CHAPTER 3: RESEARCH DESIGN

INTRODUCTION

The aim of the study was to explore the relevance to the workplace of the Further Education and Training College curriculum in electrical subjects. This chapter deals with the way in which the researcher carried out research to accomplish this aim. It details the research methods and techniques used and the sources of information consulted, and provides a rationale for choosing them. The process of analyzing and presenting data and issues of validity will be detailed.

RESEARCH APPROACH

My study follows a phenomenological model of research, which acknowledges and studies experience to uncover the meaning and significance of actions and events. Creswell (1998) and Van Manen (1990) state that this type of research describes the meaning of lived experiences. Phenomenological research is based on an understanding of consciousness as being active and bestowing meaning. Anything that comes into the purview of an individual is worth looking at, according to Van Manen (1990) and Cresswell (1998).
Phenomenology makes a special claim, that through consciousness knowledge can be discovered. The method’s relevance is that it enables subjects to reflect on their experiences, and therefore articulate meaning. Van Manen (1990) further states that phenomenology tries to interpret meaning to certain degree of depth and richness. It looks deeper at the nature of the phenomenon; and it asks what it means to be an individual in certain settings.

Hancook (1998) views the phenomenological approach as one that acknowledges a gap in our understanding, clarification or illumination of which will provide benefit. Phenomenological research describes “something that exists as part of the world in which we live. It may be an event, situation, experience or concepts” (Hancook: 1998). Hancook (1998) says phenomenology is concerned with the feelings, experiences and opinions of individuals, and explains social phenomena as they occur naturally. According to Hancook (1998), understanding of a situation is gained through a holistic perspective.

Stanage (1987) argues that phenomenology presupposes intersubjectivity. Constructivism and phenomenology are both characterized by interactions. There must be co-existence between subjects. In phenomenology occurrences are constructed, and in constructivism meanings are socially constructed.

My study is qualitative in nature. According to Patton (2002), qualitative study allows the researcher to understand the world as perceived by those who participate in a study.
SOURCES OF INFORMATION

Information was obtained from various sources: training personnel in companies, learners, educators, education specialists and a curriculum developer.

Quality can be seen from the customer’s perspective. In this case, employers of graduates are colleges’ customers, and they had something to say about the caliber of electricians that are produced by colleges. The training personnel interviewed or asked to fill in a questionnaire were from Consol, Spoornet, Eskom and Omega Lifts. All these companies are located in the vicinity of Germiston and Johannesburg, and were carefully selected for their diversity of their business. Since the electrical field is broad, the curriculum offered by FET colleges might be relevant to some companies while not to others because of the nature of their business. They were asked to explain what in their opinion constitutes a competent electrician, and whether the College produces the calibre of graduates they seek.

Learners, on the other hand, are recipients and products of the FET college curriculum. Learners from Central Johannesburg College for FET and Ekurhuleni West College for FET were also carefully selected, as they are employed in different companies in different sectors of business. The learners mostly spoke about how they felt about the relevance of the knowledge acquired, and their experiences after they were inducted into
the workplace. It was not difficult to persuade them to participate, as most of them had previously been my learners.

Three educators from Central Johannesburg College for Further Education and Training were interviewed. Educators are the tools used to deliver the curriculum, and they shared their insights into the FET curriculum. The point was whether or not the curriculum had changed, and its impact on learners’ chances of employment.

RESEARCH METHODS

Various methods that I considered suited to my enquiry were used to gather data for this study. These were: e-mail, semi-structured interviews, questionnaires and document analysis.

Document Analysis

By means of document analysis I intended to analyze the content of the current curriculum and that of the curriculum of five years ago. I also analyzed past question papers. Question papers are examinations used by education department as a form of summative assessment. They are developed by the Department of Education and are based on the curriculum. By comparing recent question papers and those of five years ago I would see if there were changes in the curriculum or not.
I experienced difficulty obtaining the latest curriculum. This was because the education department issues only one to each FET College when there is an omission or addition to be effected in the curriculum. The copy I was able to obtain dates back to 1980. I therefore compared current exam question papers with those of five years ago. This helped me to see similarities and differences. A copy of question papers and curriculum is attached in appendix C.

**Interviews**

Learners, educators, curriculum developer and employers were interviewed to gather relevant data that would give insight to the study. An interview is a method of gathering data through verbal interaction. Glazier and Powell (1992) view interviews as conversations with a purpose.

> Rather than attempting to grasp the quantities or measurements of the phenomenon, interviewing is administered to develop a better understanding of how (people) interpret and experience some situation, process or event.

(Curasi: 2001)

According to May (1997) interviews are meant to find out what is in on someone’s mind. This method can be used to follow up unexpected results or validate other methods. According to Merriam and Simpson (1995), the method yields a greater depth than questionnaires, and the researcher becomes an extension of the scheduled questions. Interviews have an added advantage in that one is afforded a chance of clarifying whatever might be unclear to the respondent.
Learners and educators were interviewed at Johannesburg and Germiston FET Colleges and two learners at their homes. The two training officials were visited at their workplaces, and one director of Omega Lifts Company at his home. Care was taken to ensure that the environment suited respondents, and to make them as comfortable as possible.

Semi-structured interviews involve a series of open-ended questions, which provide both the interviewer and the interviewee an opportunity to deliberate issues in some detail. Maxwell (1996) contends that one of the ways to combat threats to validity of the study is to ask open-ended questions and to avoid close and leading questions.

**Interview Schedule**

<table>
<thead>
<tr>
<th>Person interviewed</th>
<th>Date</th>
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<tbody>
<tr>
<td>Mayibongwe (Scaw Metals)</td>
<td>20 November 2004</td>
</tr>
<tr>
<td>Kwanele Mngceke (Spoornet)</td>
<td>20 November 2004</td>
</tr>
<tr>
<td>Ms. Tshaka (Educator 1)</td>
<td>07 February 2005</td>
</tr>
<tr>
<td>Mr. Steyn (Educator 2)</td>
<td>07 February 2005</td>
</tr>
<tr>
<td>Mr. Mabilane (Educator 3)</td>
<td>15 February 2005</td>
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<tr>
<td>George Mokoena (Abidail)</td>
<td>15 February 2005</td>
</tr>
<tr>
<td>Thomas Hlongwane (Alstom)</td>
<td>15 February 2005</td>
</tr>
<tr>
<td>Mr. Engelbrecht (Superlift Services)</td>
<td>15 February 2005</td>
</tr>
<tr>
<td>Mr. Sefu (Spoornet)</td>
<td>21 April 2005</td>
</tr>
<tr>
<td>Mr. Leon Theron (Omega Lifts)</td>
<td>02 May 2005</td>
</tr>
</tbody>
</table>
A senior training advisor (ESKOM) was interviewed through e-mail because of her unavailability and time constraints. The researcher suggested this form of interview and managed an agreement of follow-up emails in the event of vague responses. This agreement ensured the benefits of the conventional interview. My experience of e-mail as an interview tool is that it proved to be cost- and time-saving, as there were no transcriptions, no necessity to travel, and it was easy to identify any vagueness or contradictions.

Most of the interviews were tape-recorded. Tape recording an interview as opposed to writing down the responses enables the researcher better to concentrate and listen attentively to the respondent.

Recording ensures that the whole interview is captured, and provides complete data for analysis, so that cues that were missed the first time can be recognised when listening to the recording. (Hancook: 1998:14)

A friend of the researcher transcribed the interviews from the tape. However, the researcher himself took time to summarize the tape beforehand to verify accuracy of transcription. According to Hancook (1998) there are two methods of producing written version of interviews, the tape analysis and full transcription. When doing tape analysis, “The researcher can listen to the tape and make a note of sections which contain particularly useful information and key quotations, and return to these sections of the tape for fuller analysis” (Hancook: 1998:14). I have opted to use the full transcription (verbatim) for tape-recorded interviews. According to Maxwell (1996) verbatim
transcription enhances validity. Copies of interviews are attached in appendix A and completed questionnaires are attached as appendix B.

Lacey and Luff (2001) view data analysis as a mass of words generated by interviews which need to be described and summarized. Interview data was organized according to the research questions. Hancook (1998) defines content analysis as the process of categorization of verbal data. The analysis concerned what was actually said (a descriptive account) and what was meant by the response (an interpretive account)

**Questionnaires**

Questionnaires may be regarded as interviews on paper (Nishet and Entwistle, 1980). I developed a questionnaire after a number of unsuccessful attempts to secure an interview with the curriculum developer. This respondent was hard to locate and ‘pin down’, and the researcher had to use a friend in the education department as a mediator to get the questions to him. One learner declined to be interviewed and tape-recorded, and opted instead to respond to a questionnaire.

**TRIANGULATION**
Making use of these three instruments gave me a triangulated design, which strengthened the validity of the study. According to Cohen and Manion (1980), “triangulation attempts to map out, or explain more fully the richness and complexity of human behaviour by studying it from different points”. Triangulation also helps guard against researcher bias. Cohen and Manion (1994) define triangulation as “the use of two or more methods of data collection in the study of some aspect of human behaviour”. Employing a single method results in a limited perspective, and sometimes data is inaccurate.

“Triangulation demonstrates rigour” (Lacey and Luff, 2001). It also enables the researcher to uncover complexity and obtain different views.

The contradictions and differences within the data collected should spur the researcher onto further analysis, and sometimes, to further investigation until some ‘sense’ can be made of what is happening.

(Lacey and Luff, 2001:23)

**RESPONDENT VALIDATION**

The summaries of interviews were checked with respondents to eliminate imposed interpretations or misinterpretations. Lacey and Luff (2001) perceive this as a mark of quality. In respondent validation, the interpretation of an interview is fed back to the participant to check accuracy or obtain consent for use.

**3.6 VALIDITY**
On the other hand, validity “is the ability of the findings to represent the ‘truth’. Validity will be judged by the extent to which it seems to fairly and accurately represent the data collected” (Lacey and Luff, 2001:22). On the other hand Maxwell (1996) sees validity as referring to the credibility of a description, conclusion, explanation, interpretation or other kind of account.

Validity also focuses on the consistency of the findings, and ensuring that all views are represented. Maxwell (1996) refers to this type of validity as descriptive validity, which is concerned with what one has seen or heard. To ensure completeness and accuracy of the data verbatim transcription was used. To strengthen validity, care was also taken to make use of quotations from respondents’ interviews to curb imposing one’s own framework, and enhance understanding of the perspectives of the people studied.

Prior to this study I had my own preconceptions regarding the college curriculum. I considered it irrelevant, but I tried to keep an open mind about it. I discovered that this feeling was not universally shared, in particular by a number of the companies. This gives an example of what Maxwell (1996) refers to as researcher’s bias, which can undermine the validity of the study. Making use of multiple methods also strengthens validity as they enable the researcher to use many vantage points.
SUMMARY

This chapter was concerned with the processes the researcher followed to collect and analyze data for the study. In the next chapter these findings will be presented.