	19	19	16	19	19	25	1	47	28	
65	36	32	38	46	44	40	38	22	33	33	40	39	31	44	48	42			56	34	25	21	24	25	25	21	1	65	34	
23	21	21	20	23	19	26	30	22	35	25	22	15	30	16	20	25	2	7	24	20	15	16	16	17	11	21	2	41	21	
35	35	20	24	23	26	23	29	31	20	21	27	21	25	20	15	23	9	1	32	18	21	20	20	11	14	19	1	35	21	
25	37	26	28	35	41	27	32	33	21	23	27	29	20	24	19	20	0		30	15	17	13	26	23	20	24	0	45	26	
32	27	36	38	44	39	38	37	33	31	33	21	17	22	22	25	27	10	1	50	20	15	22	17	29	27	22	1	50	26	
20	0	20	2	0	0	0	0	2	3	0	3	2	1	3	0	0														
65	37	60	46	46	49	56	46	43	52	39	49	47	44	48	48	47	10	9	56	34	29	38	26	33	34	37				
34	26	30	29	30	30	30	29																							

APPENDIX 9

POLICY DOCUMENT FE COLLEGE

PROPOSALS FOR CHANGES IN DELIVERY OF FEFC-FUNDED STUDENT PROGRAMMES

Current Student Programme Delivery

College currently offers a wide range of FEFC-funded, community education and franchised 16-19 and adult education programmes to a client group of around 800 full-time and 5,000+ part-time students. Over the past two years, the number of full-time students has been falling owing to a number of factors, including competition from schools and other colleges. There has been a parallel growth in the numbers of part-time students, but it seems that this may now have reached a peak without new initiatives to encourage diverse ways of learning.

The delivery of student programmes is at present mainly centred on classroom teaching: some use of Open Learning and Student Learning Workshops has been developed, but this is a relatively minor activity at present. The Library is currently used as an information, loan and reference service, supporting Study Area delivery of student programmes through student access to books and other materials. Only two computers in the Library offer Internet and CD Rom access. A range of open access computers is available to students through the IT Unit in 'D' block, which is physically separate from the Library. The Resources service offers audio-visual, reprographic and graphic services to staff and is used by Media students for video-editing. The college IT network does not yet offer an Intranet for student and staff use, and Tutorial use of the network for student communication and tracking is rudimentary.

New Challenges

The college faces a range of new challenges over the next several years, including the following:

- The need to meet national curriculum imperatives, such as those outlined by the Widening Participation, Inclusive Learning and Information and Learning Technology Committees, and recent government consultation papers on changes in the 16-19 Curriculum and on Lifelong Learning;
- All of these initiatives emphasise in differing ways a new emphasis on more flexible, student-centred curriculum delivery. National proposals for a unitised qualifications framework with parity of academic and vocational qualifications and including Key Skills for all focus on enabling students to gain units of achievement throughout their lives. These may be sub-sets of qualifications to be built on later - the emphasis is on differentiation and flexibility of curriculum delivery and on transferability of qualifications within a cohesive framework;
- As part of the preparation for changes in the national curriculum framework, the need to develop and consolidate college-wide Key Skills and to develop advanced sub-degree work, including independent learning in preparation for HE;
- The need to maintain and improve the quality of teaching and learning, and to improve student retention and achievement, developing the college's capacity for self-assessment as the present FEFC Inspection cycle is superseded by self-accreditation;
- Continued pressure on resourcing, including the effect of the drop in full-time numbers, failure to meet targets, and the effects of convergence, leading to successive cuts in budget;
- Keeping up-to-date with technological developments in curriculum delivery, such as multi-media, CD Rom, Intranet access;
- The need to review the Library and Learning Resources services, and to consider bringing Student Support services together into a coherent easily accessible offer, including more direct access to Careers Information, Guidance, Study Support and Advice and Counselling.

New Proposals for Student Programme Delivery

Given the above, the college management is now proposing a change to curriculum delivery, which involves shifting a proportion of its resource base into flexible and student-centred learning delivery methods. Study Areas have been asked to make proposals for shift of 10% of teaching resources for 1998/9 to enable the resourcing of more flexible delivery methods, mainly resource-based learning, to be delivered both in a new Learning Centre and in Study Area Learning Workshops. This new provision for student-centred learning in the college will support a broader range of learning styles, so that students' timetables will include both traditional classroom sessions and resources-based learning/workshop time.

Possible drawbacks

There are several potential difficulties with the proposal which need to be overcome:

- Students could feel less supported, more isolated, and may not have the basic skills to cope with resource-based learning if Study Areas are not selective about which students are involved;
- Teachers could see the development as a resource-driven, retrogressive move, leading to a loss of jobs, reduction in teaching opportunities, and a threat to the professional status of teachers;
- The set-up costs for the Learning Centre and Learning Workshop facilities could be so large that in the long run the development is counter-productive for the college;
- The long-term effect of an increasing use of Learning Centre time and decreased teaching time may be a reduction in quality of the overall student programme.

Possible benefits

The main reason for undertaking this change is to offer new learning opportunities for students.

- A wider range of students could be attracted to undertake flexible learning opportunities using the new Learning Centre; some of these may come to the college through the 'Widening Participation' initiatives; delivery modifications will prove useful to accommodate their needs.
- Students' learning styles and strategies may be identified and improved through the use of tutor-supported individual learning plans, and an appropriate range of delivery methods offered, meeting the criteria developed by the Tomlinson Committee for 'inclusive learning'.
- Students will have access to a new, better equipped Learning Centre with an improved range of learning materials, including much more substantial IT access and Study Support.
- Students will have access to improved Study Area Learning Workshop facilities.
- Study Support will be timetabled into the Learning Centre, with better resourcing.
- The Careers Library materials will be expanded and improved and Careers and HE Guidance will have access to IT facilities for guidance.

The consultation

Staff are being consulted in seminars for staff, in the Curriculum Committee, Academic Board, Joint Consultative Committee, Review Group for Library and Learning Resources, and the Curriculum Delivery working party. Comments have been invited on the Review of Library and Learning Resources, and staff are welcome to put forward their views.

Director, Student Programmes

SCHOOL OF EDUCATION

STRATEGIC PLANNING CYCLE DOCUMENTS

1 STRATEGIC DIRECTIONS

The focus of this Strategic Plan is largely on the needs of the School during the coming year, in particular the need to tackle the financial difficulties faced by the School in the lead into the merger with [redacted]. It is concerned with development within the School. This includes the work to be done with [redacted] to align and validate courses. The management of the School will be adapted to support this work.

The Strategic Plan has been developed to achieve the following ten objectives:

- To increase the income of the School and to realign and reduce areas of expenditure, so that there is the probability of a break-even budget for 1999/2000;
- To prepare for and enable the merger with [redacted], in particular the restructuring of courses and other work;
- To develop the research profile and income of the School, including the appointment of a further professor;
- To enable a reduction in staff contact hours, through a reorganisation and reduction in administrative time and, possibly, in teaching time;
- To provide the opportunity to develop new courses, including a full-time Post-Compulsory Education PGCE and the appointment of a new member of staff to lead this course;
- To reorganise the management structure of the School, in order to undertake work involved in the merger and to improve communications;
- To prepare the ground so that the School is able to respond to the initiatives which result from the DfEE Green Paper on education;
- To secure a base in consultancy and short course work which will enable future growth;
- To provide the basis on which the University will grant the School further HEFCE student numbers for 1999/2000 and beyond;
- To secure the foundation for the future growth of the new School as a centre of excellence.

2 THREE EMERGING CONTEXTS

The Strategic Plan is premised on the decision that [redacted] and [redacted] are to form a strategic alliance, leading to the merger of the two Schools of Education. It assumes that the proposed date for the functioning of a single

new School of Education is to be the academic year 2000/01, with the School sited on one campus. It is recognised that the *Project Management Group*, which has the task of overseeing the merger, has only just been set up and that the work it and its sub-groups do will have a major impact on developments during the coming year.

This section identifies a variety of relevant points concerning the merger. It notes the items in the government's Green Paper on education which might affect the School's areas of work. It refers to the restructuring of the management of the School.

2.1 Westminster College merger

The response to the requirements and implications of the merger must be a key priority for the School during the rest of 1998/99 and in 1999/2000. There is much to be done that has yet to be agreed. The specific areas of work and the management of this process have yet to be finalised.

- A fundamental principle must be that the staff of both Schools are fully involved in the developments.
- In order for the merger of the two Schools to develop effectively, it is vital to ensure that the leadership of the new School is clarified as soon as possible.

In particular, the following will need to be managed and resourced in a period of considerable change:

Development strategy

- Ensure that all staff in both Schools are kept fully informed of progress towards the development of the new School, by the *Project Management Group* and the management of the current Schools, including the process of consultation, decision making and communication;
- Audit the courses, staff, facilities and resources of both Schools;
- The timescale for change, including the timing of amalgamation and the development of the mission and the business plan for the new School.

The new School

- The impact of locating the new School;
- The title of a new School of Education and of the new University campus;
- The development of the leadership and senior and middle management of the new School, for which information will be needed on the current management structures, roles and personnel;
- The development of the committee structure and representation;
- Management of the physical move to one campus.

Staff matters

- The integration of the staffing complement of the two Schools as members of the new School, including the reorganisation of staffing and of possible new appointments;
- The development of a common School ethos and vision and of shared strategic directions;
- Relationships between academic and support staff in both institutions;
- The concerns of support and academic staff in relation to employment and future developments, and how the University can support staff, for example in relation to travel cost compensation, early retirement, etc;
- How staffing matters will be handled and in what timescale;
- The staffing of current, joint and new courses;
- Provision of appropriate accommodation for all staff;
- Opportunities for staff of both Schools to meet formally and informally;
- Joint staff development and training.'

Course development

- Approaches to the revision, validation and accreditation of courses and credits in relation to current and new courses;
- The development of integrated course provision, which will include the rewriting, revising and revalidation of most courses;
- How current courses with continuing students after the merger will be sustained;
- Concern about the perceptions of and response to the new School by the TTA, HEFCE and other funders;
- The establishment of joint targets for course numbers;
- The development of new course initiatives, including those proposed already by both Schools;
- The position of the theology and other academic courses within or linked to the new School and the University.

Students and partners

- Ways to inform and consult students effectively on all courses;
- Ensure that partner schools in the region are kept informed of the developments within the new School and involved where appropriate;
- The perceptions of teachers and others involved in educational studies about the merger;
- The perceptions and understanding of the staff of the LEAs with which the new School will work.

Marketing and recruitment

- Marketing of the new School, located on one campus, to applicants who consider applying for 2001/02 entry and beyond;
- Perceptions of the new School by potential applicants and recruits to all courses;
- Where applicants to the new School's initial teacher training [ITT] and continuing professional development [CPD] courses will be interviewed for 2000/01 entry, given the location of the new School at Hinksey;
- Informing new entrants in 1999/2000 to courses of more than one year's duration of the move to one School and campus.

Research, consultancy and quality inspection/audit

- The setting of high quality targets for teaching and research;
- The establishment of joint research centres and the provision of appropriate accommodation;
- The support for research activities, including student research accommodation;
- The approach to the RAE in 2001 of the new School;
- The establishment of joint consultancy initiatives in education management, curriculum and other areas;
- Change to the timing of the Ofsted inspection and QAA review from 2000/01 to a year later.

Accommodation and resources

- The provision of appropriate teaching accommodation and facilities;
- The integrated^{lev} of the libraries and provision of resource centre accommodation and facilities;
- The provision of equipment, including hire expiry dates, etc;
- The provision of on-site services for the new School and campus, such as a computing officer, collection of examination marks/coursework, registry, etc;
- The importance of retaining and developing the new School's presence on the Gypsy Lane Campus;
- The increase in student numbers using the Hinksey campus, and thus car parking, catering, common room and other matters.

Being part of the University

- Concern about the sense of distance and isolation between the Hinksey and Gypsy Lane/Headington Hill Hall campuses;
- The University exploring the possibility of more than one School being located on the Hinksey campus;

- The provision of transport between the University campuses; ensuring speedy access between the campuses;
- The provision of good IT links between the and other campuses.

It is clear that in order to facilitate the work that needs to be undertaken by the School resources will be needed from the HEFCE restructuring fund.

- The School anticipates that the time demands on staff for course redevelopment, research development, etc will lead to a cost of a minimum of two staff FTEs at a cost of some £60,000. ? 1yr min

2.2 The Education Green Paper: *Teachers Meeting the Challenge of Change*

The following points will need to be taken into account in the work undertaken in the short and medium term. Listed below are the proposals in the DfEE Green Paper, *Teachers Meeting the Challenge of Change*, which will impinge on both initial teacher training [ITT] and continuing professional development [CPD] for teachers and, hence, on the School and its provision.

The DfEE proposes to:

Recruitment

- Improve the recruitment and retention into teaching of recruits to undergraduate and postgraduate courses and other entry routes.

Heads and governors

- Develop the training available to governors;
- Develop the framework for headship training, induction and extension.

Teachers

- Develop teacher appraisal;
- Support the development of Advanced Skills Teachers and fast-track teachers;
- Provide 'booster' programmes for fast-track teachers during the summer;
- Develop provision to support newly qualified teachers in their the statutory induction year;
- Develop the training of supply teachers;
- Expect teachers to develop their professional knowledge, understanding and skills largely outside school time;
- Pilot the development of individual Learning Accounts, for teachers, classroom assistants and support staff;
- Develop cost-effective training to schools through information and communications technology [ICT];

- Establish a national programme of sabbatical leave for teachers;
- Develop a programme of international development opportunities for teachers.

ITT

- Fund ITT through partnerships rather than through Universities; ! *Become validating body??*
- Encourage the development of school-led ITT; !
- Pilot the funding of students directly, who will then buy into course components to structure their own training programme;
- Establish a network of training schools, linked through ICT to give on-line access to trainees, mentors, other school and HEIs in order to disseminate good practice and to help them develop research capability;
- Introduce national tests in English, mathematics and ICT for all wishing to gain QTS;
- Improve the quality and opportunity to enter teaching through high quality employment-based routes;
- Develop modular PGCE courses to allow flexible start and end points for trainees;
- Provide opportunities for students on undergraduate courses to take ITT modules;
- Provide ITT trainees with opportunities to improve their subject knowledge before they start an ITT course;
- Encourage HEIs to enable Qualified Teacher Assistants to move onto ITT courses;
- Require all ITT providers to set targets for ethnic minority recruitment;
- Maintain the rolling programme of ITT inspection;
- Develop teaching schools which will have a particular role in the training of teachers.

Teaching assistants

- Provide opportunities for undergraduate students and postgraduate ITT students to work as paid associates in schools;
- Develop the use of students as teaching assistants in Education Action Zones;
- Through the NVQ, provide a framework of training in relevant areas for classroom assistants, eg early years, SEN, ICT, literacy and numeracy;
- Improve the career structure and qualifications framework for nursery nurses;
- Provide employment-based routes for qualification as teachers for LSAs.

The government's message is that it intends to implement most, if not all, of the proposals in the Green Paper. For example, in relation to some of the proposals for ITT, the DfEE have already asked the TTA to develop and trial a numeracy test in the

summer of 1999, to develop a structure, content and proposals for the introduction of a modular PGCE and to undertake a review of pre- and in-course studies to develop trainees subject knowledge. Thus, it will be essential to take into account those proposals considered most likely to be implemented in the replanning of courses and of wider provision. Monitoring the developments arising from the Green Paper and judging what to implement when will be a key priority during the 1999 to 2001 period.

2.3 Changes to the management structure of the School

In order to focus the development of work on the merger, and to support the improvement of communications and effective working within the School, there will be changes to the management structure of the School for the period 1999/2000. This will involve some restructuring of principal lecturer responsibilities and the reorganisation of the committee structure in the School.

The School began this process in moving from two deputy heads to one in 1998/99 and in taking the decision to increase the number of principal lecturer roles by two.

- As a result, alongside their other responsibilities, the Head of School has taken responsibility for finances and resources, and the Deputy Head has taken responsibility for course staffing and for staff appraisal and development.
- The addition of a ~~second~~ second professor from February 1999 will enable the Reader to share the oversight responsibility for research students and research development, working with colleagues.
- Specific responsibility for timetabling and accommodation matters for courses will be a PL responsibility.
- It is intended that the PL roles for entrepreneurial work (including international awards students and recruitment) will continue.
- The responsibilities for ITT and CPD will be split, in order to bring key course leaders into the management team. The primary undergraduate and postgraduate course leaders, the secondary postgraduate course leader and the course leader for the restructured masters level programme will be PL roles. The leaders of these courses will have particular responsibilities for merging and redeveloping these courses with colleagues during the coming year.
- The representation more explicitly of the needs of the developing post-compulsory and education studies areas of work within the management team.

The School requests that the University supports the appointment of two principal lecturers for one year (1999/2000) as a matter of urgency.

Reorganisation of the committee structure of the School will involve modifications to the current pattern of School Board sub-committees and some rearrangement of the course committees. The latter will largely be in the masters level area of courses and will link to bringing them together in on masters level framework. The former will be focused around quality, development, marketing and international work, with the management group consisting of the roles identified above.

3 STATEMENT OF PRIORITIES

3.1 Quality and customer care

Context

Quality assurance and customer care in the School have been the subject of considerable external scrutiny. There have been twelve ITT inspections over the past four years. At present the School has aspects of both its primary and secondary ITT and its CPD provision undergoing inspection by OFSTED. 1998/99 is the fourth year running in which primary teaching staff have been subject to inspection. The primary English staff have been inspected in each of the four years and the primary mathematics staff in the first three years. These inspections have affected both the undergraduate and PPGCE courses. Primary history and music staff have also been visited during the first OCTTIS inspection. Primary history is undergoing an inspection at present. Each established subject on the secondary PGCE course has been inspected over the past two years and ICT is currently being inspected. Each of these inspections takes place over the year, with two or three visits during the year. The inspection of CPD (INSET) begins in 1998/99 and will last two years. All the inspections involve observation of teaching, scrutiny of course documentation and student assignments, interviews with staff and students and, in the case of ITT, visits to schools to see students teach and to talk to staff. In each of the past four years, the cells inspected have been modified and the number being inspected has changed; for example, in 1997/98 seven cells were inspected, while in 1998/99 five cells are being inspected. These are not identical cells, because the inspection framework has been modified. Inspection grades are dependent upon both the quality of training and the capability and achievements of students. The large majority of cells have been awarded 2 (good) grades; there have been a minority of 1 (very good) and 3 (satisfactory) grades.

Targets

- The School's target for ITT and CPD inspections for 1998/99 is to gain 1 and 2 grades in all cells. There is difficulty in gaining 1 grades for the Standard cells, since these are heavily dependent upon the high achievement in teaching of students in schools and in course assessment. This target is essential to aim for since it is grades 1 and 2 which provide the opportunity to retain and/or increase student numbers from the TTA. [A grade 3 in any cell can lead to loss of numbers in ITT.]
- The School will undergo a QAA subject review in 2000/01 and is preparing for this. The intention is to gain an excellent rating. However, it should be noted that a number of courses to be reviewed by QAA will have been inspected by HMI/Ofsted between 1998 and 2000, with a different focus through their criteria. This creates a distinct challenge for the School.

In 1998/99 the School supported staff involved in the inspection and course development programme. It intends to do the same in 1999/2000. This development was undertaken because of the increasing load on staff of the demands of Ofsted

3 FTEs) from 1999/2000 and to 60 bodies (an increase of 8 FTEs) from 2000/01.

Full-time PGCE [Post-Compulsory Education] (level3)

- This is a new full-time course development, building on the current successful part-time course. It is being made in response to both market need and government steers. There are strong indications that it is an area of high potential, with increasing indications that a teaching qualification will become mandatory in the FE sector.
- The intended start date is 1999/2000.
- The recruitment target for the course is 25 in the first year. The School intends to use most of its student growth numbers here (12 FTEs), and it needs the support of the University to provide the additional numbers (13 FTEs). It is anticipated that this course will provide for a regional need, though it will attract nationally. Evidence from our other full-time PGCE courses is that student demand on hall of residence places will be low.
- Income from the course will provide for the appointment of a member of staff to lead and teach the course and for payment to FE colleges, as well as for the cover of course expenses. There will be income to the School, which will grow with the course's development.
- The School strongly requests the University to support this development by adding student numbers to the growth column and by allowing the appointment of a senior lecturer to teach and lead the course (Appendix A).

MA pathway in Educational Publishing (level M)

- This pathway, within the current MA programme, is being developed jointly with the School of Art, Music and Publishing.
- The intended start date is 1999/2000.
- Initial recruitment is expected to be 6 with numbers increasing into double figures from 2000/01 (see 5.1).
- It will be a full-cost course, aimed particularly at the international market. Recruitment will be undertaken jointly with the School of Art, Music and Publishing.

MSc in Educational Audiology (level M)

- This course is intended to complement the Postgraduate Diploma course in Hearing Impairment run with y. It will be taught at the
- The intended start date is 1999/2000.
- Initial recruitment target is 12, which is the maximum the facilities and placements associated with the course will allow.

inspections, in order to provide some identified support time. While this was introduced during the year, it is intended that the time will be planned into timetables for 1999/2000 in advance rather than at a very late stage or retrospectively. This will include time to enable the key staff involved to prepare, for example, in primary mathematics, science and ICT for 2000/01 Ofsted inspections and on non-TTA funded ITT courses for QAA audit in 2000/01.

3.2 Review of course portfolio

Over the past three years, many of the courses in the School have been updated in response to the changing requirements for ITT and CPD, as the DfEE and TTA have refocused and modified the course requirements and introduced, for ITT, a national curriculum in English, mathematics, ICT and science. For CPD courses, the School has kept abreast of developments, for example in relation to literacy, numeracy and management, through the development of the MA course and of short courses. The course portfolio is continually reviewed.

As part of the merger, the School will undertake a full review of its programmes during 1999/2000 in order to integrate the courses run by the University, for a start date of 2000/01. This will involve either the modification or rewriting of the primary and secondary ITT courses, the integration of the MEd taught at College, and the restructuring of a number of other courses to meet requirements. The University wishes to develop new courses as part of the lead into full amalgamation, which will be undertaken with the School. Considerable support will need to be provided by the University to enable this process of course restructuring and validation to be undertaken successfully in a short period of time.

During 1999/2000 and beyond, it will be essential to monitor and review the outcomes of the government's consultation and decisions on the proposals in the Green Paper *Teachers Meeting the Challenge of Change*. These may well have implications for course funding, for course partnership and location, and for course structure. It is difficult to predict what the responses will need to be, but they may well include the need to modify current courses and to introduce new courses in new formats.

(a) Course developments

Meanwhile, the School is revising, developing or intending to develop several new courses during 1998/99 and 1999/2000, including:

Education Studies single field (levels 1 & 3)

- This field is being rewritten and up-dated as a free-standing single field. It no longer has links with the undergraduate ITT course, with which it was originally developed.
- The intended start date for the new Stage 1 of the field is 1999/2000.
- Current recruitment target is 44 bodies (22 FTEs). The School proposes to use some of its growth allocation to increase the intake to 50 bodies (an increase of

- It will be a full-cost course.

Diploma in Professional Studies in Education (level 3)

- The School has worked with the International Office to develop the opportunity to set up two *Study Centres* abroad to provide the delivery of courses at undergraduate and postgraduate level for teachers, initially in international schools.
- In response to market need identified in India and Argentina, working with international schools in Bangalore and Buenos Aires, it is intended to provide a two year taught programme to develop the teaching skills and understanding of pedagogy of local teachers, who lack initial teacher education.
- These will be full-cost courses, taught by tutors from the School of Education, working with staff from the international schools. The initial intake will be 15 (India) and 25 (Argentina) (see 3.5).
- The start date for the programmes will be mid 1999/2000.

Theology in the Community Portfolio (level 1 to 3 and M)

- The procedure for validation of this course, provided and run by the diocese, has been agreed by the University.
- The course will run as a validated course from 1999/2000.
- The initial target is 22 part-time students.
- It involves no taught provision by the School and it is run off-site by the diocese. It is expected to produce income for the School of £7,500 pa.
- With future developments in the study of Religious Education, following the HEFCE funded student numbers for this and future courses.

'Working with Families and Children' single field (level 1 & 3)

- The School has considered the development of this new single field for some two years. It intends to make progress on it during 1999/2000. To achieve this, the School will undertake a feasibility study and set up a programme planning committee. It is expected that this course will recruit largely regionally.
- The intended start date for the new field is 2000/01.
- Discussions have already taken place with the Schools of Health Care and Social Sciences & Law with a view to developing this field as an inter-School field. Several new modules will be introduced but it will also draw on current modules from the three School's programmes.
- The staffing for the field will draw on expertise within the three Schools and will involve a small number of colleagues working in key agencies in the region.

- The recruitment target will be 20 student bodies (10 FTEs) initially, rising to 25 (12.5 FTEs) within 5 years, but the rolling student number will mean 38 students (19 FTEs) in year 2 and 57 (27.5 FTEs) in year 3, rising to 68 (34 FTEs) after 5 years. The School will need the support of the University to provide the student numbers for this new field.

MA course provision

- The School is also engaged in a feasibility study concerning a third *Study Centre*, located in Sao Paulo, Brazil, to provide delivery of modules in the School's MA for International Schools. This is based on identified market interest.
- This will be a full-cost course, taught by tutors from the School of Education, supported by staff who have successfully completed our MA for International Schools from the international school in which it will be based. The initial intake will be 20 (see 3.5).
- The start date for the programmes is being considered as mid 2000/01.

Postgraduate Diploma in Educational Studies (Medical Needs)

- The School will complete the validation of this course and re-examine the market for it, with a view to recruitment for 200/01.
- This is a full-cost course, which would be taught off-site.

Further course developments

During 1999/2000, the School will be involved in a number of further developments. These include:

- The restructuring of the masters level courses into one masters level programme, with one course leader supported by award bearing leaders for particular cohorts of students, such as the summer school programmes linked to the MA for International Schools. This development will include the integration of the MEd programme with the School's own pattern.
- The development of the study of education (Educational Studies) within the masters level programme as a distinctive pathway, intended to attract both HEFCE numbers and full cost students. In addition to requests made by graduates from the undergraduate *Education Studies* field, inquiries to the School have indicated that there is interest in this development from overseas.
- In relation to the *Education Studies* programme and the setting up of the new School, it will be essential to restructure current ITT courses, working with

The undergraduate three year BA QTS
 The primary PGCE course
 The secondary PGCE course

- In addition the School will need to support the rewriting of Westminster courses to meet the validation requirements of Oxford Brookes University, including:

Four year work-based BEd
BPhil

- The School will support the development with Westminster College of undergraduate fields in human development and human communication. The School will need to identify the most appropriate means for undertaking this.

b) Response to the Restructuring of the Academic Year

Reduction of teaching weeks

- From 1999/2000, the undergraduate teaching term will be reduced to 10 weeks, with weeks 9 and 10 used for revision and examinations. The School has already reduced some of its undergraduate teaching to prepare for the new pattern and it will reduce it further as appropriate. In most of its CPD courses, the School teaches for only 8 weeks, using school half-term as a reading week. Where modifications are possible this will be considered, but there is little room for reduction.
- It is intended that the School will identify ways to reduce administrative and, possibly, course teaching time.

Streamline assessment points

- Many of the School's CPD courses have only one point of assessment when external examiners are required to attend. Course reorganisation to bring all masters level courses within one programme structure will lead to a common assessment and examination point, which should reduce the number of meetings that take place separately.
- External examiners attend two examination meetings on the ITT PGCE courses: the final School Experience examination meeting and the course examination meeting. This will need to continue to be the case.
- The School will consider the need for external examiners to attend the undergraduate modular field examinations meetings other than once a year in the summer term. However, the BA QTS will need to retain the attendance of external examiners at least twice a year, for the third year block school experience moderation and assessment meeting and for the summer field examination meeting

Reduce assessment within courses and modules/units

- During 1998/99, the School modified much of its assessment load, particularly by cutting word limits from 5000 to 3000 words across both undergraduate and postgraduate courses. In a number of cases the assessment load was also reduced by moving to a single assignment. However, this cannot be the case on

all modules, particularly where there are national requirements to be met in modules which cover more than one national curriculum subject.

- The School will look at other approaches, including the creation of double and triple modules on its undergraduate courses. However, there is limited room for change here, given the range of topics which need to be covered, for example within the ITT BA QTS double field. This can be undertaken in conjunction with the restructuring of courses during 1999/2000.

Part-time routes

- Part-time routes exist in each of the ITT courses and in the Education Studies single field. Most modules are taught within a morning or afternoon or on one day. Consideration will be given to any streamlining to enable students to complete a module/unit on a single day, where this is not currently possible on the ITT courses. However, the demands on the current PGCE courses are such that it is a very difficult route for part-time students to consider undertaking. There have been very few enquiries for these routes, as there have been for the BA QTS. Nevertheless, in restructuring the courses as part of the amalgamation with Westminster College, account will need to be taken of the DfEE proposals to provide ITT modules that can be taken by undergraduates and a modular structure to the PPGCE and SPGCE courses to enable those in employment-based routes into teaching to join courses.

Workload planning

- The School has spent some time examining the issues affecting staff workloads. It will consider ways both to ease workloads generally (though this can largely only be through the reduction in course teaching and administrative time) and to support research/consultancy active staff through balancing teaching to give heavier and lighter loads across the terms.
- The School will identify ways to reduce staff teaching contact time to below 550 hours.
- The School will consider ways to reduce the administrative load on staff.
- The School will set out to provide a task oriented approach which is clear and focused for staff to enable the involvement of all staff in the developments which will be required during the merger of the two Schools.

3.3 Research and consultancy

Research centres

The School of Education agreed in 1997/98 to set up four research centres in the School:

- The Centre for Research in Learning & Teaching;
- The Centre for Research in Education Management;

- The Centre for Research in Post-Compulsory Education;
- The Centre for Research in Special Educational Needs.

The purpose of these centres is to develop the research profile and achievements of the School, particularly through the gaining of research funding from national and charitable research funders. The initial target is to win at least two research bids, to a value of £100,000, by the end of 1999/2000, though only half of this figure has been included in the research figures for 2000/01. Since this is a major new area of development for the School, a cautious approach is being taken to our initial success.

With the addition from 1999/2000 of a second externally appointed professor, the School would be in a much stronger position to move confidently to reaching the target income from research funding bids.

The proposed and expenditure income from research bids, based on the second professorial appointment, is as follows:

RESEARCH	1999/2000	2000/2001	2001/2002
Income	£38,350	£48,600	£59,150
Expenditure			
Staffing	£23,000	£30,000	£37,000
Supplies & Services	£5,000	£5,100	£5,500
<i>Total</i>	£28,000	£35,100	£42,500
Surplus	£10,350	£13,500	£16,650

Additional research funds will also be sought during the year, with the intention of a higher income. Sources will include such bodies as the TTA, from which an additional research grant of £6,800 has been obtained.

Professorial appointment

The School has already one professor, who will lead the development of the Centre for Research in Education Management. The School has made a second professorial appointment, and it has been agreed that should lead the Centre for Research in Special Educational Needs, as well as providing support initially for the Centre for Research in Learning & Teaching. The third professorial appointment, who will lead the Centre for Research in Post-Compulsory Education.

- In order to develop the largest area of research potential in the School, the Centre for Learning & Teaching needs to be led by a professor whose task will be to develop staff research and to gain funding. It is proposed that one further professor is appointed to this area from outside the University with a start date of 1999/2000. This appointment would be funded from current research funds and from the reallocation of teaching (see Appendix B).

- It is intended that this appointment would both bring publications that will contribute to the research assessment exercise (RAE) and bring in a research funding target of £22,000 in 1999/2000, in addition to the targets already set.

RAE target

- The School has set itself the challenging target of a 4 for the 2001 research exercise. Publications and research activity are being monitored, and it is still intended to meet this target. Consideration has to be given to how this can best be achieved, given the merger of the two Schools in 2000/01. The School will be identifying the nature and quality of research publications from across the staff of both Schools to consider who should be included in the RAE.
- The School has provided, over the past two years, a small amount of time for a number of staff to write for publication, with mixed results. The School must consider how best to provide effective time for staff to undertake research activities and complete papers for publication in a difficult resource climate.
- If the School considers it a priority to provide an appropriate amount of time for research rather than teaching, even to fund a small number of staff, much of that time most probably must come from the current teaching contact budget and will involve reductions in teaching hours across a number of courses.
- The submission to the RAE will follow the merger with ... During 1999/2000, the Reader and professors in the School will need to work closely with colleagues at ... to ensure the best possible submission from an enlarged staff.

Consultancy

The School has undertaken considerable consultancy activity in recent years. However, the changes in priority in DfEE funding and the opening up of bids to a wide variety of providers has created a very much more competitive market. The international markets in which the School has worked have become more volatile as the global economy has become less stable, particularly in eastern Europe and southern African, east Asian and South American countries. As a result, it has become much more difficult to make economic bids and to win them. It is expected that this will continue to be the case.

The projected course and consultancy income indicated below will depend on contracts being won against competitors or on negotiations with agencies, local authorities and schools. These projections are, inevitably, speculative, but they are based on experience in the recent past and the current year.

AREA OF WORK	ESTIMATE OF INCOME	NOTES
Palestine: education management and development	£7,000	Repeat of 1998/99
Palestine Study Tour	£6,000	New possibility, with associate staff
South Africa: education management and development	£47,000	Building from current work
Romania: education management and development	£20,000	Building from current work
Developing leadership course	£4,000	
DfID report	£8,000	3 rd report writing after policy changes
HEADLAMP	£2,000	Based on demand
Consortium work	£10,000	Based on 1998/99 figures
India: international school work	£5,000	Repeat of 1998/99
Argentina: international school work	£5,000	Repeat of 1998/99
Brazil: international school work	£5,000	Repeat of 1998/99
CfBT contract	£20,000	Speculative, after success in 1998/99 and discussions
British Council	£20,000	Speculative, based on good working relationships
Southern Africa: education management and development	£24,000	Interest from UNICEF
Jordan: education management and development	£10,000	New contract, involving associate staff
Miscellaneous short courses	£7,000	Based on 1998/99 activities
TOTAL	£200,000	

- However, because of the volatility of this market, the projected income target to be included in the budget proposals for 1999/2000 will be £150,000 rather than £200,000. This is a cautious approach, and it is intended that the target aimed for is met, but the evidence is that it has been difficult in 1998/99 to earn the income target set for the year (which was £250,000).