THE USE OF COMPUTER BASED TUTORIAL PACKAGES FOR USER EDUCATION

by

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For my inspiration...

ABSTRACT

The main aim of this thesis was to examine whether computer based tutorial (CBT) packages, were a viable delivery method for user education in academic libraries, and to identify good design features.

The search for innovative approaches for delivery for user education is not new and has taken many different forms, from the early experiments in the 1970s with tape slides and audio visual materials to the advent of CBT. This thesis sought to establish the theoretical validity of using CBT packages as a delivery method for certain aspects of user education in academic libraries. It did this through a survey questionnaire to all academic libraries and through librarian and student profile forms.

To establish the practical viability of CBT packages as a method of delivery a series of workshops took place, where individual packages were evaluated. The aim of the workshops was to examine the success and viability of CBT packages as a delivery method by evaluating specific individual packages in terms of their structure, content and overall design.

This thesis also sought to identify some good design features from an assessment of the prevailing literature and from the individual package evaluations.

Keywords

User education; Information skills training; Computer based tutorial packages; CBT; Delivery methods; CBT design factors.

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CHAPTER 1   INTRODUCTION

1.1   Aims and objectives

The main aim of this thesis is to examine whether computer based tutorial (CBT) packages, are a viable delivery method for user education in academic libraries, and to identify good design features. The specific objectives being to undertake:

- An examination of the history and development of user education in academic libraries.

- An examination of the use of, and attitudes towards CBT as a delivery method.

- An evaluation of individual CBT packages to examine their success and viability, with regard to their structure, content and overall design.

- An identification of design factors that might make a good CBT package, through the available literature and the individual package evaluations.

1.2   What is user education?

There is no shortage of definitions for the term user education:

> "User education can be defined as various programmes of instruction, education and exploration, provided by libraries to users to enable them to make more effective, efficient and independent use of the information sources, resources and services to which these libraries provide access"
> (1).

Today it appears to be the accepted terminology that covers the programmes initiated by the academic librarian to help the user through the maze of information that is found both in the library and beyond. It relates not only to the introductory orientation sessions that are;

> "primarily concerned with ways of introducing the user to the general techniques of library usage and services available in libraries and in

particular to the organisation services and layout of one particular library" (2).

But also to bibliographic instruction (an American term) which introduces the user to;

"the information resources available in particular subject disciplines and the techniques of making use of those resources" (3).

And to other study and information skills that might;

"provide a fuller awareness of the generation, role and use of information which may allow him to research problems in any subsequent professional situation" (4).

Although the term user education seems to be widely used there is no definitive consensus as to what the user education programme should cover - and the contents of user education programmes varies from university to university. It is clear however that there are two categories of instruction, those with short-term objectives and those with long term objectives (5,6,7). The short-term objectives are institution orientated. For the new user this would probably be restricted to library orientation and would cover borrowing arrangements, physical location of materials, use of the catalogue - all of use, while the student is at a particular university. This might be extended at a later stage to resources specifically available within the student's subject area, such as reference works, bibliographies and relevant databases. The long term objectives look to develop particular information and study skills, such as those of organising and evaluating information that are not specific to an institution and would have a long term value to the student. These skills which were once seen as desirable by academic libraries (8) are now regarded by most, as essential if the student is to fully exploit the information available. The question that remains in academic libraries today is still who should teach what, when and in what way.

1.3 What are computer based tutorial packages?

The terminology used today to describe the use of computers in education can be confusing. Many acronyms have been developed - such as CAL (Computer Assisted Learning), CBL (Computer Based Learning), and CAI (Computer Assisted Instruction) - which refer to the use of computers as learning tools (9). For the purpose of this study the term CBT (Computer Based Tutorial) package will be used. This can be simply defined as a computer program, which conveys instruction or information directly to the user (10). Well-designed CBT packages usually allow the user to control the pace of instruction, to access only the information they require, and to gain some feedback through interactivity.

1.4 Why is this research necessary?

"The whole field of user education is beset by doubts and difficulties" (11).

This statement was made by John Cowley in 1987 and is still true today. Despite extensive literature, conferences, workshops and specially funded projects, spanning seventy years there is as of yet no universally accepted solution to that of educating the library user. The question of what should be taught to whom, when and how are still issues for concern and debate.

The growth in student numbers, the changes in the types of students seeking degrees, the emphasis on more independence in learning, and the increasing emphasis placed on the library, has meant that many libraries have had to reassess their position with regards to user education (12,13,14). Demand has increased not only in terms of library orientation, but also in the more fundamental information skills and in the use of information technology. The volume of available information has dramatically increased and is now available in many different formats and in many locations - some physical some technological.

This increased demand however has not generally been matched by an increase in library staffing or resources:

"Current pressures in higher education, while having a significant effect within the individual teaching departments have had an equally dramatic effect on libraries and in particular, user education. We are faced with larger and larger groups while receiving no commensurate increase in resourcing" (15).

Consequently there has been a constant crusade to develop user education programmes that are both cost and time-effective.

This search for innovative approaches for delivery is not new and has taken many different forms, from the early experiments in the 1970s with tape slides and audio visual materials to the advent of CBT (16,17,18,19). Today there is an impressive array of instructional methods and media concerned with teaching the plethora of different skills that make up the user education programme. After 70 years of research in this area and a seemingly endless variety of methods, there is no nationally recognised method of delivery for user education programmes. The choice of which method and which type of instruction depends on many variables. As Stevenson noted in 1976 (20), the methods used tended to be influenced by local factors, such as the size of the institution, number of students, physical layout and location of library or libraries, staffing levels and the attitudes of those instrumental to the development of the user education programme - factors which are still predominant today.

That is not to say that there have not been improvements in the different methods of instruction *per se*. Library guiding has dramatically improved over the last 15 years as have the printed instructional materials produced. While library guides in the 1970s tended to be all encompassing guides in a pamphlet form, today they are produced in a variety of sizes - single sheets, loose-leaf guides, glossy wallets - and for a variety of specific topics and users (21). There have also been improvements in the quality of audio-visual and video presentations.

Whatever method of delivery is used, what is considered to be important for the potential success of the programme is a definition of the aims and objectives. In the past, one major problem affecting the potential success of user education programmes

was the lack of definition of these aims and objectives (22,23). However from the late 1970s the idea of establishing aims and objectives was firmly entrenched as was the need for some evaluation of the programme — be it formative, summative or illuminative (24,25,26,27).

The use of CBT packages to assist in the area of user education is not a new one, (for a brief history see Chapter Two). Packages have been previously developed (28), but they have not had the potential success that they might have had except in a few instances. In 1991 a survey undertaken by the Computers in Teaching Initiative Centre for Library and Information Studies (CTILIS) found that only seven out of 73 universities were using CBT packages for user education (29). However initiatives in the last ten years - such as the Computers in Teaching Initiative (CTI); the Information Technology Training Initiative (ITTI); the Teaching and Learning Technology Programme (TLTP) and the Learning and Teaching Support Network (LTSN) (30,31,32,33) - and improvements in authoring software have rekindled the interest in the use of CBT packages for user education.

CBT packages can possibly provide an effective solution to some of the problems presented by the user education programme of today. They are a very flexible learning mechanism and as an educational tool have the following advantages:

- Provide self-paced instruction.

- Can be tailored to meet individual needs.

- Available at the student's convenience.

- Ensures consistency of lesson content and presentation.

- 'Releases expensive human resources' for other tasks (34).

One of the great advantages for the librarian is that the student can access them as and when they need to, thus removing the burden from the librarian of decisions on the most effective time for implementing the user education programme:

"It is of the greatest importance to provide instruction at a point when the student experiences motivation for learning about the material to be taught" (35).

If well designed, the student will be able to access only the information that they require and in this way the perceived value of the user education programme is immediately evident to them.

At the time of starting this research it was generally believed that the advent of the CBT package had not fulfilled its potential. However improvements in authoring packages and accessibility to computers in libraries justified a closer examination of the area.

This thesis sought to establish the theoretical validity of using CBT packages as a delivery method for certain aspects of user education in academic libraries. It explores their practical viability through an analysis of evaluations of individual CBT packages; and concludes with an overview of design features that might make a good package.

1.5　　Methodology

The methodology proposed for this research included literature searches, workshops, survey questionnaires and evaluation forms. Each stage of the research informed the next stage as demonstrated in Figure 1.1.

Figure 1.1　　Methodology
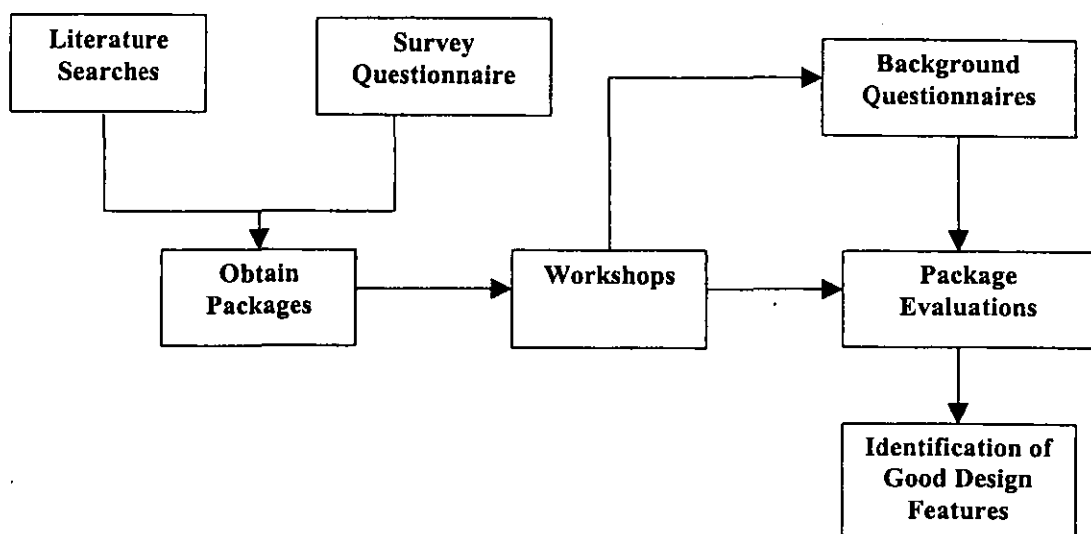
1.5.1   Literature searches

User education has been a topic that has been studied for many decades and there is an abundance of literature, journal articles and project reports on the topic. To provide a background to the thesis and to set it in context, comprehensive literature searches have been undertaken on:

- The history of user education, including major developments and initiatives.
- The changing role of the library in educating the user.
- The use of CBT packages for user education.

Syntheses of these literature searches are reported in Chapter Two.

1.5.2   Survey questionnaire

Although there had been a number of user education surveys undertaken in the UK (at the time of starting this research), there had not been a comprehensive survey since 1991 (36). It was decided therefore to send a questionnaire to all university academic libraries (Appendix A). A postal questionnaire was decided upon as:

- The population to be reached was scattered geographically.
- It was desirable and possible to determine in advance what questions needed to be asked.
- A large number of standardised responses were required.
- Questions to be asked were relatively simple (37).

Although postal surveys are noted for their potentially low response rate, this method was considered to be the most appropriate and cost effective method of data collection (38). It would have been too expensive, both in terms of cost and time to conduct telephone or face-to-face interviews with all academic libraries in the UK.

The purpose of the questionnaire survey was two-fold. Its primary aim was to establish attitudes towards CBT packages for user education and to provide current information

on libraries that were using or developing them. Its secondary aim was to examine user education generally to give an up-to-date picture. The questionnaire was designed to provide a general overview of user education, rather than an in depth study of the different types of user education available. It was partly based on the earlier survey undertaken by the Computers in Teaching Initiative Centre for Library and Information Studies (CTILIS) in 1991 so that some comparisons could be made (39). The questionnaire was divided into five sections:

- Personal details - details of respondent, so that requests for further information could be made if required.

- New library users - user education training for new library users - including the types of training offered and how it was presented; the percentage of students that took part; how the training was evaluated; how successful it was and how it could be improved.

- Existing library users - user education training for existing library users - including the types of training offered and how it was presented; whether these services were provided in conjunction with anyone else; whether any charges were made for any training services, and how requests for individual training in specific areas were met.

- Use of CBT packages - including whether commercial or in-house packages were used/or being developed.

- Attitudes towards CBT packages - attitudes towards CBT packages and their potential validity for teaching elements of user education.

The questionnaire was fairly comprehensive and was a mixture of both closed and open-ended questions (40,41). Open-ended questions were mainly used to clarify and elaborate on the closed questions. The questionnaire sought mostly factual data, although some opinion on attitudes was also requested. As an incentive to completing

the questionnaire, all respondents were promised a copy of the final results (42). A prepaid envelope was also enclosed to encourage returns.

Since the sample population was an easily identifiable group, questionnaires were sent to all higher education academic libraries. The questionnaire was sent initially to a small pilot sample for comment. No negative comments were received, although some concern was expressed over its length. However it was decided that to shorten the questionnaire would mean the loss of valid information so no changes were made. Since all academic libraries had a representative on the CTILIS mailing list the questionnaire was initially sent to these contacts. A potentially low level of responses was expected as this was considered to be one of the main disadvantages of a postal questionnaire:

> "On average, approximately 50% of mailed questionnaires will be returned" (43).

This initial mailing did result in quite a poor response (about 20%), so instead of chasing these respondents it was decided to send the questionnaire out again addressed to the university librarian. This resulted in what could be considered an excellent response and overall a total of 84% of responses from university libraries was achieved (Appendix B). Only one respondent criticised the questionnaire querying the terminology used. Not every librarian responded to every question, but where the majority of questions were answered, it was felt justified to include them in the results. A database package (FileMaker Pro) was used to analyse the results. These are discussed in Chapter Three.

1.5.3   Collection of CBT packages

Libraries that indicated in the survey questionnaire that they had developed CBT packages were asked to supply a copy of their materials. Packages developed by projects such as the Teaching and Learning Technology Programme (TLTP) initiative (as identified by the literature searches) that were study skill or library based were also collected. These were examined and evaluated in detail at a series of workshops.

1.5.4 Workshops

The most feasible method of evaluating the CBT packages, in order to reach a large number of individuals from different institutions was through a series of workshops. Workshops were set up for librarians to evaluate and assess the CBT packages in an attempt to obtain a representative sample of librarians from a number of different institutions. Twelve workshops at a number of different geographical locations were arranged through CTILIS over a three-year period. The aims of the workshops were:

- To examine the success and viability of CBT packages as a delivery method by evaluating specific individual packages in terms of their structure, content and overall design.

- To identify design factors that might make a good CBT package, through individual evaluations.

Alongside these aims, the aim of the workshops as far as CTILIS was concerned was to provide an opportunity for librarians to see what CBT packages had been developed. To this end workshops were widely advertised and any librarians from higher education institutions were able to attend. The workshops focused on eleven core CBT packages; four were generic packages and seven were packages created by particular institutions for specific use in that institution. These were packages that were made available to CTILIS and which represented a reasonable range in terms of type and information content. However it was soon established that participants found it harder to evaluate the packages that were institution specific as they were taken out of context. Although all the packages were made available at the workshops (as this was a requirement for CTILIS), this thesis is based on the evaluations of the generic packages obtained.

In the first instance it was decided to concentrate only on the opinions of librarians. As the main teachers of user education they would have to be satisfied with the content and design of such packages if they were to become a viable delivery method. However since the packages were aimed at students it was also decided for comparative purposes to elicit some student opinion. Consequently a workshop with undergraduate and postgraduate students at Loughborough University was held. The sample population of

students was all volunteers who were paid a ten pounds book token to participate in the study. All were full-time students and were just starting a course in the Department of Information and Library Studies (now the Department of Information Science) at Loughborough University. Evaluations took place in a workshop environment in the third week of the first term. Twenty-six undergraduate and 23 postgraduate students took part and they could be considered a representative sample group. The bias if any was that they were all students of the same department.

Participants were asked to consider the packages individually and not comparatively. Although it was possible that subconscious parallels between packages might have been made, this was counterbalanced by the fact that participants would not have evaluated the same packages or in the same order. Both librarians and students were able to choose the specific packages they wished to evaluate and look at them in any order. Librarian workshops were approximately one and a half hours long and each participant tended to spend about 20-30 minutes examining each package. Student workshops were for one hour and each student spent 20 minutes per package. Workshops ensured that all participants were given the same instructions. They provided a controlled environment and time scale in which the individual evaluations took place. Participants were able to discuss the packages if they wished and ask questions. Most participants evaluated at least three packages, with most evaluating at least one generic package. Although this study is based on the generic packages that were made available, no influence was exerted over participants to complete evaluations that were relevant to this study, as this would have taken it outside the remit set by CTILIS. Participants evaluated the packages through an evaluation form (Appendix C). A number of evaluators also completed a background profile questionnaire to further ascertain general attitudes towards CBT packages as a delivery method.

1.5.4.1 Profile questionnaires

Initially workshops focused only on evaluations of the individual CBT packages. However part way through the project it was decided that it would be useful to have background information on workshop participants. This would provide some context to the evaluations and provide further evidence as to the potential viability of such packages as delivery methods. A profile form was devised of which all students and

about 50% of librarians attending workshops completed. Librarian profile forms focused on current delivery methods and attitudes towards CBT as a delivery method (Appendix D). Student profile forms sought not only to establish attitudes towards CBT, but also to set in context student experience and expectation as regards user education (Appendix E). The results of the profile forms are reported in Chapter Four.

1.5.4.2 Evaluation forms

The evaluation form (Appendix C) was devised based on evaluation forms produced by the Computers in Teaching Initiative (CTI) subject centres and the many articles on evaluating CBT packages (44,45,46). Most questions were closed questions where participants had to give their opinion in the form of a scale. However there were also a number of free-text boxes where participants had the opportunity to qualify answers. Through this means, both quantitative and qualitative data was collected. The evaluation form was fairly short and was divided in to three distinct sections on structure; content and overall impressions. It was not concerned with learning outcomes *per se,* but sought to establish the suitability of individual packages as methods of delivery and to identify factors that might make a good CBT package.

Subsequent to its adoption as an evaluation tool it was trialled with a number of librarians to ensure that the questions were clear and free from jargon. However as the evaluations were undertaken in a workshop environment, there was also the option of further verbal elaboration if necessary. Only one question caused particular problems but this was not established until part way through the study. The question asked evaluators to rate *'How easy is it to request help/terminate the tutorial?'* However in most cases the packages did not have help options and therefore this should have been two separate questions; one focusing on requesting help and the other on terminating the tutorial. Evaluators completed one questionnaire for each package evaluated. These evaluations are discussed in Chapter Five and good design features are then discussed in Chapter Six.

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31   Information Technology Training Initiative (ITTI) is a government sponsored initiative to promote staff training in the use of information technology.

32   Teaching and Learning Technology Programme (TLTP) is a government initiative to encourage production of computer based learning material and its subsequent delivery to university students.

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CHAPTER 2   HISTORY OF USER EDUCATION AND USE OF CBT PACKAGES IN ACADEMIC LIBRARIES

2.1   Before 1960

The real beginnings of formal user education can be traced back to 1926 when H E Potts presented his paper on *Instruction in Bibliographical Technique for University Students* to ASLIB (1). At this time user education did occur but usually only on an informal basis, and only when users requested help. Potts felt that user education was an essential but neglected subject. He felt that all university students should be provided with instruction in what he called 'bibliography' so that they would acquire the habit of using a library and be able to do so intelligently. He sowed the seed of the idea of formal education programmes and in 1930 ASLIB passed a resolution that recognised the need to train students in the use of libraries (2).

In 1942 R S Hutton presented a paper to ASLIB in which he attempted to set out the objectives of a user education programmes which would enable students to make effective use of their libraries (3). This was followed by the establishment of a Working Party on *Instruction in the use of Libraries* by the Library Association. They proposed a formal programme of user education in 1949 (4). Their proposal consisted of three stages of education: the first stage was for new students who were to receive a general lecture, a printed guide and a tour of the library at the beginning of their first term. The second stage was for existing students and consisted of an introduction to bibliography in general and to general reference books plus an introduction to the bibliography of the students chosen subject. The third stage was for research students who were to be given even more extensive bibliographic instruction at the start of their postgraduate course, which would reinforce and build upon their previous experience.

Although slow to progress - MacKenzie found that it took 15 years for all but a few libraries to start implementing the Library Association's recommendations (5) - the principle and the need for formal user education had by the end of the 1950s been largely accepted.

2.2   1960s

Although some progress had been made in that there was recognition that formal user education was needed there was still evidence that library's users knowledge was lacking in substance. In 1963 the *Committee on University Libraries* undertook a comprehensive survey of university libraries. They found that out of a random sample from twenty-three different universities that;

> "only 37% of undergraduates know what abstract services are, only 14% have been taught to use them, 25% do not know that their library has an author or subject catalogue and 41% do not know that there is an inter-library loan service" (6).

However the educational climate of the 1960s was a changing one. Government reports (7,8) on educational issues envisaged not only an increase in the number of students entering higher education but a change in teaching methods, with more emphasis being placed on tutorials and discussion. The implication being that there would be a greater reliance from the student on the library which in turn increased the need for appropriate user education. This need was enhanced by the foundation of new universities and the upgrading of several Colleges of Advanced Technology (CATS). These institutions were prepared to be innovative and make use of different educational methods and they injected a new enthusiasm in to the need for effective user education:

> "The new institutions deliberately set out to experiment in educational methods and their libraries took part in - and even sometimes initiated - these experiments" (9).

There was also an increase in the output of literature on the subject and this was reflected by the fact that in 1962 the term Library Use or Users became an indexing term in Library and Science Abstracts (10).

The National Lending Library (NLL) also furthered the user education cause. From 1962 they held short courses which included practical work on information retrieval.

Their philosophy was that by training those that worked in libraries, they were preparing and encouraging them to then train their own students in their own libraries. According to Stevenson, a number of academic libraries found that after someone had attended a NLL course it was easier for the library to set up programmes of user education (11).

During this period there was a notable increase of interest in the area of user education, but it is to the 1970s which we look for the most intensive period of user education activity.

2.2.1   Use of CBT packages in the 1960s

Pioneering work in the use of CBT packages as a method of instructing the user in library skills first took place in America in 1967. Axeen (a doctorate student) compared a CBT instructional package with a conventional lecture method for teaching the use of the library to undergraduate students. Fourteen units of instruction were developed each involving two hours of terminal use (12). Although not strictly a library user education course as it was a credited course, it provided early evidence as to the potential of the computer for instructing users in library skills.

Further experimentation also took place at the University of Michigan, where a computer assisted instruction course was developed for a library reference course (13, 14). However these tended to be isolated cases and although further experimentation took place in the 1970s it is to the last two decades we look for real progress in the use of CBT packages for educating the library user.

2.3   1970s

The profusion of literature, conferences and specially funded research projects on library user education in the 1970s was considerable (15,16), indicating not only a growing interest in the subject, but also that there was no accepted universal solution. It was a period of increased activity, innovation and experimentation, which was stimulated at least in part by the commitment of the British Library Research and

Development Department (formerly the Office for Scientific and Technical Information).

2.3.1 Standing Conference on National and University Libraries (SCONUL)

In 1970 the Standing Conference on National and University Libraries (SCONUL) Tape Slide Group was established to bring together a number of institutions to develop tape slides for user education (17). It was a co-operative venture, whose major achievement was in its demonstration that tape slide was an acceptable medium for user education. Unfortunately on the whole the success of this was considered to be quite poor as the majority of the tape slides produced were not of very high quality (18).

The SCONUL Tape Slide Group was nevertheless beneficial and influential in that as Malley stated:

"Its exchange of experience seminars and meetings were popular and valuable in the exchange of experience and ideas in the field of user education" (19).

2.3.2 Review Committee on Education for Information Use

In September 1973 the Office for Scientific and Technical Information sponsored a workshop at the University of Bath on the *Education of Users of Scientific and Technical Information* (20). As a result of this in 1974 the *Review Committee on Education for Information Use* was established. Its terms of reference included reviewing the research and practice of user education; commissioning reviews in specific areas; identifying gaps in past and present research and recommending practical action, including a programme of further research. It completed its work in 1976 and a report was subsequently published in 1977 (21). Its major recommendations included:

- The integration of user education with other teaching.
- Teaching librarians how to teach.
- The appointment of an Information Officer for user education.

Before the committee's report had been published several of the reviews it had commissioned had appeared notably those of Stevenson (22), and Crossley and Clews (23). Stevenson produced a report that looked at the different types of user education being carried out at a variety of higher education institutions in 1974/5. It is particularly notable for its chapter on issues raised, as the problems identified, such as deciding when to give instructions, what to teach, how to integrate with subject teaching, what teaching materials to use and how to evaluate programmes are still predominant today. It also suggested that attitudes to libraries and their use should be shaped at school - a suggestion reinforced by the later projects sponsored by British Library Research and Development Department (BLR & DD) (24,25,26) and by Maurice Line at the 49th ASLIB Conference:

> "Most of what was done at higher education level was remedial, retraining people who have been quite wrongly trained in information handling at school, trained to passive reception rather than active learning. Somehow ways must be found of integrating the use of information into the whole of education from the time the child starts at school" (27).

Crossley and Clews reviewed the literature relating to educational technology and user education. They concluded that future research should concentrate on more advanced levels of instruction; on factors that might affect the learning process, such as learning conditions; and on comparisons between the effectiveness of different methods of learning such as self directed study (28).

It is significant to note that the points made by Crossley and Clews, and Stevenson as discussed above still have relevance today.

2.3.3   Travelling Workshop Experiment (TWE)

The Travelling Workshop Experiment (TWE) was sponsored by the BLR & DD and ran from July 1975 to July 1979 (29). The project was to promote and demonstrate user education in British institutes of higher education in three specific subject areas - biology, mechanical engineering and social welfare. The aim was to:

- Show how information handling could be taught.
- Provide help to institutes in developing their own user education programmes.

In the first two years 33 workshops were set up in 13 different institutions - they were to provide teaching aids, demonstrations and examples necessary to the teaching of library use. Although initially they relied on lectures with the aid of studies and practical exercises after nine workshops they adopted a self-learning approach. Students were able to work at their own pace, individually or in groups.

After two years it became clear that while a travelling workshop was not a viable option for user education, because of the many institutions and increasing numbers of students, the materials developed by the project could be of value. The TWE materials were subsequently adapted and a package was produced - the *Information Learning Package.* This consisted of a student handbook of sources of information and exercises; audio tape and tape slide programmes; posters; evaluation materials, and a teacher's manual that could be used by any university. The most significant result of this programme was the demonstration that self-instructional learning could be successfully applied to programs of user education (30). The project received a lot of publicity helping to further stimulate interest in user education.

The Travelling Workshops Experiment stands out because of the scale of the project and because it demonstrated BLR & DD's commitment to user education.

2.3.4 Information Officer

As a result of the recommendations of the *Review Committee on Education for Information Use* an Information Officer was appointed in 1976 for a period of three years, to be based at Loughborough University. He was;

> "to be responsible for the collection and dissemination of information on activities in, and relevant to, user education" (31).

His appointment provided a focal point for those interested in user education. His contribution to all aspects of user education was widely recognised and he did much to promote user education both here and abroad. He created and maintained a library of literature on user education and a Library Instructional Materials Bank (LIMB), which provided examples of materials for use in user education. He also published a periodical entitled *Infuse*, which functioned as a current awareness service and an indicator of on-going and proposed research on the subject and organised an annual conference.

The 1970s also saw an era of increased co-operation between the library and academic departments, particularly in the polytechnics. Increasingly librarians were being employed that specialised in particular subjects. They were encouraged to liaise with the department in their subject area to provide more specific user education. By slanting their user education programmes towards the needs of users in their own subject areas they were increasing the motivation of the student to undertake the programme, and enhancing the status of programmes (32).

2.3.5   Use of CBT packages in the 1970s

The 1970s saw a continuation of the experimentation started in the 1960s in the use of CBT packages, especially in America. The universities of Nebraska, Illinois and Denver in particular were at the forefront in the development of CBT packages in this area (33,34). At the University of Denver, students were able to use a computer based program to learn a variety of library skills from 'How to find bibliographies' to 'Term paper research techniques' (35). Each module took about ten minutes to complete and students could exit at any time and choose another module. It was deemed successful as out of 212 questionnaire responses;

> "84% found that the CAI instruction more valuable than other library use instruction they had, had" (36).

At the University of Illinois PLATO (Programmed Logic for Automatic Teaching Operation) a computer based instructional system was used to teach biology students how to use reference and bibliography collections (37). PLATO was also used at the University of Nebraska to develop a program on card catalogue skills. It was divided in

to six sections, each of which could be accessed independently, and to reinforce learning questions were inserted throughout the package (38).

Although perhaps considered successful in the individual libraries that implemented such packages, they did not at this time gain widespread acceptance. Initially experiments in the use of CBT packages were perceived to have little success due to the lack of equipment needed to run such programmes and the lack of time and expertise to develop programmes (39).

"CAI may have much to contribute to library instruction, but at present, the cost of developing course materials and obtaining terminals means that applications are limited" (40).

However as can be seen from the later decades much progress has been made. The situation has changed considerably as libraries have become more information technology dependent.

2.4   1980s

Interest in user education in the 1980s remained steadfast although there was a change in emphasis and thinking. The end of the 1970s saw the beginning of a shift of attention away from educating the user at university level to educating the school pupil, and this was further emphasised in the 1980s:

"The teaching of information handling skills in schools, both at primary and secondary level is a growing activity" (41).

The British Library seemed to transfer its attention to educating the school pupil in information handling skills, pointing out that if undergraduates were better prepared in secondary schools some of the user education at later times would not be necessary. They hoped that if user education were started when young a favourable attitude could be created towards it, making educating the university student easier, as the value of the library would already be recognised (42,43,44).

Although the value, appropriateness and length of user education programmes was and still is a subject of debate (45,46) it had already been generally agreed by the 1980s that for students to be able to make effective use of the library and its resources some user education was necessary. Much of the literature for this period was therefore mainly on how programmes could be designed more effectively, concentrating on objectives, goals and delivery and on such areas as learning objectives and educational technologies (47,48,49).

In 1981/82 Janet Hanson undertook a survey of user education for students of education (50). She investigated the use made by librarians of educational theories in the design and implementation of their user education programmes. She found that in the field of education that although there was what she termed a considerable degree of user education activity, it could be more firmly based in educational theory. She felt that only three institutions out of 60 showed significant use of the educational technology approach. In 1983 the Library and Information Services Council (LISC) published a Discussion Paper. This was not solely aimed at the academic community, but considered different types of users, techniques and the scope of user education (51).

There was also a continued interest in the idea of integrating user education more with courses and having some form of formal assessment. Although not everyone agreed with this as they did not believe that librarians should be teachers (52,53), there were some developments especially in the polytechnic sector (54). The BSc science course at North East London Polytechnic (now East London University) appeared to be the first to introduce a formal library component in to the students' final assessment. This was followed by others, such as Wolverhampton Polytechnic (now Wolverhampton University), Lanchester Polytechnic (now Coventry University) and Hatfield Polytechnic (now University of Hertfordshire). There was also an increase in the number of subject specialist librarians. In 1988 Cowley undertook a survey of information skills teaching in UK higher education (55). He interviewed librarians at a random sample of 21 institutions and he found that in all but two, subject librarians were used to teach user education. In the other two he found that there was a specialist group of staff who devoted most of their time to teaching.

Up until 1985 there was a continual flow of publications from the Information Officer for user education, including a monthly journal, (*Infuse*) devoted solely to user education topics. However this post was not continued by the British Library after 1985 and there was subsequently a demise in the flow of publications and a ceasing of the publication *Infuse.* Although there was no longer a central body to disseminate information in this field it was not neglected completely. Malley carried out a survey of information skills teaching in colleges of further and higher education in 1987 and Cowley carried out a similar survey of polytechnics and universities in 1988 (56,57).

Cowley found that although the vast majority of libraries provided basic induction sessions, the number providing any training in the wider areas of study skills was limited:

> "The results demonstrate a continuing commitment to user education but
> present a picture of declining resources and difficulties experienced in
> maintaining adequate subject coverage" (58).

He felt that the results of his survey reinforced the apparent failure of libraries to build upon the enthusiasm and drive established in the 1970s and 1980s.

2.4.1   Use of CBT packages in the 1980s

The 1980s saw an increasing interest in the use of CBT packages for elements of user education in America (59,60,) and the first real interest in the UK. Papers given at the first three international conferences for user education reflected this interest (61,62,63) and in 1982 Malley commenting on the increased use of microcomputers in academic libraries stated that it;

> "shows in the continuing search for new methodology that there is a
> basic unease with library orientation and its effectiveness" (64).

In February 1985 at a meeting of the Committee of Polytechnic Librarians' (COPOL) Information Technology (IT) Group it was agreed that they would collect details of the use of IT in user education and arrange an exchange of experience seminar. This seminar took place in 1986 and was attended by nearly 70 people (65). It provided an opportunity for participants not only to listen to selected papers, but also to look at some

CBT packages that had been developed. One of the key issues of the seminar was the need to consider what and how IT could be of benefit to user education:

"We should look at user education first, and then look at the technology to see if it can be applied. The technology must not become an end in itself" (66).

The seminar concluded that:

"Overall CAL has considerable scope for improving the quality of the learning experience, because learners learn by doing as well as being told what to do" (67).

This was also in evidence by the number of different libraries that were using CBT packages as a delivery method for elements of user education – examples of which are given in Table 2.1.

Table 2.1   Examples of CBT packages

Place	Project
BRIGHTON	Computer-assisted learning package for library user education with special interest in graphics (68).
DORSET	Hypertext library orientation package (69).
LEEDS	A computer-assisted learning to teach students the basic strategy of literature searching (70).
PLYMOUTH	Software package developed for orientation purposes (71).
SHEFFIELD	CAL programs on the use of the microfiche catalogue (72).
SUSSEX	Series of programs aimed at new students (73).
WOLVERHAMPTON	Library induction tutorials (74).

However these projects tended to be limited to specific institutions and little progress was made on a more global scale. Although there seemed to be an interest in CBT packages as a means of delivery for user education programmes, this was marginal in comparison to other methods of delivery as evidenced by John Cowley's survey in 1988:

> "There is evidence of reliance on traditional teaching methods and only limited progress with IT applications" (75).

Never-the-less the availability and the reduced cost of computers have led to a more IT dominant library. In the latter part of the 1980s on-line public access catalogues (OPACs) were common place and many university libraries also provided access to CD ROMs and to the Internet. New technologies did not only become a more viable delivery method for user education, but they also presented the library with new training needs.

2.4.2 Computers in Teaching Initiative Centre for Library & Information Studies (CTILIS)

In May 1989 the Computers in Teaching Initiative Centre for Library and Information Studies (CTILIS) was established at Loughborough University (76). It was funded as part of the second phase of the Computers in Teaching Initiative (CTI), set up by the Computer Board for the Universities and Research Councils (CBURC). CTILIS was initially part of 20 subject centres, each based in a different university department, serving its subject discipline throughout all UK universities. Its purpose was to encourage greater use of computer-aided methods in teaching of library and information studies (both by teachers in information and library studies departments and by academic librarians) in higher education in the UK (77).

Although it had little impact in the 1980s on the use and development of CBT packages for user education (as it was only just beginning); it had a considerable impact in the 1990s.

2.5   1990s

In the 1990s librarians seemed no nearer to answering the questions posed by the need to provide effective user education programmes. If anything the situation had been further compounded by the increasing number of both traditional and non-traditional students entering higher education:

> "Induction procedures are the most widespread traditional mode of
> library instruction for students, and have come under immediate and
> irresistible pressure from the growth of numbers...[they] have found it
> impossible to continue to mount guided tours of groups, as the latter
> increased in size and demands on staff time became insupportable" (78).

Many institutions in response to this increase and the move towards student centred learning have sought to change or revise their existing policies - Coventry University 1993/4, Leicester University 1991, University of the West of England 1990/91 (79,80) - yet they appear no closer to providing a universal solution to educating the library user.

In 1992 a librarian at the University of Central Lancashire decided to run an exchange of experience seminar on library inductions, which was "massively oversubscribed". This seminar was run again by the Committee of Polytechnic Librarians (COPOL) in 1993 and as a result of this two publications were produced in 1994 (81,82). The first publication described the differing induction programmes implemented by five academic libraries - Coventry University; Leicester University; Nene College; Nottingham Trent University, and Plymouth University - and the different methods of delivery from the introduction of an interactive computer based tutorial at Coventry University to the introduction of study packs at Leicester University. The second publication described the evaluations of the library student induction programme by eleven institutions. What is clear from both these publications, is that there was still after over seventy years of research in this field no established method of either implementing or evaluating user education programmes.

The user education programme in many institutions has changed in nature over the years. There has been a change in educational styles towards more student centred

learning. This has resulted in library and information skills being accorded a higher profile (83). The user not only has to be educated in the use of the specific library of their institution, but also - as indicated in the report Higher Education in the Learning Society - in lifelong learning (84). There has been an increased recognition of the value of information skills:

"Education which fosters information literacy will enhance student's present and future use of information networks, making an important contribution to their lifelong learning" (85).

Consequently, not only does the library have to consider how to deal with the induction and familiarisation of large numbers of students to their institution's library, and the increase in the volume of available information (available both electronically and in the printed form), but it has also to deal with its increased teaching role. A survey by the Library and Information Statistics Unit (LISU) at Loughborough University in to higher education libraries in the UK in 1993 concluded that:

"Much staff time is spent instructing users. The librarian's educational role is important and differs from the traditional concept. This springs from the need to explain changing IT and IS facilities and from increased project work. It is also a reflection of the diversity of students, backgrounds: part-time mature students can be particularly demanding" (86).

This change in the educational role of the librarian, alongside increased student numbers and the need to exploit technology was also recognised by the Libraries Review Report (more commonly referred to as the Follett report) in 1993 (87). As a direct result of this the Joint Information Systems Committee (JISC) established the Electronic Libraries Programme (eLib). The main focus of this was the exploitation of information technology towards creating the electronic library. Over fifty different projects were funded across a broad range of areas (88). One project in particular recognised the increased training needs that the electronic library placed on the library and sought to address this. The EduLib project sought to:

"Enhance educational expertise and teaching skills in the higher education library and information services community" (89).

It aimed to provide a national programme of educational development for library and information services staff. Through this it hoped to better equip library staff to deliver the vast range of user education training needed in today's technological age.

The problem of the 1990's was that libraries had an ever-expanding user education role without a corresponding rise in resources, and were subsequently on a continual search for answers.

2.5.1 Use of CBT packages in the 1990s

The 1990s saw a renewed interest in the potential for developing CBT packages for user education. In 1993 a report on libraries (prepared by the Joint Funding Councils' Libraries Review Group) highlighted the increased emphasis that teaching and learning, and information technology had for the effective library service (90). The increase in the amount of information available both in printed and electronic format increased the need for more effective user education. Coupled with the corresponding availability of computers in academic libraries and improvements in software - making the writing of CBT programs easier - the use of CBT packages for user education seemed now more than ever a viable delivery method.

The 1990s saw the development of CBT packages for elements of user education for both specific institutions and for more widespread use (91). Packages ranged from those that were basic introductions to the library to those that dealt with information and study skills. For example at Coventry University, the Lanchester Library developed a self-guided interactive tour (92). This was designed to offer users an on-screen tour of the library. It contained such information as location of services and details as to the number of books a user might take out. Users could do a complete tour of the library or look up specific information. This compares to CALAIS Database Explorer developed by the University of Aberdeen, which dealt with searching bibliographic databases (93). It was not specific to Aberdeen University, but could be used in any library. It allowed

purchasing institutions to adapt the package so that databases and search topics could be used that were pertinent to the host institution.

As well as developments by individual libraries in this area, two national initiatives did much to promote the cause of the CBT package for user education.

2.5.2 Computers in Teaching Initiative Centre for Library & Information Studies (CTILIS)

The Computers in Teaching Initiative Centre for Library & Information Studies (CTILIS) contributed much to the use and promotion of CBT packages during this decade. It actively collected and disseminated information on CBT packages. Initially these were packages obtained from the USA (94). However as more and more UK packages were developed these were also collected. These packages were then made available at a series of workshops where participants had the opportunity to see what had been developed and to evaluate them. CTILIS also ran two major conferences at Loughborough University based on the use of CBT packages for user education in 1995 and 1999. Both were successful and were fully subscribed, indicating the continued interest in this area.

Developments in the use of CBT packages were widely reported through CTILIS in their Resources Guide and in their journal INFOCUS (95,96).

2.5.3 Teaching and Learning Technology Programme (TLTP)

Another national initiative also did much to promote the use of CBT through the development of generic information and study skill packages. The Teaching and Learning Programme was launched in February 1992, when universities were invited to submit bids which;

> "make teaching and learning more productive and efficient by harnessing modern technology" (97).

Glasgow University was successful in attracting funding for a number of different departmental projects. One of the projects focused on library user education and six CBT packages were produced:

> Computer Sources.
> How to Choose Books and Journals.
> Library Search Skills (general).
> Library Search Skills (business).
> Study Skills.
> BIOSIS (98).

These were all generic packages aimed at first and second year undergraduates. Commenting on the use of the packages Project Director Gordon Doughty said:

> "The libraries' modules cover some of the areas currently taught by more traditional means. Using these computer-assisted learning packages has increased student motivation and eased the pressures on staff time" (99).

These packages were made available to other Higher Education institutions and articles on their development were published in the prevailing literature (100,101,102). In 1996 it was noted that over 130 institutions (both in the UK and overseas) were using these packages (103).

It is these packages that form the basis of the individual package evaluations that are reported in Chapter Five.

2.5.4   World Wide Web (WWW) developments

At the time of starting this research in 1994 the advent of using the World Wide Web (WWW) as a method of educating the user was not widespread. A survey conducted in September 1994 found that out of 75 academic libraries in the UK, less than half had library WWW pages (104). However the last six years have seen the use of the WWW grow exponentially. Today the majority of academic libraries in the UK make use of the WWW for some form of user education. A survey conducted in 1998 found that out of

68 academic libraries in the UK, 80% were using the WWW for some sort of user education (105). The authors of this survey also felt that this would continue to increase:

> "Progress with this medium [WWW] is likely to be considerable in the
> next few years" (106).

Despite progress with the WWW, the use of CBT packages has continued to grow. In a survey conducted by CTILIS in 1991/2 they found that only 9% of respondents (seven out of 73) were using CBT packages (107). The survey conducted in 1994/5 for this study (as reported in Chapter Three) found that this had increased to 20% (31 out of 152) (108). This has continued to grow and in 1998 this had increased to 35% (24 out of 68) (109).

This suggests that there is still a place for the CBT package as a delivery method for user education today. And even though much of the attention has shifted from CBT packages to the design and use of the WWW (110, 111) many of the lessons learnt from examining CBT packages can be applied to web based applications.

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CHAPTER 3 AN OVERVIEW OF USER EDUCATION AND THE USE OF CBT

3.1 Scope

Although there had been a number of user education surveys undertaken in the UK (at the time of starting this research), there had not been a comprehensive survey since 1991 (1). It was decided therefore to send a questionnaire to all university academic libraries (Appendix A).

The purpose of the questionnaire survey was two-fold. Its primary aim was to establish attitudes towards CBT packages for user education and to provide current information on libraries that were using or developing them. Its secondary aim was to examine user education generally to give an up-to-date picture. The questionnaire was designed to provide a general overview of user education, rather than an in depth study of the different types of user education available. It was partly based on the earlier survey undertaken by the Computers in Teaching Initiative Centre for Library and Information Studies (CTILIS) in 1991 so that some comparisons could be made (2). The questionnaire focused on user education for new and existing users and on the use of, and attitudes towards CBT packages.

3.2 Results

One hundred and fifty-two responses were received from university libraries (Appendix B), covering 84% of universities (a number of universities with split sites responded separately, as did a number of subject specific libraries that had different user education programmes). Eighty-eight responses were from old universities, 60 from new universities and four were returned anonymously. Not every respondent completed every question, but where the majority of questions were answered it was felt justified to include them in the results.

3.3 New library users

The majority of libraries (80%) provided a standard introductory user education programme that covered all new users. Two-thirds of these in addition to the standard

programme also provided an individual introductory programme developed by the subject specialists for the particular subject area or school the students were in. Eighteen percent provided an individual programme only. Of the 18% that provided individual programmes only, one quarter of these responses was from specific subject libraries. Only 2% of respondents did not indicate the type of programme they offered.

As was expected, most user education programmes for new users covered what is generally considered to be the traditional library-oriented subjects (Figure 3.1). That is those that have the short-term objectives of familiarising the student with their particular university library (3). All provided either an overview of library services, library orientation, or library catalogue training, with the majority of libraries providing all three. A smaller percentage of libraries also catered for the development of skills which are not specific to a particular library and which could be considered to have a more long-term value to the student, such as basic Information Technology (IT) skills (4).

Figure 3.1   Areas covered
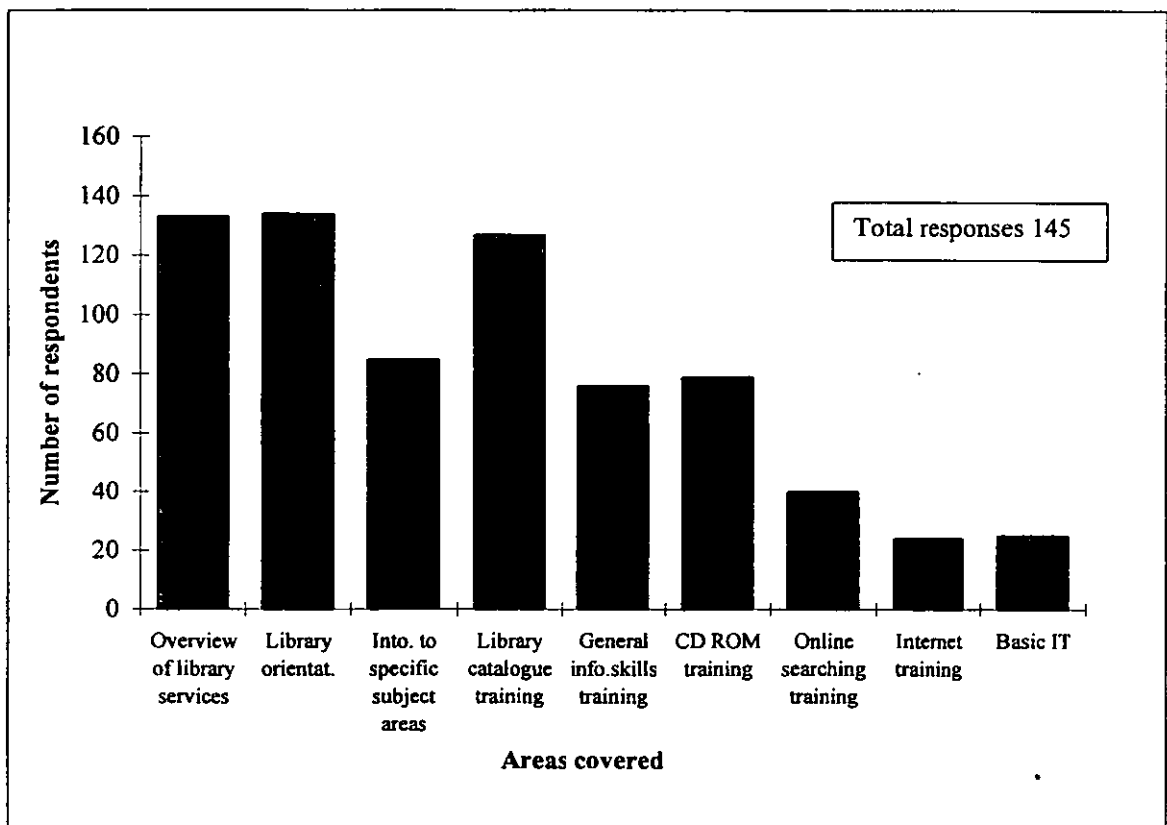
Fifty-seven percent of respondents provided training in at least one area that could be described as training in the use of computer based resources – that is CD ROM, Internet, online searching and basic IT training.

The type of programme being offered to new users (be it individual, standard or a mixture of both) did not seem to make any difference to the subjects that introduced the new user specifically to their particular library. However, a more noticeable difference was discernible with the other areas covered (Table 3.1). While it would seem obvious for those who provided a tailored service (in part or in whole), to provide more training in specific subject areas than those who provided a standard service, there is no obvious reason as to the differences in provision of training in computer based areas. Those providing a standard programme only, provided less training in the computer-oriented areas than those who provided individual only or both individual and standard programmes. It can only be assumed that those who provided individual training in part or in whole were able to offer a more comprehensive coverage, perhaps due to the enthusiasm of the staff; the co-operation with specific subject departments, or the number of students taking part.

Table 3.1   Programme coverage

	Standard only	Individual only	Both
Overview of library services	90%	100%	92%
Library orientation	90%	96%	96%
Library catalogue training	89%	87%	88%
Introduction to specific subject areas	46%	67%	76%
General information skills training	42%	71%	59%
CD ROM training	42%	67%	67%
Online searching training	15%	37%	35%
Internet training	10%	12%	16%
Basic IT training	7%	12%	16%

Percentages are based on the total number that provided the service, divided by the particular type of programme.

The majority of libraries (92%) covered at least three or more different areas in their introductory programme for the new users (Figure 3.2).

Figure 3.2   Number of different areas covered
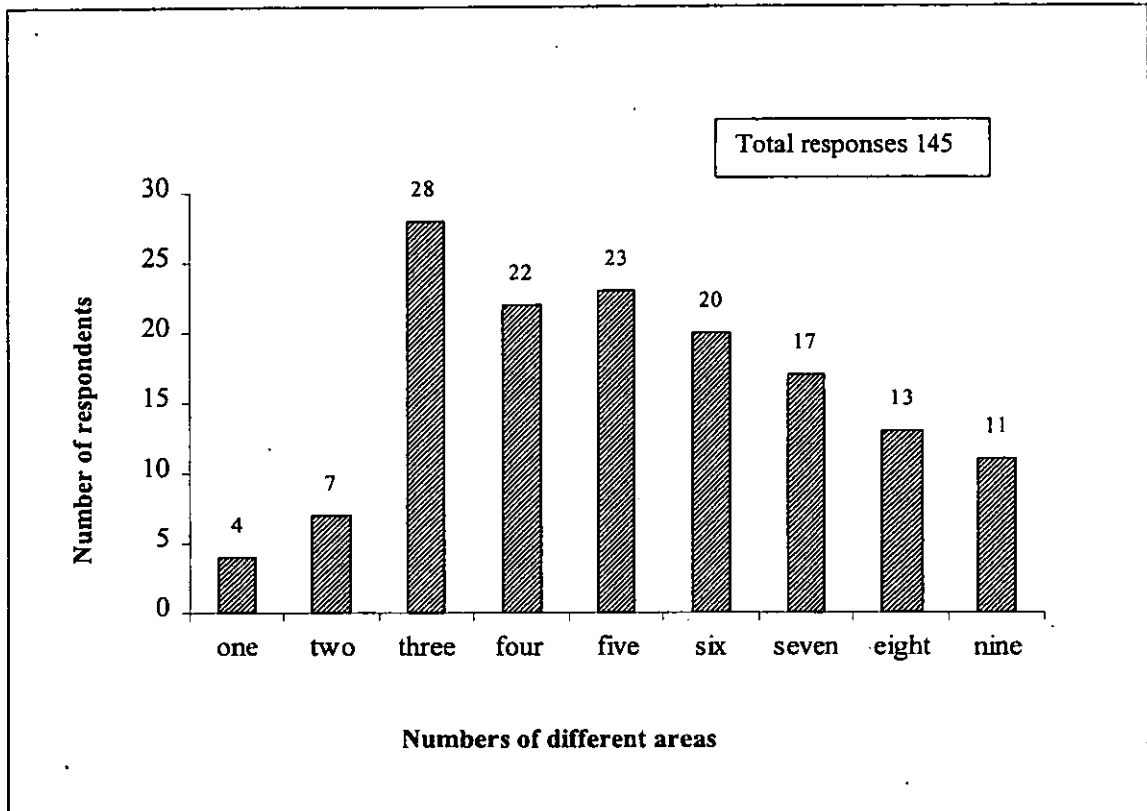
Although respondents were asked both what their introductory user education programme covered and how it was presented, only 33% of respondents gave some indication of the methods that they used. Of those that did respond, most provided more than one method of delivery. Thirty-four percent presented a talk, 40% undertook a tour of the library and 36% used a video as at least one of their presentation methods. Some examples of methods of delivery can be found in Table 3.2.

It would have been of value to this study to have an overview of different methods. It might have been better therefore, if on the questionnaire different methods of delivery had been listed (as they were in the librarian and student profile questionnaires – see Chapter 4), rather than expecting a free-text response.

Table 3.2   Examples of methods of presentation

Glasgow Caledonian University

- Overview of library services – video.

- Library orientation – video.

- Library catalogue training – live demonstration on OPAC. Exercise (very basic) on OPAC searching with examples from relevant subject areas.

University of East London

- Overview of library services – talk and tour.

- Library orientation – talk, tour and video.

- Introduction to specific subject areas – talk, tour and handouts.

- Library catalogue training – rolling demonstration on OPAC.

- General information skills training – lecture in subject groups.

- CD ROM training – lecture with demonstration.

University of Northumbria at Newcastle

- Overview of library services – tour/lecture.

- Library orientation – tour.

- Introduction to specific subject areas – lecture.

- Library catalogue training – workbook.

- General information skills training – workbook.

- CD ROM training – lecture.

- Online searching training – no method specified.

- Internet training - no method specified.

- Basic IT training (such as wordprocessing) - no method specified.

Napier University

- Overview of library services – introductory talk/lecture.

- Library orientation – tour of library and handouts.

- Introduction to specific subject areas – lecture and handouts.

- Library catalogue training – workshop or OHP lecture.

Although user education programmes tended to be offered to all students, take up of the programme varied considerably between universities. However most respondents felt that over 70% of their students attended their programmes (Table 3.3).

Table 3.3   Attendance at user education programmes

%	<10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-70%	71-80%	81-90%	91-100%
No.	4	2	3	7	7	5	9	27	29	31

Total number of respondents = 124

Eighteen percent felt that, although their programme was offered to all, they were unable to estimate their attendance rate:

Uptake is variable, depends upon subject/discipline and how library-oriented the appropriate academics are in that area.

The majority of respondents (92%) did try to evaluate their user education programmes (Figure 3.3).

Figure 3.3   Different methods of evaluation
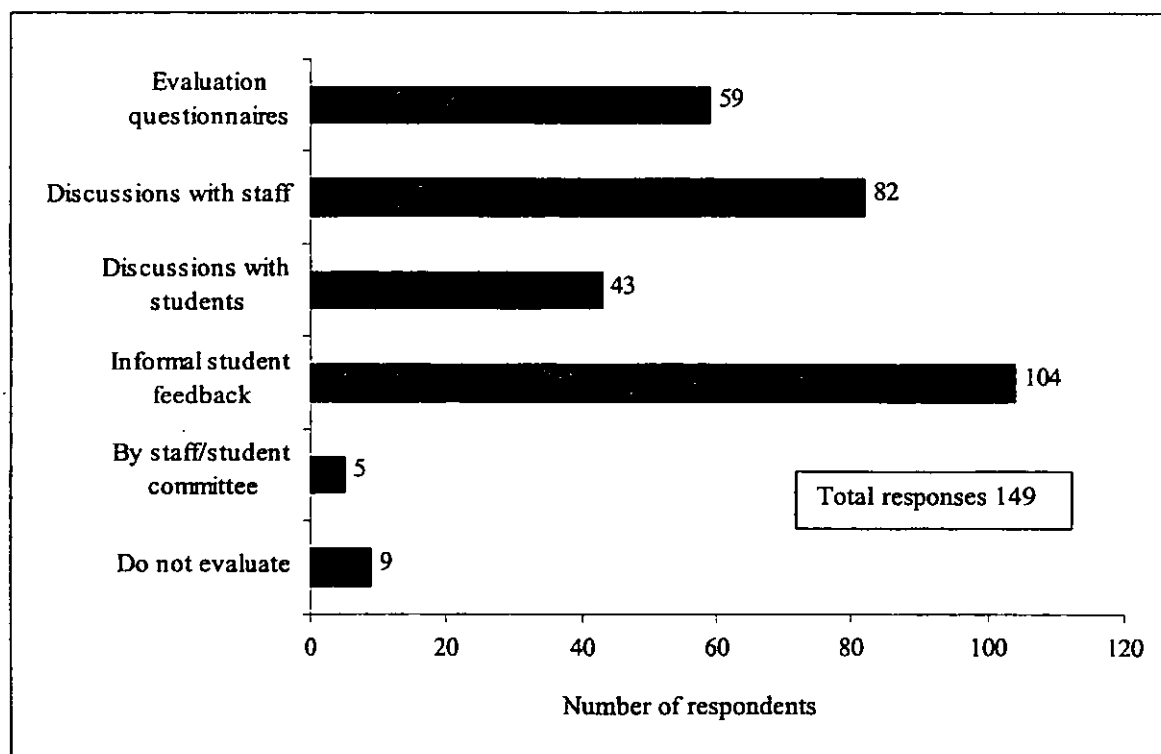
Most however, tended to do this informally rather than formally. Over half of the respondents did not rely on just one method of evaluation, but used at least two different methods.

This response represented an increase of 35% since the last CTILIS survey in 1991/92 when only 57% indicated that they evaluated their introductory user education programme (5). In both surveys, informal student feedback and questionnaires were popular evaluation methods. The type and content of programme being offered did not make any difference to the way in which it was evaluated.

Most respondents felt that their user education programme was at least moderately successful (Figure 3.4).

Figure 3.4   Success rating
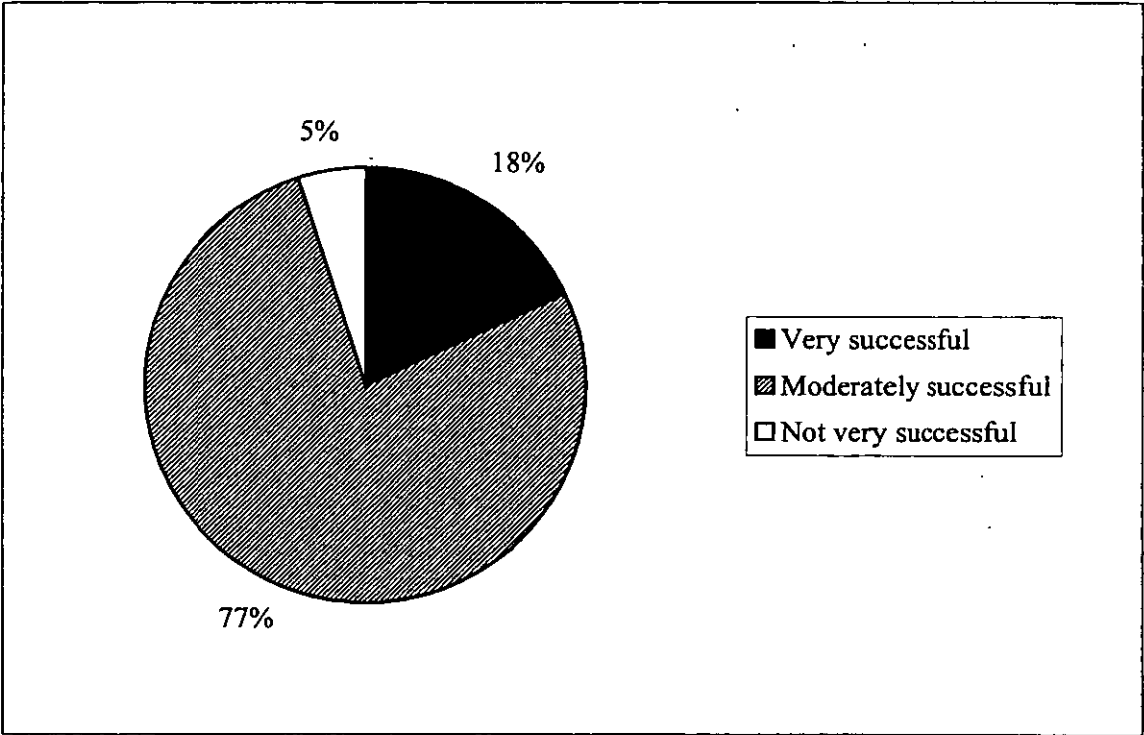
Amongst those who felt that their programme was 'very successful', the average percentage of attending students was 85%; 'moderately successful' 74%, and 'not very successful' 47%.

One institution that felt that their programme was not very successful remarked that:

> *Its main value is walking them up and down stairs and smiling at them.*

Of those who thought that their programme was very successful, only one felt that it needed no improvement or reinforcement:

> *I consider the level and time spent on the introduction course is currently right – a longer more elaborate introductory course would lose peoples interest and attention.*

One institution that provided five services for its new users, and had only about a 10% attendance, felt that for it to be improved:

> *Staff need to be persuaded to encourage their students to attend the programme.*

Suggestions as to how the user education programme could be improved are to be found in Table 3.4.

Most, regardless of their success rating, felt that the programme could be improved by:

- Better and more flexible timetabling.
- Smaller groups/more personalised inductions.
- Embedding the programme into the curriculum.
- More co-operation from academic departments.
- More time and resources.
- Having a compulsory/assessed component.

Table 3.4   Suggestions as to how user education programmes could be improved

- *By ensuring that a basic introductory programme is delivered to all students with an assessed exercise which counts towards class grades.*

- *Getting enough time from academics, getting academics to recognise the need for training in study skills, especially IT. Proper pre and post-test evaluation. Needs to be emphasised over the year. Better integration with academic programmes – assessed to give motivation and "credits". 9,000 freshers present a massive problem, which can only be tackled by a university-wide concerted effort.*

- *Information skills should be taught by library staff and embedded in the timetables of all courses.*

- *Improved by more co-operation by academic staff to include information skills early in their courses.*

- *With better liaison with the academic counterparts, more time scheduled into the curriculum, better infrastructure for larger group/hands-on training.*

- *More time with smaller groups and at the optimum point of the induction process for all students.*

- *Needs to be phased over months/years. Too much, too soon, is poor learning.*

- *More time for students to practice information skills related directly to their needs. More specific training for CD ROM. Specific modules on information retrieval for all students compulsory!*

- *More hands-on experience in using OPAC and CDs. Closer links with assessed work in the course. Assignments that are geared to information seeking and assimilation.*

- *Library lectures have to be fitted in to what is often a very busy timetable. It would be better to see them for at least two sessions, rather than try and cram everything into one session, but unless these lectures were made compulsory I doubt if they would come – after 5 minutes they think they know everything when, in fact, they misuse much.*

These were factors that had also been identified in the 1991/92 CTILIS survey:

"To the question *'What hinders good library user education?'* the commonest answers were: lack of time, staff, equipment and space; inappropriate timetabling – a widespread feeling that the common timing in freshers' week did not work well, and that timetabling the library user education at the first occasion when a practical need arose would be better; excessively large classes; and low priority given to these courses by academic staff. Factors felt to help were mostly the converse of these, but with a very strong stress on the importance of good liaison between library and academic staff, and desirability that the course should include an element of assessed work" (6).

There was no evidence to suggest that a tailored individual programme either in part or whole, was any more or less successful than a standard programme. Nor was there any evidence to suggest that the content of the programme had an effect on the success rating.

3.4   Existing library users

Most libraries (95%) provided at least some training in computer based resources for existing users. In fact more training in these areas was provided for existing library users than for new users (Figure 3.5).

Figure 3.5   Training in computer based resources
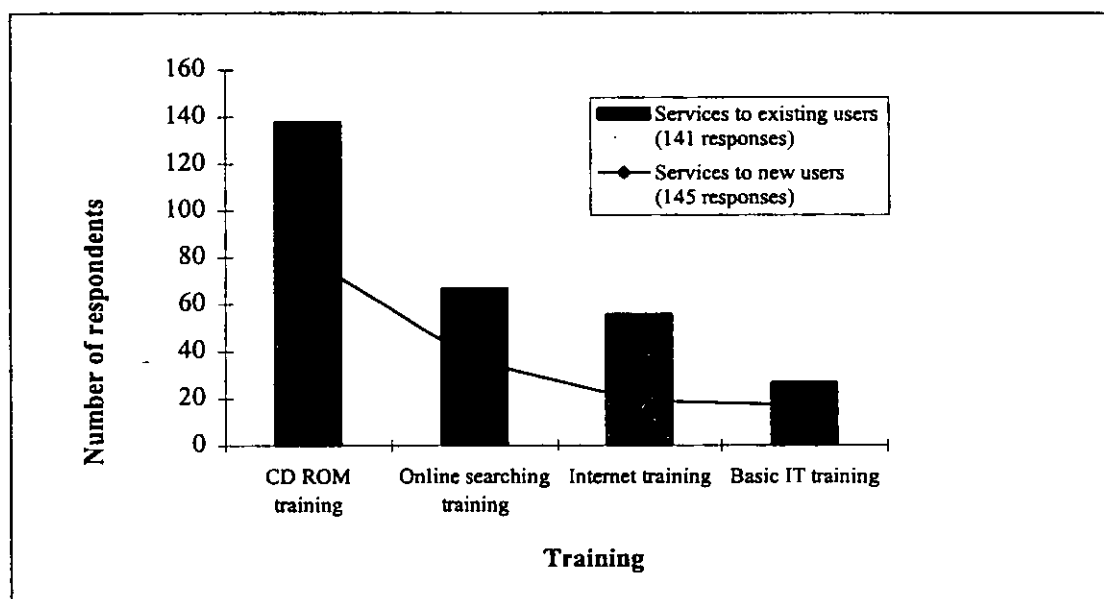
Only 2% of libraries did not provide any training in these areas for existing users:

Most of the services described are either not yet available, in planning,

or responsibility of IT service.

All but three libraries that indicated what their training programme for existing users covered, provided CD ROM training.

Only a small percentage of libraries provided training in computer based areas in their introductory programme for new users yet did not also provide them for existing users. For example all but one of the respondents who provided CD ROM training to new users, also provided it for existing users, and all but five who provided online searching for new users also provided it for existing users. In total, all but two respondents provided CD ROM training to either new or existing users and just over half provided it to both existing and new users (Table 3.5).

Table 3.5   Training in computer based areas

	For both new and existing users	For either new or existing users
CD ROM training	51%	99%
Online searching training	22%	50%
Internet training	9%	42%
Basic IT training	9%	21%

Most libraries covered at least two of the areas in training in computer based resources for existing users (Figure 3.6).

Figure 3.6   Number of areas covered
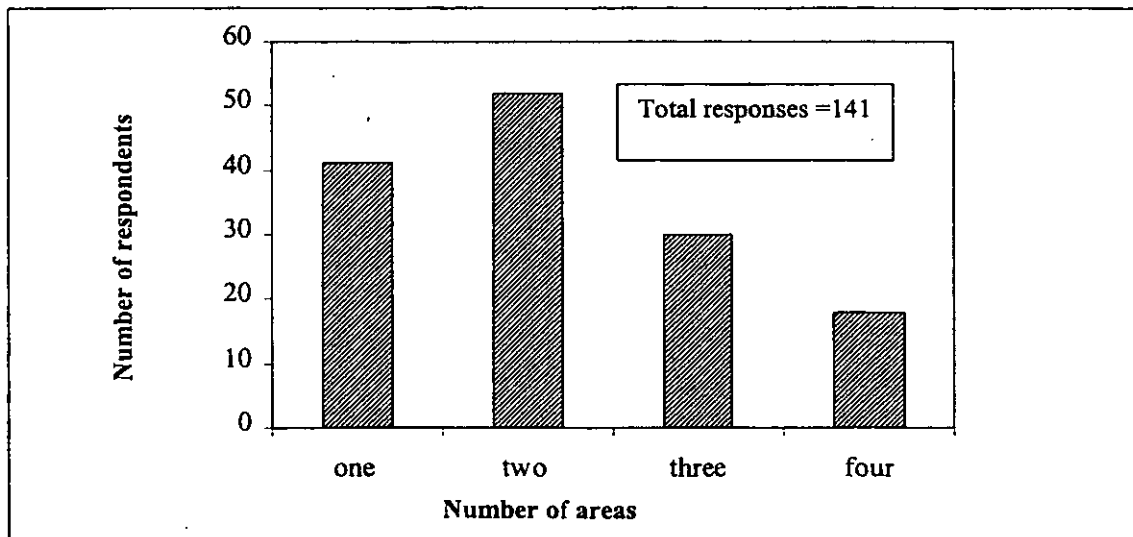
Fifty-seven percent of those providing training for existing users did so in conjunction with a particular department or with computer services. Only 6% of respondents made a charge to the appropriate department or school for these training sessions:

> *The IT (basic skills) are charged and in some instances departments buy a set number of places for students.*

> *ISP (Information Skills Programme) which are delivered at the request of a particular course and cover CD ROM training and online search training are cross-charged to appropriate departments.*

The ways in which the respondents dealt with individual student/staff requests for training in specific subject areas depended on the staff and time available. The majority dealt with adhoc training immediately, if possible, or referred the student to the subject specialist. If there appeared to be a number of students requesting the same help, then special group sessions were arranged. Examples of the ways in which libraries dealt with individual staff/students requests are to be found in Table 3.6.

Thirty-nine respondents, who did not provide any training in certain areas, felt that they ought to:

> *General information skills would be useful as part of a timetabled course – if we could sell the idea to the college.*

> *We would like to provide Internet training; training in the use of personal bibliographic databases. We would like to see information skills as part of the curriculum.*

Of these, thirty-three cited IT related areas (with 22 particularly mentioning Internet training); two cited study skills and four both IT-related areas and study skills.

Table 3.6   Ways in which libraries dealt with individual staff/student requests

- *Appointments are made with subject specialists for detailed training. Quick queries are dealt with by any member of the information team.*

- *Varies between subject librarian – ideally we see if the demand is more widespread and try to organise a group session, but would usually try to satisfy an ad hoc request at the time.*

- *Responses vary depending on staff availability. Sometimes requests are "transformed" into group sessions. Some on demand are provided when numbers build up, i.e. students sign forms for specific sessions. Publications are provided for self-help.*

- *Depends on urgency. With CD ROMs, users are encouraged to make an appointment with a relevant specialist; on occasions where the information needs to be immediately forthcoming, staff will spend one-to-one instruction time.*

- *Handled by enquiry desk initially, with use of a series of extremely good printed guides (one for each database), or by subject librarians on-the-spot or by appointment.*

- *Provide introductory drop-in sessions on a regular basis. Follow-up needs referred to subject librarians who deal with them either individually or as part of a formally arranged session/postgraduates information skills course.*

- *If possible, will give a brief session. Encourage them to make an appointment and to invite three or four others to join them.*

- *Regular clinics are held by subject specialists for those with difficulties.*

3.5   Use of CBT packages

In comparison to the 1991/92 CTILIS survey, when only seven libraries were using either commercial or in-house computer based tutorial packages for some aspect of user education training (Table 3.7), this survey found that 31 libraries were using such packages[1]. Of these, 20 were in-house developments (Table 3.8). This compares to only three in-house developments as indicted in the 1991/92 survey; an increase of 667%.

Table 3.7   Libraries using CBT packages in 1991/2

Bournemouth	Hypertext software has been used to develop a library orientation program for incoming students.
Coventry	In-house CBT package for computer science students.
Heriot-Watt	Not specified.
London Medical College	Medline tutorial (commercial).
Nottingham	Cambridge Scientific Abstracts, Medline (commercial).
Southampton	Hypercard program developed.
Scottish Agr. College	Typing package (commercial).

The majority of respondents (85%) felt that CBT packages did have a valid place for elements of user education training. Eleven percent felt that they possibly did; only one percent felt that they were not an appropriate medium. This was because they felt that:

They are difficult to update, and require many PCs.

Three percent of libraries did not respond. This compares to the 71% that felt in 1991/2 that:

"In principle students would be able to use software on their own to teach themselves information skills, if such software were made available to them" (7).

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[1] It should be noted that at the time of this survey the TLTP information and study skills packages developed by Glasgow University were not in widespread use as they had only just been made available nationally.

Table 3.8   Libraries that were using CBT packages in 1995

Aberdeen	*"Computer Assisted Library & Information Skills (CALAIS)";* library, CD ROM and network guides.
Belfast	General in-house computer aids being developed to help users find information on availability of information based topics throughout the whole system and worldwide.
Birmingham	*"Electronic Library Guide"* is used to introduce users to library services.
Bournemouth	Hypertext interactive induction package, *"Hitchhikers guide".*
Coventry	We have a *"Hyperguide"* to the library, made available on the university network for new students (plus anyone else).
East London	Used MS PowerPoint for rolling OPAC tuition.
Glasgow	Bio-labs tutorial; choosing books and journals; library search skills; computer sources; study skills; guide to electronic sources.
Heriot-Watt	Toolbook general guide to the library.
Hertfordshire	Using Mosaic.
Humberside	Basic guide to Learning Support Services (pamphlet) was mounted onto network; on student access via touchscreen. Also developing computer programme; a delivery of basic media skills, eg using a camcorder.
Liverpool John Moores	We have developed an interactive multimedia guide to learning services called *"Infopoint".*
Middlesex	We are making a CD ROM. We are using in-house programme to support learning initial IT skills.
Napier	Our information systems team, in conjunction with reader services have developed a hypertext introduction to library services using Toolbook.
Newcastle	Basic introduction to the library. Introduction to CD ROM.
Nottingham	*"CALIBRE";* designed using Authorware and covering general library facilities and guide to subject searching, maps and floor plan, computer resources.
Nottingham Trent	*"Researching a topic: An interactive guide".* Devised for urban surveying students, but applicable to most searches of LIS resources.
Portsmouth	Hypertext library guide.
Sheffield Hallam	Interactive CDI *"ERIS"* – on IT information skills – now piloting CDI induction.
Thames Valley	Basic instruction to wordprocessing, downloading, from PC, OPAC.
No name	Package for electronic database searching.

The main provisos for those who felt CBT packages did have a valid place in user education training were:

- That the packages could be adapted to individual institutions requirements or be broad enough to be applicable everywhere.
- That sufficient hardware be available within the institution to run the packages.

Comments on the validity of using CBT packages as a method of delivery can be found in Table 3.9.

Although not directly asked in what way they would use a CBT package, a number of respondents commented on this, indicating that they would only use such packages as reinforcements to their current training programmes, rather than as replacements. They would use them:

- *As a complement and not to replace individual/group personal help.*

- *As an aid rather than a replacement for post inductive sessions.*

- *As refresher training or as an alternative to more traditional methods (but not as a replacement).*

- *To reinforce initial training; to help students who missed the training etc.*

In general, most respondents' felt that their institution's attitude towards computer based training was good. Only 19% felt that their institution's attitude was 'indifferent' and only 3% felt that their institution's attitude was 'negative'. The majority felt that their institution's attitude was either 'very positive' (16%) or 'positive' (62%).

The survey confirmed that at least in principle CBT packages were a valid delivery method for elements of user education.

Table 3.9   Comments on the validity of using CBT packages as a method of delivery

- *Provided they represent close correlation to our services or can be fixed to do so.*

- *So long as they can be adapted to individual institution's requirements or are broad enough to be applicable everywhere, but still useful.*

- *Particularly interactive packages. Resources limit the access – not enough hardware.*

- *But only if they could be networked campus-wide. Availability of terminals is a big problem for us.*

- *If tailored to local circumstances (eg classwork format) or carefully made very general.*

- *If we had sufficient hardware and systems backup.*

- *If enough computers available.*

- *Providing there was sufficient hardware available to allow students to access the package.*

- *As long as they fulfil local needs.*

- *As long as there was scope for customising the package to suit the needs of an individual institution.*

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7   Op cit 1.

CHAPTER 4   DELIVERY METHODS AND ATTITUDES TOWARDS CBT PACKAGES

4.1   Background

Libraries that indicated in the survey questionnaire that they had developed CBT packages were asked to supply a copy of their materials and these were made available at workshops. Initially workshops focused only on evaluations of the individual CBT packages (discussed in Chapter Five). However it was decided part way through the project that it would also be useful to have background information on workshop participants. This would provide some context to the evaluations and provide further evidence as to the potential viability of such packages as delivery methods. It would also provide further data on delivery methods. A profile form was devised of which all students and about 50% of librarians attending workshops completed. Librarian profile forms focused on current delivery methods and attitudes towards CBT as a delivery method (Appendix D). Student profile forms sought not only to establish attitudes towards CBT, but also to set in context student experience and expectation as regards user education (Appendix E).

4.2   Librarian profiles

Sixty-eight librarians completed profile forms from 55 different higher education university or college libraries (Appendix F). This was about half of all librarians that participated in the workshops and can be considered a representative sample. The forms sought to establish the current and potential position of CBT packages, and their appropriateness as a delivery method.

It had already been established through the earlier surveys that some libraries were using CBT packages as a method of delivery (1). Although this number appeared to be increasing (2) these libraries were still very much in the minority. This was further substantiated by this study, as only six libraries were actually using CBT packages (Figure 4.1). The most popular delivery methods being verbal presentations, demonstrations and tours of the library.

Figure 4.1   Delivery methods for user education
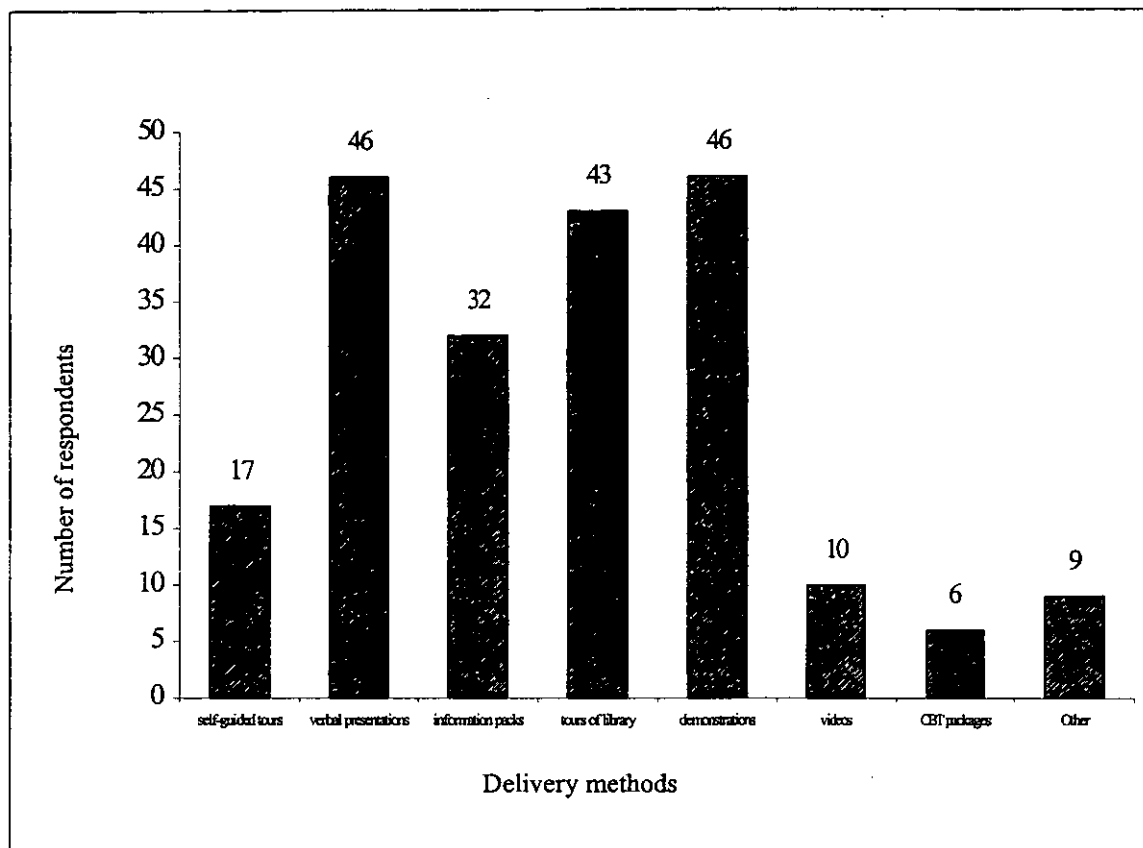
Of the nine libraries that indicated that they used methods other than those listed, four used workbooks, three held group activities, one had an integrated information skills programme in the curriculum, and one held an information fair:

Open for approximately two weeks, students drop in, pick up information and ask questions at stands (Librarian 36).

Nearly all libraries (89%) used a combination of at least three different delivery methods for their user education programme. The six libraries that were currently using CBT packages as a delivery method were all using them in conjunction with other methods.

Although participants were not asked about restrictions on the type or number of delivery methods, one library that offered only two delivery methods (demonstrations

and a CBT package) commented that this was due to low staffing levels and a consequent reluctance to offer any user education. They used their CBT package:

> *As a solution to answering basic directional enquiries, and giving basic information about the library (Librarian 48).*

Although only six libraries were currently using CBT packages as a delivery method, 35 stated that they were in the process of considering or developing such packages. Many cited increasing numbers of students, reduced resources and the need for greater flexibility as reasons for this:

> *Increasing student numbers and fewer resources/staff time limited (Librarian 3).*

> *Allows students to access information when they need it, at their own pace - saves staff time (Librarian 4).*

> *To be able to free up staff-time and to encourage independent learning (Librarian 68).*

Of the nine that indicated their libraries were not in the process of developing or considering CBT as a delivery method, five did not say why and four were looking at other methods generally:

> *We are constantly looking at new ways of carrying out user education (Librarian 26).*

The majority of librarians' (43) felt that CBT packages were definitely an appropriate medium for user education. The reasons given for this included their availability to be accessed at any time and the fact that the user could go through them at their own pace (Table 4.1).

Table 4.1 Comments from librarians who felt that CBT packages were an appropriate medium for user education

- *CBT could be referred to when needed at users own pace (L1).*

- *For some students who have missed the initial induction programme (L3).*

- *Provided that programs use the particular strengths of the media - not just a library guide transferred to a screen (L5).*

- *Provide well-defined parameters for instruction. Can be used at any time rather than waiting for subject librarian to be available (L6).*

- *It provides a good medium for distance education students, although needs to be completely self-sufficient because there can be no face-to-face back up, except perhaps via a help desk (L8).*

- *Advantages for dealing with larger group (if hardware is available) (L18).*

- *Self-paced, saves library time (L25).*

- *Library needs self-sufficient initiatives (L36).*

- *Resource based learning is the most favoured medium of education at present - students favour this way of learning (L38).*

- *Not only do they educate users in library skills - also help to build computing skills at same time (L40).*

- *Useful as a part of a range of media (L45).*

- *Provided there are enough computers for the students to work on (L50).*

- *To enable self-help and re-enforcement of formal inductions (L53).*

- *Increasing student numbers, courses, modules etc. Increasing self directed learning approach (L61).*

- *As an aid to traditional methods of delivery and also loaded on network for self-access (L65).*

- *These packages ensure help is at hand regardless of staffing levels (L72).*

- *If they can be adapted. There is some resistance to generic open learning skills - need to be tailored in-house (L73).*

- *Computers are becoming part of the furniture. CBT can help cope with increasing student numbers. Answer many obvious questions (L74).*

- *Give users an additional option, if they miss out on tours, etc. - or prefer to learn on their own (L76).*

- *Allows students to work at their own pace (L77).*

- *User-friendly - no time restrictions (L91).*

- *Allows students to control the pace of learning; at their time of choosing (L99).*

Although not directly asked in what way they would use a CBT package, 11 librarians felt that they should be used in addition to existing methods rather than as a replacement:

But only when used alongside other methods. Not always appropriate for all students (Librarian 56).

All the other librarians (except one who did not respond) felt that CBT packages were a possible valid delivery method for user education. Thirty-one librarians had seen a CBT package for user education before. There was however no significant difference in opinions as to the validity of CBT as a delivery method between those who had seen a CBT package for this subject before, and those who were about to see them for the first time (Figure 4.2).

Figure 4.2   Validity of CBT packages as delivery methods
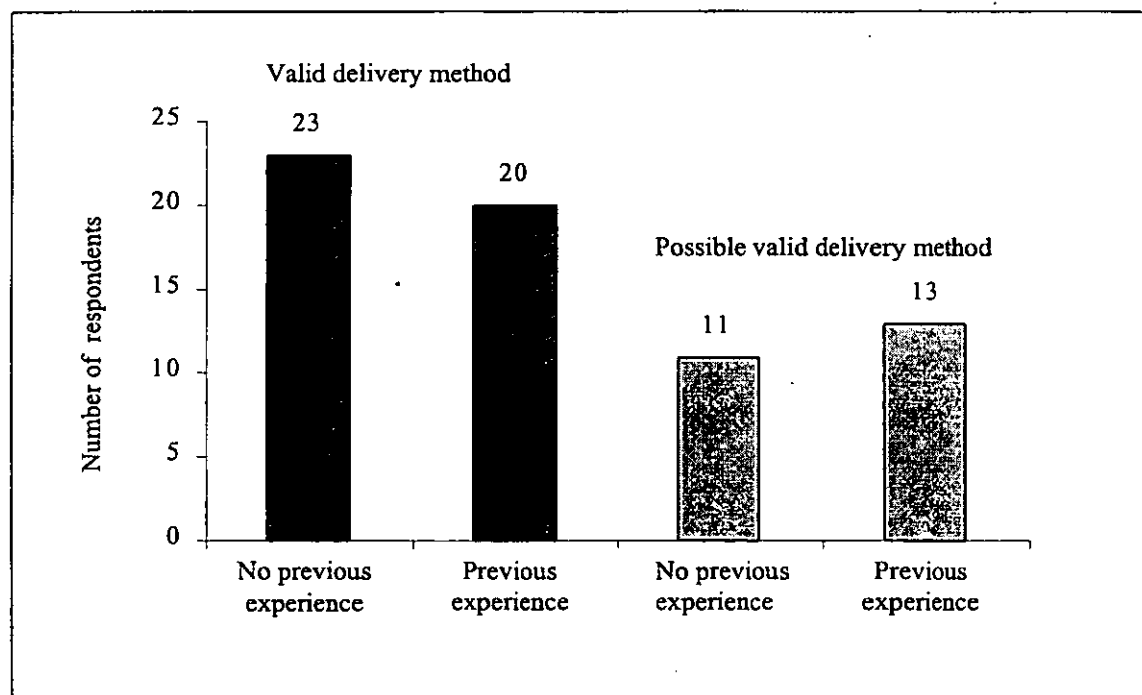
Analysis of the profile forms established that although CBT packages were not being widely used by workshop participants they were at least being considered as a delivery method by over 60%. It also further substantiated earlier surveys that CBT packages were at least potentially a viable delivery method for elements of user education.

4.3   Student profiles

Profile forms were completed by all student participants; twenty-six undergraduate and 23 postgraduate students (Appendix G). All were full-time students and were just starting a course in the Department of Information and Library Studies (now the Department of Information Science) at Loughborough University. Forms sought not only to establish attitudes towards CBT, but also to set in context student experience and expectation as regards user education.

Most students' (37) had experienced some previous user education. This was mostly confined to tours and information leaflets:

At Liverpool University a tour was given to introduce us to the library. A package of leaflets was handed out (Student 15).

Few had experienced (or could recall) anything other than this. Twelve students (seven postgraduates and five undergraduates) felt that they had received no previous user education. However all students felt that user education was necessary:

To maximise use of library facilities to help study, produce work and equip for professional life (Student 21).

Because very often you do not know what is available in a library and how to exploit resources fully. Some guidance is required to do that (Student 1).

As an undergraduate I received no such user education and took much longer to use the library efficiently and confidently (Student 11).

The majority of students expected their user education programme to be comprehensive and cover a wide range of topics (Table 4.2). All students felt that a tour of the library and all students except one felt that an introduction to the OPAC should be provided for new students.

Table 4.2   User education expected by students

	Students (total responses = 49)		
	New	Existing	New or Existing
Overview of library services	46	21	48
Tour of the library	49	7	49
Introduction to specific subjects	32	32	47
Introduction to subject specialists	20	33	39
General information training	36	30	44
Introduction to OPAC	48	15·	49
Introduction to CD ROMs	35	34	46
Introduction to Internet	25	34	42
Online searching	25	33	39
Basic IT	29	24	36

Interestingly topics that might be considered non-traditional by the library, which catered for the development of skills, which could be considered to have a long-term value to students, were also expected. Ten students (eight undergraduates and two postgraduates), felt that all the listed services should be available to new students. Twenty-seven students felt that all the listed services should be made available to either new or existing students. On average most students expected their library to provide seven of the listed services for new students and five for existing students.

The most popular expected delivery methods for user education were tours, information packs and CBT packages (Figure 4.3). Given that most students had experienced user education in the form of tours and information packs their popularity was not surprising. Nor was it surprisingly that many had cited self-guided tours as this was one of the main methods of delivery employed at Loughborough University. What was unexpected was the high number of students that expected CBT packages. Whether they were influenced by the fact that they were about to evaluate such packages or whether in this increasingly technological environment they expected this medium to be used is not known.

Figure 4.3   Expected delivery methods
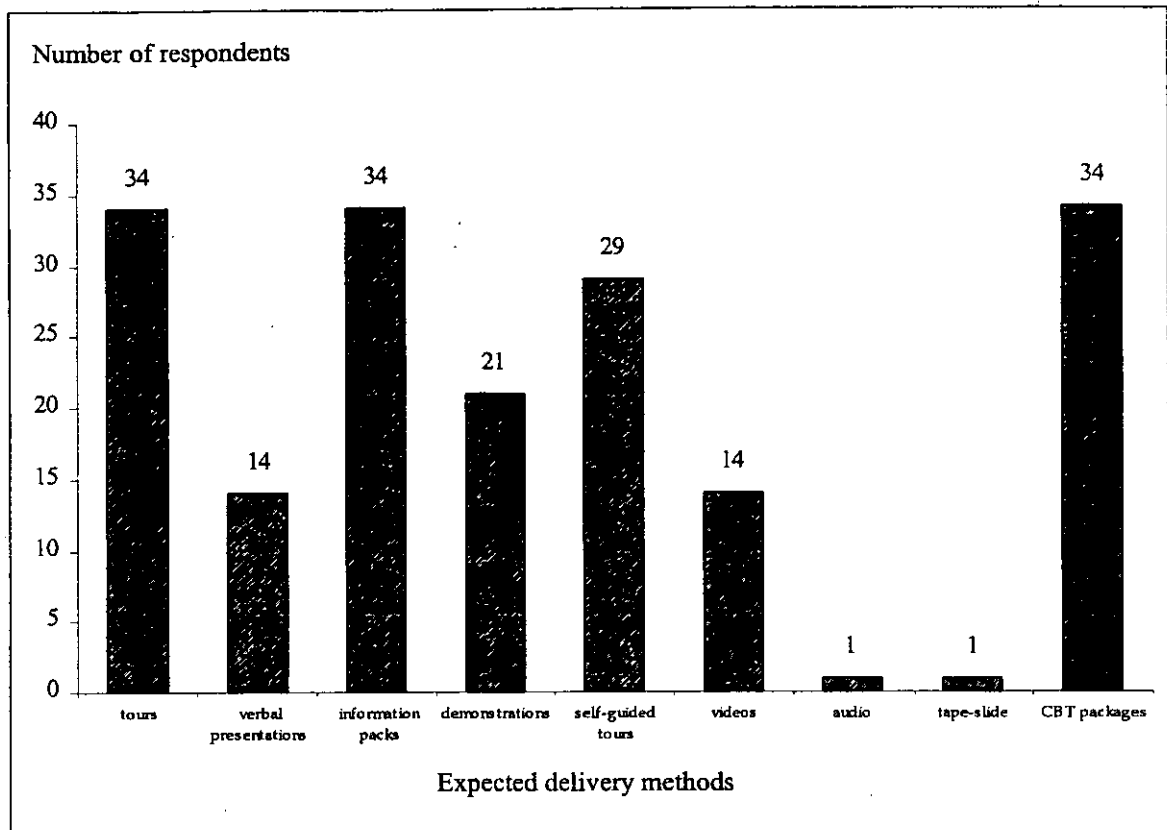
Most students (41) felt that a combination of at least three different methods of delivery were necessary for introductory user education. Two students felt that the type and method of delivery was very much dependant on the size of the institution:

> *Methods to some extent depends on the size of the library, but I think that staff involvement is ideal if possible (Student 24).*

> *I feel that a tour and information pack should be combined. However the method of delivery must be adapted to the size and organisation of the institution (Student 6).*

Thirty-nine students indicated that they had previously used CBT packages. They had mainly covered basic IT topics; none had seen one specifically for user education. Opinions towards specific packages used were positive, with well over half specifically noting that they had been useful:

WordPerfect for Windows - very effective. Very good for revision and refreshing to use (Student 11).

IT - it was extremely helpful; allowing me to take things at my own pace and to repeat things if necessary which was invaluable (Student 24).

Thirty-six students felt that CBT packages were an appropriate delivery method. However six felt that they needed to be used in conjunction with other methods:

Valid, but seldom sufficient in themselves - especially for teaching more "intellectual" skills, rather than purely practical ones (Student 32).

Other comments as to the appropriateness of CBT packages as a delivery method for user education can be found in Table 4.3.

Of the 13 students that felt that they were possible methods of delivery, two felt that their validity depended on the computer experience of the user:

Not everyone is computer literate; therefore it alienates a sector of users (Student 20).

Three felt that it depended on the aims and content:

It very much depends on what the tutorial is aimed at doing. It needs to be of some use, rather than just providing useless information (Student 47).

Two felt that other methods were more appropriate, and six felt that it depended on the design:

If they are simple enough and it is easy to get around within them. Also if they can capture the interest of the user (Student 27).

No one felt that they were an inappropriate delivery method.

Table 4.3   Comments on CBT as valid method of delivery

- *A good package provides an overview of the subject that a user can work through in their own time at their own pace. They seem to be a good starting point (S1).*

- *They are ideal for teaching software packages or computer use e.g. how to use the OPAC, basic CD-ROM or online searching (S2).*

- *Personally, I am for the interactive mode of learning where the user is a participant (S3).*

- *It enables people to learn at their own pace and also they can save instructions on disk for reference at a later date (S14).*

- *Some of them are very interesting - you can explore in them and may learn more by doing this than by just being given a handout (non-interactive) (S15).*

- *Tutorials are interactive and can be followed at users pace and convenience. The only problem is not finding the time to undertake non-obligatory work (S33).*

- *As long as they are designed to catch and maintain the user's attention and concentration then they will work (S34).*

- *Provided they are on a Windows system because they are easy to use and you can find the information you want and ignore that which you don't (S9).*

- *If simple, straightforward and built up in small packages (S21).*

- *Allow for interactivity and ability to control pace of instruction (e.g. skip material, go back etc) (S36).*

- *CBTs allow the user to learn effectively and quickly, but they can become tedious without changing graphics, styles or interactivity (S38).*

- *If they contain sufficient practical/realistic interactivity through tasks, examples etc (S41).*

- *Allows users to work at own space and makes them think about information rather than let someone lecture them (S23).*

- *They can be an enjoyable way of covering topics at their best (S44).*

- *It allows independence for learning and if subject content is adequate it can cater for all needs (S24).*

- *A thorough grounding with the chance to progress when happy (S25).*

- *It is more fun than reading a book or leaflet print (S10).*

- *I felt a good package is very effective as it makes you feel in control (S46).*

- *If the package is well structured and designed as well as interactive, it can be a useful source of education (S43).*

- *Concise method for explaining huge amounts of information. Works always as reference if parts have been forgotten (S29).*

Student's opinions as to what they felt a CBT package for user education should contain were mixed. Fourteen students focused on the actual information content required, such as, how to use library resources. Two students did not respond and the others focused on different design attributes such as clear instructions for use; clear structure; aims stated; good use of colour and graphics and interactivity:

> *The aims of the package - what it is trying to achieve. Clear instructions on how to use the package and how to navigate around it. A clear structure showing how the information is laid out (Student 1).*

> *Light heartedness, as they will be optional; clear, easily accessible menu structure, statement of aims; regular, built in questions to check understanding (Student 32).*

Twenty-seven students felt that the best way of using a CBT package was to work through only the sections that they felt were valuable; two felt that they should work through all of it, and nineteen felt that they should work through all of it initially and return to it to look at specific sections when they needed to.

As with the librarians, student comments regarding CBT packages were very positive. They not only felt that they were valid methods of delivery but many also expected them.

References

1   Rowland, F. *CTILIS questionnaire survey on library user education (1991-2).*
    (URL: http://info.lut.ac.uk/departments/dils/cti/ctilis_questionaire.html).
    [20.11.1994].

2   As reported in Chapter Three and published by the author of this thesis.
    Hopkins, T. *User education in academic libraries: Results of 1995 CTILIS survey.*
    Loughborough: CTILIS, 1995, p 16.

CHAPTER 5   CBT PACKAGE EVALUATIONS

5.1   Background

Libraries that indicated in the 1995 questionnaire that they had developed CBT packages were asked to supply copies. Packages developed by projects such as the Teaching and Learning Technology Programme (TLTP) that were library based were also collected. These packages were then made available to librarians via a series of workshops, where they were examined and evaluated in detail. The aim of the workshops was:

- To examine the success and viability of CBT packages as a delivery method by evaluating specific individual packages in terms of their structure, content and overall design.

- To identify design factors that might make a good CBT package, through the individual evaluations.

In the first instance it was decided to concentrate only on the opinions of librarians. As the main teachers of user education they would have to be satisfied with the content and design of such packages if they were to become a viable delivery method. However since the main target audience for the packages were students it was also decided for comparative purposes to elicit some student opinion. A workshop with undergraduate and postgraduate students at Loughborough University was also held.

5.2   Workshops

In an attempt to obtain a representative sample of librarians from a number of different institutions, workshops at different geographical locations were arranged through CTILIS over a three-year period. The workshops focused on eleven core CBT packages; four were generic (non-site specific) packages and seven were packages created by particular institutions for specific use in that institution. Participants were asked to consider the packages individually and not comparatively. Although it was possible that

subconscious parallels between packages might have been made, this was counterbalanced by the fact that participants would not have evaluated the same packages or in the same order. Both librarians and students were able to choose the specific packages they wished to evaluate and look at them in any order. Librarian workshops were approximately one and a half hours long and each participant tended to spend about 20-30 minutes examining each package. Student workshops were for one hour and each student spent 20 minutes per package. Most participants evaluated at least three packages, with most evaluating at least one generic (non-site specific) package. Evaluations took the form of a short questionnaire containing both open ended and closed questions.

Although eleven packages were made available at the workshops, participants found it harder to evaluate those that were site specific as they were taken out of context. While it was a requirement for CTILIS that all packages be made available at the workshops, this thesis is based on the evaluations of the generic packages, rather than the site-specific packages.

5.3   Packages

The generic information and study skill tutorials were created at Glasgow University under the Teaching and Learning Technology Programme (TLTP). The university had been successful in gaining funding through TLTP for an institutional wide programme - Teaching with Independent Learning Technologies (TILT). This was concerned with;

> *assisting the widespread, effective introduction of Information Technology (IT) into teaching methods throughout one university (1).*

The Glasgow TILT project covered 19 departments and services, one of which was the university library. The library developed six packages, five of which were made available at the workshops:

> How to Choose Books and Journals
>
> Library Search Skills (general)
>
> Library Search Skills (business)

Computer Sources

Study Skills.

They were all created using Toolbook and a runtime version of this was included so that no additional software was needed to run the tutorial. The other package created (BIOSIS) needed a specific software application to run so was not included. The packages were developed to;

"increase student motivation and ease the pressures of staff time" (2).

A reason that many institutions could identify with. They were not subject specific so that they would not alienate particular users. However two versions of *Library Search Skills* were produced; one with business examples and one with general examples. The packages were not site specific as this had been a requirement of the TILT remit. Consequently they were suitable for use in all academic libraries.

The packages were developed using hypertext, rather than multimedia and were a mix of text, graphics and simple animation. They were designed to be used on open-access as well as part of seminars or tutorials. All the packages were modular in design and contained interactivity in the form of exercises, and activities, which revealed further information. They could all be amended slightly to make them more applicable to the library they were being used in. For example in *How to Choose Books and Journals* the call number could be changed to class mark or shelf mark. Users could make notes while working through the package which could then be saved to disk. Each package had an *About the tutorial* option which listed the developers and a *How to use the tutorial* option which gave details on how to use the mouse, menubar, notepad and how to reveal further information. However the structure and approach of each package was slightly different. The packages were aimed mainly at first and second year undergraduates (3).

Packages were evaluated at workshops through an evaluation form (Appendix C). One questionnaire was completed for each package evaluated.

5.4   How to Choose Books and Journals

5.4.1   Description

This tutorial gives suggestions as to how the user might choose appropriate books and journals to meet their requirements. It does not deal so much with actually finding the material, but focuses on a series of questions the user should ask in order to evaluate the usefulness and appropriateness of a book or journal. The purpose being to teach the basic skills of critical evaluation. It is designed to be of particular use to those students who have been unable to gain access to books on reading lists or where no reading list has been issued. It is divided into four main sections:

- *Why should I read it?* Explains what information to look at when a potentially useful book or journal has been identified.

- *Is it appropriate for my purpose?* Suggests questions that should be addressed to see if the book/journal is appropriate.

- *What does it tell me?* Gives suggestions on how to skim the text to gain a further understanding of its contents.

- *How is the information presented?* Suggests how to analyse the content in more detail by considering the author's intention, reliability and bias.

There is also an *Introduction*, which gives suggestions on how to find books/journals for specific subjects; an *Examples and Exercises* section so that the user can test their knowledge and a *Summary* section. There are five multiple-choice questions in *Is it appropriate for my purpose?* And nine questions in the main *Examples and Exercise* section. The user is given their score in both these sections and in the latter has the option to be timed.

The tutorial is a mix of text, graphics and very simple animation. There is a standard menu bar at the bottom of most screens which allows the user to move forwards and backwards; take notes; go to the contents page; go to the title page and quit. The

package is modular and can be done in any order. However when undertaking *How is the information presented?* (even if the user has chosen to do this first) the user is not returned to the main menu screen, but goes automatically to the *Examples and Exercise* section. The package can be amended slightly to make it more applicable to the library it is being used in; the 'call number' can be changed to 'class mark' or 'shelf mark'. The suggested time of completion for the package is half an hour.

5.4.2   Evaluators

Twenty-seven librarians and 14 students (six postgraduates and eight undergraduates) evaluated this tutorial. Out of the 27 librarians who evaluated the tutorial 18 completed a profile form. Only six librarians had previously seen a CBT package for user education. No one currently used CBT packages as a method of delivery, but 13 librarians indicated that their library was in the process of considering or developing them. Eleven librarians felt that CBT packages were a 'valid' delivery method for user education and seven felt that they 'possibly' were. No one felt that they were 'inappropriate'.

Out of the 14 students, 11 had used a CBT package before (although not for user education). All students felt that user education was necessary and 12 felt that CBT packages were a 'valid' method of delivery:

It enables people to learn at their own pace (Student 14).

The other two students felt that they were a 'possible' valid delivery method: one felt that they needed to be used in conjunction with other methods and the other felt that their use depended very much on their design.

5.4.3   Structure and design

Overall both the students and the librarians responded fairly positively to the structure of the tutorial (Table 5.1). This was interesting as the main contents of the tutorial were presented in two different ways - through a tree diagram on the *contents/menu* screen (Figure 5.1) and as a list on the *main menu* screen (Figure 5.2).

Figure 5.1   Contents or menu screen

This screen can be accessed by *click here for contents* on the title screen or by clicking on *menu* from other screens

Four main topics
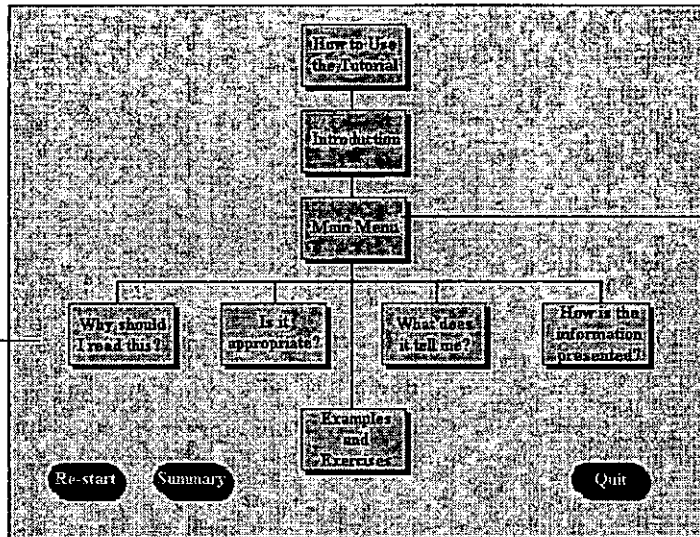
Note: It is possible to work through the tutorial and never see this contents/menu screen

Figure 5.2   Main menu screen
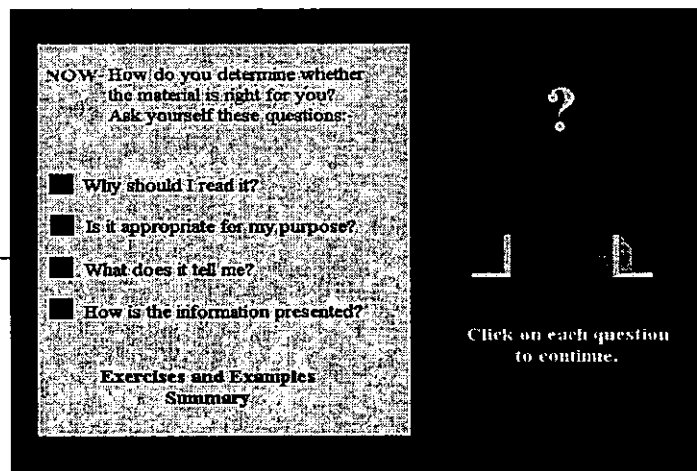
Clicking on main menu in the contents/menu screen above can access the main menu screen. It will also be automatically presented to the user after nine screens if they choose to *click here to begin* from the title screen and continue to work through the tutorial.

This made it possible for users to work through the tutorial and never actually see the overall *contents/menu* screen which gave the clearest indication of the tutorial's structure.

Table 5.1   Structure

	very clear	clear	not at all clear
Librarians	41%	59%	0%
Students	57%	36%	7%
Total	46%	51%	3%

If the user chose from the first screen *click here to begin* they were immediately taken through the introduction of the package. After nine screens they were presented with the *main menu* screen (Figure 5.2). From this screen they could then choose the specific section they wished to do. They would be returned to this *main menu* screen automatically when they had completed a section (except when undertaking *How is information presented?* when they would be taken to the *Exercises and Example* section). Unless they specifically opted to click on either the *contents* button on the title screen, or after that on the *menu* button on the bottom of most screens, they could complete the tutorial and never actually see the *contents/menu* screen. They would therefore not see the tree diagram which gave the clearest view of the package's structure. Although it was not noted how the evaluators worked through the tutorial since most felt that the structure was 'clear' or 'very clear', it is likely that they would have accessed the tree diagram at an early stage. The one student who felt that the structure of the tutorial was 'not at all clear' probably did not see the *contents/menu* screen where the contents were displayed as a tree diagram:

> *The only problem was the poor structure - either you keep going forward*
> *or start again. It is not very obvious as to where you are - difficult to*
> *access the menu to see an overview of the structure (Student 2).* .

This problem was especially significant for this student, as they had felt that CBT packages were a valid delivery method:

> *Providing their structure is kept simple and the user could work through the sections they felt were valuable (Student 2).*

Another student who felt that the structure was 'clear', did not see the *contents/menu* screen until they had nearly completed the tutorial:

> *A bit confusing to navigate at times and impossible to jump anything or go back to anything. Just found that I can click on contents to do this, but it did not actually say that I could do this anywhere (Student 11).*

Over half of all evaluators (63%) felt that they were 'aware at all times' of where they were in the tutorial (Table 5.2). This was despite the fact that there were no titles on screens to indicate which section the evaluator was in, and only the exercise screens were numbered. There was also no indication of how many screens made up a particular section or which was the last screen of a section. This suggests that for the most part it was possible for the evaluator to gauge where they were in the tutorial from the actual information content on the screen and from the fact that the package was only divided in to four topics. They could also have been assisted by the fact that when a section was completed, the section's title on the *contents/menu* screen changed colour. An open book symbol also appeared alongside the title of the completed section on the *main menu* screen.

Table 5.2   Awareness

Awareness at all times	yes	sometimes	no
Librarians	67%	22%	11%
Students	57%	36%	7%

Less than 10% of evaluators felt that they were 'not aware at all times' of where they were in the tutorial:

> *The core information and teaching modules are good. What needs to be refined are the navigational aids such as telling people where they are in the package (Student 1).*

> *You really need a miniature menu bar in the corner indicating where you are in the structure of the package as it is not always clear (Librarian 86).*

All librarians (41%) who felt that the structure of the package was 'very clear', also felt that they were 'aware at all times' of where they were in the tutorial.

Overall the evaluators found it 'easy' to move between modules (Table 5.3). This is not surprising as although there was not a direct link from module to module, there were only four main modules and these could be accessed easily from the menu screens.

Table 5.3   Navigation

Movement between modules	very easy	easy	not at all easy
Librarians (nr =18%)	26%	56%	0%
Students	50%	43%	7%
Request help/terminate *	**very easy**	**easy**	**not at all easy**
Librarians (nr =15%)	30%	48%	4%
Students	29%	57%	7%

* Evaluators who gave more than one response (ie differentiated between help and terminate) have not been included.

Evaluators did not have to complete a particular module before moving on to another. They just had to click on *menu* on the standard menu bar (Figure 5.3) and they would be presented with the contents page from which they could then choose another module (Figure 5.1). Or they could click on *home* on the standard menu bar and they would be taken to the main menu screen, where they could access all main modules. However

from this screen it was not possible to go to either the *Introduction* of the package or the section entitled *How to use the tutorial.*

Figure 5.3   Standard menu bar

Home button takes the user to the title page of the tutorial

Menu button takes the user to the content page

Allows the user to make their own notes as they work through the package.

Arrows allow user to move forwards and backwards

Allows user to quit tutorial

This standard menu bar with the option to move modules via the menu button and the option to quit, was on all screens of the tutorial except for the contents page; title page; about the tutorial page and the main menu page.

The student who felt that it was 'not at all easy' to move between modules clearly did not realise that they could move modules via these screens as they noted that the only way to move modules was;

to press the forward button (Student 2).

This student had also felt that the structure of the package was 'not all clear' and it is therefore likely that they never actually saw the main *contents/menu* screen.

Although nearly double the number of students, in comparison to librarians felt that it was 'very easy' to move between modules, it should be noted that a large percentage of

librarians did not respond to this question. Perhaps those that felt it was 'easy' as opposed to 'very easy' would have preferred the four modules to be listed on the menu bar, so that they could access them directly.

Most evaluators felt that it was 'easy' to request help or terminate the tutorial (Table 5.3). However although the option to quit was on most pages, there was no help option (Figure 5.3). It is not known how this would have affected the evaluator's rating. Only two evaluators differentiated between the option to terminate the tutorial and request help; both felt that the option to terminate was 'very easy' while the option to request help was 'not at all easy'.

As might be expected since the tutorial was mouse driven most librarians (78%) and students (78%) felt that some prerequisite mouse skills were necessary to do the tutorial (Table 5.4).

Table 5.4   Prerequisite knowledge and skills

	considerable	moderate	small	none
Computing knowledge				
Librarians (nr= 7%)	0%	11%	30%	52%
Students (nr= 7%)	7%	14%	29%	43%
Mouse skills				
Librarians (nr= 4%)	7%	30%	41%	18%
Students	14%	7%	57%	22%
Subject knowledge				
Librarians (nr= 11%)	0%	4%	37%	48%
Students (nr= 14%)	0%	14%	29%	43%
Keyboarding skills				
Librarians (nr= 7%)	0%	4%	15%	74%
Students	0%	0%	21%	79%

About half of all evaluators also felt that some computing skills were needed. Since the package itself was computer-based this was also a reasonable expectation. Most felt that

only a 'small' amount of knowledge or skills were necessary, although one student felt that 'considerable' computing knowledge was needed in order;

to save the information on to a formatted disk (Student 11).

However to assist with required mouse and computing knowledge brief instructions on using the mouse to reveal further information and on using the notepad function, to save notes to disk were given in the *How to use the tutorial* section. This section could be accessed both from the *title* page and from the *content/menu* page, so evaluators could return to it at any time.

Even though the tutorial was aimed at complete beginners and therefore should potentially have required no subject knowledge, over 40% of evaluators felt that some subject knowledge was necessary. Seventeen percent of evaluators felt that no prerequisite skills or knowledge at all were necessary. Thirty-one percent of evaluators felt that no prerequisite knowledge or skills except mouse skills were necessary. Twelve percent felt that some prerequisite skills or knowledge were necessary in all areas.

5.4.4   Content

As can be seen in Table 5.5 most evaluators felt that the tutorial's aims and objectives were either 'clear' or 'very clear' and that it met its intended purpose.

Table 5.5   Aims and objectives/intended purpose

Aims & objectives	very clear	clear	not at all clear
Librarians (nr=11%)	33%	56%	0%
Students (nr=7%)	36%	36%	21%
Total (nr=10%)	34%	49%	7%
Intended purpose	completely	to some extent	not at all
Librarians (nr=8%)	44%	48%	0%
Students	79%	21%	0%
Total (nr=5%)	56%	39%	0%

This is interesting as the aims and objectives and the tutorial's intended purpose were not explicitly stated. However it is likely that most evaluators were able to understand the underlying aims and objectives and the tutorial's intended purpose from the tutorial's title - *How to Choose Books and Journals* - and the way in which the topics covered were displayed as questions:

- Why should I read it?

- Is it appropriate for my purpose?

- What does it tell me?

- How is the information presented?

The students who felt that the aims and objectives were 'not at all clear' felt that they should have been explicitly stated:

Some kind of introduction needed, setting out aims and objectives and telling you where to start! (Student 11).

One student also commented that they felt that the button on the first page - *'About the tutorial'* - was misleading as it listed only the developers names; they had expected it to give the aims and objectives of the package.

Substantially more students than librarians felt that the package met its intended purpose 'completely'. Since the intended purpose was not stated, evaluators would have had to base their opinion on their expectations and their knowledge of this topic, alongside the actual content. Librarian's opinions were likely to be more varied based on their knowledge and experience of having to teach the subject. All students who felt that the aims and objectives of the tutorial were 'very clear' also felt the tutorial met its intended purpose 'completely'.

The tutorial in terms of its subject coverage for this topic was for the most part considered comprehensive:

All main points concerning searching for books were covered (Student 48).

Good coverage and focuses on essential topics (Student 3).

Only four students and four librarians felt that it needed more information; three felt that it needed more detail on abstracts and indexes; three felt that an introduction should be added; and two felt that there should have been more information on journals:

Should have given equal focus to both books & journals. Students would normally have greater problems with journals (Librarian 1).

Only two evaluators (both students) felt that additional documentation was needed; one suggested a bibliography of further help should be added. The other felt that the summary section ought to be available as a print out, rather than just being able to save it to disk. They felt that users would not necessarily always have a disk with them.

Over half of all evaluators (56% of librarians and 64% of students) felt that the tutorial could be used on its own as a teaching device for this subject to a 'considerable' extent. Forty-four percent of librarians and 36% of students felt that it could be used to a 'moderate' extent and needed either elaboration in certain areas or needed to be used in conjunction with practical exercises. No one felt that it could be used either to a 'small' extent or 'not at all'. All free text comments on the extent the tutorial could be used on its own as a teaching device can be found in Table 5.6.

Overall students tended to rate the information content of the package slightly higher than the librarians with 21% of students rating it as 'very good', 72% as 'good' and only 7% as 'fair'. This compares to the librarians of whom 26% rated it as 'very good', 52% as 'good' and 22% as 'fair'. No one rated it as 'poor' or 'very poor'. This more mixed response from librarians can be possibly attributed to the subjectivity of the topic being covered and their familiarity with it. For example as seen in Figure 5.4, the tutorial tended to indicate a bias towards certain publishers. This bias was clearly not liked by some:

Did not like the opinionated nature of some aspects eg deciding which publishers were worth bothering about (Librarian 20).

Publisher's information was inaccurate and misleading in this section (Librarian 22).

Figure 5.4   Sample page on judging publishers
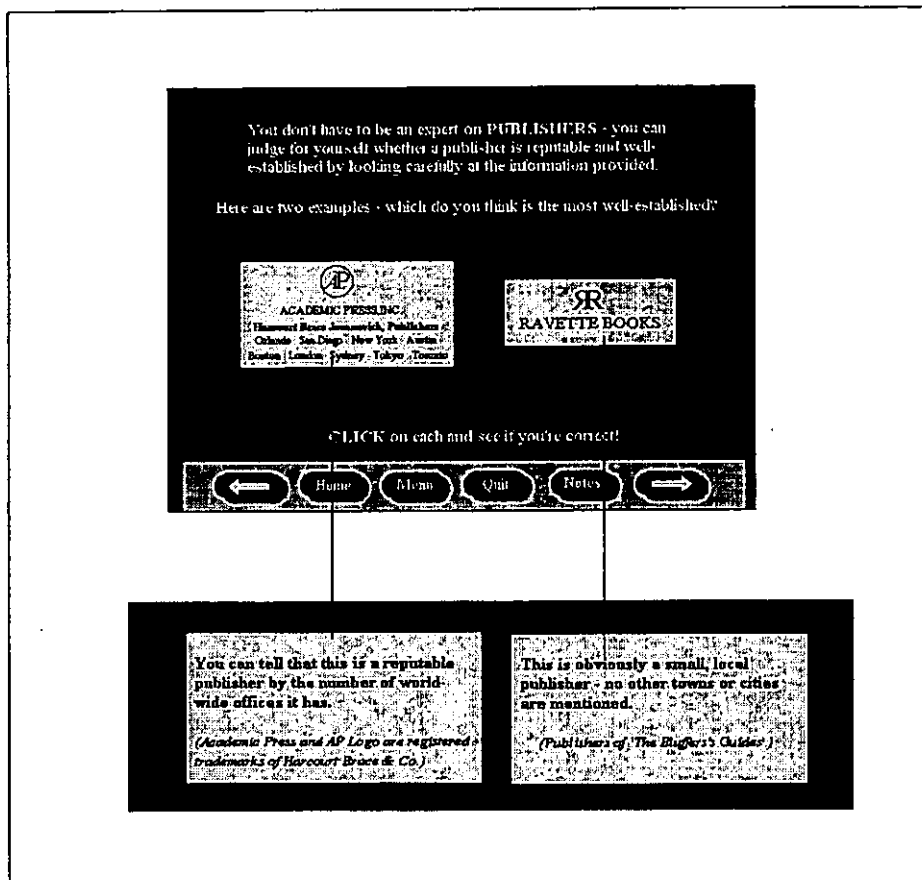
All the librarians (22%) who rated the information content as 'fair' (except one who did not comment) felt that the package was boring and unlikely to hold a student's interest. As one librarian suggested:

Probably more appealing if examples could be modified to suit groups of students in the same way class mark can be changed (Librarian 86).

Table 5.6   Comments on the extent the package could be used as a teaching device for this subject

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Librarians - Could be used to a 'considerable' extent

- *I feel it was a clear introduction to using the library resources (L3).*

- *If you could maintain user interest (L86).*

- *With some user guidance built in on purpose/objectives it could be used independently. It could also be used in a directed way within an Information, Communication or Study type of module and themes reinforced by other means (L87).*

Librarians - Could be used to a 'moderate' extent

- *Students would need to go and locate and evaluate printed sources to establish the value of what they learned and test out their knowledge (L9).*

- *Package unbalanced (eg too little detail on using indexes and too much detail in other places (L10).*

- *Needs elaborating (L15).*

- *Depends on the other user education, which forms part of the programme. Need to reinforce with local information on the collection (L18).*

- *Still think that there is too much information at times (L20).*

- *Still need a lecturer/librarian to really explain critical analysis and need for it in deciding reliability of a text (L22).*

Students - Could be used 'considerable' extent

- *It is good for providing a basic understanding of what to look for when evaluating a book or journal (S1).*

- *Basic information can easily be communicated in this format (S2).*

- *Easy to use - good content and informative (S3).*

- *Very useful 'tips and hints'. Could be used with practical exercises to consolidate (S21).*

- *In conjunction with library exercise or workshop with subject tutors. An excellent foundation library contribution (S32).*

Students - Could be used to a 'moderate' extent

- *A lot of technical terms and information turn up at you all at once. Would probably need some kind of support to answer questions in order to help people retain this information. Notepad useful for this though (S11).*

- *It does well but I think some personal help wouldn't go amiss (S37).*

- *Certainly easy enough to do on its own without instruction (S14).*

5.4.5   Overall impressions

Most students (79%) and over half of all librarians (56%) felt that there was sufficient interactivity within the tutorial to keep the user motivated:

> *Interactivity reveals more and more information - keeps users interest.*
> *Also very simply written - no jargon and easy to understand (Student 2).*

As the tutorial contained interactivity in the form of clicking on buttons to reveal further information and as there were simple exercises to complete this was not surprising. Forty-four percent of librarians and 21% of students felt that only 'sometimes' was there sufficient interactivity within the tutorial to keep the evaluator motivated. Perhaps these evaluators would have liked more exercises, as apart from the main *Examples and Exercise* section there were only exercises in the *Is it appropriate for my purpose?* section. No one answered 'no' to the question *Is there sufficient interactivity to keep the user motivated?* Twelve evaluators specifically commented that they found the exercises and interactivity the most useful feature of the package:

> *The test at the end helped me to know whether I had actually learnt*
> *anything and actually remembered it (Student 9).*

As Figure 5.5 demonstrates the majority of evaluators found the package either 'very enjoyable' or 'enjoyable' to use. All evaluators that felt that it was 'very enjoyable' to use also felt that there was sufficient interactivity to keep the user motivated and that the information content was either 'very good' or 'good'. There was however a discernible difference between the librarians' and students' enjoyment of the tutorial. Although this question was a particularly subjective one, relying on personal preferences perhaps the familiarity that the librarians had with teaching the topic made it less appealing to them. Certainly the librarians who felt that the tutorial was 'not at all enjoyable' commented that they found it boring to use.

Figure 5.5   Enjoyment
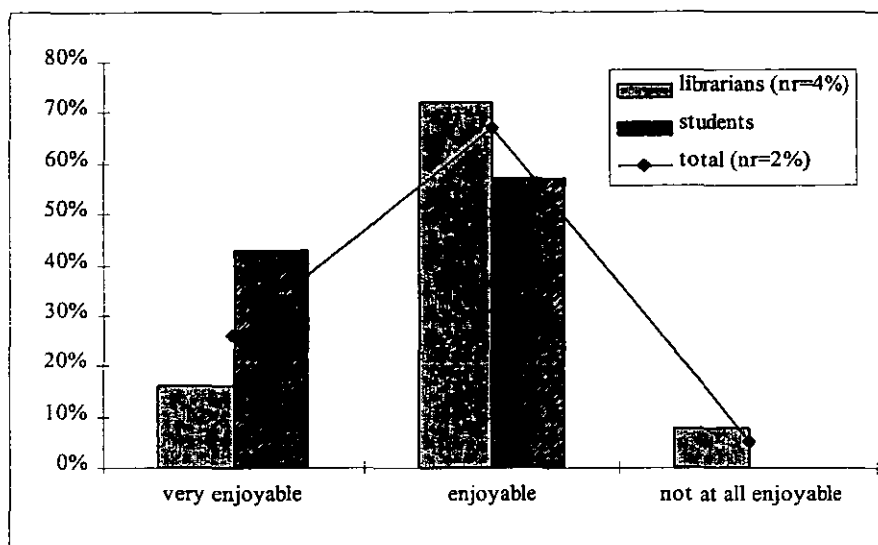
Of the librarians who commented on what they felt the most useful feature or aspect of the package was; eight librarians mentioned the interactivity, with six of these specifically mentioning the exercises. One mentioned the colour and graphics; seven mentioned the structure and design and eight commented positively on aspects of the content:

Depth of help on using different types of library materials (Librarian 6).

However in direct contrast to this, six librarians felt that the content was the least useful aspect of the package:

Some explanations were boring and long winded (Librarian 12).

In addition to these six, one librarian felt that colour and graphics was the least useful feature; one felt that it was the package's structure and design and one felt that there needed to be more exercises:

Wanted to be asked more questions to which could make individual responses to demonstrate how information was being assimilated (Librarian 18).

Of the students who commented on what they found most useful, four mentioned the exercises, one mentioned the content, two mentioned colour and graphics and three mentioned the structure and design:

> *I found most useful -1) items on lists appear one after another - helps to remember them. 2) it was practical (eg the tip to write a summary of main points). 3) the emphasis on the questioning approach to material 4) the flow chart for the menu makes it easy to understand baseline (Student 32).*

Of the students who commented on what they found least useful, four commented on the content, one commented on the colours and graphics used, four commented on the design and one felt that the package was:

> *Rather flat and bland – no humour (Student 16).*

Two students specifically commented that there was no feature or aspect that they did not find useful:

> *Couldn't find any bad points (Student 25).*

Responses to the overall rating of the tutorial in terms of particular characteristics were for the most part favourable (Table 5.7).

Table 5.7   Characteristic ratings

	very good		good		fair		poor	
	Librarians	Students	Librarians	Students	Librarians	Students	Librarians	Students
Colour & graphics	45%	50%	41%	29%	7%	21%	7%	0%
Clarity of instructions	33%	43%	48%	50%	19%	0%	0%	7%
Ease of use (lib nr=8%)	44%	29%	44%	42%	4%	29%	0%	0%
Self-sufficiency	37%	21%	52%	58%	11%	21%	0%	0%
Approach	26%	36%	59%	43%	15%	21%	0%	0%
Interest level	11%	14%	59%	65%	26%	14%	4%	7%

Sixty four percent of students and 52% of librarians rated all the listed characteristics as either 'good' or 'very good'; only 36% of students and 33% of librarians did not rate any of the listed factors as 'very good'. No one rated any of the listed characteristics as 'very poor'.

The characteristic most rated 'very good' or 'good' by the students was clarity of instructions. However apart from interest level this received fewer 'very good' or 'good' ratings from the librarians than all the other characteristics. Basic instructions were given in the *How to use the tutorial* section. For example evaluators were told that they would be asked to click on illustrations or underlined text to reveal further information (Figure 5.6).

Figure 5.6   Instruction from *How to use the tutorial* section

As you work through the tutorial you will be asked to **CLICK** on
other areas such as **illustrations** or **underlined text.**
Doing this will reveal some hidden information.

Try clicking on the picture below.

Home   Menu   Quit   Notes
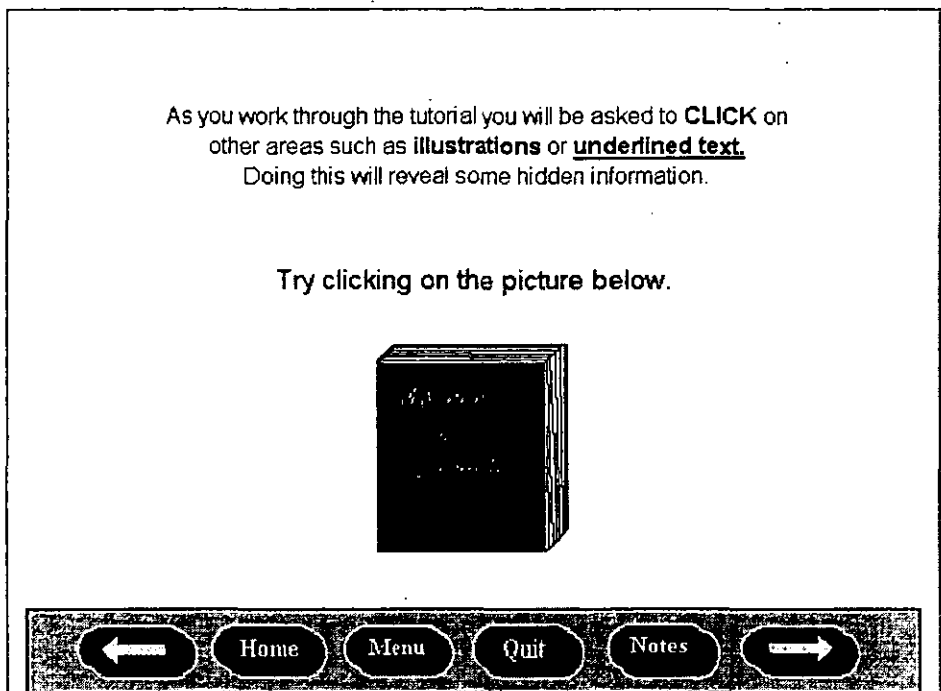
However in some cases there was hidden information behind text or illustrations, but this instruction did not appear on the screen. The emphasis was therefore on the user to

try all illustrations and underlined words. Of the librarians who rated clarity of instructions as 'fair' only one commented suggesting that;

clearer guidance on where to click needed (Librarian L87).

All students except one, rated clarity of instructions as either 'very good' or 'good'. The one student who felt that clarity of instructions were 'poor' noted that the options at the bottom of the screen were not always the same, and that it was not clear as to where the arrow keys took them. They would also have liked instructions as to how to work through the tutorial:

The first screen [Figure 5.7] threw me completely I didn't know where to start (Student 11).

Figure 5.7   The first screen of *How to Choose Books and Journals*
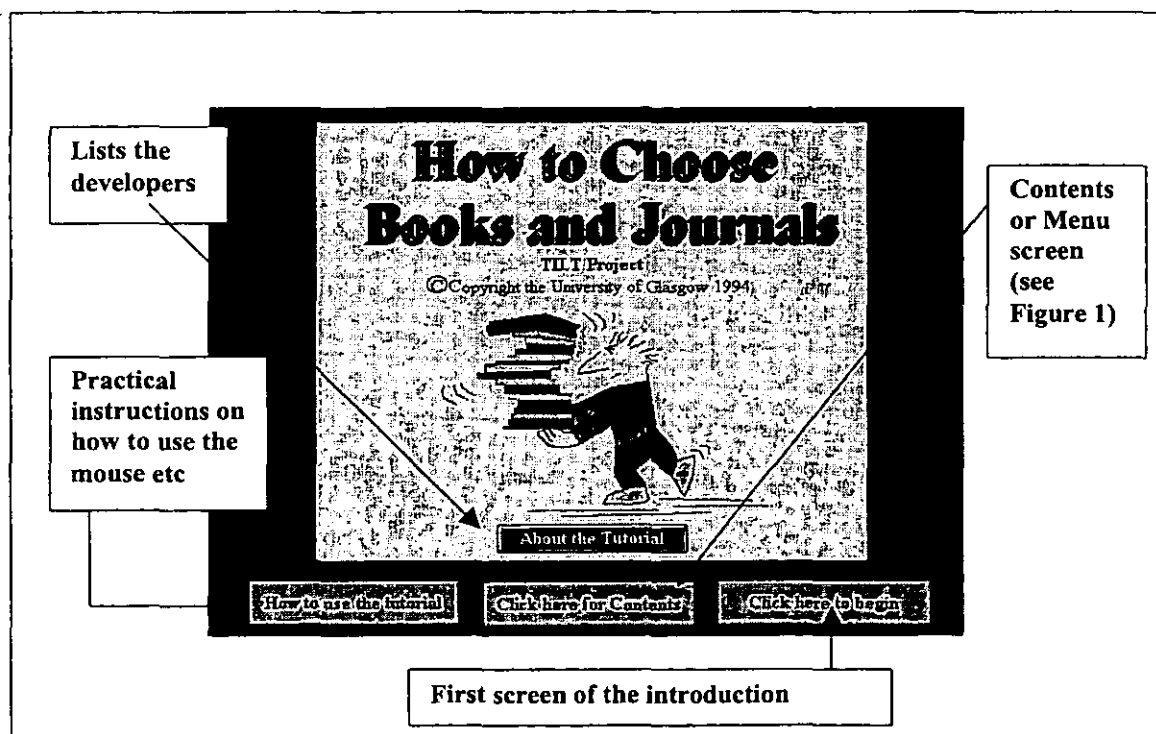
The percentage of evaluators rating the interest level as 'very good' was considerably lower than all the other characteristics. This suggests that evaluators did tend to lose interest in the package as they went along:

It was good for the brand new user but for those with more experience like myself I knew a lot about it already (Student 14).

I think overall I just felt it was a bit obvious - need to carefully choose level of user (Librarian 12).

The simplicity and the subjectivity of the topic being covered and evaluators existing understanding of it are likely to have contributed to this lower rating.

Of those that rated ease of use as 'fair', two did not comment, although they both felt that they were only aware 'sometimes' of where they were in the package. The others felt that the navigational aids needed improvement. Valid comments given that the menu bar at the bottom of the screen was not always the same, there was no consistent page numbering or titling and there were in effect two menu screens:

- A tree diagram displaying all the tutorial's contents - referred to as the *contents* from the title page and thereafter accessed by choosing *menu* from the button bar (see page 82, Figure 5.1).

- a main menu screen listing most but not all tutorial's contents - accessed automatically on choosing *Click here to begin* and automatically at the end of all sections except *How is the information presented?* and by choosing *main menu* from the tree diagram page (see page 82, Figure 5.2).

Of those that rated self-sufficiency as 'fair', four did not comment and two indicated that they felt that the topic of critical analysis could not be taught by a CBT package but needed human interaction. Of those that rated approach as 'fair', three didn't comment and four criticised the content; two specifically mentioned the information on publishers and two made more general comments:

Some of the questions under the four sub-menus were not completely answered - although it was OK (Student 9).

Too much information at times (Librarian 20).

Opinions towards colour and graphics were fairly positive. Two evaluators felt that the colours used were one of the least useful features of the package. One (who rated colour and graphics as 'poor') felt that white text on a blue background was not very easy to read. The other felt that hotwords should have been in a different colour to the rest of the text, however this evaluator rated colour and graphics as 'good'. Another evaluator felt that the lack of stimulating graphics were the least useful feature of the package:

Not enough stimulating graphics - can be boring at times (Student 3).

In direct contrast to this three evaluators commented that they felt that the use of graphics were one of the most useful features of the package:

Large typeface and good use of graphics [most useful feature of package] *(Student 48).*

Since the use of graphics can be a particularly subjective issue, mixed comments and ratings for this characteristic were to be expected.

Most evaluators felt that their overall impression of the package and of its effectiveness as a method of presentation was very positive (Table 5.8):

It provided good graphics and useful information, making it fun at the same time as informative (Student 9).

Of those that felt that the package was only 'moderately effective' and commented, two felt that it was let down by its structure and navigational aids; one felt that it needed more interactivity and graphics, and two felt that it would not hold a student's interest:

I think that many students would lose interest before the end of the package (Librarian 22).

However no-one felt that their overall impression of the package was either 'poor' or 'very poor' and no one felt that it was 'not very effective' as a method of presentation.

Table 5.8   Overall impression and effectiveness

Overall impression	very good	good	fair	poor	very poor
Librarian (nr=7%)	33%	45%	15%	0%	0%
Student	21%	50%	29%	0%	0%

Effectiveness	very effective	effective	mod effective	not effective
Librarian (nr=12%)	33%	33%	22%	0%
Student	44%	28%	28%	0%

In fact all evaluators (except for one student and one librarian) who felt that the package was 'very effective' also rated their overall impression and all the listed characteristics as either 'good' or 'very good'.

Given that the chosen topic of this package dealt with skills rather then facts, the overall reaction to the package was favourable. There were no real differences between librarians and students, which could not be attributed to either the subjectivity of the particular question or the evaluator's familiarity with the topic. There were far more positive than negative ratings from both librarians and students indicating that this CBT package would be an appropriate delivery method for this particular subject.

5.5 . Library Search Skills

5.5.1 Description

Library Search Skills describes the initial steps needed for a user to find relevant information for a project or essay. It deals with the whole search strategy and is divided in to the following sections:

- *Defining Unfamiliar Terms* - this covers the sources a user might need to use to understand words or terms that they are not familiar with.

- *Highlighting Keywords* - this covers how to work out what the main keywords or phrases are when you are given a question or have a project to complete.

- *Broad and Narrow Terms* - how to distinguish broad from narrow terms when searching for information.

- *Synonyms and Related Terms* - how to expand your list of search terms by using synonyms and related terms.

- *The Search Strategy* - provides an overview by summarising the above sections.

Each section has an introduction, and exercises and examples. There are also a number of pop-up boxes, which give further information. The tutorial is modular and the sections can be done in any order. There is a standard menu bar at the bottom of most screens which allows the user to move forwards and backwards (arrows); take notes; go to the contents page (menu button); go to the title page (home button) and quit. The suggested time of completion for the tutorial is between 30 and 45 minutes.

Two versions of the package were available; one used general examples to illustrate points and the other used examples with a business bias.

5.5.2 Evaluators

Thirty librarians and 13 students (six postgraduates and seven undergraduates) evaluated this tutorial. Out of the 30 librarians who evaluated the tutorial 15 completed

a profile form. Only one librarian currently used a CBT package as a delivery method and this was used in conjunction with verbal presentations; information packs and demonstrations. Most (12) had not seen a CBT package for user education before. Ten librarians indicated that their library was in the process of considering or developing CBT packages for elements of user education. Twelve librarians felt that CBT packages were a valid delivery method for user education and two felt that they 'possibly' were. No one felt that they were 'inappropriate'.

Out of the 13 students, eight had used a CBT package before (although not for user education). All students felt that user education was necessary and nine felt that CBT packages were a valid method of delivery. The other four students felt that they were a 'possible' valid delivery method, with two specifically indicating that they felt that they needed to be used in conjunction with other methods.

5.5.3   Structure and design

The structure of Library Search Skills was considered to be positive by most users (Table 5.9).

Table 5.9   Structure

Structure	very clear	clear	not at all clear
Librarians	50%	43%	7%
Students	46%	54%	0%
Movement between modules	**very easy**	**easy**	**not at all easy**
Librarians (nr =7%)	40%	53%	0%
Students	62%	38%	0%
Request help/terminate	**very easy**	**easy**	**not at all easy**
Librarians (nr =7%)	30%	56%	7%
Students	61%	31%	8%

From the title screen users had two options of working through the tutorial. They could either *Click here for contents,* which presented them with a tree diagram showing them the complete structure of the tutorial, from which they could then choose the particular module they wished to do (Figure 5.8). Or they could choose *Click here to begin* and they would be taken directly into the first module of the tutorial *Defining Unfamiliar Terms* (Figure 5.9). Once they had completed this module, as with any other they would be automatically taken to the tree diagram contents page.

Unlike *How to Choose and Books and Journals* (which it was possible to work through and never see the tree diagram contents page) all users would have seen this tree diagram. They could also return to this page by clicking on the *menu* button from the standard menu bar, which was on most screens. This made the movement between modules quite simple. For although it was not possible to go directly from one module to another, it was a simple two step process. They did not have to complete a particular module before choosing another one. It is not surprising therefore that all users (except two who did not respond) felt that it was 'very easy' or easy' to move between modules.

Although most users felt that it was either 'very easy' or 'easy' to request help or terminate the tutorial, far more students than librarians rated it 'very easy.' There seems to be no obvious reason for this difference. As with all the information skill tutorials the option to quit was on most screens, but there was no help option. Perhaps in the case of this particular package students felt that a help option was not necessary and therefore based their evaluation on their ability to quit the tutorial. There is however no particular evidence to support this assumption. One librarian did feel that a help option was necessary as they felt that the least useful feature of the package was;

the absence of a help facility (Librarian 106).

The majority of librarians felt that they were 'aware at all times' of where they were in the tutorial (Figure 5.10).

Figure 5.8   Contents or menu page
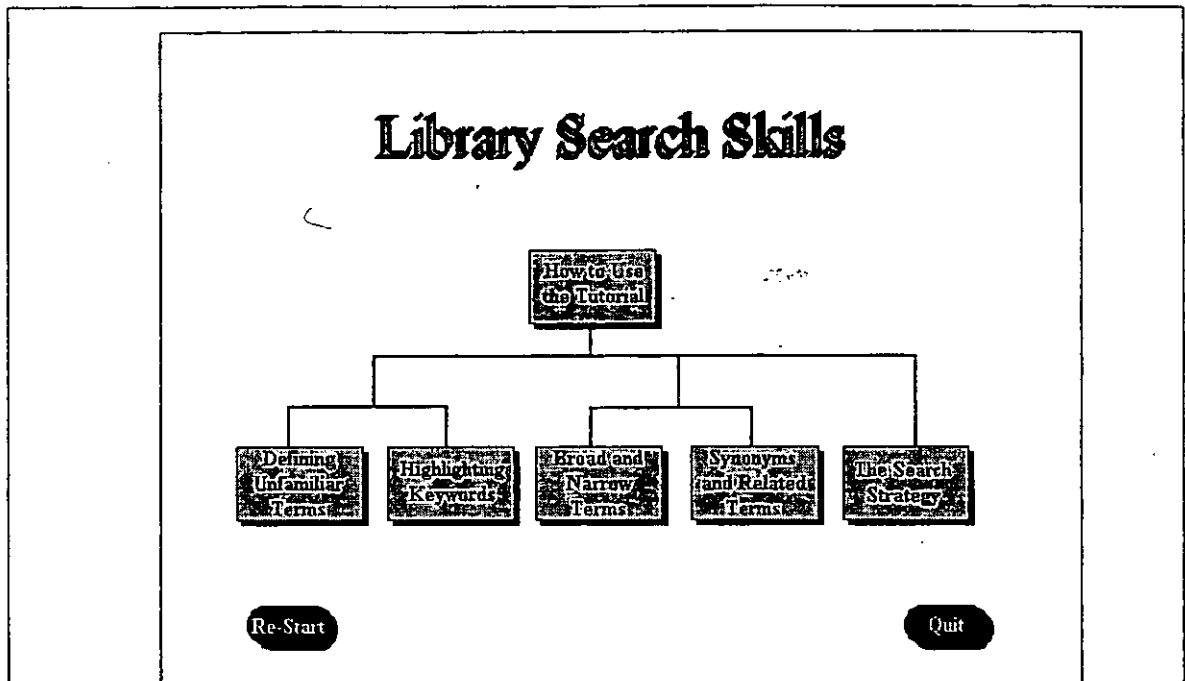
Figure 5.9   First page of *Defining Unfamiliar Terms*
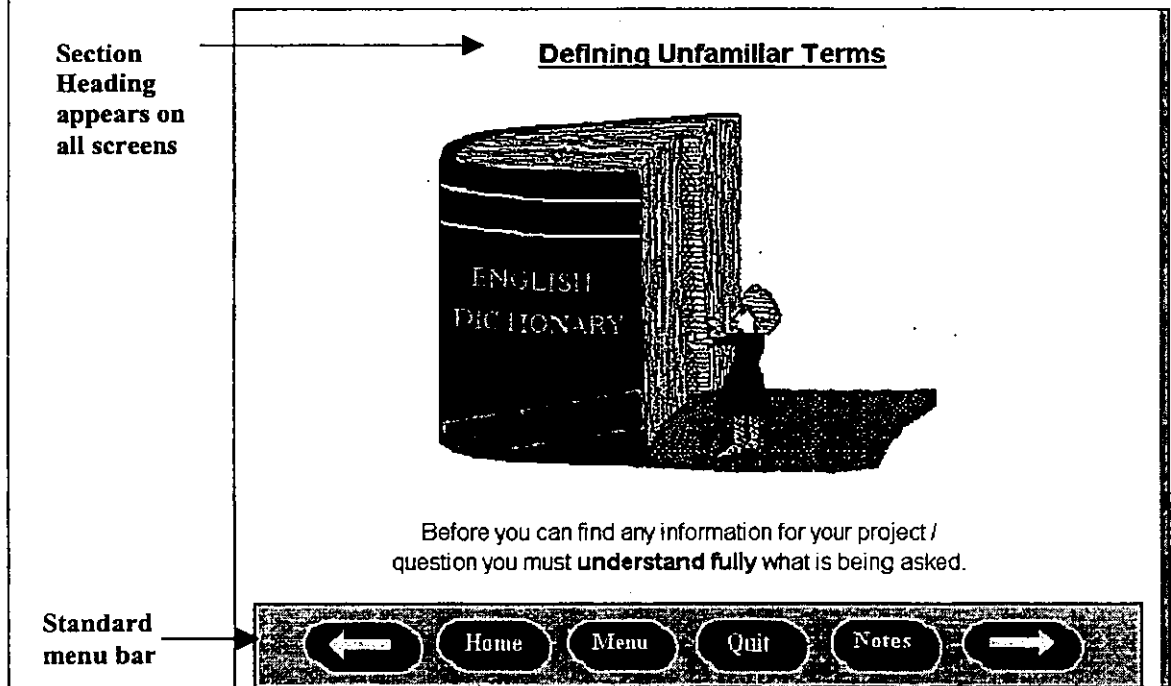
Note: If the user chose *Click here to begin* they would be taken directly into the first section of the tutorial *Defining Unfamiliar Terms* (Figure 5.9). Once they had completed this section, as with any other section they would be automatically taken to the tree diagram contents page (Figure 5.8).

Figure 5.10　Awareness
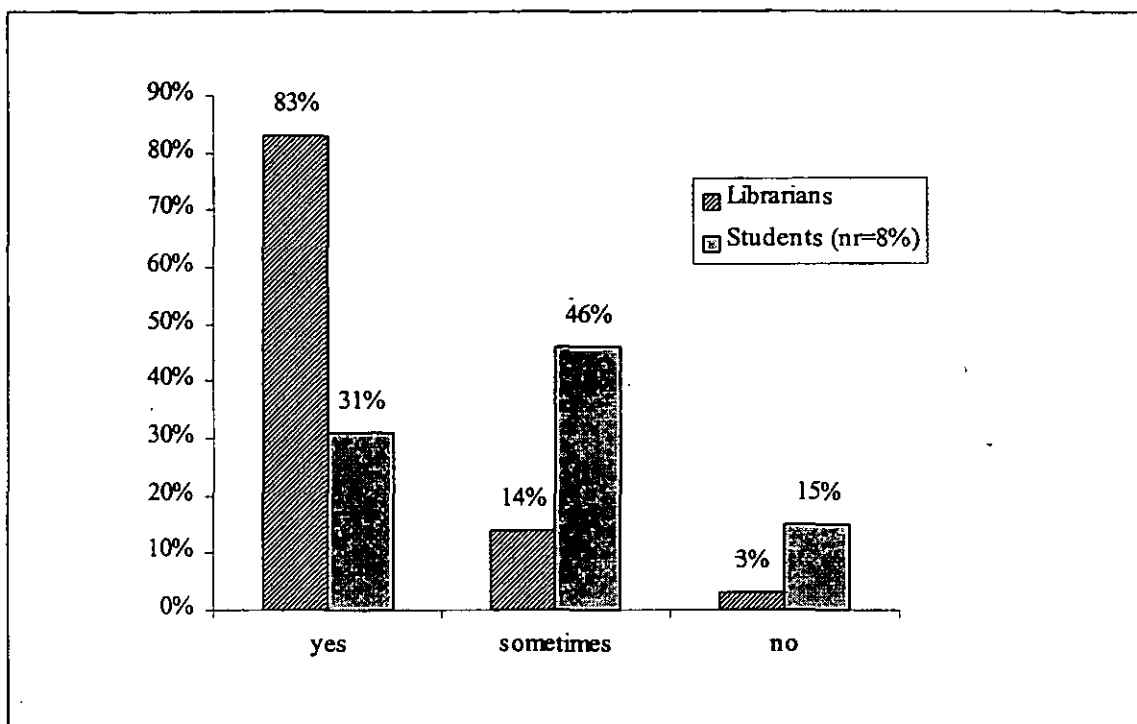
Although the screens were not numbered title headings appeared at the top of all screens (Figure 5.9). In most cases this title heading was that which was to be found on the contents page. However in some cases the titles were slightly different. For example in the section entitled *Synonyms and Related Terms* most screens were actually headed *Generating Synonyms and Related Terms*. These headings were in the same colour as the main text on the screen, although they were underlined. This clearly did not assist the librarian who felt that they were 'not aware at all times' of where they were in the tutorial. They specifically commented that the least useful feature of the package was;

> *not knowing where you are (Librarian 95).*

Another librarian (who felt that they were only aware 'sometimes' of where they were) suggested, it would have aided awareness to know how many pages made up a particular section:

> *Could benefit from page 1 of 9 in each section (Librarian 101).*

The two students, who felt that they were 'not aware at all times' of where they were in the package did not give reasons for this.

It was surprising that so few students in comparison to librarians felt that they were 'aware at all times' of where they were in the tutorial. This might infer that students did not realise that the underlined title at the top of each page was usually the module title. They were perhaps also confused by the fact that in the *How to use the tutorial* section they were told that underlined words would sometimes contain hidden information (Figure 5.11). The expectation would be that underlining would be used for this reason rather than to emphasise headings. Librarians might also have experienced some confusion but their knowledge from the teaching of this topic and what it should cover would probably have assisted their awareness.

Figure 5.11   Instruction screen
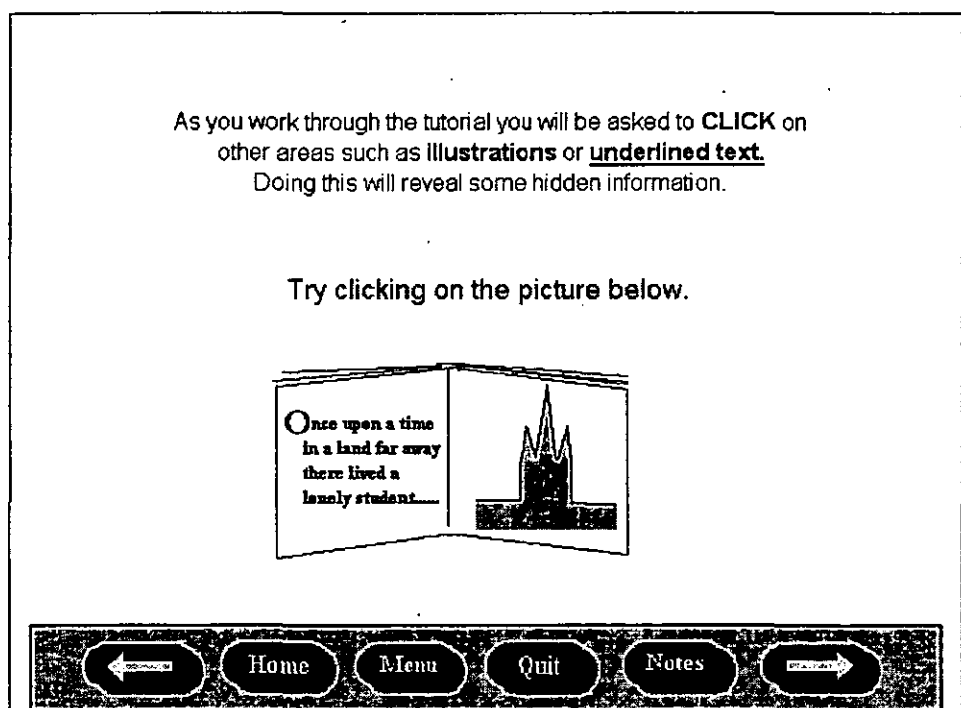
As might be expected since the tutorial was mouse driven most evaluators felt that some prerequisite mouse skills were necessary to do the tutorial (Table 5.10).

Table 5.10   Prerequisite knowledge and skills

	Some		None		No response	
	librarians	students	librarians	students	librarians	students
Computing skills	60%	69%	33%	31%	7%	0%
Mouse skills	80%	85%	17%	15%	3%	0%
Subject knowledge	60%	46%	30%	54%	10%	0%
Keyboarding skills	37%	38%	57%	62%	6%	0%

Although the tutorial did provide some advice on how to use the mouse, users really needed to know how to use the mouse to access this section! However at least the developers knowing that the tutorial was mouse driven had made some attempt to provide instruction (Figure 5.12). The *How to use the tutorial* section could be accessed both from the *title* page and from the *contents* page.

Figure 5.12   First screen from *How to use the tutorial* section

To move around the tutorial, use the mouse to move the cursor to the **MENU BAR** at the bottom of the screen.

When the cursor is in the desired position, click **ONCE** with the **LEFT** mouse button.

Try clicking on the forward arrow to continue.
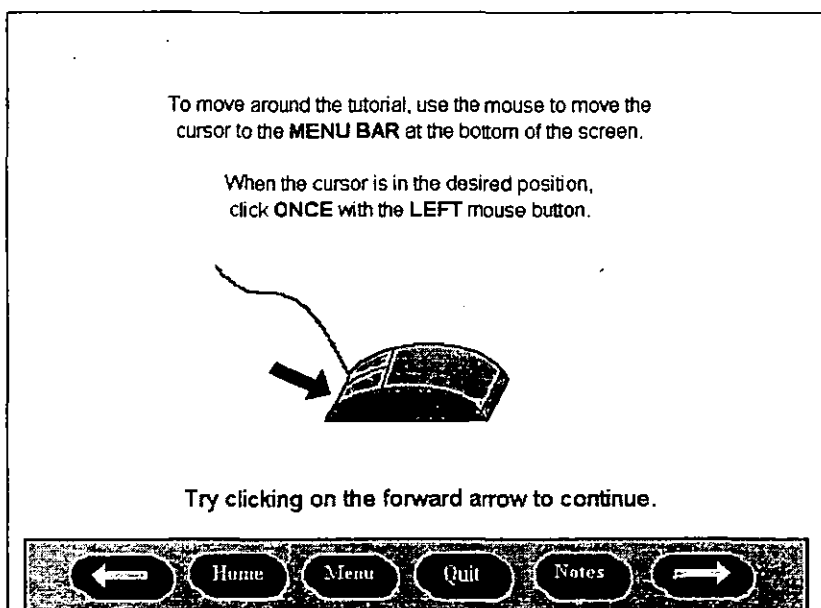
A large proportion of evaluators felt that some computing knowledge was needed. Perhaps they felt that it was necessary in order to take advantage of saving their notes to disk and because of the very medium they were using. Some existing subject knowledge was also deemed necessary, although the package was supposed to be aimed at complete beginners. Thirty percent of evaluators felt that some prerequisite skills or knowledge were needed in all the listed areas; twelve percent felt that no prerequisite skills or knowledge at all were necessary.

5.5.4   Content

Although the majority of evaluators felt that the tutorial's aims and objectives were 'clear' or 'very clear', they were not specifically stated (Figure 5.13).

Figure 5.13   Aims and objectives
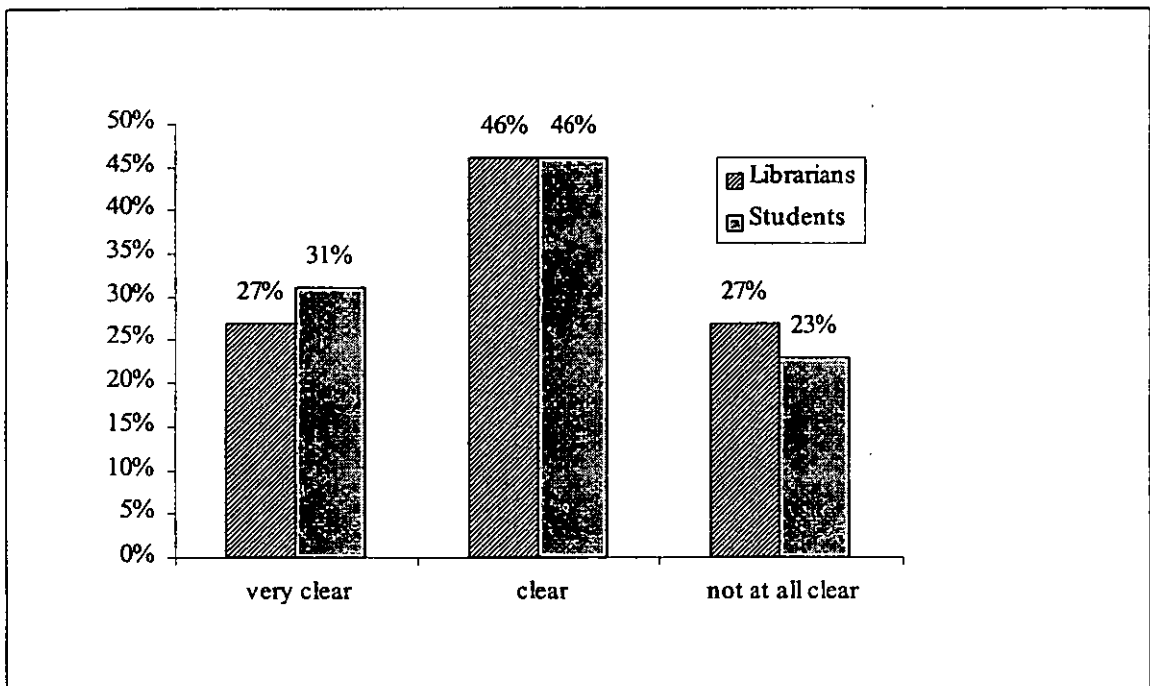
If the evaluator chose from the title page *Click here to begin* they would immediately be taken into the section *Defining Unfamiliar Terms*. There were no introductory text screens or any indication at this stage as to what the tutorial covered. A user might expect the entire package to be based on defining unfamiliar terms. As one student who felt that the aims and objectives were 'not at all clear' stated:

Not clear what its purpose is -- to define your search strategy or teach

you how to use a dictionary (Student 29).

It is not until users have completed this section (or chosen *menu* from the standard menu bar) that they are taken to the content page, which lists all sections:

Defining Unfamiliar Terms.

Highlighting Keywords.

Broad and Narrow Terms.

Synonyms and Related Terms.

The Search Strategy.

With no stated aims and objectives evaluators would have either based their rating on the actual package -- its title, the sections and the actual content -- or on the fact that the aims and objectives were not explicitly stated. Although the evaluators were not specifically asked how they judged the aims and objectives, all the students and half of the librarians who felt that they were 'not at all clear' specified that they should have been stated:

Aims and objectives are not clearly defined. This is necessary (Student

19).

While it is not known to what degree the individual components of the package contributed to the rating of the aims and objectives, the only comments made on the tutorial's title were negative. Four evaluators (three librarians who felt that the aims and objectives were 'not at all clear' and one student who felt that they were 'clear') commented that the title was the least useful feature of the package as it was not an accurate reflection of its contents:

Title is misleading - is really more general information on search

strategy skills. Title gives the impression of more skills to be covered.

(Librarian 77).

Since the tutorial's aims and objectives were not explicitly stated, evaluators had to gauge whether the tutorial met its intended purpose based on what they thought the package was attempting and perhaps on their own expectations of what the topic should include (Table 5.11).

Table 5.11   Intended purpose

	completely	to some extent	not at all
Librarians	40%	53%	7%
Students (nr=8%)	38%	54%	0%
Total (nr=3%)	39%	53%	5%

Given that the title *Library Search Skills* could cover many different topic areas and no aims were stated, it is not surprising that most only felt that it met its intended purpose to 'some extent'. Of the two librarians who felt the package did 'not' meet its intended purpose at all, both also felt its aims and objectives were 'not clear'; one felt that the content did not do justice to the tutorial's title:

> *It isn't what I'd call a Library Search Skills package. A word search package maybe. Only really covers how to do a subject search - does not really cover all skills needed to locate relevant information (Librarian 35).*

The other felt that since the aims and objectives were not stated, the intended purpose could not really be assessed.

Of those that commented on what they felt the tutorial should cover, that was not already included. Seven evaluators felt that the tutorial's aims and objectives needed stating; two felt that the role of the library should be included, and six felt that their needed to be more information on search skills:

The tutorial covers a narrow part of search skills. Searching via formal elements is not even mentioned (Librarian 44).

Three evaluators also felt that there needed to be clearer instructions; two felt that instructions regarding underlined words should be clearer. The other felt that there should be some guidance given on how to work through the tutorial:

Introduction should give a suggested sequence of reading. I think that it is better to read the 'Search Strategy' first then the other sections (Librarian 2).

Three evaluators (all librarians) also felt that additional documentation in the form of a checklist or worksheet was needed for students to have something they could take away. One librarian also felt that additional documentation should be made available in the form of local information pertaining to the library the package was being used in.

Opinions to the extent the package could be used on its own as a teaching device for this subject was varied (Figure 5.14).

Figure 5.14   Teaching device
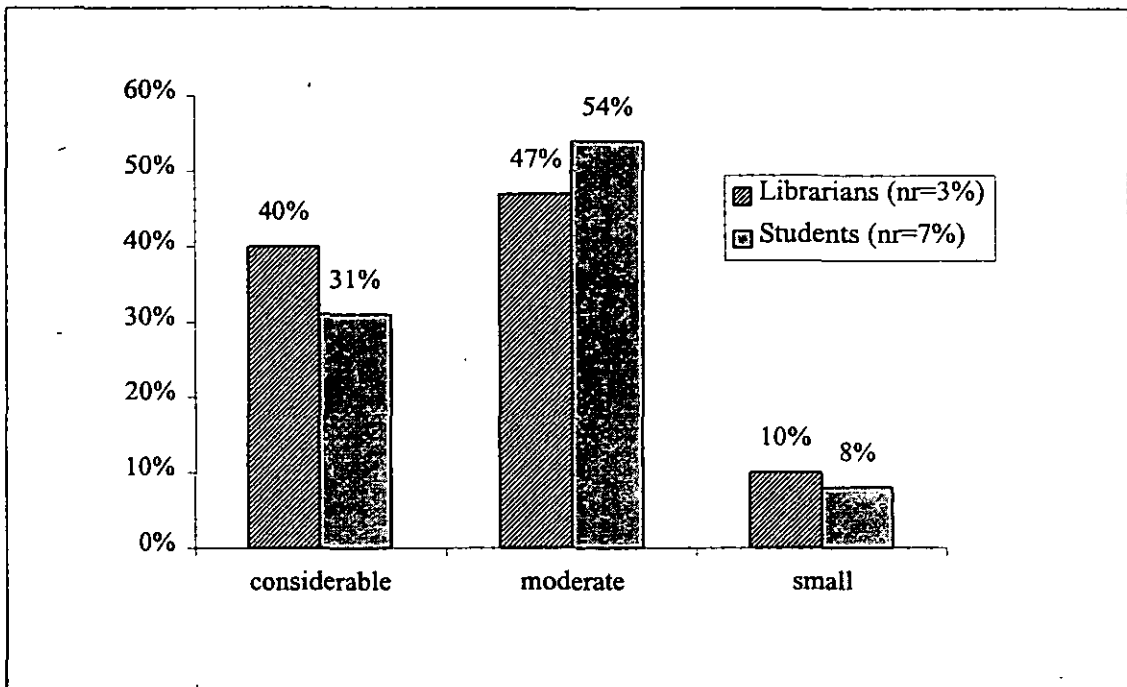
Of those librarians that felt it could be used to a 'considerable' extent and commented, all felt that it was clear and effective:

> *Very clear, well organised and fun to use - a good package that can stand on its own (Librarian 22).*

Of those that felt it could be used to a 'moderate' extent and commented, one felt that it needed further detail and two felt that the package needed to be used in conjunction with other delivery methods. Of those that felt it could only be used to a 'small' extent and commented, all felt that it was boring:

> *I found it extremely boring and simple: Too simplistic for H.E. (Librarian 17).*

Of those students that felt that it could be used to a 'considerable' or 'small' extent, no one commented as to why. Of those that felt it could be used to a 'moderate' extent and commented, one felt that it contained too much information and three felt that more information was needed:

> *It was a bit too simplistic (Student 14).*

No one felt that it could not be used 'at all'.

Opinions towards the information content of the package were also mixed (Table 5.12).

Table 5.12   Content

	very good	good	fair	poor
Librarians (nr=4%)	33%	37%	23%	3%
Students	8%	46%	38%	8%

These more mixed ratings could be due to the differing levels of content. The package started at what could be considered a very basic level; it devoted an entire section of 11 screens to using dictionaries. It then moved on to what could be considered more difficult areas, such as broad and narrow terms, and synonyms. Although the idea of the package being modular was that users could just look at the sections they wished to do (thereby avoiding sections they felt too basic), it is likely that evaluators based their evaluation on the whole package, rather than this. Given that librarians rated content more positively than students, it is likely that they considered it in relation to teaching different levels of students, whereas the students probably considered it in relation to their personal knowledge:

It explains things in a bit too much detail - things I'd take for granted (Student 5). [rated information content as 'fair']

Those that rated information content as 'poor' felt that it was too basic:

Information content at a very low level, so I doubt that students would want to spend time using it (Librarian 4).

The tutorial is too generalised and at such an elementary level it does not inform the user to any great extent (Student 42).

Only one student in comparison to ten librarians rated information content as 'very good'.

5.5.5 Overall impressions

Most evaluators felt that there was sufficient interactivity within the tutorial to keep them motivated and that the package was 'enjoyable' to use. (Table 5.13). Although there was not a separate exercise section, exercises were to be found in all sections. These ranged from those that required an answer to be typed in, to those that required the user to choose an answer from a list. There was also interactivity in the form of clicking on words or illustrations to either reveal further information or start an

animation. Of those that felt that there was not enough interactivity even 'sometimes' to keep the user motivated, only one librarian commented:

Very little interaction other than page turning (Librarian 102).

This comment suggests that this evaluator probably did not do the exercises or click on any of the text or illustrations, but just used the forward arrow to move through the package.

All evaluators who felt that the package was 'very enjoyable' to use also felt that the content was 'very good' or 'good' and all but one, felt that there was 'sufficient interactivity'; suggesting a link between content, interactivity and level of enjoyment.

Table 5.13   Interactivity and enjoyment

Interactivity			
	yes	sometimes	no
Librarians	47%	40%	13%
Students (nr =15%)	39%	39%	7%
Total (nr =5%)	44%	39%	12%
Enjoyment			
	very enjoyable	enjoyable	not at all enjoyable
Librarians (nr =3%)	17%	67%	13%
Students (nr=8%)	23%	46%	23%
Total (nr =5%)	19%	60%	16%

Of the librarians who commented what they found most useful about the tutorial, two mentioned the exercises, seven mentioned the actual content of the tutorial, five mentioned the design, and two mentioned the graphics:

Graphics to explain what can be a dull (but important) aspect of topic analysis (Librarian 3).

Of the students who commented on what they found most useful, three mentioned the design, three mentioned the actual content of the tutorial and four mentioned the exercises (Figure 5.15):

The interactive element – question and answer exercises were useful for highlighting personal problem areas (Student 6).

Figure 5.15   Example exercise screen
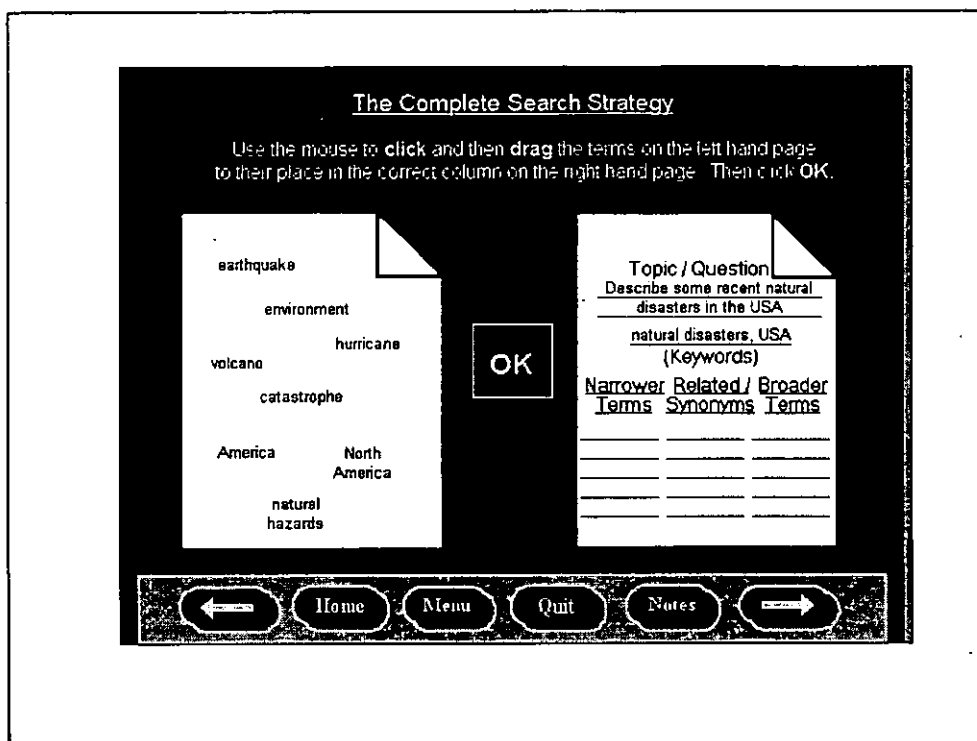
Of the librarians who commented on what they found least useful about the tutorial twelve mentioned the content, two mentioned the design and two mentioned the interactivity, commenting that they felt that there should be more exercises.

Of the students who commented on what they found least useful, one commented on the design, one commented on the exercises, three commented on the graphics and five commented on the content:

> *I was a bit confused – the package is called Library Search Skills. It wasn't really about the skills you realistically need in a library to search for something. It started at a very simple level (Student 19).*

Responses to the overall rating of the tutorial in terms of particular characteristics were mixed (Table 5.14). However more librarians than students rated the different characteristics as 'very good' or 'good'. Forty-seven percent of librarians compared to 31% of students rated all the listed options as either 'good' or 'very good'.

Table 5.14   Characteristic ratings

	very good	good	fair	poor	very poor
Colour & graphics					
Librarians	27%	43%	23%	7%	0%
Students	31%	31%	31%	7%	0%
Clarity of instructions					
Librarians	30%	47%	23%	0%	0%
Students	38%	31%	31%	0%	0%
Ease of use					
Librarians	37%	50%	13%	0%	0%
Students	46%	39%	15%	0%	0%
Self-sufficiency					
Librarians (nr=3%)	40%	40%	17%	0%	0%
Students	16%	38%	38%	8%	0%
Approach					
Librarians (nr=8%)	23%	43%	23%	3%	0%
Students	0%	62%	38%	0%	0%
Interest level					
Librarians (nr=6%)	17%	37%	27%	10%	3%
Students	8%	31%	38%	23%	0%

As was to be expected opinions towards colour and graphics were varied. These ranged from those who felt that the graphics were excellent and the most useful feature of the package. To those who felt that they were the least useful feature of the package and described them as;

silly cartoons (Student 22).

No one commented either negatively or positively about the specific colours used for the background or text.

The only characteristic not to be rated 'very good' by any student was the tutorial's approach. Unlike *How to Choose Books and Journals* this package did not have any introduction. Users would from the title page either go straight into the section *Defining Unfamiliar Terms* or go to the content's page. There were no aims and objectives stated and the title *Library Search Skills* could have led the user to expect a tutorial on finding items in a library. There was also no guidance given as to how users should work through the tutorial, until the second screen of the *Search Strategy* section. This was of limited use if the evaluator chose to do this section last! Also this particular section rather than containing new information was a fairly detailed summary of all the other sections. As one student commented;

It [the package] *made its point a few too many times (Student 14).*

Although over 60% of evaluators felt that the clarity of instructions were either 'good' or 'very good', it is not known whether this was based on the instructions throughout the package, or on the instructions in the *How to use the tutorial* section, or a mixture of both. Instructions in the *How to use the tutorial* section could be considered misleading. Evaluators in this section were told to click on illustrations or underlined text (when asked) to reveal hidden information. Yet none of the underlined text in this tutorial contained hidden information. Instead underlining was used to emphasise headings, and highlighted words contained hidden information. Two evaluators felt that clearer instruction should have been given.

Misleading in that I thought that underlined words were hypertext (Librarian 8).

The interest level rating was considerably lower than all the other characteristics. This was probably due to the tutorial's content rather than its design. Of the students that rated interest level as 'poor', one felt that the package was not complete; one felt that it was too elementary and they did not like the graphics and one would have preferred to use a printed source. Of the librarians that rated their interest level as 'poor', one did not comment, and two felt that content was too basic. The librarian that rated it 'very poor' also felt that their overall impression of the package was 'poor' and that it could only be used to a 'small' extent as a teaching device for this subject:

I found it extremely boring and simple; for school children possibly..too simplistic for HE (Librarian 17).

No one commented on ease of use or self-sufficiency, however all that rated ease of use as 'fair', also rated self-sufficiency as either 'fair' or 'poor'.

Evaluator's opinions as to their overall impression of the package and of its effectiveness were quite varied (Table 5.15).

Table 5.15   Overall impressions and effectiveness

Overall impression	very good	good	fair	poor
Librarian	30%	44%	23%	3%
Student (nr=8%)	0%	38%	54%	0%
Effectiveness	**very effective**	**effective**	**mod effective**	**not effective**
Librarian (nr=4%)	40%	23%	23%	10%
Student	15%	31%	46%	8%

However librarians were far more positive than the students. This could in part be due to the different ways in which the package was being considered. Students were more likely to be considering it in relation to their own knowledge, whereas librarians were more likely to have been considering it with reference to a range of students. It is also likely to be a reflection of the contents of the package. Sixty-two percent of students and 43% of librarians commented negatively on some aspect of the tutorial's contents. They either felt that it was too simple, too repetitive, that something was missing or they disagreed with the contents.

All librarians who felt that it was 'not very effective' felt that this was due to the information content. The student who felt that it was 'not very effective' also felt that this was due to the content, which was too elementary This was particularly important to this student who felt that CBT packages were only valid delivery methods if;

sufficiently detailed (Student 42).

The overall reaction to this package was fairly mixed, with librarians for the most part being more positive than the students. Nevertheless it could be considered a fairly good attempt at a CBT package and does not disprove the idea that it would be an appropriate delivery method particularly if the content was improved.

5.6   Computer Sources

5.6.1   Description

Computer Sources aims to give a basic introduction to some of the techniques needed to be able to search CD ROM and on-line databases. It uses the analogy of a treasure hunt to illustrate concepts such as keyword searching, boolean principles and citation searching. It deals with general principles, rather than specific details of individual databases. The tutorial is a mix of text, graphics and very simple animation. Computer based simulations have also been used when describing various database techniques.

The tutorial is divided into two main sections *Basic Principles* and *Advanced Methods*. Within both these sections there are sub-menus, which also further sub-divide into smaller topics. (Figure 5.16). The user can choose which topics they wish to do, and do them in any order. There are numerous small exercises for the user to complete within the topics. There is also a separate *Practical Exercises* section to test their overall knowledge. Within the majority of screens there is a standard menu bar where the user has the choice of being able to:

- Return to the main menu screen (Home).

- Return to a sub-menu screen (Menu).

- Move forwards or backwards a screen (Arrows).

- Make their own notes (Notes).

- Quit the program (Quit).

The suggested time of completion for the tutorial is 30 minutes.

5.6.2   Evaluators

This tutorial was evaluated by 27 librarians and 16 students (seven postgraduates and nine undergraduates). Out of the 27 librarians who evaluated the package 16 completed a profile form. Only six librarians had previously seen a CBT package for user education.

Figure 5.16   Sample menu screens

**Main Menu
Screen or
Home Page**

Computer Sources

Click on a section to start the expedition

Basic Principles

Advanced Methods

Practical Exercises

Quit

**Sub-menu
screen**

Basic Principles

*Click on each section to find out more.
Click on a topic to enter it*

Re-start

What are Computer Sources?

Find the Right Starting Point

Plan Your Route

Refine a Search

Headings only
Clicking on these
leads to topics
being displayed

Your Goal is in Sight

Broaden a Search

Narrow a Search

How to Take Home The Prize

Re use a Search

Individual topics or modules

No one currently used CBT packages as a method of delivery for user education, but 11 libraries were in the process of considering or developing it:

> *We have many students on short courses with varying levels of knowledge about information skills. CBT may help us to be more flexible in our approach to helping these students (Librarian 5).*

Five librarians felt that CBT packages were a 'valid' delivery method for user education and nine felt that they 'possibly' were. No one felt that they were 'inappropriate'.

Out of the 16 students, 12 had used a CBT package before (although not for user education) and one (Student 41) had helped develop the Glasgow TLTP packages by providing examples. All except one student had experienced previous user education in the form of either leaflets or guided tours. All students felt that user education was necessary and 11 felt that CBT was a 'valid' method of delivery for user education. The other four students felt that it was 'possibly' a valid delivery method. One student who had used a CBT package for WordPerfect and Windows felt that they were only 'possibly' a valid delivery method as:

> *Not everybody is computer-literate, therefore it [a CBT tutorial] alienates a sector of users (Student 20).*

5.6.3   Structure and design

Most users were fairly positive about the structure and design of the tutorial (Table 5.16). Although overall the librarians consistently rated it higher than the students did. This is not particularly surprising as the main structure relied heavily on the contents being presented through a menu and sub-menu system (Figure 5.16). It is likely that because of the librarian's knowledge and understanding of the subject, they were more easily able to assimilate the tutorial's structure than the students were. This is particularly reinforced by the librarian's awareness of where they were in the tutorial. Significantly more librarians than students felt that they were 'aware at all times' of where they were in the tutorial. This was despite the fact that the screens of the tutorial were not numbered and that only some screens had the sub-menu title at the top of the

screen. One student who felt that they were 'not aware at all' of where they were in the tutorial suggested that:

Page numbers or an indication of where you are in the tutorial needs adding and the end of a section could be indicated (Student 3).

Table 5.16   Structure and design

Structure	very clear	clear	not at all clear
Librarians	48%	52%	0%
Students	25%	69%	6%
Movement between modules	**very easy**	**easy**	**not at all easy**
Librarians (nr =11%)	37%	48%	4%
Students	25%	63%	12%
Request help/terminate *	**very easy**	**easy**	**not at all easy**
Librarians (nr =11%)	30%	48%	7%
Students	25%	50%	12%
Awareness at all times	**yes**	**sometimes**	**no**
Librarians	70%	30%	0%
Students	38%	44%	18%

* evaluators who gave more than one response (ie differentiated between help and terminate) have not been included.

Movement between modules was considered to be 'easy' by most evaluators. If a user wished to move modules within the same sub-section, it was a three step process. They would have to first return to the sub-menu screen by choosing *menu* from the button bar. They then had to choose a particular module heading which would result in the actual module titles being displayed. They could then enter a new module by clicking on one of these titles. However if they wished to change sections (from *Basic Principles* to *Advanced Methods*) they would have to choose *home* from the menu bar and then

choose the section they required. This would display the sub-menu screen from which they could choose a module heading and then an actual module (see Figure 5.17).

Figure 5.17   Movement between modules

MENU BAR

HOME PAGE

Computer Sources

Basic Principles
Advanced Methods
Practical Exercises
Quit

MENU
PAGE
Headings
only —
clicking
on one of
these
headings
leads to
actual
modules
being
displayed

Basic Principles

What are Computer Sources?
Find the Right Starting Pout
Plan Your Route
Your Goal is in Sight
How to Take Home The Prize

Refine a Search
Broaden a Search.
Narrow a Search
Re use a Search

ACTUAL
MODULES

If a user wished to move to a module, outside the section they were in, they would first have to choose home from the menu bar. This would take them to the main menu screen. They could then choose the section they wished to enter. They would then choose their module heading which would result in the actual modules being displayed.

Movement between modules was therefore at least a three step process, and as one evaluator commented;

was not intuitive (Librarian 105).

The users who felt that it was 'not very easy' to move between modules did not specify why, however they might have felt that it would have been better to be able to go directly to another module rather than via the menu screen. They might also have considered that the module headings, which further sub-divided into the actual modules were unnecessary. To assist the user when they had completed a topic within a sub-

menu, the heading on the sub-menu screen changed colour to indicate this. Also users had the advantage of not having to complete a module before moving on to another.

There was no help option within the tutorial. Users however had the option of being able to quit from every screen except the first title screen. It is not known when the users were asked to rate *How easy was it to request help/terminate the tutorial?* whether they considered that there was no help option. However three evaluators differentiated between the option to terminate and to request help; two felt that the option to terminate was 'very easy' while the option to request help was for one 'easy' and the other 'not at all easy'. The other felt that it was 'easy' to terminate and 'not at all easy' to request help.

As with the other TLTP packages, this tutorial was also very much mouse driven. It is not surprising therefore that nearly all librarians (92%) and students (81%) felt that some prerequisite mouse skills were necessary to do the tutorial. Over half of all users (68%) also felt that some keyboard skills were necessary. (Table 5.17). This is again not unexpected as if the user chose to do the exercises they would have had to type in responses and use certain function keys. What is more surprising is that over 40% of users felt that some prerequisite computing and subject knowledge were necessary.

Table 5.17   Prerequisite knowledge and skills

	Some		None		No response	
	librarians	students	librarians	students	librarians	students
Computing	52%	37%	41%	56%	7%	7%
Mouse	92%	81%	4%	19%	4%	0%
Subject knowledge	63%	50%	30%	44%	7%	6%
Keyboarding	67%	69%	18%	25%	15%	6%

One librarian however who felt that some prerequisite subject and computing knowledge were necessary felt that this was desirable as opposed to essential:

> *Computing knowledge might add value to the experience but it is not required eg you would get more out of note taking and downloading or would have more confidence to try if you had worked with files before. Some subject knowledge would also add value but it is not essential - it would aid the transition from generic skills to specific use of databases and the context in which to work would be clearer if there was a subject need identified already to the user (Librarian 87).*

Instructions on using the mouse to reveal further information and on using the notepad function were given in the *How to use the tutorial* section. However this section could only be accessed from the title page and the title page could only be accessed from the two menu screens by choosing the *Re-start* button. Thirty percent of users felt that at least a small amount of knowledge or prerequisite skills were necessary in all the stated areas. Only 5% of users felt that no prerequisite skills or knowledge at all were necessary.

5.6.4 Content

As can be seen in Figure 5.18 the librarians found the aims and objectives of the tutorial to be clearer than the students did. This is interesting as the aims and objectives were not explicitly stated. Although some indication of the tutorial's intention was given on the title screen:

> *An introduction to some of the techniques required to search CD ROM and on-line bibliographic databases.*

Evaluators would have to formulate the tutorial's aims and objectives from the title of the package and from its content. Since the title *Computer Sources* implies many different things, such as sources of information about computer science, a heavier reliance on the actual contents of the package was likely to be needed. The topic

headings on the sub-menu screens were also unlikely to assist the evaluator. Rather than didactic headings, headings followed a treasure hunt theme:

- Find the right starting point.

- Plan your route.

- Your goal is in sight.

- How to take home the prize.

Aims and objectives could therefore only be understood from the individual module titles within these sub-menu headings and through the actual content of the tutorial and the evaluator's existing knowledge. It is therefore not surprising that librarians with their likely greater knowledge of the topic would have been better placed to have a greater implicit understanding of the tutorial's aims and objectives than the students. As one librarian who felt that the aims and objectives were 'very clear' stated;

> *but I am a librarian. I am not sure how our students would find it (Librarian 30).*

Figure 5.18   Aims and objectives
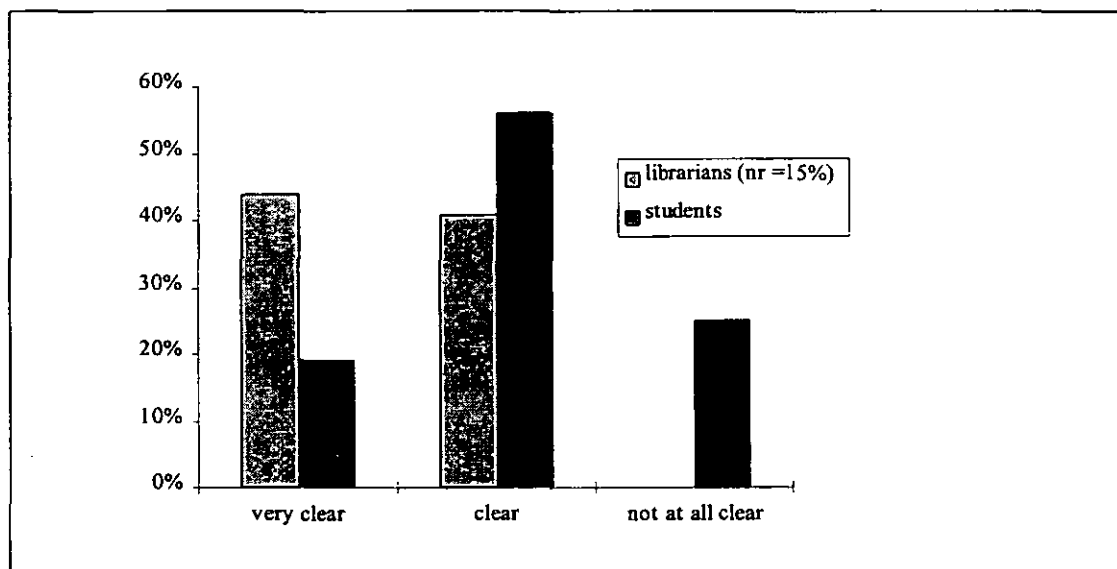
Most evaluators felt that the tutorial met its intended purpose either 'completely' (48% librarians; 50% students) or to 'some extent' (37% librarians; 44% students). Four evaluators did not respond and only one student felt that it did not meet its intended

purpose 'at all'. This student also felt that the aims and objectives of the tutorial were 'not clear' and that it could 'not' be used on its own as a teaching device for this subject:

Structure, explanation, and ease of use require development and therefore the package is not suitable on its own as a teaching device. Some of the features do not appear to be completely developed and therefore some aspects are lacking (Student 40).

There was no discernible difference between the librarians' and the students' opinions.

Four students felt that the tutorial in terms of its content needed more information adding. Two students felt that the introduction needed to be expanded and two students felt that there needed to be more information on the different types of computer sources:

More background about types of computer sources needed not just methods of searching (Student 39).

Four librarians also felt the contents needed to be expanded in terms of methods of searching different databases:

Linking sets by using # plus number is not common to all databases and students should be made aware that another approach may be needed (Librarian 87).

No-one felt that additional documentation was needed:

Basically the package is sound. It is simple enough to use without further documentation (Student 1).

Users were mixed as to their opinion on the extent the tutorial could be used on its own as a teaching device for this subject (Table 5.19). Some users felt that it needed to be followed up in some way, others felt that it was a good basic introduction. Comments on the extent it could be used as a teaching device for this subject can be found in Table 5.18.

Table 5.18   Comments on the extent the package could be used on its own

Students - Considerable

- *Good information content and easy navigation techniques (S3).*

- *It would give a good overview of the basics of searching electronic sources. Students would then need to practice on different CD-ROMs (S1).*

- *If a person wishes to find out about the thing on it, it shows you how by having you do it, plus it has a practical section. Therefore if you get it wrong you know which bits to redo so as not to make mistakes when it's important (S20).*

- *Computer searching - best done on computers (S39).*

Librarians - Considerable

- *I felt that this was very clear and more comprehensive than the search skills; again needs option to link to local OPAC (L12).*

- *Takes computer searching from constructing searches to specific details (L27).*

- *Could be used as part of group work or individually as well as in conjunction with other resources (L24).*

- *There are good interactive ('doing') links that are effective in delivery - though some areas are a tad "so-so" eg cited reference searching (L105).*

- *Provided someone explained the purpose/use of the package it is easy to use unaided (L88).*

- *The novice or the "trial and error" searcher with experience could both benefit. There is not any need for other supportive programmes although it could be used as part of one (L87).*

Students - Moderate

- *Personal demonstration and answering of questions is also desirable, preferably in a workshop environment (S32).*

- *Databases are different and tend to require different search language - users need to practice or to have library staff there to help - this package is a good introduction but not sufficient to teach the whole subject (S2).*

- *Some help with package should be available at time of use, plus some practical follow-up exercises if possible (S33).*

- *There is enough for the user to gain a general view on the topic (S44).*

Librarians - Moderate

- *Could use if readily available to all students as alternative - should students prefer to learn this way (L30).*

- *Contains a great deal - would take a long time to complete (L31).*

- *Needs further subject specialism (L83).*

Small

- *Even though the package is straightforward I would not want to be taught how to search without any human interaction due to the fact that the package is very rigid and does not allow for any unusual questions. It is self-sufficient but it is not flexible (S34).*

Not at all

- *Structure explanation and ease of use require development and, therefore package is not suitable on its own (S40).*

Table 5.19   Extent used as a teaching device

	considerable	moderate	small	not at all
Librarians	45%	48%	7%	0%
Students	31%	50%	13%	6%

Opinions as to the quality of the content of the tutorial were also mixed (Figure 5.19). This is as expected given that the subject can be quite complex and the search techniques described are but one set of techniques. Those familiar with other techniques were more likely to find the content lacking. Three students and six librarians commented specifically on this:

> *There needs to be more emphasis on differences between sources* (Librarian 11 who rated the information content as 'poor').

However over all, most rated it as 'very good' or 'good'.

Figure 5.19   Content
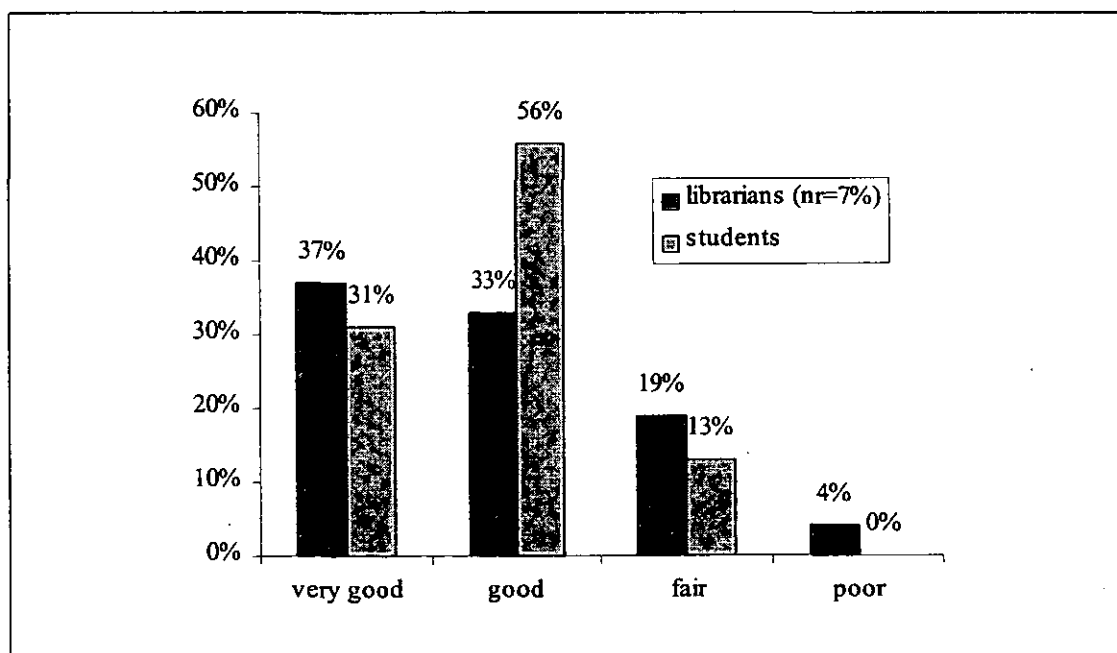
5.6.5 Overall impressions

Most users felt that there was sufficient interactivity within the tutorial to keep the user motivated. (Table 5.20). As the tutorial relied heavily on interactivity with the user in the form of clicking on buttons to reveal further information or to view simple animation, and as there were simple exercises within every section this is not unexpected.

Table 5.20   Interactivity

	yes	sometimes	no
Librarians (nr =7%)	63%	26%	4%
Students	69%	25%	6%
Total (nr =4%)	65%	26%	5%

Both evaluators who felt that there was 'not' sufficient interactivity within the tutorial to keep the user motivated also felt that it was 'not at all enjoyable' to use and that their overall impression of the package was 'poor'. They were negative about most aspects of the tutorial as they felt that the topic did not:

> *Lend itself to a computer tuition packages..requires a workshop demonstration (Student 32).*

Over 85% of users felt that the tutorial was either 'very enjoyable' or 'enjoyable' to use (Figure 5.20). All librarians and all students who felt that the tutorial was 'very enjoyable' to use also felt that there was 'sufficient interactivity' within the tutorial to keep the user motivated and they rated the content as either 'very good' or 'good'.

Figure 5.20   Enjoyment
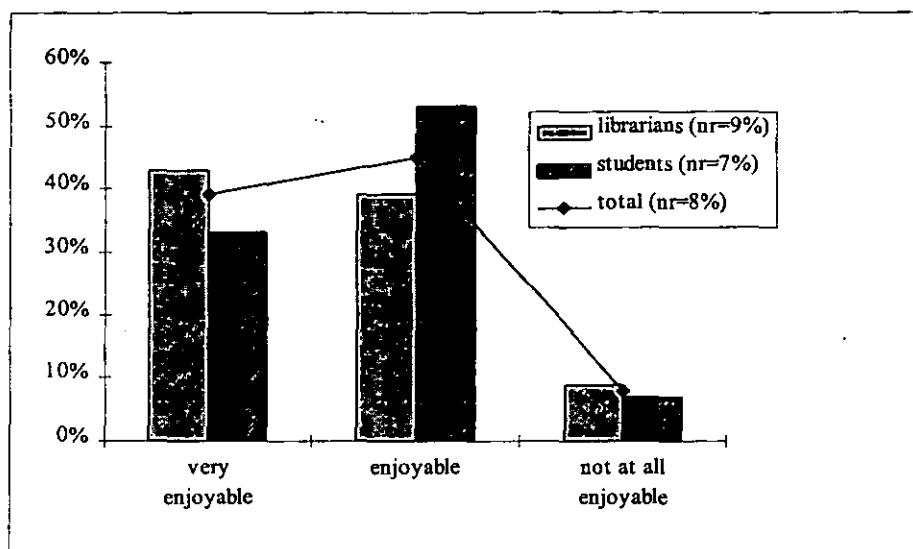
Of the librarians who commented what they found most useful about the package three mentioned the design, five mentioned the actual content of the package and six mentioned the interactivity and exercises:

> *Interactive parts [were the most useful] ie the practical exercises section; it is clear and well designed and instructs the user well (Librarian 32).*

Of the students who commented on what they found most useful, four mentioned the design, one mentioned the actual content of the package, four felt that it was all useful and four mentioned the interactivity and exercises.

Of the librarians who commented on what they found least useful about the tutorial two mentioned the graphics, two mentioned the design and four mentioned the content:

> *Very specific in terms of database searching - based on one package that permits 'field' searching, not all do; launches into field codes without explanation. (Librarian 90).*

Of the students who commented on what they found least useful about the tutorial three mentioned the structure, two felt that the graphics were pointless and two mentioned the content:

> *Does not stress enough that there are umpteen differences between commands for different database hosts (Student 32).*

Responses to the overall rating of the tutorial in terms of particular characteristics was mixed; although over 75% of users felt that their overall impression of the tutorial was either 'very good' or 'good' (Table 5.21).

Table 5.21   Characteristic ratings

	very good	good	fair	poor	very poor
Colour & graphics					
Librarians	56%	33%	7%	4%	0%
Students	44%	25%	25%	6%	0%
Clarity of instructions					
Librarians	41%	44%	15%	0%	0%
Students	31%	31%	38%	0%	0%
Ease of use					
Librarians (nr=8%)	48%	37%	7%	0%	0%
Students	31%	31%	25%	13%	0%
Self-sufficiency					
Librarians (nr=4%)	33%	44%	15%	4%	0%
Students	25%	50%	25%	0%	0%
Approach					
Librarians (nr=4%)	33%	37%	22%	4%	0%
Students	13%	68%	13%	6%	0%
Interest level					
Librarians (nr=4%)	37%	37%	18%	4%	0%
Students	13%	37%	31%	19%	0%
Overall impression					
Librarians (nr=11%)	41%	33%	11%	4%	0%
Students	25%	56%	13%	6%	0%

No one rated any of the listed characteristics as 'very poor'. The characteristic most rated 'very good' or 'good' by the students was the tutorial's approach. Yet this received fewer 'very good' or 'good' ratings from the librarians than all the other characteristics.

This suggested that the idea of a treasure hunt theme to convey the information was therefore more appealing to the students than the librarians. It also suggested that the librarians were more aware of different approaches (due to teaching the topic) that might be more appropriate, than the approach taken. Most users felt that the package was self-sufficient, although some felt that that practical sessions on actual CD ROM's were needed.

As was to be expected opinions towards colour and graphics were mixed. These ranged from those that felt they were;

childish and annoying (Student 39).

To those that felt the:

Graphics are very good (Librarian 80).

Only one evaluator commented on the colours used for the background and text. They felt that this was the least useful feature of the package:

Would have preferred use of different colours on screen for different pieces of text − tendency for some text to fade in to background (Librarian 8).

Clarity of instructions was the only characteristic not to be rated 'poor' by either the librarians or the students. As with the other TLTP packages basic instructions were given in the *How to use the tutorial* section. However this section could only be accessed from the title page and the title page could only be accessed from the two menu screens by choosing the *Re-start* button. It is not known to what extent if any this affected evaluators rating of clarity of instructions. Although one student who rated both clarity of instructions and ease of use as 'fair' commented on this:

Need a constant link back to the introductory screen telling you about how to use the programme (Student 1).

Of the two students that rated ease of use as 'poor', both felt that the structure and ease of use required development, but did not specify in what way.

Overall the librarians consistently rated the individual characteristics higher than the students did. Over half (56%) of all librarians compared to 32% of students rated all the listed characteristics as either 'good' or 'very good'. The largest difference between the librarian and student ratings was interest level; with the librarians rating it higher than the students. This was a particularly subjective characteristic to rate. The possible complexity of the topic being covered and the user's familiarity with it along with their motivation is likely to have affected this rating.

The librarians were more positive regarding the effectiveness of the tutorial than the students (Figure 5.21). This can possibly be attributed to their understanding of the topic and their familiarity with having to teach it. Boolean searching, keyword searching with truncation can be difficult concepts to convey and it is clear from the fact that over half of all students rated it as 'moderately' effective, that they required more than this tutorial was able to offer. Comments on the tutorial's effectiveness can be found in Table 5.22.

Figure 5.21   Effectiveness
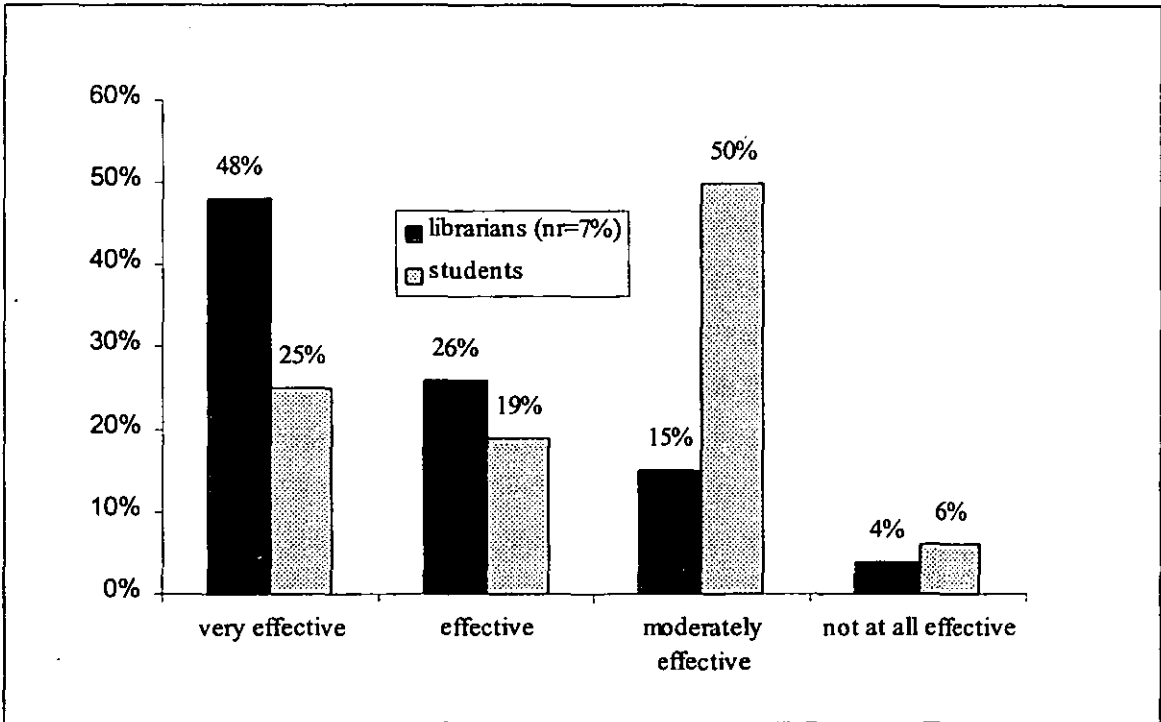
Table 5.22   Comments on the effectiveness of the tutorial

Very effective - Librarians

- *Having written user education publications, this conveys information by example very succinctly (L8).*

Very effective - Students

- *The package has a sense of humour, is clearly structured and comprehensive (S33).*

- *Could be used at all levels confidently (S25).*

- *It is not all reading there are little things to keep you occupied too, making it easier to use as well as enjoyable (S20).*

- *Particularly liked interactivity - which allowed examples etc to be shown (S36).*

Effective - Librarians

- *Very good for its specific purpose. Better on general search strategy than some general packages (L27).*

Effective - Students

- *It covers enough features in a general way to make the user competent with the programme (S44).*

Moderately effective - Librarians

- *Concerned about level - FE rather than HE? (L80).*

- *Not sure if our first years can handle so much conceptual information rather than being focused on a particular task or subject (L32).*

- *Need to be able to insert relevant examples, especially keywords and give more practice (L5).*

Moderately effective - Students

- *Interactivity could be increased and more simulations (S3).*

- *It is self sufficient but is not flexible (S34).*

- *It could be very good. The core parts of the package are very useful and clear. But it needs refining in some areas, eg providing a clearer structure, better indication of where you are in the programme (S1).*

- *Will give user a rather superficial knowledge of subject - searching is too detailed to be taught in such a package (S2).*

- *Computer search skills are best taught by practical experience - but this comes a very close second as it is similar to computer sources cited (S39).*

As with *Library Search Skills* the overall reaction to this package was fairly mixed, with librarians for the most part being more positive than the students. This is perhaps due to the librarian's knowledge of the subject and the student's lack of knowledge and the way in which the information was presented. Nevertheless if the criticisms were taken on board and the package was amended accordingly it might be an appropriate delivery method for this topic.

5.7   Study Skills

5.7.1   Description

This tutorial is a basic introduction to some of the techniques required for successful study. It presents an overview of the basic concepts of:

- Time Management.

- Note-Taking.

- Reading Skills.

- Writing Skills.

- Presentations.

- Revision.

- Examinations.

There are some simple exercises at the end of most of the topics so the user can test what they have learnt. The tutorial also has a *Summary* section, which contains a series of key points on each of the above topics. References for potentially useful books is to be found in the *Other Information Sources* section as are suggestions on who to go to for help. Both the *Summary* and the *Other Information Sources* section can be amended to references suitable to make it more applicable to the library it is being used in.

The tutorial is a mix of text, graphics and animation. On a number of screens the text appears in text blocks that appear automatically on the screen every three seconds (Figure 5.22). Clicking on illustrations, underlined text (when requested) and a hand symbol reveals further information as does moving the cursor over a mouse symbol. The tutorial is modular and the user can choose which sections they wish to do and do them in any order. The *Summary* section can be saved to disk as can the book list found in the *Other Information Sources* section. The suggested time of completion for the tutorial is half an hour.

Figure 5.22   A sample screen from the *Writing Skills* section
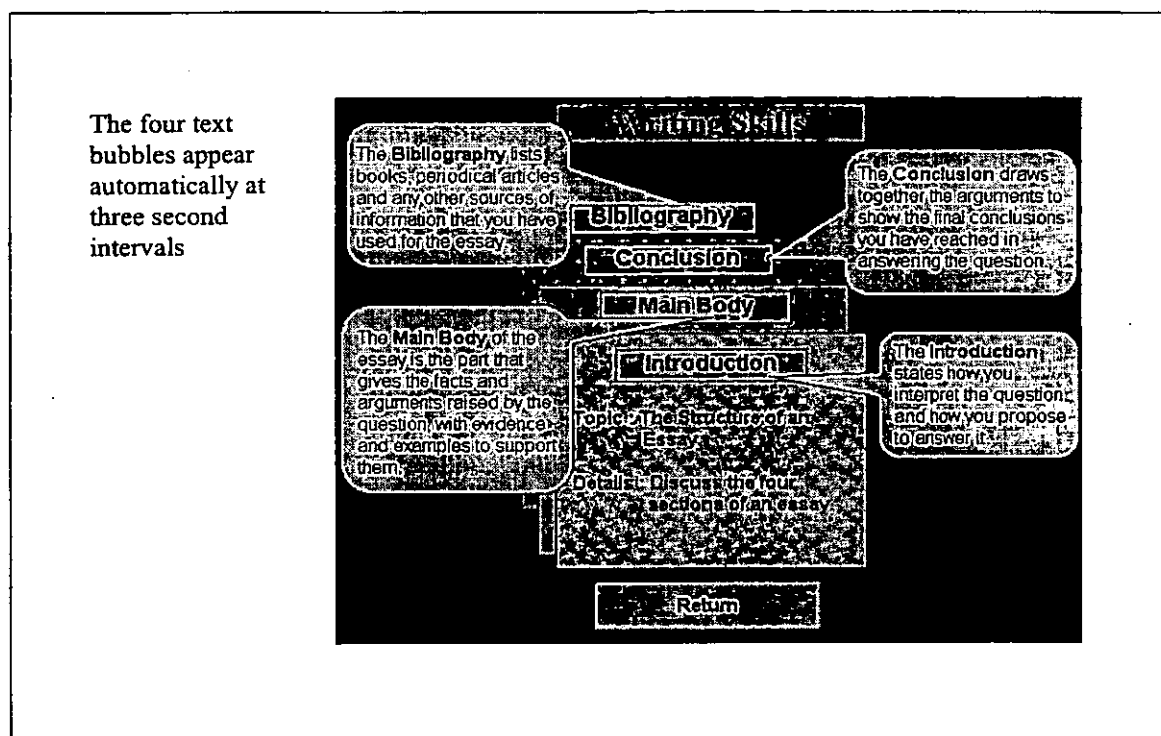
5.7.2   **Evaluators**

This tutorial was evaluated by 29 librarians and 18 students (nine postgraduates and nine undergraduates). Out of the 29 librarians who evaluated the package 24 completed a profile form. Twelve librarians had previously seen a CBT package for user education. No one currently used CBT packages as a method of delivery for user education but 14 libraries were in the process of considering or developing it. Another indicated that they were researching the idea and one indicated that as a result of the workshop they might look in to it. Fifteen librarians felt that CBT packages were an appropriate delivery method for user education.

All students except two undergraduates and two post graduates had experienced previous user education in the form of either leaflets or guided tours. Most students (16) had used a CBT package before (although not for user education). All students felt that user education was necessary and 13 felt that CBT was a valid method of delivery for user education. The other five students felt that it was 'possibly' a valid delivery method.

5.7.3 Structure and design

Most librarians and students were 'very positive' about the structure of the tutorial (Table 5.23).

Table 5.23   Structure

	very clear	clear	not at all clear
Librarians	69%	28%	3%
Students	72%	28%	0%
Total	70%	28%	2%

This was probably due to the users being presented with the main menu screen when they chose *Click here to begin*, rather than being launched in to the first text page of the first module (Figure 5.23). There were no sub-menus or introductory text screens or separate contents screens (as there were in the other TLTP tutorials) to confuse the user:

The main menu was very simple - no sub-menus to confuse you (Student 17).

Figure 5.23   Main menu screen
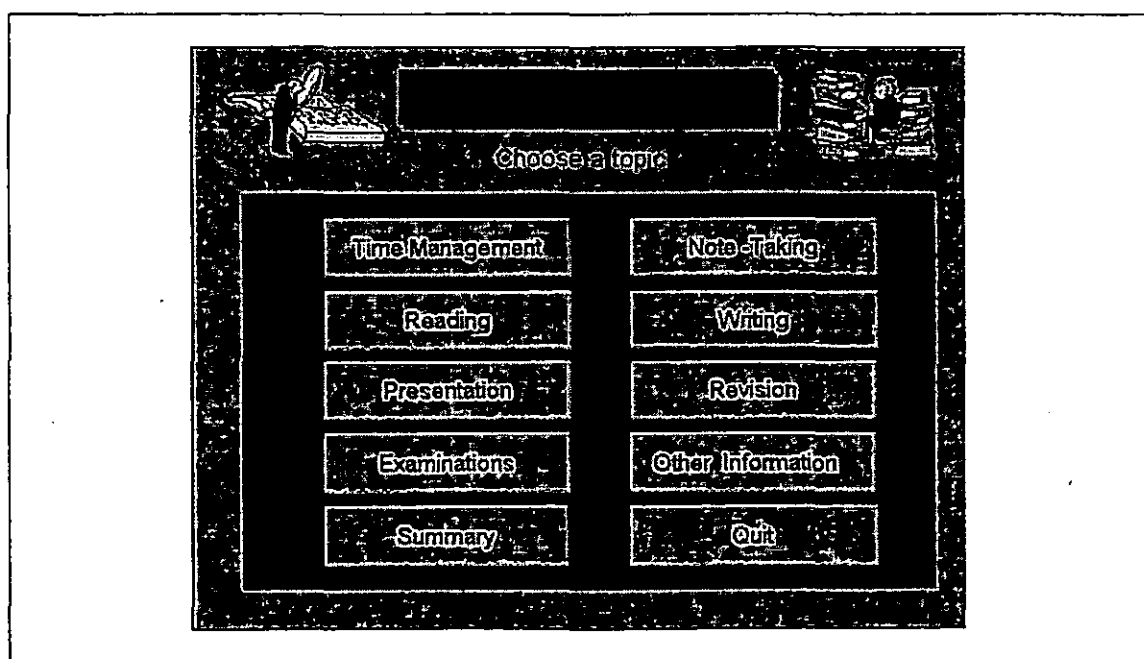
From this page they were instantly aware of the contents and the overall structure of the package. Users were automatically taken back to this screen at the end of each module and they were able to return to this screen from every screen of the tutorial via the *menu* option. They were also able to do the modules in any order, able to quit, move forward and backwards and make notes from most screens. It is not surprising therefore that the structure was rated highly. Only one user felt that the structure was 'not at clear' but they did not specify why.

Although the screens of the tutorial were not numbered, the topic title appeared at the top of every screen. This title was always a different font size and colour to the rest of the text on the screen and was always in a box. This gave the user some indication of where they were in the tutorial and most users felt that they were 'aware at all times' of where they were in the tutorial (Table 5.24). Those that felt that they were only aware 'sometimes' or were 'not aware' at all of where they were in the tutorial, gave no reasons for this. It would have perhaps further assisted users to have the screens numbered and to know how many screens made up a particular section.

Table 5.24   Awareness

	yes	sometimes	no
Librarians	83%	14%	3%
Students	67%	22%	11%
Total	77%	17%	6%

Navigation through the tutorial was considered to be 'easy' or 'very easy' by most users (Table 5.25). To move between modules users just had to return to the main menu screen (by clicking on *menu* on the button bar) and chose another module. They did not have to complete a module, before moving on to another one. Once an evaluator had completed a particular module a check mark appeared against the title on the contents page. Perhaps those that felt it was 'easy' and 'not very easy' would have preferred the modules to be listed on a menu bar so that they could access them directly. The module

that they were in could then also have been highlighted on the menu bar, assisting awareness. However there were seven modules and an additional menu bar might have made the screen appear cluttered.

Although there was no help option the option to quit was on all pages except the title page. It is not known whether evaluators considered the fact that there was no help option, however one librarian who felt that it was 'not at all easy' to request help felt that this was;

> *not really necessary (Librarian 53).*

Another student noted that they felt that the least useful feature of the package was:

> *No help (but kept so simple I don't know if help would be necessary (Student 2).*

However this student rated the option to quit/request help as 'very good'. Only one student differentiated between the option to quit and request help; they felt that while the option to terminate was 'very easy', the option to request help was 'not at all easy'. They also commented that the fact that there was *no help option (Student 17)* was one of the least useful features of the package.

Table 5.25   Navigation

Movement between modules	very easy	easy	not at all easy
Librarians (nr =3%)	55%	42%	0%
Students	56%	39%	5%
Request help/terminate*	**very easy**	**easy**	**not at all easy**
Librarians (nr =7%)	38%	52%	3%
Students (nr =5%)	45%	33%	11%

* evaluators who gave more than one response (ie differentiated between help and terminate) have not been included.

Thirty percent of evaluators (seven students and seven librarians) felt that the structure of the tutorial was 'very clear', that it was 'very easy' to move between modules, request help or terminate the tutorial, and that they were 'aware at all times' of where they were in the tutorial.

Again as with the other TLTP packages, this was very much mouse driven and it was not surprising that nearly all evaluators felt that some prerequisite mouse skills were necessary (Table 5.26). As one student pointed out:

First instruction is click here to begin - assumes knowledge of how to use a mouse (Student 7).

As with all the other packages to assist with necessary mouse and computing skills brief instructions on using the mouse to reveal further information and on using the notepad function were given in the *How to use the tutorial* section. However unlike the other packages once the user had passed the title screen, where the option of *How to use the tutorial* appeared, they could not return to do this section without quitting the package and starting it again.

Even though the tutorial was aimed at complete beginners and therefore should potentially have required no subject knowledge, over 40% felt that some subject knowledge was necessary. Thirty-one percent of librarians and 22% of students felt that no prerequisite knowledge or skills except mouse skills were necessary. Only 4% of evaluators (one student and two librarians) felt that no prerequisite skills or knowledge at all were necessary.

Table 5.26   Prerequisite knowledge and skills

	considerable	moderate	small	none
Computing knowledge				
Librarians (nr= 7%)	0%	10%	31%	52%
Students	0%	0%	28%	72%
Mouse skills				
Librarians	10%	35%	45%	10%
Students	17%	39%	33%	11%
Subject knowledge				
Librarians (nr= 3%)	0%	14%	28%	55%
Students (nr= 5%)	0%	11%	28%	56%
Keyboarding skills				
Librarians (nr= 7%)	0%	10%	17%	66%
Students	0%	11%	28%	61%

5.7.4   Content

The majority of evaluators found the aims and objectives of the tutorial to be 'very clear' (Table 5.27).

Table 5.27   Aims and objectives

Aims & objectives	very clear	clear	not at all clear
Librarians (nr=3%)	52%	42%	3%
Students	61%	39%	0%

As with the other packages, no specific aims or objectives were given. However like *Computer Sources* a brief description of the package was given on the title page (Figure 5.24).

Figure 5.24   Title page
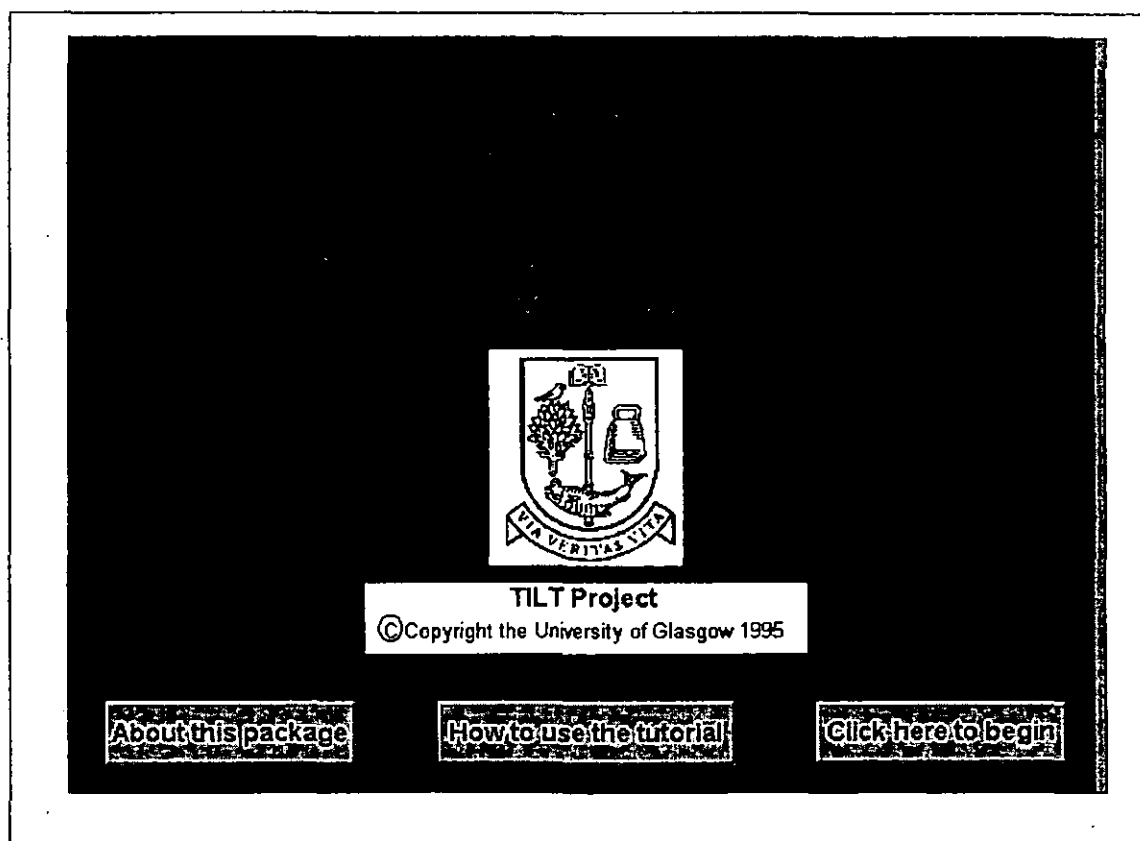
Although this could be considered a bit vague, alongside the actual topics displayed on the main menu page and the tutorial's title most evaluators were likely to have had a fairly good understanding of what the package was trying to achieve. It is not surprising therefore that all but two evaluators, felt that the aims and objectives were either 'very clear' or 'clear'. Of these other two evaluators, one felt that the aims and objectives were 'not at all clear':

> *Aims and objectives need to be added. It does not make explicit that some students would need to investigate study skills further to achieve desired level. Package won't meet all needs although there is a book list provided (Librarian 73).*

The other did not provide a rating but noted that the aims and objectives were;

> *not expressed (Librarian 21).*

Most evaluators felt that the tutorial met its intended purpose 'completely' (Table 5.28). The remaining users (except those who did not respond) felt it met its intended purpose to 'some' extent.

Table 5.28   Intended purpose

	completely	to some extent	not at all
Librarians (nr=7%)	62%	31%	0%
Students	72%	28%	0%

Six librarians felt the contents of the tutorial needed to be expanded. Two felt that information retrieval needed to be included and the other four felt that it needed to be more comprehensive:

> *More development of issues they are dealt with too superficially (Librarian 80).*

Three students also felt that the tutorial in terms of its content needed more information adding; one felt it needed more detail and two students felt that essay and report writing should be covered:

Layout/presentation of written work – citation etc [should be covered] *(Student 8).*

Two librarians felt that additional documentation in terms of a print out to accompany the package was needed and two felt that there needed to be something to develop actual skills. Only one student felt that additional documentation was needed to explain the menu bar options.

Evaluators responded positively to the extent the tutorial could be used on its own as a teaching device for this subject. Students were divided equally between those who felt that it could be used to a 'considerable' extent (50%) and those who felt that it could be used to a 'moderate' extent (50%). Of those who felt it could be used to a 'considerable' extent and commented; one felt that the content was particularly good the other four felt that the medium of a CBT package was particularly appropriate:

It allows people to look at specific areas they are interested in or to prioritise the things they want to look at. Items can be repeated to facilitate understanding and the notebook idea is great (Student 24).

Of those students who felt that it could be used to a 'moderate' extent and commented on how it could be improved; two felt that other delivery methods (personal input or book) would be more appropriate; one commented on the design suggesting that there needed to be a help option and one felt that there should have been a self-test. In comparison librarian's opinions were more mixed with 55% indicating it could be used to a 'considerable' extent, 28% to a 'moderate' extent and 14% to a 'small' extent. Although librarians were asked to elaborate only three librarians commented. Two who felt that it could be used to a 'considerable' extent felt that it was easy to use and overall a good package:

Well written. Well structured. Correct level in terms of content and style.
Very good for year one students. An excellent summary of student skills
(Librarian 81).

One who felt that it could be used to a 'small' extent felt that it offered no more motivation than using a book. However no-one felt that it could not be used 'at all' as a teaching device for this subject.

The majority of evaluators felt that the information content of the tutorial was either 'very good' or 'good' (Figure 5.25):

Content high quality considering the coverage and necessary brevity
(Librarian 73).

It is comprehensive and practical, covers areas which give problems to
students (Student 4).

Figure 5.25   Content
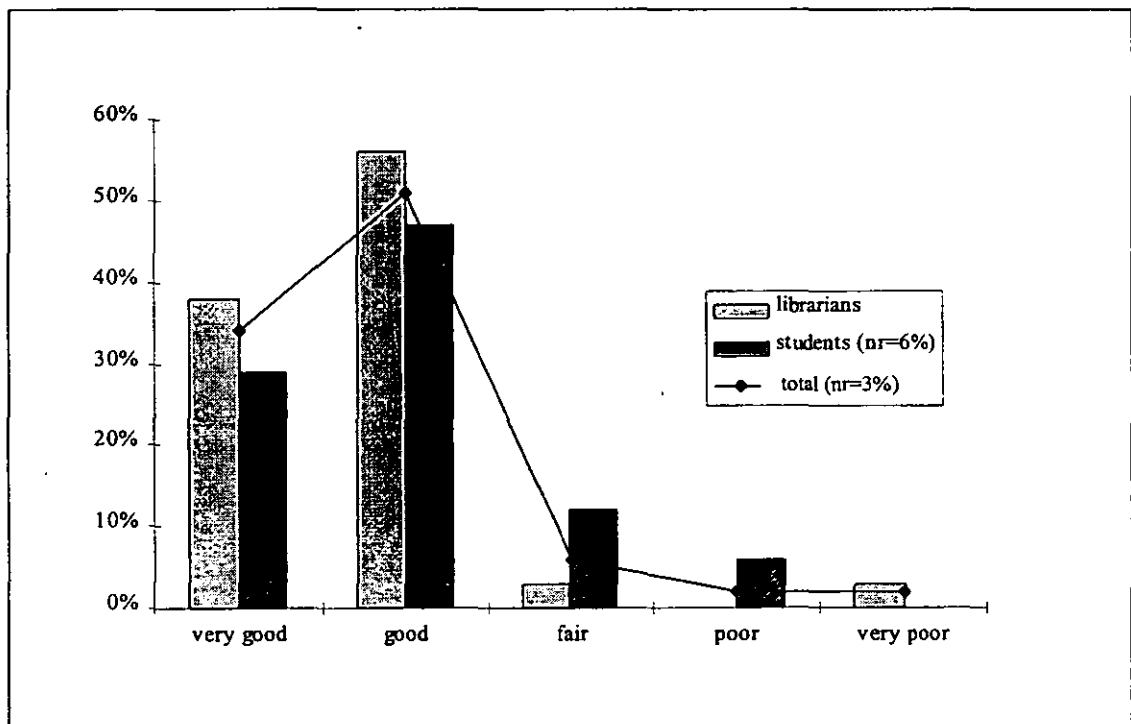
Given that the tutorial was attempting to convey concepts on what was really a number of individual subjects under the broad heading of study skills, this was a very positive result. The one student who felt that the content was 'poor' felt that:

Content was very basic - doubtful as to whether it justified the cost of the package (Student 8).

This was of particular significance to this student who felt that CBT packages were a valid delivery method dependent on their content:

Graphics and presentation methods are novel and attractive but sometimes packages are time consuming and even time wasting when information is slight (Student 8).

The librarian who felt that it was 'very poor' also felt that the content was too basic:

More development of issues are needed. They are dealt with too superficially (Librarian 80).

However it should be noted that the tutorial was - as stated on the title page - only supposed to be a basic introduction to Study Skills.

5.7.5   Overall impressions

Most evaluator's felt that there was sufficient interactivity within the tutorial to keep the user motivated (Table 5.29). Although there was not a separate exercise section, exercises were to be found in all sections. There was also interactivity in the form of clicking on words or illustrations to either reveal further information or to view simple animation.

Table 5.29   Interactivity

	yes	sometimes	no
Librarians	59%	31%	10%
Students	83%	11%	6%

Two of the three librarians who felt that there was not sufficient interactivity to keep the user motivated felt that there was too much text:

> *Too much text – no interactivity. No graphics in many sections to break up long sections of text (Librarian 56).*

> *Too much print, not sufficiently interactive. Would be equally/more effective as a series of booklets (Librarian 27).*

The student who felt that there was 'not' sufficient interactivity within the tutorial to keep the user motivated also felt that it was 'not at all' enjoyable to use and that it was 'not at all' an effective method of presentation:

> *Package is pedestrian, not clear in navigation and the topic requires a workshop demonstration [as opposed to a CBT tutorial] (Student M3).*

This student had used CBT packages before but found them boring and felt that they were only valid delivery methods:

> *As long as they are designed to catch and maintain the user's attention and concentration – then they work (Student M3).*

One librarian who felt that only 'sometimes' was there sufficient interactivity, felt that this was good, but that there needed to be more. They felt that the most useful feature of the package was:

> *The interactivity. This generally helps to reinforce the points being made (Librarian 47).*

However they also felt that interactivity was the least useful feature of the package:

> *Not enough interactivity (Librarian 47).*

The majority of users found the package either 'very enjoyable' or 'enjoyable' to use (Figure 5.26).

Figure 5.26   Enjoyment
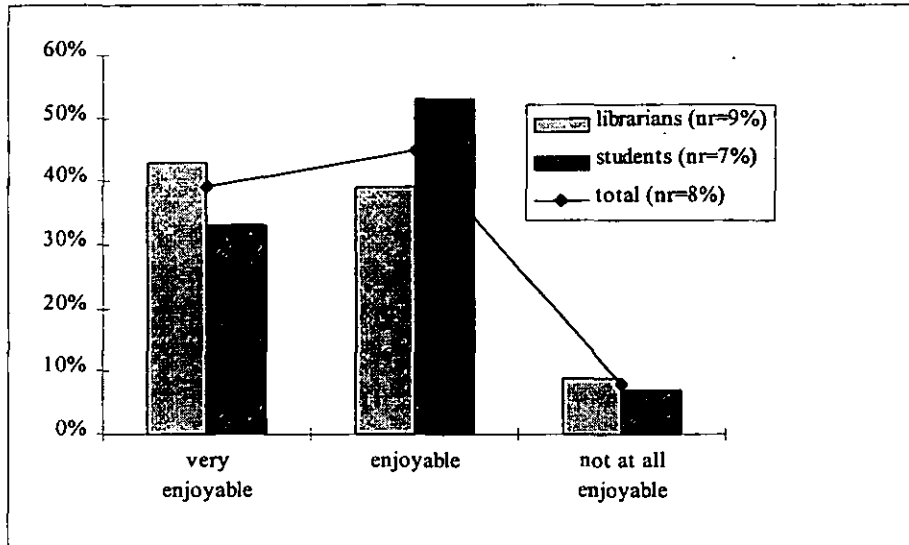
All students and all librarians who felt that the tutorial was 'very enjoyable' to use also felt that there was 'sufficient interactivity' within the tutorial to keep the user motivated.

Out of the 23 librarians who commented on what they found most useful about the package four mentioned the graphics, seven mentioned the content and 11 mentioned the structure and design:

> *Good involvement of user. Good images. Basic and to the point. Self-sufficient (Librarian 36).*

Out of the 18 students who commented on what they found most useful, three mentioned the content of the package, two mentioned the notepad facility and 13 mentioned the structure and design:

> *Excellent graphics and images. Very well designed and structured (Student 43).*

Of the 12 librarians who commented on what they found least useful about the tutorial one mentioned the content, eleven mentioned the structure and design with four of these commenting on the amount of information on the screen:

> *The dynamics of presentation hold the attention, but the screens are often quite/too complex (Librarian 37).*

Of the 11 students who commented on what they found least useful about the tutorial, three mentioned the content, two mentioned the graphics and six mentioned the structure and design:

> *Too much information at once – would need to use sections at separate sessions (Student 22).*

Five student (four undergraduates and one postgraduate specifically commented that they found there was nothing that was not useful.

Responses to the overall rating of the tutorial in terms of particular characteristics was fairly positive (Table 5.30).

Table 5.30   Characteristic ratings

	very good	good	fair	poor	very poor
Colour & graphics					
Librarians	59%	31%	10%	0%	0%
Students (nr=5%)	67%	22%	6%	0%	0%
Clarity of instructions					
Librarians	45%	52%	3%	0%	0%
Students (nr=5%)	56%	33%	6%	0%	0%
Ease of use					
Librarians	55%	42%	3%	0%	0%
Students (nr=5%)	56%	22%	17%	0%	0%
Self-sufficiency					
Librarians	45%	41%	14%	4%	0%
Students (nr=6%)	44%	39%	11%	0%	0%
Approach					
Librarians (nr=4%)	48%	31%	10%	7%	0%
Students (nr=11%)	44%	33%	6%	6%	0%
Interest level					
Librarians (nr=3%)	41%	35%	14%	7%	0%
Students (nr=5%)	50%	22%	17%	6%	0%

Seventy-six percent of librarians and 56% of students rated all the listed characteristics as either 'good' or 'very good'. Nineteen percent of evaluators rated all the listed characteristics as 'very good'. They also felt that the package was 'very effective', 'very enjoyable' to use, was 'sufficiently interactive' and met its intended purpose 'completely'.

> *Very clear – very easy to exit- informative – good for new users – would*
> *be good in schools as well as H.E. Quite humorous, which would appeal.*
> *Covers important skills which students often are rarely taught (Student*
> *2).*

All librarians except one and all students (except one who did not respond) rated at least one of the characteristics as 'good' or 'very good'.

Opinions towards colour and graphics were positive. No one felt that they were 'poor' and the majority felt that they were either 'very good' or 'good':

> *Very good choice of graphics and visual effects (Student 43).*

> *Good use of colour and graphics (Librarian 5).*

The one student that rated colour and graphics as 'fair' rated all the other characteristics as 'very good'. They had however felt that the least useful part of the package was the:

> *Graffiti style writing (Student 38).*

The librarians that rated colour and graphics as 'fair' did not comment.

Over half of all evaluators rated clarity of instructions as 'very good'. Basic instructions were given in the *How to use the tutorial section* and instructions also appeared throughout the package (Figure 5.27). Although over 90% of evaluators felt that the clarity of instructions were either 'good' or 'very good', it is not known whether this was based on the instructions throughout the package, or on the instructions in the *'How to use the tutorial'* section, or a mixture of both. However it should be noted that once the

user had passed the title screen, where the option of *How to use the tutorial* appeared, they could not return to do this section without quitting the package and restarting.

Figure 5.27   On screen instructions
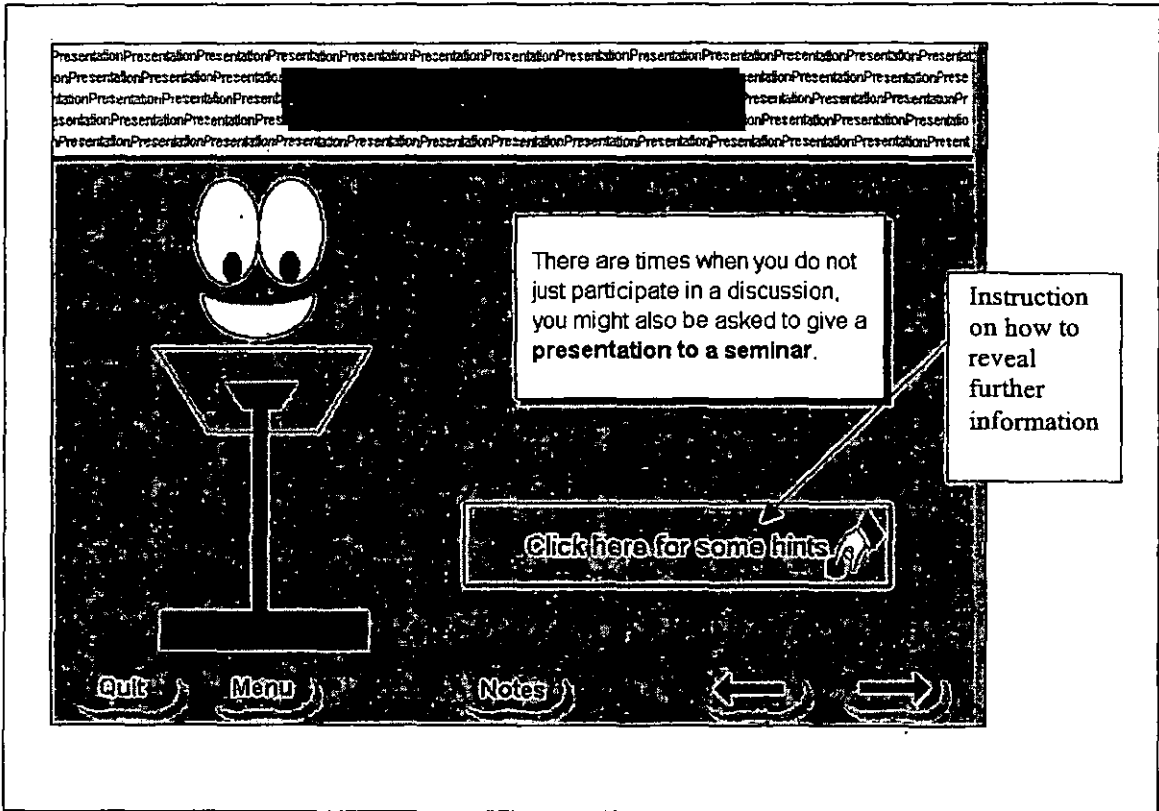
Of those that rated ease of use as 'fair', only one student commented. They felt that they were 'not aware at all times' of where they were in the tutorial and that it was:

> *A little basic and slow. With all the graphics it's enjoyable, but hard to take seriously as a learning tool. (Student 17).*

Another two evaluators who rated ease of use as 'fair' also felt that they were only aware 'sometimes' of where they were in the package.

Of those that rated approach as 'fair' or 'poor' and commented; three felt that there was too much information and one felt that the information was too basic.

Most evaluators felt that the package was self-sufficient. Of those that rated self-sufficiency as 'fair'; two felt that it could only be used as a teaching device for the subject to a 'moderate' extent, three felt it could be used to a 'small' extent and one felt that it could be used to a 'considerable' extent. One librarian who rated self-sufficiency as 'fair' and felt that it could only be used to a 'small' extent qualified this:

Useful as encouraging students to 'dip' which may lead to further reading. Difficult topic to cover in CBT format as this is an area which lends itself to discussion and student contribution (Librarian 73).

Another librarian who rated approach and interest level, as 'fair' but self-sufficiency as 'good' felt that they:

Would be loath to leave a student requesting study skill support with only CBT (Librarian 37).

Ratings for interest level were quite high. This is perhaps because the package covered a variety of distinctly separate topics under the broad heading of *Study Skills.*

Most evaluators felt that their overall impression of the package and of its effectiveness as a method of presentation was very positive (Table 5.31).

Table 5.31   Overall impression and effectiveness

Overall impression	very good	good	fair	poor	very poor
Librarian	45%	42%	10%	3%	0%
Student (nr=5%)	61%	22%	6%	6%	0%
Effectiveness	**very effective**	**effective**	**mod effective**	**not effective**	
Librarian	66%	14%	17%	3%	
Student (nr=5%)	67%	11%	11%	6%	

Of the two evaluators that felt that the package was 'not very effective' as a method of presentation, both felt that the content was too basic:

More development of issues = are dealt with too superficially (Librarian 80).

Content let down the presentation. Slight subject matter which could have been condensed. Package style made it more time-consuming and long-winded (Student 8).

Other comments on its effectiveness can be found in Table 5.32.

Overall responses to this package were very positive, indicating that this CBT package would be an appropriate delivery method for this subject.

5.8 Overview

Evaluations of the individual packages were for the most part positive. Although some criticisms of both the design and content of the packages were made, there were far more positive than negative ratings from both librarians and students. The evidence from this suggests that CBT packages are both successful and viable as a delivery method for user education.

Table 5.32   Comments on the effectiveness of the tutorial

Very effective - Librarians

- Sets out all the skills. Brief fun information (L97).
- Enjoyable and straightforward info. Good for basic info (L36).
- Uses text and graphics and clickability. Pity there is no sound or video image (L55).
- Excellent for first year students (L29).

Very effective - Students

- Information is presented in a clear and logical way, which covers all aspects of study skills. It is simple and easy to understand (S47).
- Very user friendly and easy to understand (S45).
- Information is simply presented in various forms to aid easy assimilation (S35).
- It's a good introduction which would build a user's confidence to try other CBT packages (S24).
- Clear, entertaining, sympathetic, easy to follow, covers very basic subjects (S7).
- At university level there is little help with study skills, they presume that by the time you are at university you should know how it works, also little time for extra curricular studies. So it is really a do-it-yourself subject and a CBT package can help (S5).
- It is comprehensive and practical – covers areas which give problems to students (S4).

Effective - Librarians

- But limited to general study skills only (L56).
- Particularly for individual students who may need to solve problems at their own pace (L47).

Effective - Students

- The package was easy to use, informative. Overall user friendly (S19).

Moderately effective - Librarians

- I would be loath to leave a student requesting study skill support with only CBT (L37).

Moderately effective - Students

- It appears a little basic and slow. With all the graphics it's enjoyable but hard to take seriously as a learning tool. (S17).

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CHAPTER 6   GOOD DESIGN FEATURES

6.1   Introduction

This chapter seeks to identify some good design features from an assessment of the prevailing literature and from the individual package evaluations. There are many design elements involved in the production of a good CBT package and on the whole these are reflected in the evaluations of the individual packages. Most recognised design guidelines appeared to have been followed (1,2). Generally for all the packages, far more positive than negative ratings and comments were received.

6.2   Structure

- *Structure should be clear and as simple as possible*

The structure of a package should be clear. Users should be aware of where they are in the structure and it should be easy for users to move around. The presentation of information should be logical and well organised. Users should be fully aware of the overall structure of the tutorial and of how to quit and gain help. Packages should be menu driven as this helps to facilitate relevant learning:

> "Students can choose material relevant to their needs and can move at
> their own pace and if necessary go back over information as much as
> they want to" (3).

All the TLTP packages were menu driven, although they all had slightly different structures. *How to Choose Books and Journals* had in effect two content pages. A menu page, which gave a partial view of the overall structure of the package and a content page where all options were displayed in a tree diagram. In *Library Search Skills* there was just a content page, in the form of a tree diagram. However in both these packages if the user chose to *Click here to begin* they were taken directly into the first text page of the tutorial. It was not until they had finished this first section that they would be able to see a content page which would give them some idea of the structure of the package.

Table 6.1   Structure

	very clear		clear		not at all clear	
	librarians	students	librarians	students	librarians	students
Books and Journals	41%	57%	59%	36%	0%	7%
Library Search Skills	50%	46%	43%	54%	7%	0%
Computer Sources	48%	25%	52%	69%	0%	6%
Study Skills	69%	72%	28%	28%	3%	0%

Computer Sources probably had the most complicated structure of all the packages in that there were a number of menu and sub-menus, and this is reflected in the students' rating of the package (Table 6.1). The librarians' rating was more positive, but this was likely to be due to their knowledge and understanding of the subject. This meant that they were more easily able to assimilate the tutorial's structure than the students were. *Study Skills* had the clearest structure, in that the contents were displayed in boxes (Figure 6.1). They were also presented with the main menu screen when they chose *Click here to begin*, rather than being launched in to the first text page of the first module.

Figure 6.1   Main menu screen of *Study Skills*
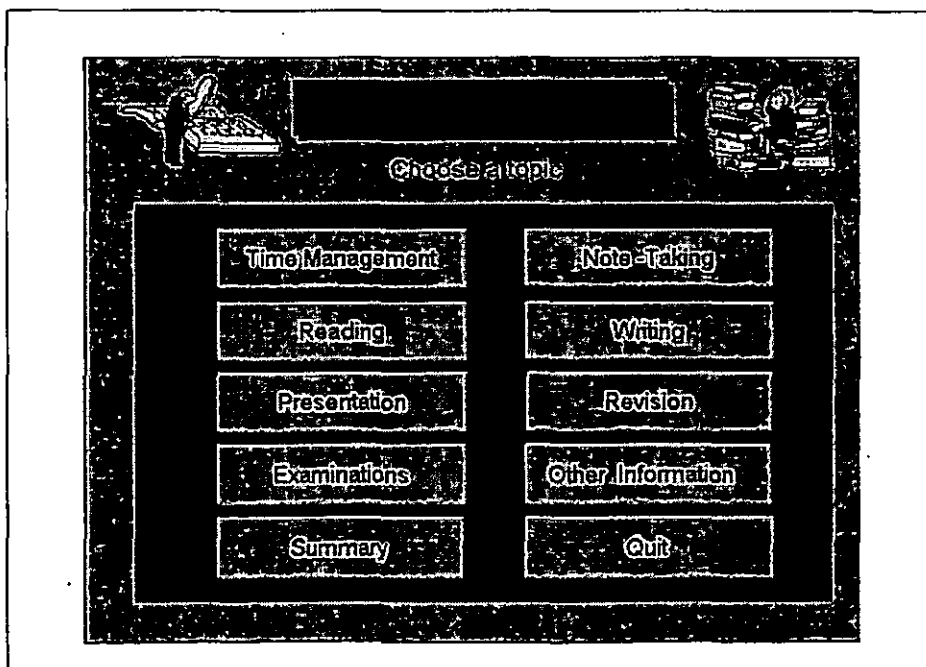
There were no sub-menus or introductory text screens or separate content screens (as there were in the other TLTP tutorials) to confuse the user:

> *The main menu was very simple - no sub-menus to confuse you (Student 17 – Study Skills).*

This is likely to have greatly assisted both the student and librarian ratings, and is reflected in the fact that the majority felt that the structure was 'very clear'.

All the packages were menu driven and were modular:

> "The modular structure means that students can select the areas of interest and get useful information even if they only have a few minutes to spare" (4).

Evaluators did not have to complete a particular module before moving on to another.

- ***Users should always be aware of where they are in a package***

Users should always be aware of where they are in a package. Each screen should therefore have a clear identifiable title. Also some context for each screen within other screens should be provided. Perhaps by indicating the number of screens in a section and the screen that the individual is on, as suggested by one evaluator:

> *Could benefit from page 1 of 9 in each section (Librarian 101 – Library Search Skills).*

None of the packages had this facility. Also in both *How to Choose Books and Journals* and *Computer Sources* there were no title on the screens:

> *The core information and teaching modules are good. What needs to be refined are the navigational aids such as telling people where they are in the package (Student 1 – How to Choose Books and Journals).*

You really need a miniature menu bar in the corner indicating where you are in the structure of the package as it is not always clear (Librarian 86 – How to Choose Books and Journals).

In *Library Search Skills* there was a title that was underlined at the top of each screen, but this was in the same colour as the rest of the text on the screen. This does not seem to have particularly helped the students as this received fewer 'very good' ratings than all the other packages (Table 6.2). In *Study Skills* the title was more identifiable as it was in a different font size and colour to the rest of the text on the screen and was also encased in a box.

Table 6.2   Awareness

	yes		sometimes		no	
	librarians	students	librarians	students	librarians	students
Books and Journals	67%	57%	22%	36%	11%	7%
Library Search Skills (students nr=8%)	83%	31%	14%	46%	3%	15%
Computer Sources	70%	38%	30%	44%	0%	18%
Study Skills	83%	67%	14%	22%	3%	11%

Since librarians felt that they were more aware than students in all the packages, it is likely that they were also assisted by their knowledge and understanding of the subject. This meant that they were more easily able (especially in the case of *How to Choose Books and Journals* and *Computer Sources)* to gauge where they were in the tutorial from the combination of their knowledge and the actual information content on the screen.

Although the ratings by librarians were generally quite good, the ratings by students were more mixed. It would have been better if all the packages had title screens like *Study Skills* and also screen numbers.

- ***Package should be easy to use and navigation should be clear and simple***

Navigation should be clear and simple and not act as an impediment to the user. The user should feel in control of the package rather than controlled. This is particularly important for the new user. A menu bar should be consistent and should allow for differing learning strategies. A confident user should be able to navigate freely within the package. A novice user should have the ability to be able to simply move on the next screen (5).

Users should quickly be able to understand how to navigate around the package, so that they are able to concentrate on the content of the package rather than how it works. Movement between screens and modules should be easy. Familiarity with using a mouse or keyboard should not be assumed.

The TLTP packages sought to overcome potential problems that might have occurred by the user having to use a keyboard, by providing mouse-based packages. They also sought to compensate for those who had little or no experience of using a mouse by providing instructions in the *How to use the tutorial* section which was in every package (Figure 6.2).

Figure 6.2   Instruction screen from *How to use the tutorial* section
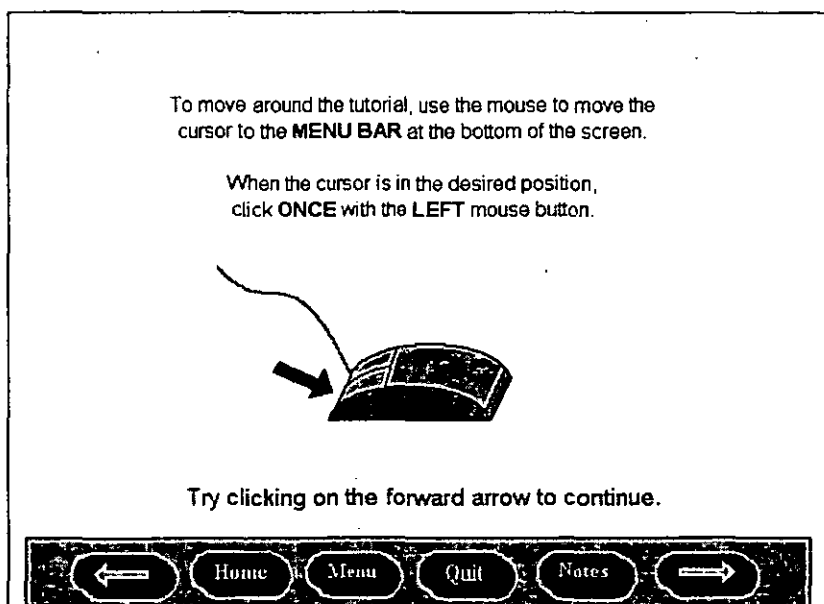
Although the keyboard might have been required occasionally to type in answers, the user could avoid this, by using the forward arrow to move on to the next screen. Exercises were optional rather than compulsory.

Navigation through the TLTP packages was via a standard menu bar, which was to be found along the bottom of the screen. This menu bar was on most, but not all screens and the user could use it to move forwards and backwards; take notes; go to the contents page, and quit (Figure 6.3).

Figure 6.3   Standard menu bar from _How to Choose Books and Journals_
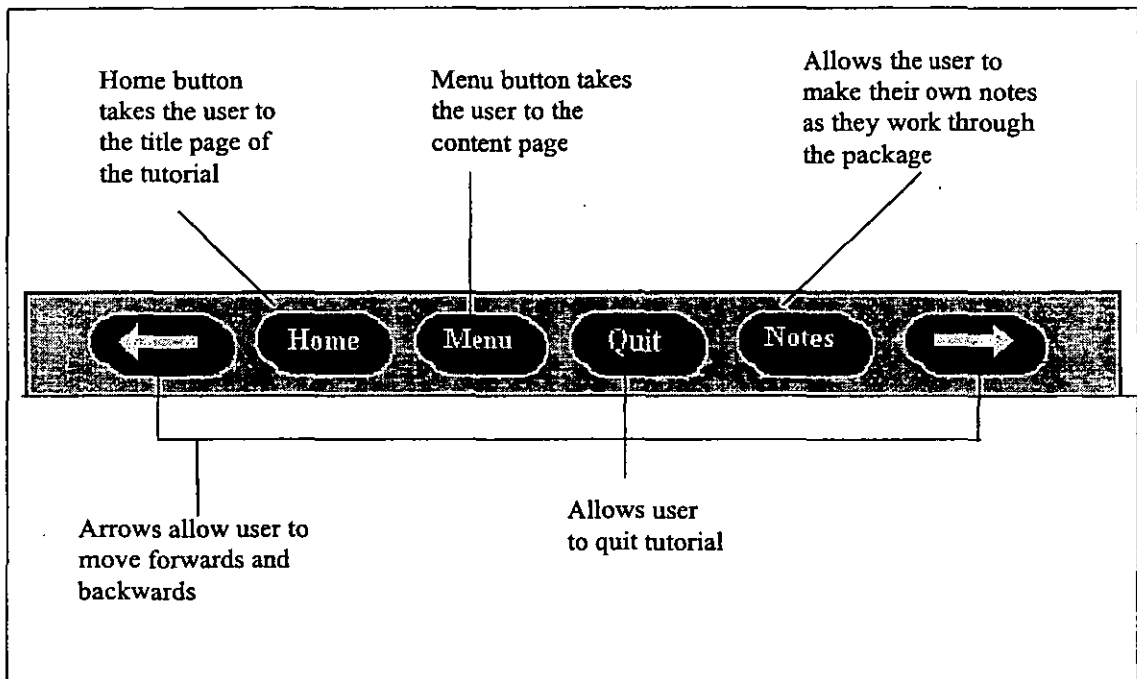
It was also possible in some packages to return to the title page. For example in _How to Choose Books and Journals_ and _Library Search Skills_ this was done via the home button. However the home button in _Computer Sources_ took the user to the main menu screen. The only way of returning to the title page in this package was through _a Re-start_ button which could only be accessed from the two menu screens. One student who rated both clarity of instructions and ease of use as 'fair' specifically commented on this:

Need a constant link back to the introductory screen telling you about how to use the programme (Student 1 – Computer Sources).

In *Study Skills* there was no option at all for the user to return to the title page. This package had no *home* button, instead it had a *menu* button, which took the user to the content page. Hence once the user had passed the title screen, where the option of *How to use the tutorial* appeared, they could not return to do this section without quitting the package and starting it again.

Although individually the non standardisation of menu bars across the packages would not necessarily have affected ease of use, since these could have been considered a suite of programs, it might have aided users if buttons and menus had been the same. This would have provided a coherent image and assisted ease of use.

All the packages did try to follow suggested guidelines for navigation through their menu structures and menu bar and for the most part this was fairly successful (Table 6.3).

Table 6.3   Ease of use

	very good		good		fair		poor		very poor		no response	
	libs	stud	libs	stud	libs	stud	libs	stud	libs	stud	libs	stud
Books and Journals	44%	29%	44%	42%	4%	29%	0%	0%	0%	0%	8%	0%
Library Search Skills	37%	46%	50%	39%	13%	15%	0%	0%	0%	0%	0%	0%
Computer Sources	48%	31%	37%	31%	7%	25%	0%	13%	0%	0%	8%	0%
Study Skills	55%	56%	42%	22%	3%	17%	0%	0%	0%	0%	0%	5%

● *Users should be able to interact with the package*

Interactivity within a package can greatly enhance the learning experience. It also assists to maintain student interest and increase a user's enjoyment of a package. Exercises can help to re-enforce the information content of a package. Interactivity can be increased by providing a variety of different exercises, such as multiple choice, pointing or highlighting or typing in answers. It is not just based on exercises but also

involves the user in for example revealing further information. Packages should try to avoid being purely page turning models as this does not offer the user any real interaction with the package (6,7).

Interactivity within the different TLTP packages was considered to be fairly good. Most evaluators felt that there was sufficient interactivity within the different tutorials to keep the user motivated (Table 6.4).

Table 6.4   Interactivity

	yes		sometimes		no		no response	
	librarians	students	librarians	students	librarians	students	librarians	students
Books and Journals	79%	56%	21%	44%	0%	0%	0%	0%
Library Search Skills	47%	39%	40%	39%	13%	7%	0%	15%
Computer Sources	63%	69%	26%	25%	4%	6%	7%	0%
Study Skills	59%	83%	31%	11%	10%	6%	0%	0%

All packages contained a variety of exercises. In some, exercises were to be found in all sections. In others, such as in *How to Choose Books and Journals* and in *Computer Sources* there was a separate exercise section to reinforce learning.

A number of evaluators felt that the exercises and interactivity were the most useful feature of the package:

> *The test at the end helped me to know whether I had actually learnt anything and actually remembered it (Student 9 - How to Choose Books and Journals).*

> *The interactivity. This generally helps to reinforce the points being made (Librarian 47 – Study Skills).*

There was also interactivity in the form of clicking on words or illustrations to either reveal further information or to view simple animation. There was also the ability for the student to make their own notes as they worked through the package. Interestingly there were less interactive features in *Library Search Skills* than all the other packages and this seems to be reflected in the package ratings.

As suggested by the literature there is usually a link between student interest and enjoyment of a package and interactivity. This was proven to be the case with the TLTP packages where all evaluators (except one) that felt that the package was 'very enjoyable' to use also felt that there was 'sufficient interactivity' to keep the user motivated.

6.3   Screen design

- *Screens should be visually appealing, consistent and uncluttered*

The layout of individual screens should be considered carefully to optimise usability. Graphics and colour should be used to enhance text and appropriate use should be made of type faces, sizes and space. Consideration should also be given to the amount of text on screen and its positioning; scrolling should be avoided. There should be an appropriate balance of text and graphics on the screen. The spacing and font and type size should facilitate reading and typographic guidelines for the screen should be followed. The use of colour, italics, bold and the position of text for example through indenting should be used to distinguish between text components. There should be a consistent approach to screen design and established design principles should be adhered to (8,9).

Although there was not a specific evaluation question on screen design on the evaluation form, as the director of the TILT project at Glasgow University stated:

> "User interface must be well designed if it is not to act as an impediment to the learner" (10).

On the whole this seems to have been adhered to, as there were very few negative comments:

> *Layout – excellent – clean and simple (Librarian 10 – How to Choose*
> *Books and Journals).*

The layout of the TLTP packages was fairly consistent. The menu bar was always at the bottom of the screen and if headings were used, these were always at the top of the screen and emphasised through underlining or the use of a box. The main part of the text was always the same typeface and size, and bold, underlining, or colour was used to emphasise particular words. Different typographical styles were also used for exercises and examples or when there was nested information to be revealed. However in *Library Search Skills* underlining was used to emphasise headings. This was particularly misleading as in the other three packages underlining was used to denote hidden information. In *Library Search Skills* users were asked to click on certain bold headings to reveal further information. Despite this misleading instruction there was consistency within individual packages. However since it is likely that the packages would be made available together, even if they were not used together it would have been a better design feature, to have had a consistent approach across all four packages.

Figure 6.4   Screen from *Study Skills*
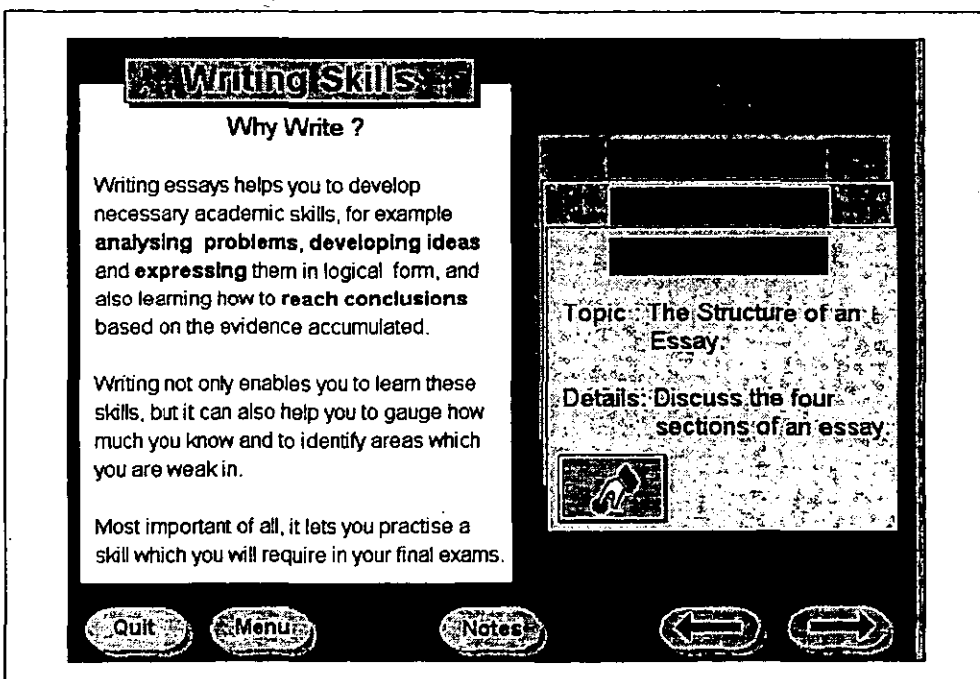
There were no specific negative comments on the legibility and readability of screens. Most screens appeared clear and uncluttered with a fair amount of blank space. The only package to receive any negative comments as regards screen design was *Study Skills* (Figure 6.4). Two evaluators felt that there was too much information on a number of screens.

- ***Colour and graphics should be used for emphasis and to aid assimilation of content***

Colour and graphics can be used to make an immediate visual impact on the user. Colour can be used to provide variety and stimulation and to reinforce points. It can also be used for emphasis, and to make it easier to read and to look more attractive. As with general screen design there are many established guidelines such as never combining more than three colours on a screen that can be followed (11). Graphics can add aesthetic appeal to the screen and should (if used correctly and provided they do not clutter the screen) help the user to assimilate the information. They can be used to convey information by illustrating specific points, or they can add amusement and seek to break up the text. However if used in this way it is important that they do not detract from the information content of the package.

In the TLTP packages graphics are used in two ways. They are used to provide humour, in the form of cartoon like illustrations (Figure 6.5). They are also used (especially in animated sequences) to convey information, particularly processes. Colour is used both to add interest to the package and to emphasise points. For example in *Library Search Skills*, the screens are either white background with blue writing or blue background with white writing, with yellow used for emphasis. These follow recommended colour combination guidelines (12).

Only four evaluators commented negatively on the use of colour in the TLTP packages. In *Library Search Skills*, three evaluators commented that they felt that the colours used were one of the least useful features of this particular package. One felt that white text on a blue background was not very easy to read. One felt that hotwords should have been in a different colour to the rest of the text. The other felt that the least useful feature of the package was:

The huge amount of blue! (Student 29 – Library Search Skills).

Figure 6.5   An example of a humorous graphic
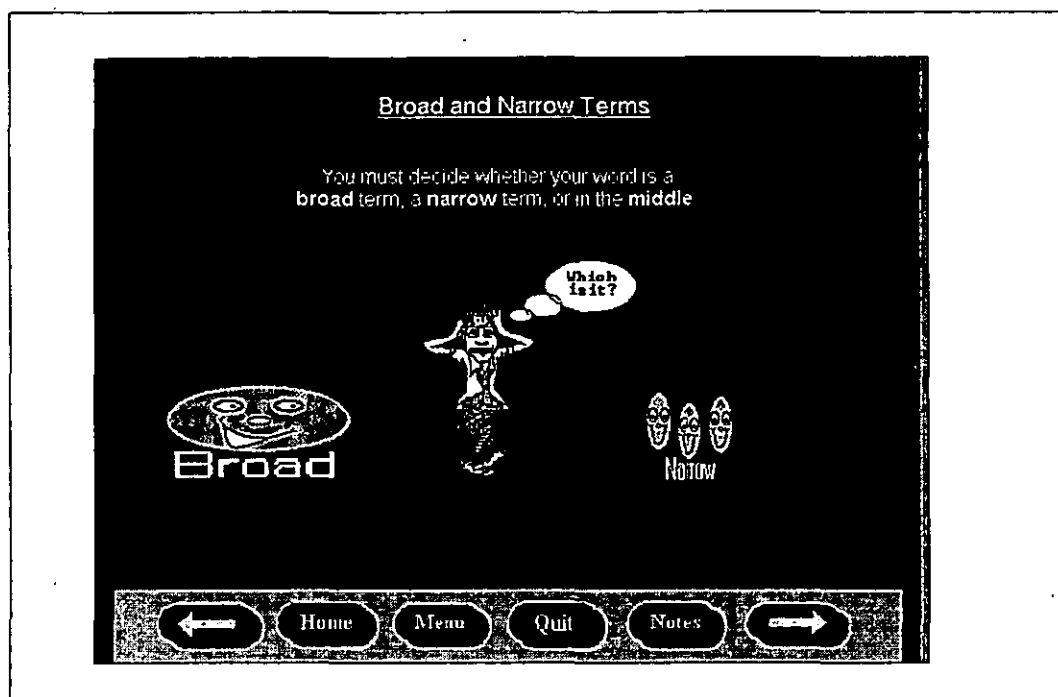
In *Computer Sources* one evaluator felt that the use of colour was the least useful feature of the package:

> *Would have preferred use of different colours on screen for different pieces of text – tendency for some text to fade in to background (Librarian 8).*

However established guidelines were followed and the use of colour for the vast majority of evaluators was positive.

Comments on the use of graphics were rather more mixed, but since this is a more subjective issue this was to be expected. Comments ranged from those that felt that they were:

> *Childish and annoying (Student 39 – Computer Sources).*

To those that felt there was a:

Very good choice of graphics and visual effects (Student 43 – Study Skills).

6.4   Content

•   ***Aims and objectives should be clear and explicitly stated***

The aims and objectives of a package and indeed the individual modules (if modular) should be explicitly stated. The user should be fully aware of the intended purpose of the package in order to be able to judge its appropriateness.

Although it is possible as can be seen from the TLTP packages that aims and objectives can be gauged, they should ideally be stated (Table 6.5).

Table 6.5   Aims and objectives

	very clear		clear		not at all clear		no response	
	librarians	students	librarians	students	librarians	students	librarians	students
Books and Journals	33%	36%	56%	36%	0%	21%	11%	7%
Library Search Skills	27%	31%	46%	46%	27%	23%	0%	0%
Computer Sources	44%	19%	41%	56%	0%	25%	15%	0%
Study Skills	52%	61%	42%	39%	3%	0%	3%	0%

Titles alone as can be seen from *Library Search Skills* can be misleading and not represent an accurate reflection of the packages aims and objectives:

Title is misleading - is really more general information on search strategy skills. Title gives the impression of more skills to be covered. (Librarian 77).

It was only from a combination of factors - the package's title, the content page, the evaluator's existing understanding of the topic and from working through the package - that evaluators would have been able to gain an understanding of what the TLTP packages were trying to achieve and what their aims and objectives were.

Two packages although not explicitly stating their aims and objectives did give the user on the title screen some indication of their intention:

- *An introduction to some of the techniques required to search CD ROM and on-line bibliographic databases (Computer Sources).*

- *A basic introduction to some of the techniques required for successful study (Study Skills).*

It might be expected that this would reflect in a higher rating for these two packages than the other two. Although this might be considered to be the case for the librarians as these two packages were rated more highly, it is not the case for the students. Although the clarity of the aims and objectives were rated quite highly by the students for *Study Skills,* this I believe is down to a number of factors rather than just the information on then title page. This is confirmed by their rating of *Computer Sources,* which also had an added sentence on the title page, yet received the lowest rating of all the packages.

To avoid ambiguity and to assist the user in assessing the appropriateness of a package, aims and objectives should be explicitly stated.

- *Content should relate to target audience*

The language used in a package needs to be at a suitable level for the targeted user. Consistent vocabulary, avoidance of technical jargon and acronyms, provision of a glossary (perhaps through hot-links) should all aid optimum comprehension.

> "Consider the target learners. Do not use images or language, which are outside their understanding or previous experience. If this is likely to occur, careful explanation must be given" (13).

Ambiguity and double meaning should be avoided. The content should be accurate and free from any typographical or grammatical errors. Modules should be independent of each other. Relevant examples and exercises should be used and these should be as up-to-date as possible. The information provided should try to satisfy the needs of the anticipated user.

The information content of the TLTP packages was aimed primarily at first year undergraduates. They were supposed to provide basic introductions to the topics rather than comprehensive coverage. They appeared to be free of typographical and grammatical errors as there were no comments on this. They focused on generic issues rather than being subject-based, in order to be of value to a wider audience. This meant that the target population in this case, their needs, wants, ability and cognitive styles was very diverse. This was recognised by the creators of the material:

"Gauging the correct level at which to aim the material was not easy as the users were likely to come from varied backgrounds and subject areas" (14).

Although there were a number of individual criticisms of the packages ranging from those that felt that the information content was too basic:

The tutorial covers a narrow part of search skills. Searching via formal elements is not even mentioned (Librarian 44 - Library Search Skills).

To those that felt the information given was incorrect:

Publisher's information was inaccurate and misleading in this section (Librarian 22 - How to Choose Books and Journals).

Given that the majority felt that the content of the packages was either 'good' or 'very good', it could be assumed that the content was at about the correct level (Table 6.6).

Table 6.6   Information content

	very good		good		fair		poor		very poor		no response	
	libs	stud	libs	stud	libs	stud	libs	stud	libs	stud	libs	stud
Books and Journals	26%	21%	52%	72%	22%	7%	0%	0%	0%	0%	0%	0%
Library Search Skills	33%	8%	37%	46%	23%	38%	3%	8%	0%	0%	4%	0%
Computer Sources	37%	31%	33%	56%	19%	13%	4%	0%	0%	0%	7%	0%
Study Skills	38%	28%	56%	50%	3%	11%	0%	5%	3%	0%	0%	6%

The creators of the packages attempted to avoid the 'not invented here syndrome', by enabling host institutions to make minor adjustments to the content of the package to suit their specific needs.

All evaluators that felt that the packages were 'very enjoyable' to use also felt that the information content was either 'very good' or 'good'. This suggests that there was a link between quality of content and package enjoyment.

- **Instructions should be clear and concise**

Instructions on how to use the tutorial and how to progress through it should be clear and concise. Good clear instructions ensure that the user can have confidence in the medium that they are actually using. It becomes a far less effective learning tool if a user is unsure how to work through a package. Users should be able to return to instruction screens at any time if they need confirmation of an action. Support should be provided in terms of help facilities and prompts.

Although clarity of instructions for the TLTP packages were not rated particularly poorly, they did not appear to follow recommended guidelines (15). There was no help option provided, and a number of evaluators across the packages felt that the fact that there was no help option was one of the least useful features of the package.

There was in all the packages a section entitled *How to use the tutorial*. This briefly covered how to use the mouse, how to reveal further information and how to use the notes function. However this was not always easily available. In *Study Skills* once the user had passed the title screen, (where the option of *How to use the tutorial* appeared), they could not return to this without quitting the package and then starting it again. In *Computer Sources* they could also only access this screen from the title page and the title page could be accessed from the two menu screens by choosing the *Re-start* button.

Table 6.7   Clarity of instructions

	very good		good		fair		poor		very poor		no response	
	libs	stud	libs	stud	libs	stud	libs	stud	libs	stud	libs	stud
Books and Journals	33%	43%	48%	50%	19%	0%	0%	7%	0%	0%	0%	0%
Library Search Skills	30%	38%	47%	31%	23%	31%	0%	0%	0%	0%	0%	0%
Computer Sources	41%	31%	44%	31%	15%	38%	0%	0%	0%	0%	0%	0%
Study Skills	45%	56%	52%	33%	3%	6%	0%	0%	0%	0%	0%	5%

There was also a wrong instruction given in the *How to use the tutorial* section of *Library Search Skills*. The same instruction as regards underlining was given in *Library Search Skills* as in all the other TLTP packages (Figure 6.6).

Figure 6.6   Instruction from the *How to use the tutorial* section

As you work through the tutorial you will be asked to **CLICK** on
other areas such as **illustrations** or <u>**underlined text.**</u>
Doing this will reveal some hidden information.

Yet in *Library Search Skills* on individual screens users were asked to click on certain bold headings to reveal further information; underlining was used on every screen to emphasis headings.

Some attempt was made for the user to provide a sense of security and guidance through the packages, by the repetition of the above instruction (Figure 6.6). Mostly this did occur, but for example in the *Exercises and Examples* section of *How to Choose Books and Journals*, more information was revealed if the user clicks on the graphs, but there is no reminder on this page that the user should do this.

There were also no instructions to the user as to how they should work through the tutorial. All the packages had either three or four options on the title page, and it was not clear what each option did. As one student stated:

> *The first screen* [Figure 6.7] *threw me completely I didn't know where to start (Student 11 – How to Choose Books and Journals).*

Figure 6.7   First screen of *How to Choose Books and Journals*
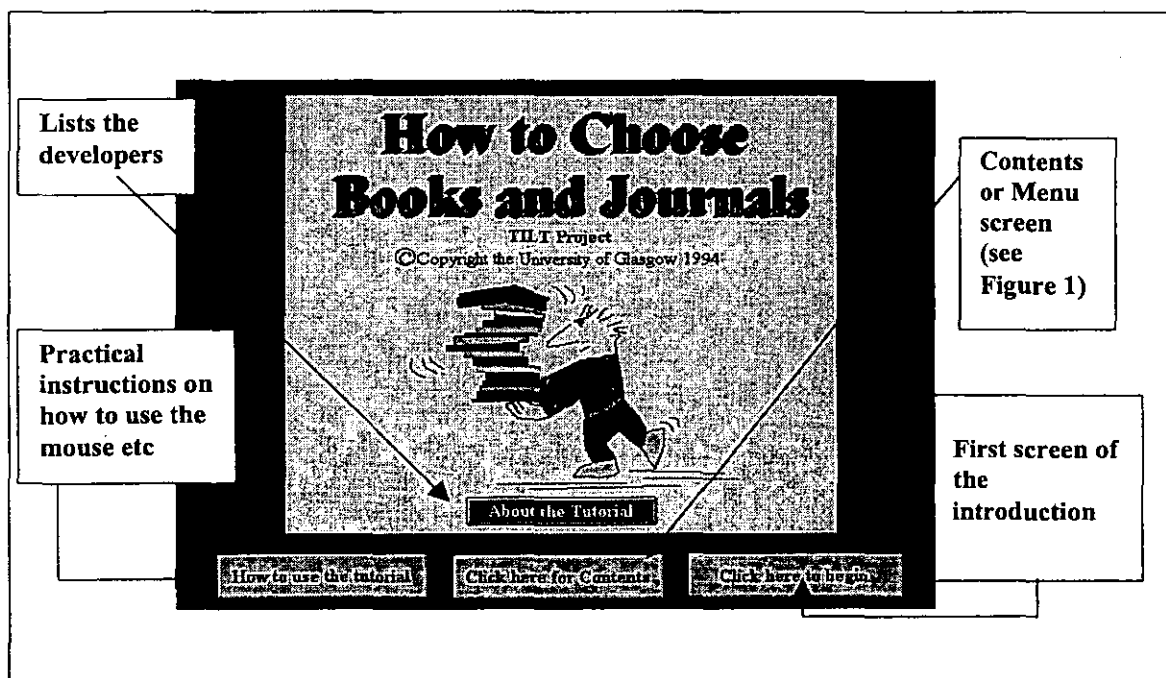
It is possible due to the fairly short time span evaluators had to look at the packages that they might not have realised the issues concerning clarity of instructions, as the ratings

do not seem to reflect the suggestions in the prevailing literature. Alternatively evaluators might have considered the outlined concerns, but perhaps thought that these were only minor considerations.

Generally good design features as established by the prevailing literature are reflected in all the TLTP packages. On the whole they demonstrate a successful approach to design and this is shown through the many positive ratings and comments found in Chapter Five.

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CHAPTER 7   CONCLUSION

7.1   Aims and objectives of the research

The main aim of this thesis was to examine whether computer based tutorial (CBT) packages were a viable delivery method for user education in academic libraries, and to identify good design features. This was undertaken through literature searches, workshops, survey questionnaires and evaluation forms, with each stage of the research informing the next.

7.2   Attitudes towards CBT packages as a delivery method

Attitudes towards CBT packages as a delivery method for elements of user education were sought from all academic libraries through a nationwide survey, and from students and librarians attending workshops. The results showed that in theory CBT packages would be a suitable delivery method for elements of user education.

Of the 152 responses received from university libraries through the nationwide survey, the majority of respondents (85%) felt that CBT packages did, in theory, have a valid place for elements of user education training. Eleven percent felt that they possibly did; one percent felt that they were not an appropriate medium and three percent of libraries did not respond. The main provisos for those who felt CBT packages did have a valid place in user education training were:

- That the packages could be adapted to individual institutions requirements or be broad enough to be applicable everywhere.

- That sufficient hardware be available within the institution to run the packages.

The reasons given for their suitability as a delivery method included their availability to be accessed at any time and the fact that the user could go through them at their own pace.

Their viability as a possible delivery method was also further substantiated by the librarians and students attending workshops. Of the 68 librarians that attended a workshop and completed a profile, 63% felt that CBT packages were an appropriate delivery method for user education. All the other librarians (except one who did not respond) felt that they were a 'possible' valid delivery method. Of the 49 students that completed profiles, 73% felt that CBT packages were an appropriate medium for user education; the others felt that they possibly were. Interestingly, students not only felt that they were valid methods of delivery, but many (70%) also expected them to be available.

7.3   Practical viability of CBT packages as methods of delivery

To test the practical viability of CBT packages as methods of delivery, a number of CBT packages were made available at a series of workshops at a number of different geographical locations. These packages were evaluated by both students and librarians. They considered the packages individually not comparatively. The evaluators were not concerned with learning outcomes *per se*, but sought to establish the suitability of individual packages as methods of delivery and to identify factors that might make a good CBT package.

All the packages were slightly different in structure and approach, and had unique contents, yet all the evaluations of the individual packages were, for the most part, positive. Although some criticisms of both the design and content of the packages were made, there were overall far more positive than negative ratings from both librarians and students. They all could be considered to be fairly good attempts at a CBT package, especially if the individual criticisms were taken on board and the packages amended accordingly.

The evidence from the individual package evaluations suggests that CBT packages can be both successful and viable as a delivery method for user education.

7.4   Good design features

This thesis also sought to identify some good design features from an assessment of the prevailing literature and from the individual package evaluations. There are many design elements involved in the production of a good CBT package and on the whole these are reflected in the evaluations of the individual packages. Most recognised design guidelines appeared to have been followed. These packages were, for the most part, good examples of successful design.

7.5   Summary

The search for innovative approaches for delivery of the user education programme is not new and has taken many different forms, from the early experiments in the 1970s with tape slides and audio visual materials to the advent of the Computer Based Tutorial (CBT) package and the World Wide Web (WWW) (1,2,3,4). Today there is an impressive array of instructional methods and media concerned with teaching the plethora of different skills that make up the user education programme. The topic continues to receive widespread national interest as evidenced by the recent audit of information skills training undertaken by JISC and others in June 2001 (5).

Yet despite over 70 years of research in this area and a seemingly endless variety of methods, there is no nationally recognised method of delivery for the user education programme. The choice of which method and which type of instruction depends on many variables. It tends to be influenced by local factors, such as the size of the institution, number of students, physical layout and location of library or libraries, staffing levels and the attitudes of those instrumental to the development of the user education programme.

The growth in student numbers, the changes in the types of students seeking degrees, the emphasis on more independence in learning, and the increasing emphasis placed on the library, has meant that many libraries have had to reassess their position with regards to user education (6,7,8). Demand has increased not only in terms of library orientation, but also in the more fundamental information skills and in the use of information technology. The volume of available information has dramatically

increased and is now available in many different formats and in many locations - some physical some technological. Consequently there has been and still is, a constant crusade to develop user education programmes that are both cost and time-effective.

At the time of starting this research in 1994 the advent of using the WWW as a method of educating the user was not widespread. A survey conducted in September 1994 found that out of 75 academic libraries in the UK, less than half had library WWW pages (9). However, the last few years have seen the use of the WWW grow exponentially. Today the majority of academic libraries in the UK make use of the WWW for some form of user education. A survey conducted in 1998 found that out of 68 academic libraries in the UK, 80% were using the WWW for some sort of user education (10). This is only likely to have increased.

In conclusion, the WWW and the use of CBT packages have not replaced traditional methods, but supplemented and extended the many existing methods of delivery. They have both become accepted delivery methods for the user education programme, but as additions rather than replacements. Despite extensive literature, conferences, workshops and specially funded projects, spanning over seventy years there is as of yet no universally accepted solution to that of educating the library user. The question of what should be taught to whom, when and how continue to be issues for concern and debate. The advent of the CBT package has just added to this debate.

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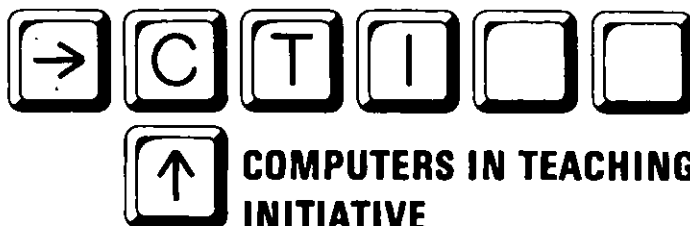
CENTRE FOR LIBRARY AND INFORMATION STUDIES

December 1994

Dear CTILIS Reader,

We are currently updating the *Introductory Library User Education questionnaire* that we carried out in November 1991 and we would be grateful.if you could spare a few minutes to fill out the enclosed questionnaire and return it by January 28 in the prepaid envelope. Thank you.

Yours sincerely

Tracy Hopkins

SECTION A - PERSONAL DETAILS

Name: ....

Institution: ....

Address: ....

....

Tel: ....   Fax ....

E-Mail ....

1.Do you (personally) use JANET regularly for any purpose?

              yes [ ]   no   [ ]

If yes please elaborate

....

....

....

SECTION B - NEW LIBRARY USERS

This section focuses on the introductory services that you might provide for **new** library users.

2. Do you have a standard introductory user education programme that covers all new students or do individual subject specialists create their own individual programmes?

standard   [ ]   individual [ ]

other (please elaborate)..
....

3. If you provide a standard introductory user education programme, what does this cover and how is it presented? (If you present an individual introductory user education programme please give an example from one subject area and indicate the subject area here..................)

overview of library services   [ ] ....
library orientation   [ ] ....
introduction to specific subject areas   [ ] ....
library catalogue training   [ ] ....
general information skills training   [ ] ....
CD ROM training   [ ] ....
online searching training   [ ] ....
internet training   [ ] ....
basic IT training (such as wordprocessing) [ ] ....
other (please elaborate)...
....

4. Approximately what percentage of new students take part in your introductory user education programme?
....

5. In what ways (if any) do you evaluate your introductory user education programme?

evaluation questionnaires   [ ]
discussions with staff   [ ]
discussions with students   [ ]
informal student feedback   [ ]
other (please elaborate)..
....

6. How successful do you consider your introductory user education programme to be and how (if time and resources were available) do you think it could be improved?

very successful [ ]   moderately successful [ ]   not very successful [ ]

....
....
....
....

SECTION C - EXISTING LIBRARY USERS

7. What training services are available for existing library users and how do you present these services?

CD ROM training	[ ]..
online searching training	[ ]..
internet training	[ ]..
basic IT training such as wordprocessing	[ ]..

other (please elaborate)..

....

8. Do you provide these services in conjunction with anyone else such as the computer centre or particular departments/schools?

yes [ ]   no [ ]

if yes, please elaborate..

....

9. Do you make any charges to departments/schools for any of the above training services?

yes [ ]   no [ ]

if yes, please elaborate..

....

10. How do you deal with **individual** students/staff requests for training in a specific area such as CD ROM training?

....

....

....

....

11. Do you provide any user education training in any areas (such as online searching) that you feel should be provided elsewhere or are there any areas where you feel that you should pro vide training but currently do not?

....

....

....

....

12. Do you use any computer packages (either inhouse or commercially available) for teaching any aspect of user education?

Yes [ ]   No [ ]

If you have answered yes please go to section D, if you have answered no please go to section E.

SECTION D - USE OF COMPUTER BASED TRAINING PACKAGES

13. Have you developed, or are you developing any computer based training packages for user education?

        yes [ ]   no   [ ]

if yes, please elaborate...
....
....

14. Have you purchased any commercially available computer based training packages for user education?

if yes, please elaborate...
....
....

15. Are you aware of any other departments/schools or facilities that use or are developing cbt packages in the areas of general study or information skills?

if yes, please elaborate...
....
....

SECTION E - ATTITUDES TOWARDS COMPUTER BASED TRAINING

16. If computer based training packages were available for elements of user education, do you feel that they would have a valid place in training?

....
....

17. What do you feel your institutions attitude towards computer based training for user education is?

       very positive   [ ]
       positive   [ ]
       indifferent   [ ]
       negative   [ ]

18. Any Further Comments?

....
....
....

Please return in the prepaid envelope by 28 October. Thankyou.

Appendix B   Survey respondents by institution

Aberdeen

Abertay

Anglia

Anglia (Cambridge)

Aston

Bangor

Belfast (Agriculture and Food Science)

Belfast (Science Library)

Birmingham

Birmingham (Russian and East European Studies - Baykov Library)

Birmingham (Medical School - Barnes Library)

Birmingham (Shakespeare Institute)

Bournemouth

Brighton

Bristol

Buckingham

Cambridge

Cardiff

Cardiff (Sir Herbert Duthie Library)

Cardiff (Velindre Hospital)

Central Lancashire

City

Coventry

Cranfield

Cranfield (School of Management)

DeMontfort (Gateway)

DeMontfort (Scraptoft Campus)

DeMontfort (Milton Keynes)

Dundee

Dundee (Duncan of Jordanstown College)

East Anglia

East London (Holbrook Annexe)

East London (Longbridge Road)

East London (Maryland House)

Edinburgh (Erskine Medical Library)

Edinburgh (Queen Margaret College)

Edinburgh (Reid Music Library)

Exeter

Glamorgan

Glasgow

Glasgow Caledonian

Greenwich

Heriot-Watt

Hertfordshire (Business School Library)

Hertfordshire (Hatfield Campus)

Hertfordshire (Watford Campus)

Huddersfield

Hull

Humberside

Keele

Kingston

Kingston (Business and Law Faculty)

Lancaster

Leeds

Leeds Metropolitan

Leicester

Leicester (Clinical Sciences Library)

Leicester (Education Library)

Liverpool John Moores (Aldam Robarts LRC)

Liverpool John Moores (Byron St)

Liverpool John Moores (Trueman Building)

London (Goldsmiths College)

London (Heythrop College)

London (Hospital Medical College)

London (Imperial College)

London (Institute of Advanced Legal Studies)

London (Institute of Cancer Research)

London (Institute of Classical Studies)

London (Institute of Commonwealth Studies)

London (Institute of Education)

London (Institute of Historical Research)

London (Institute of Latin American Studies)

London (Institute of Ophthalmology)

London (King's College)

London (Royal College of Art)

London (Royal Free Hospital School of Medicine)

London (Royal Holloway)

London (Royal Veterinary College)

London (Royal Veterinary College-Hatfield site)

London (School of Economics & Political Science)

London (School of Hygiene & Tropical Medicine)

London (School of Medicine and Dentistry)

London (School of Oriental & African Studies)

London (Senate House)

London (St Bartholomew's Hospital Medical College)

London (St. Georges Hospital Medical School)

London (St.Mary's Hospital - Medical School)

London (UMDS Guys)

London (University College)

London (University College – Gower Street)

London (Warburg Institute)

London (Wye College)

Loughborough

Manchester Business School

Manchester Metropolitan

Manchester Metropolitan

Middlesex (Enfield)

Middlesex (Faculty of Art, Design and Performing Arts)

Middlesex (Hendon)

Napier

Napier

Napier (Craiglockhart Library)

Napier (Publishing)

Newcastle

North London (Ladbroke House)

North London (Learning Centre)

Northumbria at Newcastle (Coach Lane Campus)

Northumbria (City Campus)

Nottingham

Nottingham (Queens Medical Centre)

Nottingham Trent

Open University

Oxford

Plymouth

Portsmouth

Reading

Reading (Faculty of Education and Community Studies)

Robert Gordon University

Salford

Sheffield

Sheffield (Health Sciences)

Sheffield (Northern General)

Sheffield (St Georges Library)

Sheffield Hallam (City Campus)

Sheffield Hallam (Collegiate Campus)

Sheffield Hallam (Napier Street)

South Bank

Southampton

Staffordshire

Staffordshire (Business)

Staffordshire (Nelson Library)

Sunderland (Art Library)

Surrey (George Edwards Library)

Sussex

Sussex (Institute of Development Studies)

Swansea

Swansea (Education Library)

Thames Valley

Ulster at Belfast

UMIST

Warwick

Westminster

Westminster (Cavendish Street)

Westminster (Harrow Campus)

Westminster (Riding House Street)

Wolverhampton

Wolverhampton (Compton Campus)

York (J.B.Morrell Library)

+ 4 Anonymous Responses

EVALUATION OF USER EDUCATION
TUTORIALS

Evaluator's Name: ....   Package: ....

SECTION 1 - STRUCTURE

Is the structure of the tutorial

      [ ] very clear   [ ] clear   [ ] not at all clear?

Are you aware at all times, of where you are in the tutorial?

      [ ] yes   [ ] sometimes   [ ] no

If the tutorial is modular, is it easy to move between modules?

      [ ] very easy   [ ] easy   [ ] not at all easy

How easy is it for the user to request help or terminate the tutorial?

      [ ] very easy   [ ] easy   [ ] not at all easy

To what extent are the following prerequisite knowledge or skills needed?

	considerable	moderate	small	not at all
keyboarding	[ ]	[ ]	[ ]	[ ]
computing	[ ]	[ ]	[ ]	[ ]
mouse	[ ]	[ ]	[ ]	[ ]
subject knowledge	[ ]	[ ]	[ ]	[ ]

SECTION 2 - CONTENT

How clear are the aims and objectives of the tutorial?

      [ ] very clear   [ ] clear   [ ] not at all clear

How far do you feel that the tutorial meets its intended purpose?

      [ ] completely   [ ] to some extent   [ ] not at all

Is there anything that you feel should be covered by the tutorial, that is currently not included?

      [ ] yes   [ ] no

Please elaborate

Do you feel that additional documentation is needed?

      [ ] yes   [ ] no

Please elaborate

To what extent could the package be used on its own as a teaching device for this subject?

[ ] considerable   [ ] moderate   [ ] small   [ ] not at all

Please elaborate

SECTION 3 OVERALL IMPRESSIONS

Is there sufficient interactivity to keep the user motivated?

[ ] yes   [ ] sometimes   [ ] no   [ ] not applicable

How enjoyable is the package to use?

[ ] very enjoyable   [ ] enjoyable   [ ] not at all enjoyable

What feature/aspect of this package, did you find the most useful?

What feature/aspect of this package, did you find the least useful?

How do you rate the package in terms of	very good	good	fair	poor	very poor
colour and graphics?	[ ]	[ ]	[ ]	[ ]	[ ]
clarity of instructions?	[ ]	[ ]	[ ]	[ ]	[ ]
ease of use?	[ ]	[ ]	[ ]	[ ]	[ ]
information content?	[ ]	[ ]	[ ]	[ ]	[ ]
self sufficiency?	[ ]	[ ]	[ ]	[ ]	[ ]
approach to subject?	[ ]	[ ]	[ ]	[ ]	[ ]
interest level?	[ ]	[ ]	[ ]	[ ]	[ ]
overall impression?	[ ]	[ ]	[ ]	[ ]	[ ]

How effective is this particular cbt package as a way of presenting 'user education'?

[ ] very effective   [ ] moderately effective   [ ] effective   [ ] not very effective

please elaborate

Thank you

Appendix D   Librarian profile form

EVALUATION OF USER EDUCATION TUTORIALS

PARTICIPANT DETAILS

Name:
Institution:
Tel:
E-mail:

How is user education (that is basic library orientation) currently undertaken in your library? (please tick all that are applicable)

self guided tours	[ ]
verbal presentations	[ ]
information pack	[ ]
tour of the library	[ ]
demonstrations (ie OPAC, CD ROM's)	[ ]
video presentation	[ ]
audio presentation	[ ]
computer based tutorial	[ ]
other (please elaborate)	....

....

Is this the first time that you have seen a computer based user education tutorial?

       [ ] yes   [ ] no

If no, what other tutorials have you seen?...
....

Do you feel that cbt tutorials are an appropriate medium for user education?

       [ ] yes   [ ] possibly   [ ] no

Please elaborate..
....

Is your library in the process of considering or developing any cbt for user education or study skills?

       [ ] yes   [ ] no

If yes, for what reason might you introduce cbt into your library?........................
....

Thank you

Appendix E   Student profile form

EVALUATION OF USER EDUCATION TUTORIALS
BACKGROUND QUESTIONNAIRE

SECTION A - PERSONAL DETAILS

Name: ....

Course: ....

Age: [ ] 18-21   [ ] 22-25   [ ] 26-30   [ ] 31-35   [ ] 36-40   [ ] 40+

Gender: [ ] Male   [ ] Female   Status: [ ] Full-time   [ ] Part-time

Are you registered as: [ ] a UK student   [ ] an Overseas student

SECTION B - USER EDUCATION

1.   What previous training in user education have you experienced and what has it covered?
      (please state whether this was at school or at another university)
      ....
      ....
      ....

2.   Do you think that user education is necessary?

                         [ ] yes   [ ] no

      please elaborate...
      ....

3.   What would you expect the library to provide in terms of

            a)   an introductory user education programme for new library users?
            b)   a user education programme for existing users?

	a new users	b existing users
overview of library services	[ ]	[ ]
tour of the library (library orientation)	[ ]	[ ]
introduction to specific subject areas	[ ]	[ ]
introduction to subject specialists	[ ]	[ ]
general information skills training	[ ]	[ ]
introduction to the catalogue (OPAC)	[ ]	[ ]
introduction to the CD ROMs	[ ]	[ ]
introduction to the Internet	[ ]	[ ]
introductory online searching training	[ ]	[ ]
basic IT training	[ ]	[ ]
other (please specify)	....	

4. Which methods of delivery do you feel would be best for introductory user education instruction?

        tour of library by library staff   [   ]
        verbal presentations by library staff   [   ]
        information pack (self-instructional)   [   ]
        demonstrations   [   ]
        self-guided tours   [   ]
        video presentation   [   ]
        audio presentation   [   ]
        tape slide presentation   [   ]
        computer based tutorial package   [   ]
        other (please elaborate) ....

SECTION 3 - COMPUTER BASED TUTORIALS

5. Have you used a computer based tutorial for any subject before?

        [   ] yes   [   ] no

if yes, what was the subject and what was your opinion of the package?...........................
....

SECTION 4 - HAVING EXAMINED SOME OF THE USER EDUCATION CBT PACKAGES

6. Do you feel that computer based tutorials are a valid delivery method for user education?

        [   ] yes   [   ] possibly   [   ] no

please elaborate..
....
....

7. What information do you think a cbt package for user education should contain?
....
....
....

8. How do you think you would use a cbt package for user education?

[   ]   work through all of it
[   ]   work through only sections that you feel are valuable
[   ]   work through all of it initially and return to look at specific sections when you needed to.

Thank you

Appendix F Librarian details (Institutions)

L1	Leicester University
L2	No Form
L3	University of Oxford
L4	Oxford Brookes University
L5	University of Wales, College of Cardiff
L6	University of Luton
L7	No Form
L8	Open University
L9	No Form
L10	City University
L11	Oxford Brookes University
L12	Oxford University
L13	University of Bath
L14	No Form
L15	No Form
L16	No Form
L17	No Form
L18	University of Luton
L19	No Form
L20	London Institute
L21	Westminster College
L22	No Form
L23	No Form
L24	Oxford Brookes University
L25	Oxford Brookes University
L26	Cranfield University
L27	No Form
L28	No Form
L29	University of the West of England
L30	University of the West of England
L31	Oxford Brookes University
L32	Univerity of North London

L33	Cardiff University
L34	No Form
L35	Westminster College
L36	University of Plymouth
L37	University of the West of England
L38	West Hertfordshire College
L39	University of Glamorgan
L40	University of Surrey
L41	No Form
L42	Aston University
L43	Worcester College
L44	No Form
L45	University of Wales, Bangor
L46	University of Wales, Bangor
L47	University of the West of England
L48	Buckinghamshire Chilterns University College
L49	No Form
L50	De Montfort University
L51	No Form
L52	Oxford Brookes University
L53	Havering College of Further Education
L54	No Form
L55	No Form
L56	No Form
L57	University of Abertay, Dundee
L58	Thames Valley University
L59	University College Northampton
L60	University of Hull
L61	Buckinghamshire Chilterns University College
L62	Southampton Institute
L63	Nottingham Trent University
L64	University of Wales, Aberystwyth
L65	Thames Valley University
L66	University of Portsmouth

L67	University of Greenwich
L68	No Form
L69	University of Sheffield
L70	Chichester Institute of Higher Education
L71	University of the West of England
L72	University of Birmingham
L73	University of London
L74	University of Ulster
L75	No Form
L76	University of the West of England
L77	Oxford Brookes University
L78	University of Ulster
L79	No Form
L80	No Form
L81	No Form
L82	No Form
L83	No Form
L84	No Form
L85	No Form
L86	No Form
L87	No Form
L88	No Form
L89	No Form
L90	No Form
L91	University of Huddersfield
L92	University of Bradford
L93	University of Newcastle
L94	No Form
L95	Bell College of Technology
L96	No Form
L97	Durham University
L98	University of Nottingham
L99	University of Derby
L100	Napier University

L101	University of Northumbria
L102	No Form
L103	University of Newcastle
L104	Worcester University College
L105	University of Aberdeen
L106	No Form

Appendix G   Student profiles

Code No	Type	Gender	Age
1	Undergraduate	Female	22-25
2	Postgraduate	Female	26-30
3	Postgraduate	Female	40+
4	Postgraduate	Female	36-40
5	Postgraduate	Female	26-30
6	Postgraduate	Female	22-25
7	Postgraduate	Female	26-30
8	Postgraduate	Female	22-25
9	Undergraduate	Female	18-21
10	Undergraduate	Female	22-25
11	Postgraduate	Female	25-25
12	Undergraduate	Female	36-40
13	Postgraduate	Female	22-25
14	Postgraduate	Female	22-25
15	Postgraduate	Female	22-25
16	Undergraduate	Female	40+
17	Postgraduate	Female	22-25
18	Undergraduate	Female	
19	Undergraduate	Female	18-21
20	Undergraduate	Female	18-21
21	Undergraduate	Female	31-35
22	Undergraduate	Female	18-21
23	Undergraduate	Female	18-212
24	Undergraduate	Female	18-21
25	Undergraduate	Female	40+
26	Undergraduate	Female	18-21
27	Undergraduate	Female	18-21
28	Postgraduate	Female	31-35
29	Undergraduate	Female	18-21
30	Postgraduate	Female	22-25

31	Postgraduate	Female	26-30
32	Postgraduate	Male	22-25
33	Postgraduate	Male	22-25
34	Undergraduate	Male	18-21
35	Undergraduate	Male	22-25
36	Undergraduate	Male	26-30
37	Undergraduate	Male	18-21
38	Postgraduate	Male	18-21
39	Postgraduate	Male	22-25
40	Undergraduate	Male	22-25
41	Postgraduate	Male	22-25
42	Postgraduate	Male	26-30
43	Postgraduate	Male	31-35
44	Undergraduate	Male	18-21
45	Undergraduate	Male	26-30
46	Postgraduate	Male	31-35
47	Undergraduate	Male	18-21
48	Undergraduate	Male	18-21
49	Undergraduate	Male	18-21