Chapter 1

Overview and orientation

Contents

1.1 Introduction

This thesis reports on a study designed to investigate the utilisation of an integrated training resource programme for the education and training of cataloguing students. Results from the study will lead to the development of a training programme in cataloguing presented via an appropriate mix of media and technologies. The mix would include:

- printed study texts
- a computer program
- virtual campus facilities
- communication channels such as e-mail
- contact classes

The training programme can be utilised in training cataloguing students in contact classes, distance education and in-service training.

This study investigates the factors that would determine the selection of media for such a training resource and the design of the training resource. To determine these factors, the problems and limitations in the education and training of cataloguers had to be established.

The following diagram illustrates all the different components of the research:

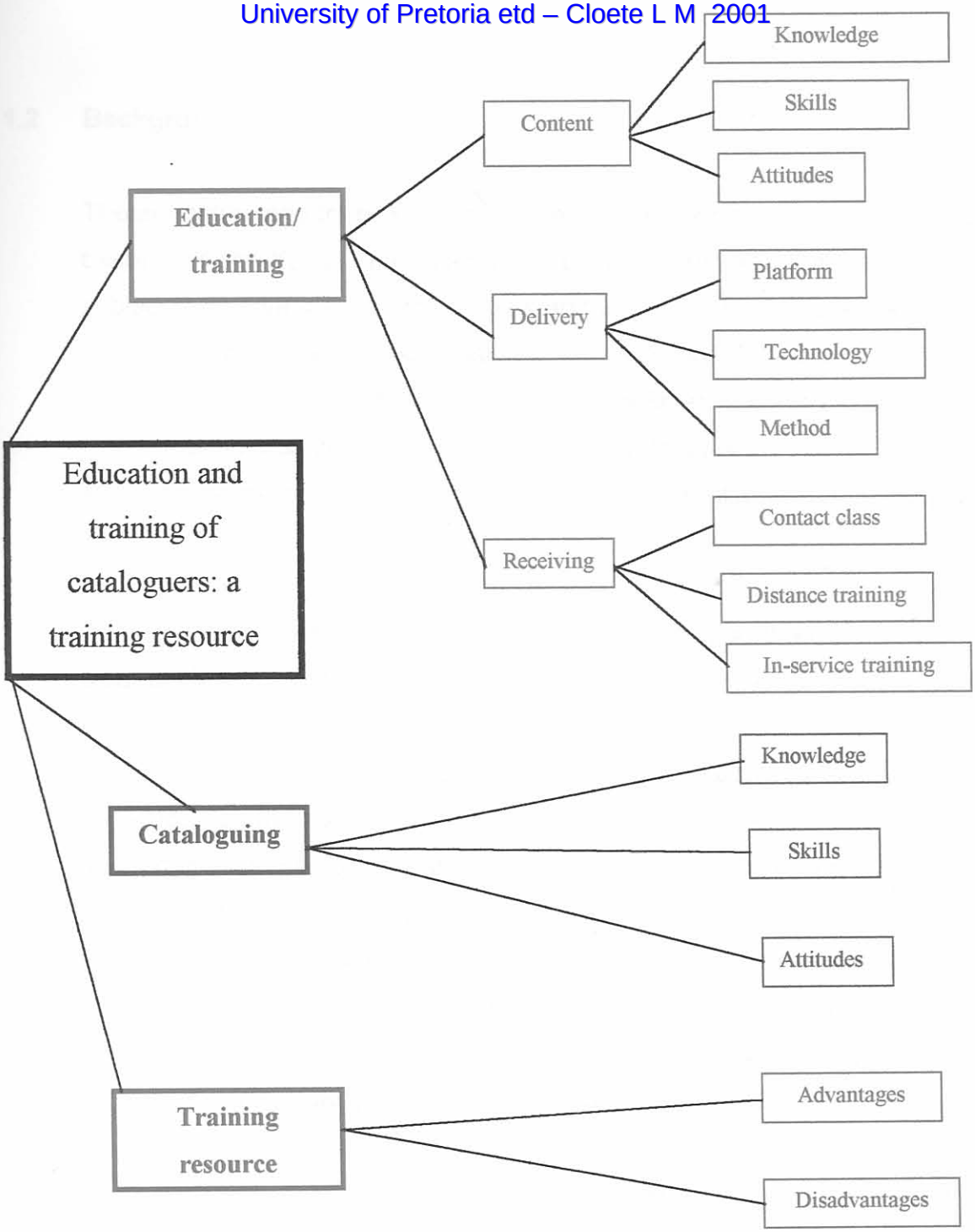

Figure 1.1: Components of the research

1.2 Background

The education and training of cataloguers forms part of the education and training of librarians. The cataloguing course is usually completed as a subject in one year's full-time studies and in two or three years' part-time studies. Traditionally, there have been two possible routes that a prospective student in Library and Information Science could follow:

- Full-time contact study at a university or technikon
- Part-time study through distance education, also at a university or technikon

In the full-time contact education and training situation there is usually a clear distinction between theoretical work and practical work. Students are taught the theoretical background information through lectures presented to them by a lecturer. The theory is applied during practical sessions when the students have to do certain practical exercises under the guidance of the lecturer or senior student (student assistant). They are evaluated through both theoretical and practical tests and examinations. At the contact training institutions it is not, however, always possible to expose students to sufficient practical training. Lecturers' time is restricted to the lecturing periods and student assistants are usually not experienced enough to conduct all the required practical training sessions effectively.

In the traditional distance education framework students are presented with printed course material consisting of study guides that provide theoretical information and practical workbooks. Students have to learn the theory on their own and perform certain practical tasks under the guidance of a mentor (senior library staff member). They are evaluated through assignments that include theoretical questions as well as practical exercises, projects and examinations.

The education and training of Library and Information Science students through distance education is becoming more popular, since an increasing number of students are unable to afford the luxury of full-time studies at a contact class institution. After school greater numbers of people have to enter the working world and obtain further qualifications through part-time studies, especially through distance education (Stanford, 1997:181). This is also very much the case in libraries and information centres. Library assistants or administrative assistants with a senior certificate are appointed. Many of these employees wish to further their qualifications in Library and Information Science to pursue a career as a professional librarian, library technician or information specialist (Stanford, 1997:181). Although part-time courses are offered at contact class institutions, many students prefer to study through distance education, since it allows students of diverse educational backgrounds and accomplishments to move at different paces.

Distance education has traditionally been provided through paper-based correspondence. In distance education as a method of tuition the written word is the main medium of instruction. Interaction between the lecturer and student is limited to course material and books, completed assignments from the students and projects related to their work experience. This low level of interaction between lecturer and student has led to a number of problems in the education and training of cataloguers. Students often need an immediate answer to a question or problem in a practical exercise for them to continue to the next step. With paper-based distance education they usually have to wait weeks to receive an answer to problems encountered during the study of a particular skill. Other delivery modes such as audio, video and computer technologies are also utilised in distance education (Steiner, 1998), but the time delay in interaction between the student and lecturer still exists. This asynchronous instruction has the advantage that students may choose their own

instructional time, but there is no real-time interaction and immediate feedback from the lecturer. Developments from the traditional paper-based methods in distance education to virtual campuses are taking place (Herther, 1997). Developments at Technikon SA, especially virtual campuses and online training, are described by Lazenby (1998). (Since 1998, amendments to the online training options at Technikon SA have been made. The utilisation of these options in a training resource for cataloguers will be discussed in more detail in chapter 4.)

Education and training at tertiary level usually only prepares students in general and not for the specific library or information centre, where the student will eventually work, with its specific needs and work procedures. Through career-oriented education, efforts are being made to overcome this limitation. The aim of career-oriented education is to enable qualified people to immediately enter employment in a specific field. This is possible through close collaboration between the training institution and organised commerce, industry and individual employers.

Usually, when graduates enter cataloguing posts, they need a refresher course in cataloguing conducted by the supervisor or senior staff member of the department. They also need in-service training to understand and master the specific procedures at the library where they are employed. Library assistants or clerks (without any formal library education or training) are often employed in cataloguing departments to perform certain routine, administrative cataloguing tasks. They are given in-service training by the supervisor or senior staff member. These in-service training periods take about six to nine months to complete. During that period the trainee cataloguer is not very productive as far as work output is concerned. Moreover, the supervisor or senior staff member conducting the training has to perform this function, which includes evaluating the trainee's work and discussing problems, on a full-time basis. This means

that this senior staff member does not perform other cataloguing tasks for which he/she has originally been appointed.

From the above description it is possible to identify three education and training fields and, indeed, needs for cataloguing training:

- The contact training institution
- The distance training institution
- In-service training in cataloguing departments

Cataloguing and reference work are still considered the core of Library and Information Science courses (Smith, 1985:35; Stieg, 1992:109; Clack, 1993:27). Bender (cited in Bearman, 1987:29) mentions that "traditional skills associated with acquiring, organizing, and disseminating information will still be needed by tomorrow's information professional at the entry level". One of the most important skills for organising information is cataloguing. The automation of libraries has also changed the nature of the work in cataloguing departments. The functions and tasks of librarians in cataloguing departments have changed. However, bibliographic work can never be completely computerised. Human input, especially with regard to authority control, is very important (Snyman, 1998). Co-operative cataloguing has become an important function amongst libraries. Copy cataloguing is now one of the most important tasks of cataloguers. To adapt and utilise a copy record for a library's own purposes, it is very important that the cataloguer have a sound knowledge of cataloguing principles. This can only be achieved though proper education and training in cataloguing. Zyroff (1996:47) mentions a number of valid reasons why training in cataloguing should now, even in the age of automation, co-operative cataloguing and shared cataloguing, still be considered a core competency. Her statement that "[t]hose who have not spent time applying and creating subject and name headings, authority records, descriptive

cataloging and classification codes, and indexing norms don't have in-depth perspective on the structure of information" captures the essence of organising information. It has therefore become more important than ever that cataloguers receive appropriate education and training through all possible modes.

There is a greater demand from employers for librarians who are immediately employable with the minimum in-service training (Hill, 1985:728). This requirement also coincides with the expectations of outcomes-based education. In addition, already qualified librarians are required to be trained in the latest cataloguing developments and skills (CCS Task Force on Education and Recruitment for Cataloging Report, 1986:71), as is often the case when a librarian who has not been cataloguing for a while is transferred to a cataloguing department.

1.3 Motivation for the study

The motivation for this study is based on the lack of previous research, the necessity of cataloguing courses, the limitations in the current presentation of cataloguing courses and the shortage of qualified cataloguing instructors.

1.3.1 Lack of previous research

A preliminary literature search indicated that no research had yet been conducted in the education and training of cataloguers through computer-assisted training, specifically the World Wide Web. The only reference is made by Weihs (1997:48), who mentions that "[s]ome programs are considering offering courses by Internet". No specific details are given and this reference is applicable to technical services education in general and not specifically to cataloguing. The expansion of access to educational

opportunities for Library and Information Science students through technology is generally recognised (Stanford, 1997:181).

Research pertaining to cataloguing courses concentrates on the inherent problems of teaching cataloguing, teaching the courses at residential tertiary institutions, the influences of library automation, bibliographic networks and co-operative cataloguing on cataloguing courses, and the training of cataloguers at the workplace itself (Smith, 1985:33-35; Romero, 1994:210).

An Internet search revealed that a number of training institutions present so-called online or web-based courses in cataloguing. After further enquiry it became clear that these courses are still only print-based, i.e. students submit only written assignments. There is no utilisation of interactivity or multimedia in the presentation of the courses. The web and e-mail facilities are used merely as alternative delivery modes for print-based study material and assignments.

A detailed overview of the literature findings is presented in chapter 2.

1.3.2 Necessity of cataloguing courses

The necessity of cataloguing courses has been debated extensively in the literature and other forums. The conclusion of these debates is that cataloguing courses are now, in the age of automation, as important as ever (Clack, 1993:33). Bibliographic control, of which cataloguing forms an integral part, is considered "the heart of librarianship and should be taught as such" (Gorman, 1992:694). However, few suggestions are made on the improvement of these courses in order to fully train cataloguers that can enter the working world with limited in-service training. Library training institutions are criticised for the inadequate cataloguing training they

provide (Sellberg, 1988:30). Even today, supervisory staff at libraries where cataloguing is performed complain that cataloguers are not adequately qualified to meet the needs of a cataloguing department. The researcher's experience as a supervisor/in-service trainer at a cataloguing department (1996-1997) was that newly appointed cataloguing staff needed extensive in-service training before they could work on their own. Table 1.1 indicates the arguments both for maintaining and reducing cataloguing courses:

Table 1.1: Necessity of cataloguing courses

Arguments for maintaining cataloguing courses	Arguments for reducing cataloguing courses
Core of the library and information profession	Cataloguing is an expensive process
Cataloguing organises information to enable retrieval of information sources	Shared cataloguing means less need for individual cataloguers at libraries
Co-operation necessitates high international cataloguing standards	Automation means less human intellectual input in the cataloguing process
Automation makes cataloguing more sophisticated and complex and therefore necessitates training	
Wide variety of information-carrying media necessitates more advanced training in cataloguing these media	
Unorganised volume of especially web-based information reinforces the need for training in information packaging skills	

1.3.3 Limitations in the presentation of cataloguing courses

Cataloguing courses have also been criticised because of their dull classroom presentations (CCS Task Force on Education and Recruitment for Cataloging Report, 1986:75; Saye, 1987:34; Clack, 1993:30). Real meaningful learning does not take place in the classroom setting, but only when students have the opportunity to apply the instruction. Students should have the opportunity to work on real problems under real conditions (Zuber-Skerritt, 1993:45). This is also referred to as active learning, where the students approach the course content through problem-solving exercises (Romero, 1995:7). Apart from problem-solving skills, analytical thinking and decision-making skills form an important part of cataloguing (Connaway, 1997:38; Olson, 1997:52). Activities such as simulations, case studies and small group activities could all form part of active learning. This is especially applicable to a cataloguing course.

Practical work, fieldwork, internship and experiential training have always been considered to be an integral part of cataloguing courses (Stieg, 1992:120). Supervision and quality control are, however, two problematic aspects of these practical components. Libraries find it increasingly difficult to participate in these programmes in collaboration with the education and training institutions because of their own staff constraints.

Henderson (1987:20) suggests that cataloguing students should be presented with sound educational experiences and that enthusiasm for the subject should be fostered. Hill (1985:730) states that too few students are exposed to the fun of cataloguing and do not appreciate the intellectual exercise. A training resource that includes interactive instruction with the utilisation of multimedia could provide this meaningful learning opportunity.

According to Clack (1993:35), cataloguing teachers and trainers "must be innovative in their teaching strategies and methodologies". Training should not only be done for present practice, but also for the future.

The time in the curriculum allotted to cataloguing is not enough to train students thoroughly in all the required cataloguing skills. Usually only one academic year is spent on cataloguing training. Clack (1993:36) recommends that the training time be extended to develop knowledge and theoretical and practical skills in a specialised field such as cataloguing.

1.3.4 Shortage of qualified cataloguing instructors

Finding cataloguing instructors or lecturers in the field is also problematic (CCS Task Force on Education and Recruitment for Cataloging Report, 1986:75; Henderson, 1987:14). Experienced cataloguers are often not qualified in the education field (Clack, 1993:32) and do not wish to abandon cataloguing for a training position. People with an education background, on the other hand, are often not experienced enough in cataloguing.

The purpose of this study is to investigate the improvement of cataloguing courses, especially by utilising computer-assisted training and web-based training applications such as a virtual campus.

1.4 Research problem and research questions

This study is concerned with the problems and limitations in the education and training of cataloguers and with the provision of possible solutions. Special reference is made to the implications of utilising a training resource in which a mix of media and technologies is applied as a training mode.

A number of specific subproblems and research questions can be distinguished and need to be addressed and investigated. The research questions can be divided into the following categories (Table 1.2):

Table 1.2: Research questions

Category	Research question
Category 1: ***Requirements of cataloguers***	**Question 1**: What are the requirements from industry (library and information practice) of newly qualified cataloguers?
	Question 2: What are the requirements set by outcomes-based education and training?
	Question 3: What are the requirements regarding the experiential training component of a cataloguing course?
Category 2: ***The adult learner and learning theories related to the cataloguing student***	**Question 4**: What are the characteristics of the adult learner, especially the cataloguing student?
	Question 5: How can learning theories be applied in the education and training of cataloguers?
	Question 6: What are the inherent problems of teaching a cataloguing course?
Category 3: ***The problems/obstacles in training cataloguers***	**Question 7**: What are the problems and limitations in the education and training of cataloguers in distance education?
	Question 8: What are the problems and limitations in the education and training of cataloguers in in-service training?
	Question 9: What developments have taken place in the utilisation of a mix of appropriate media and technologies in training cataloguers?
Category 4: ***Utilisation of a mix of appropriate media and technologies***	**Question 10**: What are the advantages and disadvantages of training cataloguers by means of a mix of media and technologies?
	Question 11: How should training by means of a mix of media and technologies be designed to serve as an appropriate training mode?

1.5 Research approach

A qualitative approach is used in this study. In this approach the researcher is concerned with process rather than only outcomes and products.

1.5.1 Critical analysis of reported research

The first part of the research is qualitative to establish the status quo of educating and training cataloguers. A critical analysis of reported research forms the foundation of the research. This analysis will make it possible to establish the requirements of employers and outcomes-based education with regard to cataloguers. It will also be possible to establish education and training constraints. The analysis will further be conducted to establish the status quo regarding the training of librarians and especially of cataloguers through computer-assisted training.

1.5.2 Formative evaluation

The empirical component of the research was conducted when a training resource consisting of a mix of media and technologies for educating and training cataloguers was developed and tested, for example by testing certain components from the training programme on distance education students. Evaluation took the form of interviews with students, questionnaires, one-on-one testing and observation of students' verbalised thoughts and actions. Formative evaluation during the early design stages was also conducted. According to Beyer (1995:7), the primary goal of formative evaluation is to "improve the quality of the product being developed so that it will be as likely as possible in everyday use to achieve the objectives it was designed for".

The advantages of formative evaluation are summarised by Cilliers (1997:6):

- It is ongoing.
- It involves assessment.
- It seeks specific information as well as judgements.
- All those involved can learn from it.
- Inadequacies are detected and opportunities are identified for improvement.
- Problems are solved in the learning process.
- Results lead to concrete, immediate and practical implementation strategy and actions.

The research questions were investigated by the following means and data-gathering instruments (Table 1.3):

Table 1.3: Data collection matrix

Research questions	Critical analysis of reported research	Interviews	Focus group discussions	E-mail messages	Evaluation of existing training programmes	Questionnaires	Observations
Question 1: What are the requirements from industry (library and information practice) of newly qualified cataloguers?	✓	✓	✓				
Question 2: What are the requirements set by out-comes-based education and training?	✓						
Question 3: What are the requirements regarding the experiential training component of a cataloguing course?	✓	✓	✓				
Question 4: What are the characteristics of the adult learner, especially the cataloguing student?	✓						
Question 5: How can learning theories be applied in the education and training of cataloguers?	✓						
Question 6: What are the inherent problems of teaching a cataloguing course?	✓	✓	✓				
Question 7: What are the problems and limitations in the education and training of cataloguers in distance education?	✓	✓	✓				
Question 8: What are the problems and limitations in the education and training of cataloguers in in-service training?	✓	✓	✓				
Question 9: What developments have taken place in the utilisation of a mix of appropriate media and technologies in training cataloguers?	✓	✓	✓	✓	✓	✓	✓
Question 10: What are the advantages and disadvantages of training cataloguers by means of a mix of media and technologies?		✓	✓	✓	✓	✓	✓
Question 11: How should training by means of a mix of media and technologies be designed to serve as an appropriate training mode?		✓	✓	✓	✓	✓	✓

The anticipated results of this study may lead to the following possible applications:

- A self-paced flexible learning course
- A training resource utilising a mix of media and technologies
- Interactive distance learning web utilisation
- A cataloguing laboratory or virtual classroom in the web environment

1.5.3 Subjects of the study

The subjects of the study are all the second-year students in the Library and Information Studies course who have registered for the subject Information Retrieval II. The subject includes the more advanced component of cataloguing training. Therefore all the students have already completed the basic course in cataloguing covered in Information Retrieval I.

1.6 Structure of the thesis

This study contains the following chapters (Table 1.4):

Table 1.4: Structure of the thesis

Chapters	Contents
Chapter 1: Overview and orientation	Introduction and background to the study Motivation and need for the study Defining the field of study Formulating the research problem and subproblems Research approach Structure of the thesis
Chapter 2: Critical analysis of reported research	A review and critical analysis of findings from reported research regarding each of the research questions
Chapter 3: Project description: computer program	Design and development of a computer program Needs analysis Design Development Implementation Formative evaluation of the computer program Results and recommendations
Chapter 4: Project description: training resource programme	Design and development of a training resource programme Needs analysis Design Development Implementation Summative evaluation of the training resource programme Results and recommendations
Chapter 5: Conclusion and recommendations	A critical analysis and interpretation of the results Conclusions of what was learned from this project Recommendations for future developments Guidelines for the design of a training resource programme for the education and training of cataloguers

1.7 Summary

This thesis reports on a study designed to investigate the utilisation of an integrated training resource for the education and training of cataloguing students. This chapter has provided a framework for the study. Chapter 2 reports on a critical analysis of reported research applicable to the research questions.