CHAPTER 1: BACKGROUND AND INTRODUCTION

1.1   Introduction

This dissertation reports on an action research project that investigates the degree to which information communication technology (ICT) can be an effective mechanism of information delivery for teachers. It reports on the process of developing a subject-specific web site for Afrikaans First Language teachers to provide for their information needs.

Motivation for the study

Teachers are, by the sheer nature of their profession, information providers and facilitators of the learning process that involves the utilisation of information. Teachers form a professional group that is heavily involved in information provision (Chalkley & Nicholas 1997:97). They need to be informed about teaching and learning strategies, curriculum changes, educational policy, and developments in their area of specialisation. For instance, language teachers need to be aware of current developments concerning language policies, language learning and teaching, assessment strategies, trends in literature and children's literature.

To be able to do their job well, teachers need easy and quick access to current, accurate information. An efficient and reliable information resource can do much to support teachers in their quest for lesson ideas, information on the new curriculum and assessment strategies. It can save time, motivate, educate, and enhance their productivity on the whole. This point of view is also expressed by Oosthuizen (1997:233): "If teachers know how, why, where and when to find information and use it, these skills will not only enhance their teaching and prepare them for the new curriculum, but will filter through to the pupils and the community".

In order to establish an effective information resource for teachers, investigations of their specific information needs should be done. An examination of the information needs of teachers in South Africa is long been overdue. Oosthuizen's study (1997) deals with the

information needs of the teachers of Orange Farm. The only other study concerning the subject-specific needs of teachers was done by Pretorius (1994) and dealt with the information needs of Biology teachers. No formal investigation has ever been done on the information needs of Afrikaans First Language teachers.

It is with this background in mind that this action research was undertaken. The researcher has been working closely with Afrikaans language teachers for more than ten years. During this time a lack of a reliable, up-to-date and easy-to-access information resource for this group of teachers became evident.

In the meantime advanced communication technologies like the Internet, have become **the** tool for conducting business, communication, information provision and even teaching in developed countries, while in many countries they are widely utilised to provide professional support for teachers. Many web-based information resources have been established to provide for the information needs of teachers, for example *AskEric* and *SchoolNet Canada*. These two information resources receive more than two million visits per month (Ask Eric 2001; Haughey & Anderson 1998:75). This is a clear indication of the value sites like these have for teachers.

The Internet presents itself as an ideal tool for information delivery. A survey of the status quo of web-based information resources in 2000 revealed no such initiative for Afrikaans L1 teachers. At the end of 1999 the researcher started a small-scale subject-specific web site for Afrikaans L1 teachers.   As formal research would undeniably help to deal with the pitfalls and problems of web site development, an action research project was the obvious choice. This would culminate in a combination of action and research in the form of disciplined inquiry, in which a personal attempt was made to "understand, improve and reform practice" (Cohen et al 2001:226).

But is the Internet an appropriate tool for information delivery in a developing country such as South Africa? Many schools do not yet have electricity, few have computers (Lundall & Howell 2000:66; SRN 2001) and many schools do not have telephone lines.

Previously most South African teachers were not trained to use computers or the Internet. There seems to be a general lack of awareness of the potential of the Internet (Summerley 1996). This raises the question as to whether web-based information resources for teachers are viable in South Africa.

In a time of space-age revolutions and advanced information communication technologies, it is vitally important to develop comprehensive support structures for South African teachers to optimise the use of ICT in schools. National policies also prioritise the development of ICT capacity in education (RSA 1996; DoE 1996 and DoE & DoC 2001).

The end goal is to equip all learners for the Information Age. Teachers are key agents in this venture: "Educators will need curriculum and technical skills to integrate ICT in the curriculum so as to ensure that learners have the appropriate competencies and knowledge to study or work in information rich environments" (Paterson & Lundall 2001). They maintain that the following aspects should be addressed urgently:

- Development of learning support materials
- Support of innovative culture of ICT teaching
- Support of individual teachers

The development of a web-based information resource for teachers is in line with national policies and priorities identified by researchers in the field. Research into the development of an online information resource for Afrikaans language teachers is important because it can:

- lead to a broader view of the possibilities of ICT development in the South African educational context;

- add to the knowledge base of this discipline; and

- contribute to the establishment and maintenance of a quality web-based information resources for teachers in other learning areas.

According to the research results of Lundall & Howell (2000:51) there is a need for contextually specific investigations of ICTs in education in South Africa. The research for this study falls into this category.

1.2 Research problem

Central to this study is the main research problem, namely:

What is the best practice to establish a web-based information resource to meet the information needs of Afrikaans First Language teachers?

The following sub-questions are derived from the research question above:

➢ ***Information resources***

  ❑ Why are information resources necessary?

  ❑ What are the criteria for a quality information resource?

  ❑ What is a suitable framework for establishing and maintaining an information resource?

➢ ***The Internet as information resource***

  ❑ What are the benefits and constraints of the Internet as an information resource?

  ❑ What are the benefits of web-based information resources for teachers?

  ❑ How do teachers utilise and value the Internet as an information resource?

  ❑ What is the best practice to develop a quality web-based information resource?

➢ ***Establishing a web-based information resource for Afrikaans L1 teachers***

  ❑ What are the information needs of Afrikaans L1 teachers?

  ❑ To what extent do Afrikaans L1 teachers use and value the Internet as an information resource?

  ❑ How do Afrikaans L1 teachers value and use a subject-specific web site?

1.3 The purpose of this research

The aim of an action research project is to "bring about practical improvement, innovation, change or development of social practice, and the practitioners' better understanding of their practices" (Cohen et al 2001:227). Central to action research is problem solving – usually a problem that is of immediate concern to the practitioner(s).

This action research project aims to:

- ❑ determine via a literature survey the characteristics of information resources and appropriate steps to be taken to implement a web-based information resource;
- ❑ establish the appropriateness of the Internet as an information resource;
- ❑ examine to what extent teachers use and value web-based information resources;
- ❑ determine the information needs of Afrikaans L1 teachers;
- ❑ investigate the utilisation of both traditional information resources and the Internet by the target group; and
- ❑ establish, improve and maintain a subject-specific web site for Afrikaans L1 teachers.

1.4 Terminology

Concepts such as 'information', 'information needs', 'information resource' and 'information communication technology' will be used. To clarify what is meant by these terms in this study they will be defined in the next section:

- ❑ *Information*

    Dictionary definitions of information range in scope. It is defined as "facts or detail" (*Merriam-Webster*) and as "data, common knowledge, general knowledge, know-how, skill and aptitude" (*Xrefer*). Data are listed at the lowest point of a hierarchy that moves from information and knowledge to wisdom at the top. Whereas data are a collection of more or less isolated facts, information is "data with a shape and a potential use, or conclusions drawn from data" (*Xrefer Online*).

McMillan (2002) emphasises that there is no commonly agreed definition of information, but gives the following description of information: "Information is produced when data are processed so that they are placed within some context in order to convey meaning to a recipient". Information is only valuable if it has a definite meaning for a person in a specific situation. Information has meaning when it helps someone do and/or decide something (Blom 1981:34).

The kind of information referred to in this study is the information which language teachers need on a daily basis to enable them to interpret the curriculum and plan for lessons. It provides background information for lessons, empowers them to make decisions concerning assessment, administration and classroom practice, and provides ideas for extra activities.

❑ *Information needs*

Information needs refer to the information a person needs to do a job. It could entail information necessary to solve problems, make decisions, act creatively, plan and answer questions (Du Toit 1986:12). The science, profession, circumstances and personal aspects of the individual influence the information needs.

For the purposes of this study information needs refers to gaps in the teachers' knowledge. It is the information they **need** to teach, or to plan teaching and learning activities. For instance, they might need the correct versions of poems, clarification of new terminology in the curriculum, examples of assessment procedures, or background information of Afrikaans authors.

❑ *Information resource*

Kaniki (1995:16) defines an information resource as "a space or building in which human and other information resources in a variety of media are arranged or made accessible in an appropriate manner". The information resource is a source (building/ book/ CD-Rom/ person/ museum) with specific information for a certain

target group. Information resources are generally designed to provide support for a specific group of users in a given content area (Milheim & Harvey 1998:53).

Thus, an information resource will indicate a central resource that provides a variety of information specific to the information needs of a specific group of teachers. It is a resource (paper-based or electronic) that can be accessed by teachers who need information in support of their professional duties.

- *Information Communication Technology (ICT)*
  Information technologies consist of the hardware and software used to input and process data and output useful information (Laribee 1992). With the development of telecommunication technology, information technologies have become an integral part of information systems. These technologies are used for storing, retrieving and communicating data. Examples of these technologies include distributed networks, electronic mail and telecommunications such as the Internet.

  In the context of this study ICT will more specifically refer to the Internet with its applications such as web pages, and communication tools such as e-mail.

1.5   Methodology

This study was conducted as an action research project. True to the characteristics of action research, this study has moved through various stages and used a variety of instruments for data collection.

An action research project follows "a spiral of cycles of *planning*, *acting* (implementing plans), *observing* (systematically), *reflecting*… and then re-planning, further implementation, observing and reflecting" (Cohen et al 2001:229). The research for this study was conducted by means of a literature survey on the subject, followed by an empirical study.

Though literature on similar studies is limited, an extensive survey of relevant literature was done and is critically synthesised in Chapter 2. The research process evolved through various stages. Data was collected for various purposes and a variety of data collection methodologies were used (see Table 1.1).

❑ **Data collection methods**

Table 1.1 summarises the stages of the research with the appropriate data collection methodologies:

Table 1.1: Data collection methodologies of the research

Purpose	Data source
❑ Audit of existing information resources for Afrikaans L1 teachers	➢ Web search engines ➢ Library visits ➢ Questionnaire
❑ Assessment of the information needs of Afrikaans L1 teachers	➢ Focus group discussions ➢ Questionnaire
❑ Evaluation of the quality and effectiveness of the web-based information resource	➢ Online evaluation form ➢ E-mail ➢ Peer review of the web site ➢ Hit counters on web sites

❑ **Selection of participants**

Non-probability sampling is frequently used in action and small-scale research (Cohen et al 2001:102). For the purposes of this study convenience sampling (a form of non-probability sampling) was done. It involves choosing respondents to whom the researcher has easy access. This was done because of financial constraints.

A group of Afrikaans First Language teachers who attended a conference at the University of Pretoria in September 2000 were asked to complete a questionnaire

and participate in focus group discussions. This group was chosen because it was convenient and cheap to circulate the questionnaires at the conference.

The selectivity of a non-probability sample is recognised. Although data from these questionnaires could not be generalised for the wider population of Afrikaans L1 teachers, it gave valuable direction at this early stage of the research.

1.6   Significance of research

Nicholas (1996:1) is of the opinion that society is not yet utilising technologies such as the Internet to the advantage of users. This study is a venture in the direction of not only providing teachers with a much-needed information resource, but also in utilising ICT to the advantage of an important profession.

The research results of this study will contribute to the knowledge base of ICT development and utilisation for educational purposes, information science and teacher education, especially in a developing country such as South Africa.

❑ **Validity and reliability**

As the researcher has been closely involved in the action research project, it was decided – for validity's sake – to triangulate the data. The data for this study came from six different sources:

- A questionnaire completed by Afrikaans L1 teachers
- Focus group discussions with Afrikaans L1 teachers
- A hit counter on a subject-specific web site for Afrikaans language teachers
- A feed-back form on the web site
- Feedback to the webmaster in the form of e-mail
- Peer review

The data gathered from these sources was compared to triangulate the findings of the research. This was done in an effort to strengthen the validity of the research findings.

❑ **Demarcation**

The focus of this study is not on website development (structure and design)*,* but on meeting the target audience's information needs. It does not explore web design in depth, but rather addresses the content of such a resource and the feasibility of a project of this kind.

❑ **Limitations of research**

The research for this study worked within three important limitations:

1) *Convenience sampling*: The sample for establishing the information needs of Afrikaans L1 teachers was selected out of convenience because of budget constraints.

2) *Size of the sample*: The size of the sample was very small and is therefore not representative of the intended target group. As teachers from one region were involved in the answering the questionnaire and participating in the focus group discussions, the results are not representative of Afrikaans L1 teachers in other provinces.

3) *Subjectivity of the researcher*: The researcher is closely connected to the target group. The development of the information resource is her brainchild. She avoided, as far as possible, to interpret results in a biased way.

The validation of the data via triangulation might add to the validity of the research. However, it is still acknowledged that this research will be affected by these limitations.

1.7   Outline of the chapters

Table 1.2 offers an outline of the chapters to follow:

Table 1.2: Outline of chapters

1	Background and introduction
2	Review of relevant literature
3	Research methodology
4	Research findings
5	Conclusion and recommendations
6	References

1.8   Research outcomes

Apart from the dissertation, a web-based information resource for Afrikaans language teachers was developed. It is called the *"Goudmyn"* (Gold Mine) for Afrikaans language teachers. The web page is online available at http://www.onnet.up.ac.za.

Conclusion

It is the aim of this study to establish whether information communication technology (ICT) can be an effective mechanism of information delivery for teachers. The literature review, the empirical research and the assessment of the subject-specific web site, the *Goudmyn*, will contribute to answer the research questions of this study.