

TEACHERS' EXPERIENCES OF IMPLEMENTING THE DESIGN CURRICULUM IN
THE UMLAZI DISTRICT OF KWAZULU-NATAL

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT
FOR THE DEGREE OF MASTER IN EDUCATION, IN THE SCHOOL OF EDUCATION,
UNIVERSITY OF KWAZULU-NATAL, EDGEWOOD CAMPUS

JANUARY 2014

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ACKNOWLEDGEMENTS

There are many people to thank, as no academic quest is self-contained and independent. During this journey I was inspired, motivated, supported – and stopped in my tracks as well – but mostly I was driven by many people, for the completion of this project. For this I am eternally grateful; you have given me ‘Form, Space and Vision’.

Dr Noor my supervisor for your support, recommendations and guidance and seeing this project through.

Labby and Nyna for your friendly disposition and the way you engaged your students academically, but more importantly, for your inspirational discourses on academic educational research. Those lectures still ring in my head: “... who can tell me what day is it today?”

My dear friend Safura for believing, when everything was lost. Thank you for inspiring me to trust in myself.

My sons Udeshen and Vishalin for your constant help and support during your busy schedule with the Xbox but more importantly for recovering my lost folders every time the screen went blank. Thank you for your patience and understanding.

Ambigay, for your unstinting support in keeping the home fires burning while I contemplated Dr Noor and raged about ‘teacher experience’.

My Mum and Dad, firstly for the sacrifices you made in your personal lives, and in supporting me throughout my academic career. Dad for instilling in me the value of education, and mum, my first academic teacher – who knows what you would have become – thank you for the individual sacrifice you made, your enthusiasm and suggestions.

My sister Gloria for the deep interest you took in this research project and for constantly singing my praises. Thank you for believing in me.

My sister Krishnie for generously giving of her time spent on finishing my exams and reports so I could concentrate on this project, thank you.

Deva for your unconditional support and critical editing skills in the final analysis of the chapters.

Deven and Visha for your long-distance enthusiasm and support in seeing this project through.

Vaneshree for borrowing books on your library ticket while in New Zealand, and

Navan for scanning and emailing me chapters of books that I could not borrow from the library in New Zealand.

My wife, my eternal benefactor, whose support knows no bounds, your excellent editing skill, your clinical approach, in helping me sift through the literature and raw data, logging many long hours in the garage. When finding words was difficult and ideas did not flow, you were there, a true wordsmith. We have travelled many roads together, but this one was an odyssey. I could not have made it without you.

I am also genuinely indebted to all of the authors whose texts I drew and transcribed from in the compilation of this research project.

Last but not least, and notwithstanding my personal views, it was I believe through Divine intervention that this study was completed, as I felt the presence and the urge to complete in the final straits of this odyssey.

Abstract

Outcomes-based education, introduced in 1997, replaced the previous Art syllabi with Visual Arts and Design as separate subjects. Design as a learning area comprises multiple skills, and teachers are expected to employ new methods and terminology in its implementation. The teaching of Design demands creative and problem-solving processes involving problem identification, planning research, innovation, conceptualisation, prototyping and critical reflection. Many of these processes are new to Design educators. An additional handicap was that the Department of Education stopped supplies of art materials to schools.

The question that arises is how teachers are implementing the new curriculum, given the changes in both curriculum and regulations. The focus of this study therefore is to explore Grade 12 educators' experiences of implementing the Design curriculum and to provide some explanation of the extent to which the objectives of the new curriculum are being achieved. The study is viewed through the analytical lens of Wenger's understanding of communities of practice: teachers as a community, sharing their experiences in particular contexts, and facing diverse challenges.

A qualitative approach was adopted, with interviews and observations used to gather data. Three schools in KwaZulu-Natal that offer Design became the sites of data collection, interviews being conducted with one at each school. Data were coded, analysed and interpreted, and emerging themes were identified and presented as findings, which were; context of curriculum, Design literacy, continuous professional development, impact of learning materials and teachers' creativity and inventiveness.

CHAPTER 1

OVERVIEW

1.1 INTRODUCTION

The inclusion of Design as part of the school curriculum is an expression of creativity and innovation that is much needed in society. Design plays a pivotal role in the development of any country, both socially and economically. The best designs reflect a society's values and traditions, inculcating in the minds of the young learner the positive aspects of our rich, diverse and colourful heritage that harbours much potential.

Post-1994 the previously fragmented education departments within South Africa were integrated to form one national education department. Subsequently a new curriculum policy called Curriculum 2005 was introduced. This new curriculum advocated a learner-centred approach to teaching, focusing on the skills and outcomes of the learner as opposed to the previous content-based curriculum (Harley & Wedekind, 2004). This required teachers to learn new teaching methods as well as to change their pedagogy (Msibi & Mchunu, 2013). Curriculum 2005 constituted the biggest change in the history of curriculum studies worldwide (Jansen, 1997), revolutionising the education system in South Africa and bringing with it a host of new innovations.

The criticisms levelled against this new curriculum were many. Some of the most significant were that the language associated with outcomes-based education (OBE) was too complex and contradictory, resulting in teachers not being able to make sense of the new terms and concepts used (Jansen, 1997). Another criticism was that OBE was based on assumptions regarding the contexts of schools as well as of the teachers within the education system (Msibi & Mchunu, 2013).

As a practising teacher my understanding of this curriculum change was that teachers had to change their pedagogical style to embrace the context of their classrooms and to find new and different ways to assess learners coming from diverse backgrounds. Using the framework of curriculum change and its attendant challenges, I will use the learning area of Design as a case study to explore the experiences of teachers implementing the Grade12 Design curriculum under the new dispensation.

The particular significance of Curriculum 2005 was that Design was introduced into the integrated South African education system as a separate learning area. According to Kahn and Volmink (1997) the only form of Design education prior to 1994 was Technology and Design within some of the education departments, such as the ex-Natal Education Department. The intention of the Design curriculum developers was to afford learners the opportunity to appreciate how images and artefacts relate to economic, environmental, social and cultural contexts, develop appropriate presentation and communication skills to convey Design concepts effectively, and emphasise the collaborative nature of the design process which encourages teamwork and creativity.

According to the new curriculum, the previous Art teacher had to become the new Design teacher, and was expected to employ new methods, teaching strategies and terminology in its implementation. Kimbell and Perry (2001), who make reference to the complex nature of the Design learning area, argue that Design has a unique pedagogy, making use of a range of learning styles across its many disciplines. The disciplines of Design include photography, ceramics, fashion, printmaking, beadwork, textiles, weaving, animation, theatre and set design and stained-glass, amongst others (National Curriculum Statement (NCS), on Design, Department of Education (DoE), 2007). Wilson and Harris (2004) elaborate on the project-based, problem-solving nature of Design requiring

conceptualisation and conceiving of ideas, prototyping and critical reflection while making informed judgements during construction of projects.

The teachers who had previously been trained to implement the old Art curriculum now had to implement the Design curriculum encompassing all the above processes and techniques, with limited knowledge and minimal re-training in this new learning area (Govender, 2010). As might be expected of a new subject, very little is known about the implementation and experiences of teachers in the context of the new curriculum. With the introduction of so many curriculum changes, the study of the experiences of teachers of Design becomes necessary in ascertaining whether there was adequate preparation for the implementation of Design, whether there were support structures in place to provide the necessary guidance to teachers, and the extent to which the aim of the curriculum developers was being met. This thesis therefore explores the experiences of Grade 12 Design teachers implementing the Design curriculum in the Kwazulu-Natal (KZN) area.

The focus of the study is the experiences of Grade 12 teachers in implementing the Design curriculum. This chapter begins with a brief description of the learning area of Design, followed by the purpose and significance of the study, the rationale and the theoretical framework. Thereafter the critical research questions and the methodology are introduced, followed by the sampling, data analysis, design limitations, trustworthiness, validity, ethical issues, and a preview of the chapters to come. The conclusion brings an end to this chapter.

1.2 THE LEARNING AREA OF DESIGN

With the introduction of Curriculum 2005 Design was one of the new learning areas that were introduced to replace the previous Art syllabus. The new Design

curriculum emphasises the teaching of Design from a social, cultural and environmental perspective. The conceptual aspect of Design, alongside the teaching of the theoretical component of Design knowledge (i.e. Design terminology, elements and principles of Design), also forms part of the new curriculum (DoE, 2003). The intention of the curriculum developers was to achieve Design literacy amongst learners from a holistic perspective, where the learner is able to demonstrate Design literacy and to understand Design in its cultural, environmental, social and historical context (DoE through the NCS Guidelines 10-12 for General Education on Design, 2003).

The Design curriculum comprises both a theoretical and a practical component. The theoretical component encompasses the history and appreciation of Design. In the teaching context the learner should be able to demonstrate an understanding of Design in a cultural, environmental and business sense, both historically and in contemporary practice (DoE, 2003). The practical component comprises a research and planning stage followed by the construction of a project within a chosen discipline.

The NCS (DoE, 2003) states that the main purpose of the Design curriculum is that it should be used as a tool for change. Therefore the Design curriculum had to focus on craft production that is context-based and accessible to all learners (DoE, 2003). This means that the Design teacher could implement the Design curriculum based on the diversity of his learners and the resources available to him.

The previous Art syllabus focused only on the production of a completed project within a stipulated discipline, which included painting, ceramics and print-making. This was my experience as an Art teacher for many years. In comparison, the Design curriculum requires a planning stage, Learning Outcomes 1 (LO1), to be completed before the project is undertaken. LO1 requires the

learner to first carry out research and then produce a series of drawings and illustrations. Thereafter he/she is required to explain how the Design project was conceptualised. This planning stage, which is new to both the teacher and learner, constitutes 50% of the project mark. This change from the previous Art syllabus to the present Design curriculum would imply that Design teachers must introduce this aspect of the curriculum in a manner that is relevant to the context of the learners.

Design is a new learning area that encompasses, amongst other requirements, complex problem-solving processes. There are also challenges in the technical aspects of Design instruction which teachers have to encounter. This includes, amongst others, the pedagogical strategies required for the teaching of LO1. The teaching of LO1 requires the teacher to develop teaching strategies to inspire and evoke the imagination of his learners whereby they can carry out research, develop their ideas and present them in a portfolio. These issues raise questions related to how Design teachers are making use of their previous Art knowledge in the teaching of Design.

A practical approach is best called upon to glean information and insight into the development of teachers' practice and pedagogic skill. This approach would involve exploring the real experiences of Design teachers: analysing their individual and creative approaches to overcoming learning barriers in the teaching contexts.

1.3 PURPOSE AND SIGNIFICANCE OF THE STUDY

The purpose of the study is to investigate the experiences of Grade 12 teachers implementing the Design curriculum in light of the recent curriculum reform. The study would be significant in providing some insight into how the

implementation is taking place in the classroom. Knowledge about implementation will reveal what challenges and successes these teachers are experiencing, the subsequent development of their pedagogic practice, and the future of Design as an innovative aspect of curriculum.

The literature examined shows that there is very little research material on Design teachers' implementation of the Design curriculum (Lerner, 2012). My study hopes to make a contribution to the limited literature on the subject. This may benefit curriculum policy makers and the teaching of Design.

1.4 RATIONALE FOR THE STUDY

I am a teacher and my professional training in Art was located within the previous Art syllabus. Post-1994, following the changes in curriculum, I now teach Design. The Design curriculum introduced into the school system meant that the teachers had to learn new content, new forms of assessment and new methodologies of teaching. The approach to learning and implementing the new Design curriculum was controlled and regulated by the DoE through workshops that were held within certain time-frames, with the 'one size fits all' approach (Govender, 2010, p. 3). This implies that Design workshops did not take cognizance of the different types of schools and the different contexts within which teachers teach.

With Design employing many concepts and terminology in its application which teachers of this new learning area may find unfamiliar, it can prove a challenge for them to develop learning material that can be easily interpreted and understood, especially if it is to be of relevance to the context of the learners in their classroom.

This became apparent to me during 2010 and 2011, when I had the opportunity of working with a teacher and his Grade 12 Design learners in a rural school in Kosi Bay. As he was teaching Grade 12 for the first time, I volunteered to assist him with understanding the terminology and content of the Grade 12 curriculum. I also workshopped him together with his Grade 12 learners in the discipline of ceramics, and shared with him my notes on the history of Design. It was during my second visit to his school that he advised me of the challenges he experienced regarding teaching the content of the curriculum to his rural learners. He added that the absence of textbooks to refer to made it difficult for learners to grasp even simple concepts. He also felt isolated, as there were no Design teachers close to him that he could get help from or seek guidance from. This was of concern to me as I found myself being faced with similar issues in the classroom – however, I had the benefit of being an experienced Art teacher in an urban environment.

This teacher later informed me that he was no longer teaching Design as he was experiencing many challenges that he could not cope with and had no recourse to address them. From informal discussion with fellow Design teachers, similar concerns were expressed, which became a talking point for Design teachers at the annual report-back meetings on Grade 12 results.

My personal interest and concern for the future of Design coupled with my experiences were a stimulus for the conceptualisation of this research project, which explores the experiences of Grade 12 teachers' implementation of the Design curriculum under the new dispensation.

The responsibility to develop and plan appropriate pedagogic strategies to address and implement the Design curriculum are some of the additional challenges that teachers have to work with. Given the changes in curriculum and regulations, the Design teacher now requires an understanding of curriculum

conceptualisation, restructuring of lesson plans, and different pedagogical practices compared to the requirements of the previous curriculum.

When I conducted the literature review for this study I became aware of shortcomings in the Design workshops. The workshops held by the DoE for teachers did not address the availability of resources at schools. The facilitators of the workshops were not equipped to assist teachers to meet the needs of the multi-cultural learners through the learning and teaching of diverse pedagogical methods. Despite many teachers' complaints at workshops about specific areas of concern, a concrete way forward has not been identified (Govender, 2010).

I was keen to discover the experiences of my colleagues teaching Design under these circumstances, i.e. how are these teachers implementing the new Design curriculum given the changes in curriculum and regulations?

1.5 CONCEPTUAL FRAMEWORK

The study will be viewed through Maxine Greene's (1995) understanding of teachers as a community, sharing their experiences in particular contexts and approaching their individual pedagogy through the use of imagination. According to Greene (1995) teaching should be viewed as an imaginative communal activity which involves creating a classroom environment that promotes and supports learners. The conceptualisation of community, contextual circumstances and teaching with imagination is relevant and appropriate in framing the inquiry of the experiences of Grade 12 Design teachers, as it focuses on pertinent issues that relate to the implementation of the Design curriculum.

The second conceptual framing for this study is Wenger's (2000) understanding of communities of practice. According to Wenger (2000) people group together informally to share skills, knowledge and expertise for a joint endeavour.

Wenger and Snyder (2000, p.140) posit that members in "communities of practice share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems". Design teachers have different areas of expertise with respect to the various disciplines within Design, and coming together in communities of practice allows for Design teachers to share their skills and expertise with one another.

Collaborations between teachers provide a platform for knowledge production and new, creative approaches to teaching this new learning area. Erickson (1997) argues that this type of practice not only supports teachers in illuminating their own knowledge, but it allows those ideas and understandings to become objects for group discussion, which according to Greene (1995, p. 3) "brings us together in community".

Page (2009) and Erickson (1997) agree that working together changes work and personal ideologies in a positive way. This reinforces the idea that working collaboratively in communities of practice improves work ethic and the way in which people view knowledge.

Communities of practice can provide a forum for Design teachers to address challenges they may experience in implementing the curriculum. Teachers can receive support from one another and look for solutions to common problems. New teachers can benefit from feedback from experienced teachers in the adoption of successful practices in the classroom.

1.6 RESEARCH METHODOLOGY

1.6.1 Research design

The phenomenon of this study is the experiences of teachers implementing the Design curriculum in Grade 12. A qualitative case study approach was adopted in this study, which allowed the researcher to present a detailed and in-depth account of how the participants (teachers) construct and experience the teaching of Design. The interpretivist paradigm was used to interpret the data, as it seeks to understand the individual teachers' experiences of teaching the newly introduced Design curriculum in Grade 12.

1.6.2 Research questions

The critical research questions that inform the research design for this study are the following:

1.6.2.1 What are the experiences of Grade 12 teachers in implementing the Design Curriculum?

Interviews will be carried out with Grade 12 Design teachers in the KZN area to respond to this question.

1.6.2.2 How are Grade 12 Design teachers implementing the Design curriculum?

Observations of lessons will be conducted to ascertain how Grade 12 teachers teach Design in response to the second research question.

1.6.3 Data collection instruments

Multiple methods of data collection were used, namely semi-structured interviews, classroom observations and anecdotal evidence in order to obtain rich, in-depth information on the experiences of Design teachers implementing the Grade 12 Design curriculum. Semi-structured interviews allowed the researcher to probe deeper in order to get an understanding of teachers' individual experiences. The interviews were audiotaped so that important information would not be lost or overlooked. The interviews enabled participants "to discuss their interpretations of the world in which they live" and "how they regard situations from their own point of view" (Cohen, Manion, & Morrison, 2007, p.349). In this sense the interview is not only about collecting data, but it is part of life itself; in fact, its "human embeddedness is inescapable" (Cohen *et al.*, 2007, p. 349).

Classroom observations using a semi-structured observation schedule provided the researcher with the opportunity to observe how Grade 12 Design teachers were implementing the Design curriculum. Observation is an important tool, as it allowed the researcher to get information on methods used to implement the Design curriculum. Furthermore, it allowed the researcher to observe implementation of the Design curriculum in context: "Observation offers an investigator the opportunity to gather live data from naturally occurring social situations" (Cohen *et al.*, 2007, p. 396). The importance of conducting classroom observation is best explained by Taylor and Vinjevoold (1999), who state that observation carried out in classrooms offers an extremely rich supply of data regarding the environment in schools, the pedagogic styles, use of tools, equipment and materials, and associations between the styles of teaching and learning performances and its results. In this study the observation technique will allow me to observe teachers in their individual contexts implementing the Design curriculum.

1.7 SAMPLING OF PARTICIPANTS

As my study was confined to exploring the experiences of Design teachers implementing the Design curriculum, purposive sampling was used to identify participants in this study. Purposive sampling refers to a deliberate choice of participants from a specific population within a wider community (Cohen *et al.*, 2007).

Three Design teachers were chosen from three different schools offering Design within the KZN area. (A diagram illustrating the profiles of the three participants is provided in Chapter Four (see 4.2.1).

1.8 DATA ANALYSIS

The interviews of the three participants were recorded electronically and then transcribed verbatim. These transcriptions were then read and reread several times to analyse the data using content analysis. This method of data analysis refers to the summarising and reporting of written data through coding units called units of analysis (Cohen *et al.*, 2007). Summarising the message content using coding allows for patterns to emerge, thereby leading to the identification of themes. I adopted this thematic coding method, which involved putting the typescripts into themes so that the large amount of data collected could be understood. (A diagrammatic representation of how the data were analysed is presented in Chapter Three.)

1.9 PREVIEW OF CHAPTERS

Chapter One provides an introduction to the study and examines the complex new learning area of Design. The purpose and significance of the study are reviewed in light of the recent curriculum reform, followed by the rationale which explains my personal motivation for undertaking the study. This is with particular reference to the experiences I had with a Grade 12 Design teacher in the rural area of Kosi Bay in KZN. The theoretical framework that guides the study is then briefly discussed followed by the research methodology that was adopted to conduct the research. Finally this chapter provides a brief outline of the remaining chapters in the study.

Chapter Two firstly reviews current literature related to the experiences of teachers teaching Design and research conducted in this field. The scarcity of literature specifically related to the experiences of teachers implementing Design curricula necessitated a broadening of the search for literature to include the experiences of teachers implementing new or revised curricula. Secondly it presents the conceptual framework of Greene's (1995) understanding of imagination in pedagogy and Wenger's (2000) concept of communities of practice. Greene (1995) argues that imagination helps teachers develop creative pedagogy relevant to their context and environment. Wenger's theory of communities of practice posits that collaboration amongst people with a common interest in a subject generates new processes and approaches to solve problems in a particular domain. The conceptual framework of Greene (1995) and Wenger (2000) is to be used as a firm foundation for the analysis of the data and for interpretation with regard to the experiences of Grade 12 teachers implementing the Design curriculum.

Chapter Three focuses on the research design and methodology seeking to answer the critical research questions. A discussion of the qualitative approach and paradigmatic orientation of the study is included. A case study methodology was engaged to research this phenomenon, which provides the groundwork for the analysis, interpretation and findings of the research to be carried out in Chapter Four. Data collection methods, validity, ethics and limitations conclude this chapter.

Chapter Four presents and analyses the data that were generated from the semi-structured interviews and classroom observations. The data from the semi-structured interviews are presented thematically, followed by data from the observations presented in narrative format. The data are analysed through the conceptual lens of Greene's (1995) notion of imagination and Wenger's (2000) concept of community of practice. The chapter concludes with an integrated discussion of the themes and some of the researcher's observations of the study.

Chapter Five presents and discusses the findings, provides a synthesis of the study, presents personal reflections and highlights aspects of Design that require further research.

1.10 CONCLUSION

In this chapter I presented an overview of the thesis with reference to its core elements, including the focus, rationale, critical research questions, conceptual framework and data presentation and analysis. Given the relatively new status of Design as a learning area in the post-1994 curriculum and the empirical challenges facing the teacher in the post-1994 classroom, I hope to have argued for an informed and conscientious approach to curriculum reform and implementation.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

The study sets out to explore the experiences of Grade 12 teachers implementing the Design curriculum in the KZN area. This chapter reviews literature that focuses on the experiences of teachers in light of the implementation of new and revised curricula. Literature dealing with teacher experiences locally and globally is investigated with a specific focus on the experiences of Design teachers implementing the new curricula. The presentation of the literature is structured thematically, followed by the theoretical framework that guides the analysis of the data.

As Design is a new learning area comprising multiple disciplines, teachers are expected to employ new teaching methods and strategies in order to implement the subject contextually. Design teachers have different areas of specialisation. Teachers will benefit from meeting and collaborating with one another to share their skills, expertise and experiences, as well as to develop creative pedagogies to implement the new Design curriculum.

This study will be viewed conceptually through Greene's (1995) theory of the role of imagination in teachers' pedagogic practice shared in particular contexts and Wenger's (2000) understanding of communities of practice as an analytical concept. A community of practice, according to Wenger (2000), is where people group together informally to share skills, knowledge and expertise for a joint endeavour.

The conceptualisation of communities is central to the theories of both Greene (1995) and Wenger (2000), where groups of people with a common interest come together to share their expertise and passion in a joint venture.

The search for literature regarding the experiences of teachers implementing the Design curriculum was broadened to include the experiences of teachers implementing new or revised curricula other than Design. The literature that is being presented is therefore not exclusively related to the experiences of teachers teaching Design but includes teachers' experiences of teaching related learning areas. It is hoped that parallels and areas of commonality can be drawn from these studies that will relate to the experiences of teachers implementing the Design curriculum.

This chapter first discusses the experiences of teachers teaching new learning areas under the headings of context, professional development, collaborative learning and availability of resources. In the second part of the chapter literature about the conceptual framing is presented.

2.2 TEACHER EXPERIENCES OF TEACHING NEW LEARNING AREAS

With the introduction of Curriculum 2005 which adopted OBE in South Africa, the previous Art syllabus was replaced with Visual Arts and Design, thereby introducing Design as a new learning area. Design is underpinned by the principles of OBE with the emphasis being on skills development, where learners achieve certain specific outcomes. The studies presented in this review revealed several aspects that influence teacher experiences of teaching a new learning area. Of these, four pertinent areas have been identified to inform this study. The literature on teacher experiences that follows is presented under the headings of

context and design, professional development programmes for new and revised curricula, collaborative learning and availability of resources.

2.2.1 Contextual circumstances impacting teachers' experiences

Cornbleth (1990) asserts that curriculum is shaped by contextual factors within and beyond the classroom and school. Spillane, Reiser and Reimer (2002) contend that teachers understand and implement a new curriculum within the specific context of the school environment they find themselves in. As Billet (1996) and Davies and Sumara (1997), as cited in Gorodetsky, Keiny, Barak and Weiss (2003, p. 22), state: "The majority of the research community acknowledges that the context is inseparable from what is learned, and moreover it is an intrinsic part of the learning situation...". My study focuses on the experiences that Grade 12 Design teachers have within the contexts of their individual classrooms.

The South African Schools Act of 1996 makes provision for public schools to meet the diverse needs of all the learners by ensuring more flexibility in the manner in which the curriculum is enacted (Singh, 2004). However, according to the DoE (2007) there are still many learners throughout the South African schooling context who face obstacles to learning and lesson participation as schools are not able to respond to the diverse needs in the learner population. This has implications for teachers implementing both existing and revised curricula.

Singh (2004) contends that as South African classrooms become increasingly diverse with respect to learner demographics, the task of helping all children to succeed becomes more complex. This has relevance to my study with respect to

learner literacy, as learners are required to have a conceptual understanding of Design terminology before they can visualise and conceive ideas in the construction of their projects. Furthermore, the DoE (2003) requires Design literacy amongst learners to be understood contextually.

Context may impact on the experiences of Design teachers who may have to contend with the curriculum content being unfamiliar to their learners with regard to the planning component of the Design project. Teachers in secondary schools may assume that many of the subject-specific features, terminology and concepts of Design can be understood by the learners and that they can engage with the requirements of the Design curriculum (Winters, 2011). However, Lieberman and Mace (2008, p. 227) argue that “curriculum packages” disregard context as well as ignore the “appropriateness of the content for their particular students”. In the Design classroom, with learners coming from culturally diverse backgrounds, the use of complex Design terminology may not be easily understood by some learners, and curriculum packages do not address specific needs of learners in particular contexts. Similarly, Curriculum 2005 made some “flawed assumptions about what happens inside schools and how classrooms are organised” (Jansen 1997 p. 149), e.g. how classrooms are resourced and the cascade approach to teacher training which expected the trained teachers to disseminate the knowledge in a consistent and uniform manner. The planning element of Design (LO1) is new to the Design teacher as well as to the learner, which impacts on both the learning as well as the teaching of this subject.

Learner demographics within classrooms can be a constraint to implementation of new curricula in many ways. A study conducted by Prinsloo (2007) on the implementation of the new Life Orientation programmes in South African schools found that cultural diversity presented many challenges to the teachers implementing new curricula. Participants in the study expressed concern with

regard to teaching learners who did not have a cognitive understanding of the language of instruction, which they found impacted negatively on the success of teaching the subject. Design terminology employs specific concepts which are imperative for the learner to have a cognitive understanding of, in order to successfully undertake projects and develop their analytical skills.

A comparative study on the implementation of secondary Visual Arts standards by Derby (2005) found that cultural diversity necessitated teachers having to communicate material to students in creative ways to accommodate this diversity, as learning styles differ amongst cultures. The study found that teachers subsequently experienced difficulty in completing the curriculum, as no additional time was afforded to those teachers dealing with culturally diverse classrooms. As curriculum content is conveyed through language, having culturally diverse learners in a Design class may influence the success of its implementation.

Little (2004, p. 9) advocates that teachers modify the curriculum with relevance to their context when he states that:

Teachers and others with whom they work enjoy the latitude to invent local solutions to discover and develop practices that embody central values and principles, rather than to implement or adopt practices that embody or demonstrate practices thought to be universally effective.

In adapting the curriculum to the needs of their learners, teachers can experience success in their implementation. This may find similarity in South African Design classrooms, where a significant percentage of our learners are taught in English, which is the language of instruction but not necessarily their mother tongue. From the South African perspective, training activities planned by the DoE on Design curriculum would have to take cognizance of the contextual realities of the schools offering Design, providing the guidance and ongoing

support that teachers will require in the initial stages of implementation. Continuous professional development for new and revised curricula would be expected to take cognizance of contextual factors influencing teacher experiences of implementing in the classroom.

2.2.2 Professional development for teachers implementing new curricula

Villegas-Reimers (2003) asserts that professional development of teachers is a core feature of most educational reforms globally. However, Fullan and Miles (1992) have cautioned that if teacher development programmes do not address the specific needs of teachers as directly related to their daily teaching practice in the classroom, these programmes will have little chance of success.

According to Gibson and Brooks (2011), finding recommended experiences that meet the needs of all teachers can be difficult and may not always be the best option for promoting change in practice. They found that the teachers in their study had mixed feelings regarding the success of the professional development programme for their new Social Studies curriculum. The participants in the study of Gibson and Brooks (2011) specifically experienced two critical shortcomings in the professional development programme, the first being lack of follow-up to the professional development sessions which impacted on their experiences in the classroom. According to the findings, more than half of the respondents would have preferred follow-up sessions to guide them during the year of implementation, to help them gain confidence in teaching the new learning area. Another significant finding was that respondents felt that assessment criteria and strategies on how to evaluate students' work in the new curriculum were not adequately addressed. Teachers in this study experienced assessment to be challenging and expressed frustration at having to design their own assessment

tools and rubrics to assess learners' work. Professional development programmes seemingly neglected assessment as a crucial aspect of training.

The finding in the Gibson and Brooks (2011) study regarding follow-up training sessions in the initial year of implementation supports an earlier study by Fullan, Cuttress and Kilcher (2005) which recognised the importance of promoting a culture of learning in schools, where teachers' learning through professional development continues to happen throughout the initial implementation of new and reform curriculum, ensuring a positive experience for teachers in the classroom.

In comparison to the findings in the Gibson and Brooks (2011) study, a quantitative study by Jones, Harlow and Cowie (2004) on the experiences of New Zealand teachers implementing the Technology curriculum revealed that the overall response of participants to professional development programmes was that they had a positive impact on their experiences of teaching the Technology curriculum. Three-quarters of the participants reported that professional development had been helpful as they had been offered a comprehensive professional development programme with the introduction of the new curriculum. This had given them in-depth knowledge on the planning and implementation of the Technology curriculum. The participants expressed that the professional development programmes had helped them gain confidence in teaching Technology specifically with respect to planning, teaching skills and assessment and reporting strategies. The study concluded that the professional development programmes had been very effective in positively impacting on the teachers' experiences of implementing the Technology curriculum. The general consensus of the teachers was that it had been beneficial and supportive in addressing their specific needs. This study illustrates that professional development programmes dealing with new curriculum, if carefully planned and implemented, can improve teacher practice.

In a study conducted by Prinsloo (2007) on the implementation of Life Orientation programmes in the new curriculum in South African schools, the participants included teachers from public, rural and former Model C schools. Although the teachers in this study came from different school contexts, the general consensus was that the facilitators appointed by the DoE were not adequately equipped to conduct these workshops. While some of the respondents were critical of the knowledge and experience of the facilitators, others pointed to their limited knowledge of didactic methods in the teaching of the subject. When asked whether they benefitted from the workshops, their responses differed. The teachers from the government and rural schools asserted that they found it difficult to cope with the implementation. In comparison, teachers in the former Model C schools, which had better infrastructures and support services, worked with key players to overcome this shortfall. These teachers collaborated with the guidance counsellor, principal and other teaching staff to make their experience of the implementation of this new subject a successful one.

In a study conducted by Govender (2010) participants were exposed to two types of State-driven professional development activities; a one-day workshop and a three-day workshop. The teachers in this study favoured the three-day professional development as it facilitated interaction with their peers, it was interactive and there was time for sharing of ideas, promoting a “sense of collegiality amongst the Visual Arts teachers” (Govender, 2010, p. 38). The additional time available allowed for teachers to discuss the various interpretations of the curriculum, and made it possible for the intellectual growth of the teachers. This supports an earlier study by Desimone, Porter, Garet, Yoon and Birman (2002) that states that professional development is an important mechanism for deepening teacher curriculum knowledge and thereby developing their pedagogic practices.

Govender's (2010) study corroborates the findings of Lessing and de Witt (2007) that a 2-day workshop was more beneficial than a 1-day programme, as it afforded additional time to participants to engage in activities that enhanced critical thinking and self-direction, acquire knowledge and skills and gain confidence in their teaching.

Professional development workshops organised by the DoE should address the specific needs of the Design teachers. The planning stage (LO1) is new to the Design teacher, who has to be trained in the method of teaching this aspect of Design to learners. Continuous professional development will be required for teachers to acquire skills in the disciplines of Design that they were not previously exposed to under the old Art curriculum. In addition, professional development workshops should assist teachers to design assessment tools for projects across the various disciplines of Design.

2.2.3 Collaborative learning and curriculum implementation

Collaboration amongst teachers is important during the implementation of a new curriculum. It provides a supportive platform for teachers to work in a collegial environment, sharing ideas and with the openness to be able to ask for help in implementing the prescribed curriculum in the classroom (Burn, Childs, & McNicholl, 2007).

A study conducted by Briscoe and Peters (1997) to investigate collaboration amongst teachers, where this expedited the reform process, argued that collaboration provided an opportunity for teachers to pool their knowledge and ideas. This allowed them to plan together and adopt the best pedagogic practices

related to their contexts, which helped them to adapt more easily to the curriculum changes.

Similarly, in a study conducted on reforms to the Mathematics curriculum within schools in the American state of Michigan, Spillane (1999, p. 160) showed that ‘collegial, interactive working practices’ with teachers teaching in the same department significantly assisted towards creating positive experiences for the teachers implementing the curriculum changes.

According to Gail (2009), in her study of the professional development of Art teachers, Art teachers very rarely had the opportunity to collaborate with other Art teachers in terms of sharing knowledge and experiences, as they were often the only teachers of Art in their schools. This study specifically referred to the Art teacher in the school as having very little interaction with the other teachers; one Art teacher in this study expressed her feelings of isolation as follows: “I taught for 8 years in another school and I was like an island. Nobody knew or cared what I was doing. Now having this where we can be artists together, it offers so much. It takes that isolation away” (Gail, 2009, p. 6). She felt that coming together with other teachers in a project took away the feeling of isolation.

Govender (2010) also highlights the situation in secondary schools where there is only one Art teacher per school. He makes reference to spatial distances and the effect it has on collaboration amongst Visual Arts teachers. The subject is offered in few secondary schools, so spatial distances between these schools isolate Visual Arts teachers from one another, creating a “barrier to meaningful collaboration amongst teachers” (Govender, 2010, p. 39).

Bowins and Beaudoin (2011, p. 10), in their study on experienced Physical Education teachers adapting to a new curriculum, define collaboration as “two or more teachers meeting to discuss the new curriculum to work on aspects of the change”. The majority of the participants in their study, who collaborated with other teachers to share ideas and plan for the curriculum changes, indicated that the collaboration exercise helped the process of adaptation.

Ryder and Banner (2012), in their study on teacher experiences of Science Curriculum reform, emphasise collaboration in three areas, namely: collaboration with the head of department, with local teacher ‘role models’, and with teachers within the subject department. A prominent aspect of the teachers’ reflections on their experiences referred to their interaction and collaboration with the department head. The study asserted that a strong and enthusiastic head of department motivated the teachers and encouraged them to adopt the various aspects of the curriculum change. The study also referred to one head of Science who explicitly stated that without his leadership, the department would have been less inclined to focus on the curriculum changes. Local teacher role-models, referred to as ‘frontier teachers’ in this study, having successfully implemented new reforms in their classrooms acted as catalysts to encourage and influence other teachers in the department to accept and adopt curriculum reforms. This interaction amongst fellow teachers in the same department facilitated a helpful and empathetic understanding with a sincere wish to assist one another.

The above studies illustrate that collaboration allows teachers to interact with one another on issues of curriculum within a collegial working environment which provides opportunities for discussion. Teachers of Design can collaborate to share ideas and to ask for assistance on aspects of the curriculum content which they find challenging to implement. The literature highlights that collaborative

interaction allows for new teachers to benefit from the experiences and mentorship of senior teachers with respect to pedagogic practices.

The literature above reveals that teachers experienced many benefits when working in collaboration, as this promotes learning amongst teachers working on the same subject. Teachers working in collaboration experienced the benefit of the support and know-how of experienced teachers as well as being exposed to the benefits of mentorship.

2.2.4 Impact of resources on teacher experiences

The scarcity of different types of resources has been mentioned by participants in a host of studies as being one of the biggest hurdles in the implementation of new or revised curricula. This is with particular reference to technical subjects that require varied and subject specific tools, equipment, materials and consumables (Johnson, Hodges, & Monk, 2000).

A study conducted by Johnson *et al.* (2000) found that schools which did not have the infrastructure and resources required to teach Science could not support the effective teaching of the subject. They further argue that in technical subjects the availability of subject-specific resources such as laboratory equipment and chemicals is critical to successful implementation of the curriculum, with scarcity thereof impacting more on teachers' activities than for non-technical subjects.

Similarly, participants in the Davis (2011) study expressed that the limited supply of resources specifically required for the practical component of Technology was a barrier to successful implementation of the Technology curriculum. One aspect was the lack of or non-availability of specialist rooms with specialised equipment

and tools. Teachers in this study also found the scarcity of instructional materials and training manuals to be a major inhibiting factor to implementation of this curriculum.

In a study by Jones *et al.* (2004) 50% of the respondents listed the difficulty of accessing specialised equipment, visual aids and materials needed to implement the Technology curriculum as a major challenge. In keeping with the above findings, two independent studies by Van Deventer (2008) and Van Deventer (2009) on implementation of the Life Orientation curriculum revealed that the sport and recreation component of the curriculum could not be conducted as there was insufficient apparatus and equipment available.

Howie (2003) found that most South African schools lack the basic requirements necessary for effective teaching and learning of Science in schools, such as science textbooks, laboratories and science equipment. This was echoed by James, Naidoo and Benson (2008) in their study on the sustainability of Science education in South Africa; they found that some schools in South Africa have neither science laboratories nor resources.

The availability of science resources to teachers implementing the curriculum has an influence on learner performance in Physical Science (Bybee & Fuchs, 2006). In Xulu's (2012) study on the use of science resource centres by Physical Science teachers, she concurs that the lack of science resources in schools is a factor leading to poor performance in Physical Science. Statistics show that only 15% of South African schools have science laboratories (Department of Basic Education, 2011).

Design is also a technical subject, and the availability of good-quality and varied resources is essential for the Design teacher to positively experience the implementation of this new learning area. The multiple disciplines within the

practical component of Design, e.g. Printmaking, Jewellery, Ceramics, Sculpture and Fashion Design, to name but a few, require the use of specific materials and stationery as well as specialised tools and visual aids.

2.2.5 Summary

The literature has revealed that several factors have to be considered for the successful implementation of new curricula. It was also found that a curriculum should be contextually relevant and meet the diverse needs of all learners for it to be successful in its implementation. In the South African context, learner demographics within classrooms have changed following the integration of the education system, and cultural diversity and different learning styles have presented challenges to teachers with regard to communicating curriculum content to learners.

Studies showed that professional development programmes were a prerequisite for teachers to experience the successful implementation of new and revised curricula. However, in order for professional development to impact positively on their experiences, the studies found that it needs to focus on teachers' needs and be applicable to the context of their classrooms. The literature revealed that teachers preferred frequent follow-up professional development sessions during the initial year of implementation to give them guidance and help them gain confidence in implementing new curricula. In addition, 2- and 3-day workshops were favoured over 1-day sessions, as they were more interactive and allowed time for the sharing of ideas and experiences.

The studies revealed that collaboration amongst teachers promoted a higher level of success in implementation of new or revised curricula, as well as aided

teachers to adapt to change. Collaboration was found to foster the interrogation of curriculum content and pedagogical styles for teachers to adopt best practice suitable to their context. Spatial distance has been identified as a limitation to collaborative learning.

It was evident from the literature that resources constitute a significant part of the teaching of new learning areas, specifically with reference to technical subjects. Scarcity of resources was found to have impeded the implementation of new curricula. Lack of appropriate learning materials proved to be a major constraint, with teachers experiencing a challenge in sourcing suitable resources. In addition, studies also pointed to schools not having specialised rooms for teachers of Technology-related subjects.

Parallels can be drawn from the literature and related to this study, as Design is a technical subject requiring specialised and expensive equipment, tools and materials. Hence professional development workshops should be tailored to the specific needs of teachers as related to their individual contexts.

The literature reviewed provides a backdrop to my study, which aims to gain an understanding of the experiences of Grade 12 teachers in implementing the Design curriculum.

2.3 CONCEPTUAL FRAMEWORK

This study explores the experiences of teachers implementing the Grade 12 Design curriculum, with a specific focus on their experiences of implementing this new learning area given the changes in curriculum. The study will be viewed through Greene's (1995) theory of imagination in pedagogic practice, where teachers as a community share their experiences in particular contexts, and

Wenger's (2000) understanding of communities of practice, where groups of people with a common interest come together to share their expertise and passion in a joint venture. The conceptual frameworks that I used to understand the experiences of teachers are therefore Greene's (1995) notion of imagination in pedagogy and Wenger's (2000) understanding of communities of practice.

Maxine Greene (1995) defines the role of imagination in education and the arts with specific reference to social change and the resultant increase in classroom diversity. In her book *Releasing the Imagination* (1995) Greene calls for teachers to take imaginative action to understand that their learners, who may see the world from a different perspective, may also have different learning styles; this may require teachers to teach in different ways so that they can understand the curriculum. By introducing the concept of imagination into the practice of teaching she questions the conventional teaching methods, and challenges teachers to embrace imaginative pedagogy in their diverse classrooms. Imagination is what helps teachers structure and develop lessons instantaneously, responding to context and environment. When a teacher is alone in the classroom and within the context he finds himself in, imagination helps him to modify his pedagogy to suit his classroom, learners or situation, which is a continuous creative process.

The Design processes of LO1 and LO2 require the use of imagination, as the act of planning and producing a designed project exhibits the intrinsic characteristics of the imaginative process. The Design teacher must find creative and imaginative ways in his pedagogy to invoke the imagination of his learners. The LO1 process requires teachers to assist individual learners with developing ideas that have to be documented, illustrated and discussed in the classroom. According to Greene (1995) this process of trying to learn how to learn requires imagination on the part of teachers.

Greene (1995, p. 31) deepens our understanding of imagination by suggesting that through the use of imagination, teachers can experience empathy towards their learners:

It may well be the imaginative capacity that allows us also to experience empathy with different points of view. One of the reasons I have come to concentrate on imagination as a means through which we can assemble a coherent world [the classroom] is that imagination is what, above all, makes empathy possible. It is what enables us to cross the empty spaces between ourselves and those we teachers have called ‘other’ [multicultural learners] over the years.

In relation to Design, teachers are involved with individual supervision in guiding their learners to develop their projects. It requires empathy for Design teachers to have the capacity to see through the eyes of their learners, and to feel their way into the minds of their learners in an attempt to understand how they learn. This process of teaching and learning allows teachers to create multiple ways of understanding how learning takes place within their classrooms. Through empathy, teachers are provoked to see differently and to interpret the curriculum from their own context.

Frazier (2003, p.65) supports Greene (1995), by stating that teaching should be viewed as an imaginative communal activity which involves “creating an environment that promotes and supports learners and allows them to explore, discover and question their assumption about the class, the content the world and their perceptions in a situation of mutual support”.

Greene (1995) alludes to curricula moving away from the top-down rigidity of the past to a more adaptable format that gives teachers the flexibility to contextualise the curriculum to accommodate their diverse learners. She posits that (1995, p. 12) “once granted the ability to reflect upon their practice within a

complex context, teachers can be expected to make their choices out of their own situations”.

Similarly, the national curriculum (DoE, 2003) provides a common framework and generic direction for all of our schools to work within. It allows schools the scope, flexibility and authority they need to design and shape their curriculum so that teaching and learning is meaningful and beneficial to their particular communities of learners. In effect, the NCS calls for the teacher to teach Design from the standpoint where the learner will understand it within its context, “acknowledging the multicultural nature of our classroom and the artistic and cultural contributions of the different ethnic groups” (DoE, 2007). This translates into teachers being able to interpret the curriculum in response to the particular needs, interests and talents of individuals and groups of learners, taking into account the diversity of their classrooms.

I found Greene’s (1995) notion of imagination pertinent to my study, as the use of imagination is intrinsic to the nature of the Design processes of LO1 (conceptualisation and planning) and LO2 (execution of project).

The second concept for this study is Wenger’s (1998) understanding of communities of practice. As defined by Wenger (1998, p. 2), “Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly.” Communities of practice are developed where there is a common area of interest in a subject. Wenger (1998) explains this by illustrating how even neurosurgeons come together to attend conferences where their colleagues are discussing new research, in order to understand and increase their knowledge of the latest developments in their field.

In my study Design is a new learning area with multiple disciplines requiring revised pedagogic practices. Teachers have knowledge and skills in specific

disciplines of Design, and the curriculum requires them to expose their learners to as many disciplines as possible. Many of these teachers will require re-skilling as well as learning new skills to accommodate the curriculum requirements. I found it appropriate to use Wenger's (1998) theory of communities of practice to guide the analysis of the data as I wanted to investigate the extent to which teachers were collaborating and sharing ideas, knowledge, resources and pedagogic styles with one another in implementing this new learning area.

Wenger and Snyder's (2000, p. 139) theory of communities of practice, where "people group together informally to share expertise and passion for a joint enterprise", posits social learning as taking place when social engagement interacts with personal experience. These informal learning environments can be understood, in part, as a process of social learning which is a key element of communities of practice that occurs when people who have a common interest in a subject or area collaborate over an extended period of time, sharing ideas and strategies, determining solutions, and building innovations (Wenger, 1998).

A study conducted by Lieberman and Wood (2002), documenting a community workshop that was attended by teachers during their school summer vacation, corroborates this concept of social learning. The study followed up on four teachers to see whether any of them were applying what they had learned at the communities of practice in their classrooms. They found that all four teachers were using strategies that had been formulated in the communities of practice, which positively influenced and enhanced their teaching in the classroom. More importantly, the study concluded that all of them were utilising the particular social practices that had been developed at the communities of practice workshop.

Lieberman and Mace (2008, p. 227) support Wenger's notion of social learning occurring in communities through experience and practice:

... people learn from and with others in particular ways. They learn through practice, through meaning and through community. They argue that professional learning should be refocused on the building of learning communities, as there is now a great deal of evidence that teachers learn best when they are members of a learning community.

With reference to my study of the experiences of teachers implementing the Design curriculum, communities of practice may provide these social learning spaces where Design knowledge can be shared.

According to Wenger (1998) social learning involves two components, viz. competence and experience. Competence is what communities have established over a period of time, while experience refers to the ongoing participation of the individual within the community. Learning takes place when these elements interact with each other. Design teachers have developed competence in their specific areas of expertise over the years.

Using this framing of communities of practice to guide the analysis of the data will allow me to observe whether teachers were sharing their experiences with one another in implementing the Design curriculum with regard to the many disciplines within Design.

According to Wenger and Snyder (2000, p. 140) teachers in communities of practice "share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems". Wenger (2000) advocates that communities of practice create the space for teachers to share their own ideas and

experiences of what works and what does not work, allowing teachers in the group the opportunity to take the best practices and adapt them to their own situation.

Using the notion of collaboration within communities of practice to guide the analysis of the data would have a two-tiered effect. Firstly, it would provide the opportunity to gain insight into how teachers are addressing challenges directly related to the teaching of Design, and secondly to observe whether they are sharing their expertise and comparing their experiences to develop a better understanding of the practice of Design. Communities of practice, while also knowing that they will get the full support and understanding of the wider Design community, can act as “basic building blocks” to this new learning area (Wenger, 2000, p. 229).

The literature highlighted several constraints that teachers experienced which impacted on the implementation of new and revised curricula. The four pertinent areas that were identified to inform this study were teachers’ contextual circumstances, professional development programmes for new and revised curricula, teachers working in collaboration, and availability of resources. The Design curriculum necessitated teachers being required to learn new content, new forms of assessment and new methodologies of teaching. Using the frameworks of Greene’s (1995) theory of imagination and Wenger’s (1998) theory of community of practice, both with the concept of shared learning, I will explore and examine the experiences of Grade 12 teachers implementing the Design curriculum within their contextual environments.

2.4 CONCLUSION

The literature presented in this chapter included the experiences of teachers implementing new and revised curricula. The studies revealed four key areas that impacted on their experiences – teachers’ contextual circumstances, professional development programmes for new and revised curricula, teachers working in collaboration, and availability of resources. These experiences were presented thematically under these four areas. This was followed by the conceptual framework which I devised for this study, based on Greene (1995) and Wenger (1998).

The literature revealed a scarcity of studies specifically relating to the experiences of teachers implementing a new Design curriculum. This necessitated the search being extended to include experiences of teachers implementing new or revised curricula. My study hopes to contribute to the existing literature on Design with a view to aiding policy developers and teachers to improve current educational theory and practice.

The next chapter discusses the research design and methodology.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This study explored the experiences of Grade 12 Design teachers implementing the Design curriculum in the KZN area. I investigated their experiences with particular reference to their contextual circumstances.

This chapter commenced with an introduction of the context of the study. An elaboration of the research design was presented thereafter to show how the study was conceptualised epistemologically and methodologically. In brief, the study took on an interpretivist paradigm within a qualitative approach and a case study methodology. Sampling of the participants was described, after which the research questions were outlined. Thereafter a data collection table was presented, followed by a discussion of the data collection methods, which included semi-structured interviews and post-interview classroom observations. Next the data analysis was described, following which the validity of the study was discussed. The ethical issues and limitations of the study concluded this chapter.

3.2 METHODOLOGY OF THE STUDY

3.2.1 Interpretivist paradigm

This study was located in the interpretive paradigm, as knowledge is constructed not only by observable phenomena but also by descriptions of people's meaning making and self-understanding (Henning, 2004, p. 20). In this study I attempted

to interpret the meanings of the Design teachers as they articulated their experiences and learning in the teaching process of the Design curriculum within their school environment. This is also in keeping with what Neuman (1997, p. 68) defines as the interpretive approach: “a systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds.”

The interpretivist paradigm concerns itself with the individual teacher’s experiences of teaching a subject. The central endeavour in the context of the interpretive paradigm “is to understand the subjective world of human experiences” (Cohen *et al.*, 2007, p. 21). As an interpretivist researcher, this subject of understanding of the teachers’ experiences was central to this research agenda as its concern was how these teachers make sense of their subjective teaching world. This paradigm was appropriate to my study as I wanted to discover the experiences of teachers implementing the Design curriculum.

Following integration of the education system post-1994, many of our schools now have diverse population groups. Schools are differently resourced: public schools that are reliant on government funding experience a scarcity of resources, as opposed to ex-Model C and private schools that do not experience this constraint (Ndimande, 2009). The interpretivist paradigm was appropriate in this case in that it allowed exploration by the researcher into the participants’ natural setting by analysing the context or environment in which the participants were implementing the Design curriculum (Denzin & Lincoln, 2005; Radnor, 2002). Interpretative research is concerned with the definition and knowledge of the site (Henning, Gravett, & Van Rensburg, 2005).

Hence a case study methodology was deemed most appropriate for this interpretivist research, as the practices and experiences of these Design teachers were deeply located within the realities of the site of their teaching, influenced by the particular resources, their (teachers') biographies, the learners' biographies and the school ethos. Leedy and Ormrod (2005) state that the interpretivists' paradigm is about discovering new and original aspects of a particular experience, about obtaining different ideas and theories about that experience, and unearthing problems in the phenomenon being studied. Through a situated analysis of the subjective experiences of these Design teachers this study hopes to illuminate for analytical generalisation new and original aspects of Design teachers' experiences of teaching Design in the Further Education and Training sector of school education.

Design comprises multiple disciplines, each of which requires the teacher to possess specific skills which must be successfully transferred to the learner. In addition, this learning area requires specific materials and tools in order for Design to be successfully implemented in the classroom. The interpretivist paradigm was relevant to this study as it allowed the researcher to observe what the experiences of the teachers were and how they were implementing the Design curriculum contextually.

3.2.2 A qualitative approach

In this study I adopted the interpretive paradigm employing the qualitative approach. The qualitative approach allowed me, as an interpretivist researcher, to present a detailed account of how the participants constructed and gave meaning to their experience of teaching Design. According to Patton (2002, pp. 16-17),

qualitative research tries to “understand situations in their uniqueness as part of a particular context – what the world looks like in that particular setting – and in the analysis to be able to communicate that faithfully to others.” This understanding, that is central to qualitative research, is consistent with an interpretivist epistemology that guided the research design of this study.

This is aligned with the belief that all knowledge is constructed in its social setting, and according to Maree (2007, p. 56) through “language, consciousness and shared meaning” that allowed me as an interpretivist researcher to better appreciate, understand and investigate the phenomenon of teaching Design to learners in the FET grades of school education. An important feature of qualitative research is that it allows participants and researchers to develop close relationships, permitting the best opportunity to answer research questions, thus allowing researchers to collect valuable data that are essential for a comprehensive interpretation of the case.

In keeping with this, Denzin and Lincoln (2007) suggest that qualitative research concerns itself with placing the researcher in the environment, where he/she observes the subjects and comments from his or her perspective. Morrow (2007) confirms that this naturalistic approach is practical and a beneficial way of trying to interpret how people give meaning to their daily experience.

Relating the above to my study, I found that adopting the qualitative approach allowed me as a researcher to delve deeper into the world of the Design teachers, and to develop close relationships with the participants by conducting semi-structured interviews as well as classroom observations. This helped me obtain a unique perspective of how each Grade 12 teacher was implementing the Design curriculum under the prevailing conditions within his school, with the available resources, and within the context he found himself in.

3.2.3 Case study methodology

Henning (2004, p. 36) defines methodology as a “coherent group of methods that complement one another and have the goodness of fit to deliver data findings that will reflect the research question and suit the research purpose”. The term ‘methodology’, as defined by Strauss and Corbin (1998, p. 3), is “a way of thinking and studying social reality.” The methodological approach is central to research as it provides a ‘sense of vision’ and points towards the course that the analyst keeps to in the study (Strauss & Corbin, 1998, p. 3). It embodies the theoretical framework which shows how the researcher will conduct the study (Van Manen, 1998).

My study employed a descriptive case study method (Yin, 2003) to collect data that explored the experiences of Grade 12 teachers implementing the Design curriculum in the KZN area. Merriam (1988, p. 44) defines the case or unit of analysis as being an individual, a programme or an institution. She further explains that the case is “what the researcher wants to be able to say something about at the end.” Case study methodology as described by Yin (2003) is an intense and thorough contextual understanding of the case, acknowledging multiple data sources. A case study approach allowed me to get an in-depth perspective of how teachers were complying with the new Design curriculum requirements given their specific contextual circumstances.

The phenomenon of the study, which was the experiences of Grade 12 Design teachers implementing the Design curriculum, was what the case study focused on. The data that informed the phenomenon was obtained from the participants through the semi-structured interviews and classroom observations.

A number of cases used to study an actuality is referred to by Denzin and Lincoln (2005) as a multiple or collective case study approach. In this study a multiple case study methodology had been selected, as three research sites were chosen, each with a Design teacher being the unit of analysis. The reason for the choice of a multiple case study methodology is located in the scarcity of the Design subject being taught across schools in KZN, and that few teachers are professionally trained for teaching Design based on their pre-service teaching training. This scarcity of professionally trained teachers would tend to compromise the following: “sufficient data must be collected for the researcher to be able to explore significant features of the case and to create plausible interpretations of what is found” (Bassey, 1999, p. 62). By taking on a multiple case study methodology, Bassey’s concerns would be addressed in ways that would make this study go beyond illumination to analytical generalizability, the main goal of this study.

In employing this multiple case study approach, I used three schools which offer the Design curriculum up to Grade 12. Open-ended unstructured interviews followed by classroom observations accounted for the ‘sufficient data’ to analyse important elements and to establish credible interpretations for the study.

According to Hitchcock and Hughes (as cited in Cohen *et al.*, 2007, p. 253), one of the hallmarks of a case study is that “it focuses on individual actors and seeks to understand their perceptions of events.” This was appropriate to this study, as I was able to focus on the experiences of the individual Design teachers and their implementation of the Design curriculum in their different contexts.

I found the case study methodology appropriate for my study as it allowed for a contextual understanding of the critical questions that were used to explore the

phenomenon, which was the experiences of teachers implementing a new curriculum within the context of Design in the KZN area. In addition, using multiple data sources as allowed for by the case study methodology enabled me to gather sufficient data for the effective analysis and interpretation thereof.

3.3 CONTEXT OF THE STUDY

This study was located in the KZN Province of South Africa, in the Chatsworth-Umlazi district. This district was chosen as it is the region in which the researcher teaches, which allowed for easy access to the schools. The three schools that were chosen for the study were all public schools, each located in a physically different environment, ranging between middle to lower socio-economic neighbourhoods. Two of the schools had non-functional libraries and specialist rooms. Some of the schools were exposed to vandalism and theft, as evidenced by broken windows and graffiti. Deeper insights into the context of the participants will be provided in Chapter Four.

3.4 PURPOSIVE SAMPLING

Sampling refers to the process of selecting a group of people to be used as a representative sample from a population (Terre Blanche, Durrheim, & Painter, 2006). Denzin and Lincoln (2007) explain that sampling can be either random or non-random. In non-random sampling, also referred to as purposive sampling, certain individuals from the wider community will be deliberately chosen while others will be excluded (Cohen *et al.*, 2007).

I chose purposive sampling to identify participants in this study, since this study specifically explored the experiences of Design teachers implementing the Design curriculum in the KZN area. The population of Design teachers is very

low in the Chatsworth-Umlazi district, meaning random sampling was not a feasible option. In addition, the study did not take on a statistical generalisation process, as the subjective experiences of these design teachers were the focus of the study within an interpretivist and qualitative study design. Hence purposive sampling was deemed most appropriate. Information-rich and specific participants would be the most appropriate target, that could reflect deeply on their teaching experiences for the study purpose. This approach to selection of participants was therefore in line with what purposive sampling is about.

There were simple criteria for the purposive selection of the participants, which included experience of teaching Design to Grade 12 learners, accessibility through referral, and teaching in public schools. Three schools were selected to be included in the study, each of which had only one teacher teaching Design. The schools chosen were secondary to the selection of the teacher participants. Once the teachers were selected, their respective schools became the site of research, the unit of analysis still being the Design teachers of Grade 12 learners in public secondary schools.

3.5 RESEARCH QUESTIONS

In formulating and defining my research topic, I focused on two critical questions to assist in understanding what the experiences of the Design teachers were and how they were implementing the curriculum:

1. What are the experiences of Grade 12 teachers in implementing the Design curriculum in the KZN area?
2. How is Design being implemented by Grade 12 teachers in the KZN area?

3.6 DATA COLLECTION METHODS

I used two data collection methods. Firstly I conducted semi-structured interviews with the teachers from the three schools, and thereafter I observed these teachers in the classroom as they implemented the Design curriculum. I exhibit a strategy for my data collection by following the guide by Vithal and Jansen (1997) (Table 1).

Table 1: Data production and generation plan

Questions for developing a data collection plan	Question One: What are the experiences of Gr. 12 teachers implementing the Design curriculum?	Question Two: How is Design being implemented in the KZN area?
Why are the data being collected?	To understand what the experiences of Design teachers were.	To observe how they were implementing the Gr. 12 Design curriculum.
What is the research strategy?	Semi-structured interviews were conducted in the Design classroom.	Semi-structured observation schedule was used to record the observations
Who (or what) will be sources of data?	Design teachers implementing the Gr.12 Design curriculum	The Design teachers together with their learners within the classroom.
How many of the data sources will be accessed?	Three Design teachers from three different schools implementing the Gr12 Design curriculum.	
Where are the data being collected?	Individual teachers were interviewed in their respective schools.	Each teacher was observed in his respective classroom.
How often?	Design teachers were interviewed once.	One classroom observation was conducted per teacher.
How will they be collected?	Data was collected via semi-structured interviews which were tape-recorded.	Data was collected using semi-structured observation schedules.
Justify the plan	Semi-structured interviews allowed for probing, so I could get an in-depth understanding of the data, and also allowed me to get the comprehensive views and outlooks of the participants.	Through semi-structured observations I was able to observe and record how implementation of the Design curriculum was actually taking place in their classroom.

3.6.1 Semi-structured interviews

Semi-structured interviews were used to answer the first critical question of this study: What are the experiences of Grade 12 teachers in implementing the Design curriculum in the KZN area?

Through semi-structured interviews an effort was made to ‘get inside’ the participants or inside the context and to understand them from within (Cohen *et al.*, 2007). Understanding from within the context of this study meant that I interviewed teachers individually and the responses they provided allowed me to interpret their subjective world of teaching Design in their classrooms. Semi-structured interviews were appropriate for this research as it allowed the researcher to ask the same questions of all participants, but at the same time allowed for probing so that the researcher could get an in-depth understanding of the data (Cohen *et al.*, 2007). The in-depth interview using open-ended questions (Yin, 2003) allowed me to acquire a comprehensive overview of the outlook of the participant. Since this study aimed at generating experiences and true feelings of the Design educators, this type of interview seemed relevant as it allowed participants to articulate honestly their experiences, ideas, perceptions and views (Lofland & Lofland, 1984).

I interviewed the participants in a quiet, informal setting so that they felt comfortable and relaxed when answering the questions (Myers & Newman, 2007). Each interview was done on one occasion and was audiotaped to record data for constant engagement after the interview process.

3.6.2 Classroom observations

Observation refers to the attentive watching and recording of something as it happens. Gillham (2008) explains that observation is concerned with what people actually do, instead of what they say. Cohen *et al.* (2007, p. 396) describe a distinctive feature of observation as being a process which allows the researcher “the opportunity to gather live data from naturally occurring social situations.” The documenting of an observation is referred to by Maree (2007, p. 85) as “running records being a detailed, continuous or sequential account of what is observed. They try to describe the action in the context in which it occurred.”

Observations are useful in understanding how individuals perform in their natural settings. Using this method allowed me to observe the interactions between the teachers and learners in the contexts that they worked in. I was also able to monitor the experiences of teachers working together with their learners as they implemented the Design curriculum.

I conducted semi-structured observations, which involved making use of observation schedules. According to Cohen *et al.* (2007) a semi-structured observation allows for illumination of problems in a systematic manner. The researcher will be able to look for data in an open-ended manner but within guidelines of appropriately formulated questions to base his/her observations on. I used a semi-structured observation schedule which allowed me to observe the same data in the selected context.

Observations are an important tool to collect and also to validate data. This afforded the researcher the opportunity to check aspects or elements that the participants had left out during the interviews. It also allowed for the validation

of what was said in the interviews when I was sitting in the classroom with direct access to what was taking place.

Classroom observations also gave me the opportunity to observe whether visual aids, texts and other related resources were available and being used, as well as the impact they had on the lessons. I was able to transcribe the observations as they occurred in the classroom, in a narrative format (Vithal & Jansen, 1997).

Maree (2007) points to a possible shortcoming of observations, in that they can be subjective. During the classroom observations I remained as unobtrusive as possible and was mindful of not providing any input in order to decrease any possible bias or subjectivity that may have arisen.

Table 2: Critical questions informing the study

Research question	Interview	Observation
What are the expectations of Gr. 12 teachers in implementing the Design curriculum?	This question was answered using semi-structured interviews	
How is Design being implemented in the KZN area?		This question was answered using classroom observations

3.7 DATA ANALYSIS

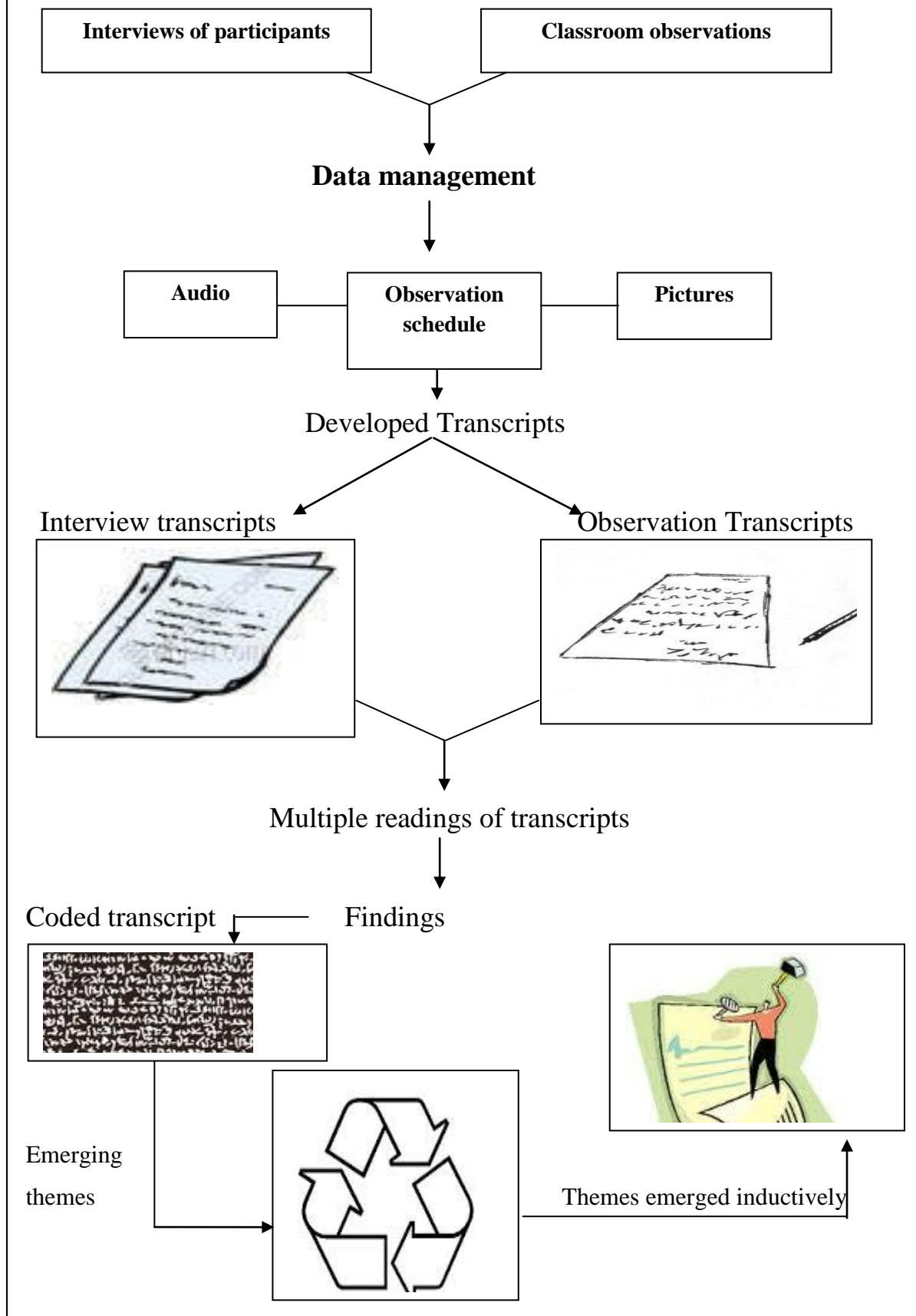
The transcriptions from the recorded semi-structured interviews and the classroom observation schedule formed the data for this study. These data were collected to answer the critical questions that were core to the study. Content analysis was used to analyse the data in this research project. This is a process of

summarising and reporting of written data through coding called units of analysis (Cohen *et al.*, 2007). Coding refers to finding labels or words to summarise the message content (Maree, 2007). The rich and in-depth information that is produced in qualitative research is usually very extensive and onerous to put down on paper, so content analysis is used to categorise this information into units of analysis. The form of analysis used to scrutinise the data is thematic coding. This involves inserting text into themes (Cohen *et al.*, 2007).

As my study was a case study, content analysis was appropriate in that it permitted large amount of content to be summed up into themes. The themes were analysed using the literature and Wenger's (2000) theory of community of practice and Greene's (1995) understanding of the use of imagination in pedagogic practice, which formed the lens through which the data were analysed.

The inductive method in content analysis used in this study refers to “a systematic procedure for analysing qualitative data” (Thomas, 2006, p. 238).

Diagram 1: Diagrammatic representation of data analysis



3.8 ETHICAL ISSUES

Ethical clearance was received before the commencement of this study from the Ethics Committee of the University of KZN. Informed consent was obtained from each participant (Appendix A). The relevant informed consent letters are attached after the reference list (Appendices A-E). No real names were used in this study; anonymity was guaranteed by the use of pseudonyms for both schools and participants, so that neither would be identified (Deanly, 2005). Participants were advised that participation was voluntary and that they were allowed to withdraw from the study at any time. No questions of a provocative or harmful nature were included in the interview schedule.

3.9 VALIDITY

Validity and reliability in qualitative research is explained in terms of credibility and trustworthiness (Maree, 2007). According to Maree (2007), the use of more than one data collection method leads to trustworthiness. I used two data collection methods, viz. semi-structured interviews and classroom observations.

Semi-structured interviews were conducted first so that the findings could be correlated with the classroom observations. This added integrity and gave credibility to the study. Trustworthiness of the interviews was confirmed by the comparison of the transcript to that of the classroom observation schedules, where one validated the other. Transcripts were typed directly from the recordings, with no input from me as the researcher. These transcripts were then shown to the participants to verify that what they communicated in the interviews was transcribed verbatim, with no input from the researcher. This was done in order to decrease bias and subjectivity. Quotations taken directly from the

transcripts of the interview were used to ensure trustworthiness and transparency of the findings (Tong, Sainsbury, & Craig, 2007).

3.10 LIMITATIONS

One of the limitations of this study was that my research was confined to one district only, namely the Umlazi district. If the research study was extended to other educational districts, the findings may not be the same. Although my sample initially included four schools in the area that was implementing Design, one of the teachers was unavailable for the interviews and observations because he resigned during my field work. The school where the participant resigned is presently not offering Design, so this study was limited to three participants.

Being a researcher can be perceived as being in a position of power, which can prove to be an obstacle in the collection of data. The respondents in my study may have withheld sharing some of their experiences, which they may have perceived as having the potential to be used against them.

Being a Design teacher, I am in contact with the participants during workshops, department meetings and continuous assessment moderation meetings, so I had to be aware of my own biases, opinions and prejudices when analysing and interpreting data.

3.11 CONCLUSION

Chapter Three presented the methodology used in conducting this study. It highlighted the instruments used to gather the data, the type of sampling used, data analysis, ethics and validity of the study.

The analysis of the data collected is discussed in the following chapter, in which individual profiles of the three schools are first presented. The data from the semi-structured interviews have been organised into themes, followed by the observation schedule in narrative format. A discussion of the data analysis is presented thereafter.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.1 INTRODUCTION

This study explores the experiences of Grade 12 teachers implementing the Design curriculum in the KZN area. Design as a learning area employs many concepts and terminology in its application, which has proven a challenge for teachers of Design, as they are expected to develop learning material that is relevant to the context of the learners in their classrooms.

Teachers' experiences of implementing the Design curriculum would encompass the planning of appropriate pedagogic strategies and practices and structuring of lesson plans in line with their conceptualisation of the new curriculum. This chapter presents data on the experiences of Grade 12 Design teachers in interpreting and implementing the Design curriculum.

The data are presented and analysed in response to the two critical research questions:

- What are the experiences of Grade 12 Design teachers in implementing the Design curriculum in the KZN area?
- How is Design being implemented by Grade 12 Design teachers in the KZN area?

The answer to the first critical question was obtained through semi-structured interviews using an interview schedule, where all three participants were asked the same set of questions for the purpose of uniformity and to maintain the focus

of the study. Semi-structured interviews allow for the use of open-ended questions which deepen the scope for probing. Thereafter I used the data to respond to the first critical question. Data for the second critical question were obtained through classroom observation undertaken using a semi-structured observation schedule that used the same set of criteria for all observations. This allowed me to correlate and critically review the data recorded in the interviews in terms of what was observed during the lessons.

Three schools are the three sites where the study was conducted. Each of the schools has been in existence for over 30 years. In line with the ethical standards of research, pseudonyms are used to conceal the identity of the schools, which are Accolade Secondary, Bountiful High and Complex Secondary, with their corresponding teachers having the pseudonyms of: Andy, Brian and Colin respectively. From an ethical viewpoint the pseudonyms used for the teachers and the schools will ensure anonymity.

A profile of each participant in the context of his respective school is presented in tabular format in Table 3. This is followed by the profiles of the three schools presented individually, with photographs to provide a deeper understanding of context (Figures 1 to 6). A brief history of each school is included to illuminate the context to the study.

Thereafter the data from semi-structured interviews are presented, using five themes that were emerged. Finally the three classroom observations follow in narrative format, each being presented separately. The summary at the end of each observation includes an integrated discussion of the themes that related to the observation. The conclusion brings an end to this chapter.

4.2 PROFILES

4.2.1 Profile of teachers

Table 3: Teacher profiles

Teacher	Years of experience	Gender	Qualification	Area of specialisation
Andy	27	Male	B.Paed. (Arts)	Ceramics, Graphics, History of Art (Hons)
Brian	26	Male	Junior Secondary Education Dip.	Ceramics, Graphics
Colin	30	Male	BA(Fine Arts) Jewellery	Jewellery, History of Art

It is evident from the above table that all of the participants have more than 25 years of experience in teaching Art. Colin from Complex Secondary has also been involved with Senior Certificate assessments for many years. Reference will be made to each school and each participant in the following section.

4.2.2 Profile of Schools

The profile of each school is presented separately, with a brief overview of the school's history as well as the Design teacher's role in the school. Two visuals of each school are included for contextual reference.

4.2.2.1 *Accolade Secondary*



Figure 1: Design class not in use



Figure 2: Graffiti and poor maintenance

Accolade Secondary was established 46 years ago and presently has a staff complement of 20 teachers, with a student population of 300. The learners come from predominantly poor backgrounds, many of whom have to travel some distance to attend school. As can be seen in Figure 1, the specialist room was locked and not in use. Figure 2 depicts some of the graffiti that was evident in many parts of the school. The school does have a library, which is presently being used as a common room for students. Design classes at this school are conducted in a multi-purpose room.

Andy, who is a specialist in the disciplines of Printmaking, Ceramics, and Three-dimensional Design, has been teaching at this school for the past 27 years. He has used these skills to assist the school in designing props for school plays, and posters to advertise the various functions and ceremonies that the school has hosted over the years.

4.2.2.2 *Bountiful High*



Figure 3: Evidence of poor maintenance and infrastructure



Figure 4: Deterioration of infrastructure and grounds

Bountiful High is 31 years old and has a staff complement of 25 teachers. This school is situated in a middle-class suburb and has a larger student population of around 950. The student population is from diverse socio-economic backgrounds, as many of the learners come from low-cost housing and informal settlements in the surrounding vicinity. I was advised that due to the financial constraints of these households, the collection of school fees is a major challenge, which impacts on the maintenance of the infrastructure of the school. Evidence of this can be seen in Figure 4. This school does have a specialist Art room where the Design classes are conducted.

Brian has been at this school for the past 26 years, and specialises in Ceramics and Printmaking. Bountiful High has a ceramic kiln in the Art room, which has allowed Brian to teach all of the processes of Ceramics to the final stages of firing and glazing the projects. The school management team has also employed Brian's printmaking skills for posters advertising special events taking place at the school.

4.2.2.3 *Complex Secondary*



Figure 5: Dilapidated state of buildings



Figure 6: Poor maintenance and infrastructure

Complex Secondary is the oldest of the three schools, having been in existence for 49 years. This school has 16 staff members and a student population of 350. The school is situated in a low socio-economic area, where unemployment is high. As a result of this the school has instituted a feeding scheme in the form of weekly food hampers to learners, funded by local businesses. Except for the basic infrastructure, the school is in a state of deterioration (Figure 5) and signs of vandalism are evident, as seen in Figure 6.

Colin, who is the most experienced of the three teachers, has been in the teaching profession for 29 years. His areas of specialisation are in the disciplines of Jewellery Design and Graphic Design. He employs these skills in engaging his learners to use recycled materials and items of scrap to construct projects for the practical component of the Design curriculum. This teacher also uses his photographic skills to document important school functions, e.g. awards day functions, school proms and fund-raising activities.

4.3 DATA PRESENTATION AND ANALYSIS

The data were gathered from three schools chosen within the KZN area, all public schools from the middle to lower socio-economic groups. What follows is a presentation of data from the semi-structured interviews which are structured into five themes, each supported by verbatim quotes from the interviews.

4.3.1 Semi-structured interviews

Semi-structured interviews were appropriate for this research since they allowed the researcher to ask the same questions of all participants, while at the same time allowing for probing so that the researcher could get an in-depth understanding of the data (Cohen *et al.*, 2007). As a qualitative researcher I am interested in the experiences of the participants and how they act and think in their own settings. The aim of the semi-structured interviews was to identify the experiences of the Grade 12 teachers in implementing the Design curriculum.

The data from the three semi-structured interviews conducted were coded, which refers to identifying commonly used words, expressions and concepts. The coding revealed several areas of commonality with respect to the teachers' experiences of implementing the Design curriculum in Grade 12. From the analysis five common themes emerged which relate specifically to their experiences of teaching Design in the classroom.

The data from all three interviews are presented below under the five themes that were identified. The themes are presented in an integrated manner, supported by data from each interview.

4.3.1.1 *Theme One: Context of curriculum*

As the Design curriculum is underpinned by the principles of OBE, the content of this curriculum is required to be contextually relevant to enable learners to achieve the aim of the curriculum developers, which is to ensure that Design literacy amongst learners be understood in its cultural, environmental, social and historical context (DoE, 2003). This calls for curriculum material to be relevant to local context.

Andy expressed that his learners were disadvantaged by some sections of Design theory:

I'd like to make the point of going to the root of this entire issue of drawing up the syllabus, both practical and theory. There was no consultation with the role players... for instance things like Art Deco (theory) are very vague to these kids with no real relevance ... sections like that should be taken out ... very far-fetched from our local trends. ... theory should be watered down to a South African context. ... with better, precise examples

Andy felt strongly that his learners were challenged by certain sections of the curriculum which had little relevance to the context of his learners. He also found that there were no local examples for his learners to relate to and understand.

Brian commented on the practical component of the Design curriculum:

... try to standardise the projects (Practical content of the Design curriculum)... although it should be left open to a certain extent for creativity. All schools need to work on certain (specific) projects (within specific disciplines) and we can standardise that.

Brian felt that as the disciplines for Grade 12 were not specified, the projects for the practical component of the curriculum could not be standardised. This left the

learner free to choose across a wide range of disciplines, which he felt was too varied to guide and assess.

Colin made reference to the structure of the Design curriculum in respect of the various disciplines of Design:

The history of Design needs to be structured throughout all schools where we need to specialise in areas that we are training children. The Design curriculum cannot be so vague that a child is allowed to do anything. The subject (curriculum content) allows for a vast variety of Design areas (disciplines) to be done at school. This creates a problem for educators as these skills are too varied to guide and assess learners. Learners need to be trained for specific Design disciplines, e.g. Ceramic Design, Graphic Design, etc.

Colin's experience of the curriculum content was that it was too broad as it allowed the learner to choose from a wide range of disciplines. This required the teacher to be proficient in many disciplines of Design. It was therefore a challenge for teachers to teach specific skills to learners to enable assessment criteria to be developed according to the skills taught in the specified disciplines.

The teachers in this study highlighted the significance of the content of the curriculum being contextually relevant to the learners in their classrooms.

4.3.1.2 *Theme two: Design literacy*

Design employs the use of specific terminology which requires a conceptual understanding of the elements and principles of Design. To fulfil the requirements of the NCS (DoE, 2003) where learners are required to develop

concepts, implement, critically reflect and evaluate Design projects, all learners must be Design literate.

Andy pointed to the low literacy levels in his Design class:

... literacy is very low ... we've got learning problems ... when we talk about things like focal point, composition, etc., they don't know what we're talking about.

Andy experienced a problem in communicating some of the basic principles and elements of Design to his learners in ways such that the learners could readily understand the subject matter.

Brian highlighted his challenge of teaching Design concepts to second-language learners:

With regard to literacy levels, most of the learners are second-language learners and that is a major concern. English is a problem for them to interpret, they have basic knowledge of English ... Now when it comes to Design, they are using terminology which is absolutely foreign to them ... obviously they're not going to be able to understand, they're not going to be able to interpret questions. Once again, the questions that are coming out in the NSC [National Senior Certificate] examination are way beyond the level of our learners. Design requires interpretive and writing skills which second-language learners do not have.

Brian experienced a constraint in effectively communicating the complex terminology employed in Design theory to his learners, as their grasp of the language challenged their cognitive understanding of the subject matter. He felt that this language barrier presented a twofold constraint to his learners, whereby the learners are challenged with concepts and terminology firstly in the classroom

and secondly in the final Grade 12 examinations, which requires learners to have interpretive and writing skills.

Colin experienced similar setbacks with his second-language learners:

... many of them are second-language learners; the difficulty is for them to understand communication through English first and then Design with its own specialised vocabulary, makes it even more difficult ... writing goes beyond just speaking and the pupils find much difficulty expressing themselves. The language and concepts in Design books are written for the experts, no books are written for the beginner. School learners are beginners and probably the largest group of readers in the world. It's about time that somebody started writing Design books for 16- and 17-year-old children ... using simpler language rather than using this verbose language ... Very often teachers have to rephrase and then retype information to make it more readable for the learner.

Colin found that his learners had difficulty developing critical writing skills due to the language of instruction not being their first language. The complex terminology of Design further hampered their understanding of Design concepts. Colin highlighted the absence of prescribed textbooks written for Grade 12, which could employ simpler language that would be understood by all learners.

The participants expressed concern that the low literacy levels of their learners impeded their understanding of Design. The levels of Design literacy in their respective classrooms was not in keeping with the expectation of the NCS Learning Programme Guidelines for Design (DoE, 2007).

4.3.1.3 *Theme three: Continuous professional development*

The purpose of the Design skills and training workshop is to introduce the teacher to the new curriculum and to help him to implement it in the classroom. This is done with the aid of materials, tools and equipment. Workshops also provide a platform for teachers to interact with one another, sharing ideas, experiences and solutions to common challenges. The training was introduced into the school system through a process of teacher development, making use of the cascade model that was planned and implemented by the DoE.

The aim of these workshops was to introduce new learning areas into school education in response to the shift in the school education curriculum. At these workshops specialised equipment and materials were available to the facilitators and attendees to assist with skills development pertaining to the many disciplines contained within the curriculum.

The teachers however pointed to some gaps in the presentation and content of the workshops they attended. Andy stated that:

The people that conduct the workshops do not know the context of our classroom. The same teachers are used to workshop other teachers. I cannot use stuff that we do in workshops; we do not have the resources and materials and tools

Andy believed that the facilitators at the workshops did not take cognizance of the contextual reality of his classroom. He added that he experienced constraints when attempting to use what he had learnt at the workshops, as the materials and equipment were not readily available at his school.

Brian agreed that facilitators at workshops did not consider the contexts of Design classrooms:

Workshops are far-fetched, conducted by ex-Model C teachers. These presenters do not know the situation in our classrooms. Some are beyond the capacity of our learners in disadvantaged schools. ... in terms of the workshops, very few are being held. Although materials are provided at the workshops, the same cannot be purchased at the school level. So we can't translate what we as educators learn at the workshops for our pupils, it's a waste of time. Also, at the workshops, highly specialised equipment is used ... When we come back to our schools, we have to scout around and try to scrape up a budget to buy those, and more often than not, it doesn't happen.

Brian acknowledged the use of highly specialised equipment and materials that was provided at these workshops that focused on developing the techniques and methodology of the Design curriculum. However, he was not always able to transfer these skills to his learners as there was a shortage of materials and specialised equipment at his school.

Colin expressed a similar constraint with regard to specialised equipment used at workshops:

In order to adopt methods that have been discussed at workshops, we need laptops, projectors and Internet access, stuff we at government schools can only dream of. Workshops are being delivered by educators that don't teach Design, hence cannot guide us. Workshops should be more intensive and focus on specific areas, for example, visual literacy in the context of Design, the source book journal, how to write a brief, how to evaluate a Design product. Implementation of the subject in the classroom with very little resources and overcrowded classrooms needs to be addressed, but it is not. These workshops are presented by fellow teachers. It would be more valuable if it was done by professionals, specialists.

Colin added that some of the facilitators at the workshops were not Design teachers and were therefore not equipped to provide the guidance he needed. He felt that the workshops did not address his specific needs, and alluded to the inclusion of interactive feedback at workshops. This would provide him with the opportunity to address the challenges he faced in his classroom.

The teachers acknowledged that they benefitted from the workshops with regard to the ideas that were presented and the skills that they acquired. However, they felt that facilitators should take cognizance of their individual contextual realities in order for them to benefit from the skills taught at these workshops.

Literature points to continuous professional development being critical to the successful implementation of new curricula: “The successful implementation of ... outcomes-based curriculum ... will only be effective if teachers are adequately prepared... by means of initial retraining ... by means of CPD” (Coetzer, 2001, p. 89; Early & Bubb, 2004, p. 3).

4.3.1.4 *Theme four: Impact of learning materials*

With Design comprising a theoretical as well as a practical component, the availability of good-quality and varied resources are essential tools for the Design teacher to have access to in the classroom. The multiple disciplines within the practical component of Design, e.g. Printmaking, Jewellery, Ceramics, Sculpture and Fashion Design, to name but a few, require the use of specific materials and stationery as well as specialised tools and visual aids in their implementation. The limitations that scarce resources impose on teachers’ classroom activities have a greater impact for technical subjects such as Design as compared to non-technical subjects such as Mathematics and Social Studies (Johnson *et al.*, 2000).

Design teachers experienced challenges in teaching Design due to limited resources in terms of textbooks, materials, visual aids and consumables. Evidence is provided in the data that limited access to resources appeared to be a major inhibitor in implementing the Design curriculum, as experienced by all three participants. As gleaned from the data, all three teachers mentioned that their schools did not have sufficient textbooks, equipment, tools and consumables required to implement the Design curriculum.

The data presented in this theme are divided into two sections; firstly textbooks, which highlights the resource pertinent to the theoretical component of the Design curriculum; and secondly equipment, tools and consumables, which refers to the practical component of the curriculum.

4.3.1.4.1 Textbooks

Textbooks with good-quality colour illustrations together with language that is easily understood at secondary school level helps to define and make clear to the learner the principles and universal elements of Design.

Andy expressed difficulty in sourcing relevant books:

... there's no direction in attaining the correct type of books ... secondly it is costly because there are large coloured illustrations ... cannot afford to buy good expensive resources.

Brian claimed that there were no prescribed textbooks for Grade 12 learners:

First in terms of resources, textbooks, as I mentioned we don't have textbooks, we don't have colour reproductions in the resources that are supplied by the Department. There's no reference books, the books that we have in the library are outdated ... we cannot afford to buy a book for each

learner... teaching takes place with one or two illustrations, and sometimes without any reference to the work being discussed. We are constantly doing research for subject matter as there are no prescribed texts.

Brian advised that the lack of good-quality and grade-relevant textbooks with colour illustrations impacted negatively on his experience of teaching Design, as he had no colour visual images to make reference to the lesson being taught. As a result he had to constantly research subject matter for his learners.

Colin confirmed the lack of prescribed textbooks for Design:

The Design curriculum came to us without text. Design books are scarce and too expensive and they do not contain images [related to the curriculum]. The Design [exam] paper consists of evaluation and comparison of answers of unseen works [pictures], so there is a constant need for images.

He highlighted the need for learners to be constantly stimulated with colour visual images to develop the skills required for Design as well as to meet the level of understanding expected of the learner in the National Senior Certificate examinations.

However, Colin did advise that he received one copy of a Design text through a community incentive project. He found this text very helpful as it included local (South African) examples, but there was only one issued to the school:

They [Woolworths] gave us a good package [textbook] which you can use for teaching as there are localised examples. The Woolworths resource [textbook] was very helpful but cannot be given to the learners as a text as we were issued with only one per educator.

To develop their critical thinking skills, i.e. Design literacy, alluded to in the Design policy document (DoE, 2003), learners need to engage with colour aids on a daily basis. Additionally, as the National Senior Certificate Design

examination papers are printed in full colour, where learners are expected to analyse and critically discuss these illustrations, regular exposure to these resources is required.

4.3.1.4.2 *Equipment, tools and consumables*

In their experience of implementing this new Design curriculum Andy, Brian and Colin stressed the necessity of having specialised equipment, tools and consumables to successfully teach the various disciplines.

Andy expressed frustration at the limited and sometimes lack of resources at his school:

... resources basically what we have is inadequate, cannot afford to buy good expensive resource ... for Design you need firstly computers, proper programming ... if you're doing pottery, you need kilns. Sometimes I feel defeated ... because of all the ideas I have about Design that I cannot put to use because of resources ... at moderation meetings work is judged with projects from other well-resourced schools and we teachers are seen as weak and inefficient and this can affect the morale of teachers

Andy pointed to the many disciplines within Design requiring specialised equipment which was not at his disposal. He felt frustrated that his limited resources restricted him from assigning projects that required good-quality materials. Also the lack of specialised tools hampered learners in the execution of their projects.

Brian said that although he did have access to some basic equipment, such as paper and powder paint, this was old stock left over from previous years. He mentioned that:

No resources available ... lack of funds. Constraint ... no multimedia equipment, no laptop, projector to show images, poorly equipped resource library. Design being a modern subject, you need materials, you need tools, and you need specific machinery to create projects. ... projects have to be designed around resources that pupils can find ... that is a major concern because the projects that we are looking at have to be tailored around what the pupils can get.

Brian also felt restricted as he had to assign projects based on the resources that were available to his learners. He alluded to Design projects being simple in construction and remaining in their elementary stages due to the lack of materials, equipment and tools at his school.

Colin feared that the lack of good-quality resources and equipment at his school would prevent learners from choosing the subject:

No resources. Monetary constraints make it difficult to purchase equipment and quality materials for learners. Learners will not choose subject because of lack of materials. In order for learners to be trained as designers, they need to work with good materials.

Colin felt that the scarcity of resources was a limiting factor for his learners in their overall experience of learning Design.

In their responses teachers indicated that good-quality resources and tools are crucial to the teaching of Design, as the making of artefacts enhances learners' understanding of the properties and uses of materials and their competence in the Design process.

4.3.1.5 *Theme five: Teachers' creativity and inventiveness*

In their experience of implementing the new Design curriculum each of the three Design teachers that were interviewed found unique ways where they improvised and innovated in order to foster creativity and healthy learning experiences for the learner. They also collaborated with fellow Design teachers to share knowledge, skills and resources where possible.

Andy advised that he sent a motivation letter to the Governing Body of his school requesting them to allocate funds that he required for his Design classes:

... you have to make a plan, you have to motivate, send the motivation to your governing body. I sometimes bring my own stuff from home ... I also purchase items from my own pocket. Because of burglaries I keep stock that I buy at home in my garage.

He added that he sometimes used personal funds to purchase items that he required for his lessons and students' projects. Due to vandalism and theft, he kept his supplies at his home. Andy also sought help from fellow Design teachers:

You get a lot of support from teachers who are willing to help because they understand the situation.

Brian claimed that he gets assistance by working with other Design teachers to get the support to teach Design and to share ideas and resources:

At the moment we don't have a subject advisor, so what we are doing is networking with other Design teachers and we are trying to share the resources and the knowledge that we have.

Brian also assisted his learners by assigning projects around materials that learners can access.

Projects are designed around resources that pupils can find. We cannot ask pupils to buy material ... every project has to look at the basic type of equipment or material, like paper and things from nature ... tailored around what pupils can get ...

Colin mentioned the various ways in which he overcame the challenges he experienced:

We educators have coped by photocopying and running out cyclostyled notes for learners and downloading images for the learners for analysis. Since projectors are too expensive and our classes are large, we make attempts to view the colour image in front of the class using the educator's personal laptop. Borrowing from fellow teachers and fund-raising in the community has to be done to keep this subject going.

Despite the limitations that the teachers expressed with respect to curriculum content, skills development and learning materials, each participant expressed creativity in using different methods of improvisation in order to teach Design in his classroom. They went the extra mile to develop creative and innovative ways to overcome some of the challenges they experienced in the classroom with the implementation of the curriculum.

In the above section the five themes that emerged from the data relating to the semi-structured interviews are in response to the first critical question.

In the section below the data from the three classroom observations are presented separately in narrative format in response to the second critical question.

4.3.2 Classroom observations

Observation is an important part of the research process as it allows the researcher to gather *live* data from everyday interactions between the subjects being observed. The type of unstructured observation used was participant observation, where the “researcher can best gain knowledge by being involved in a social setting or group and experiencing a situation firsthand” (Mason, 2002). The purpose of the classroom observations was to answer the second critical question:

How is Design being implemented by Grade 12 Design teachers in the KZN area?

The classroom observations in this study were carried out using a semi-structured observation schedule (Robson, 2002). The data from the semi-structured interviews were analysed before the classroom observations were conducted, so although the categories of observation were not predetermined, the themes that had emerged from the semi-structured interviews were used as a guideline to determine correlation between the data obtained from the semi-structured interviews and how the lessons were being conducted in the classroom. The semi-structured observation schedule was therefore constructed with reference to the themes that were generated from the interviews.

The observation for each school is presented separately in narrative format that was informed by an observation schedule, which is attached as Appendix B. This will accommodate the possibility of the contexts being different within the three schools, thereby revealing the data contextually.

A short summary is presented after each observation, followed by a discussion identifying similarities and differences amongst the three schools, with a focus on the experiences teachers have when implementing the Design curriculum.

4.3.2.1 *Observation 1: Design theory lesson conducted at Accolade*

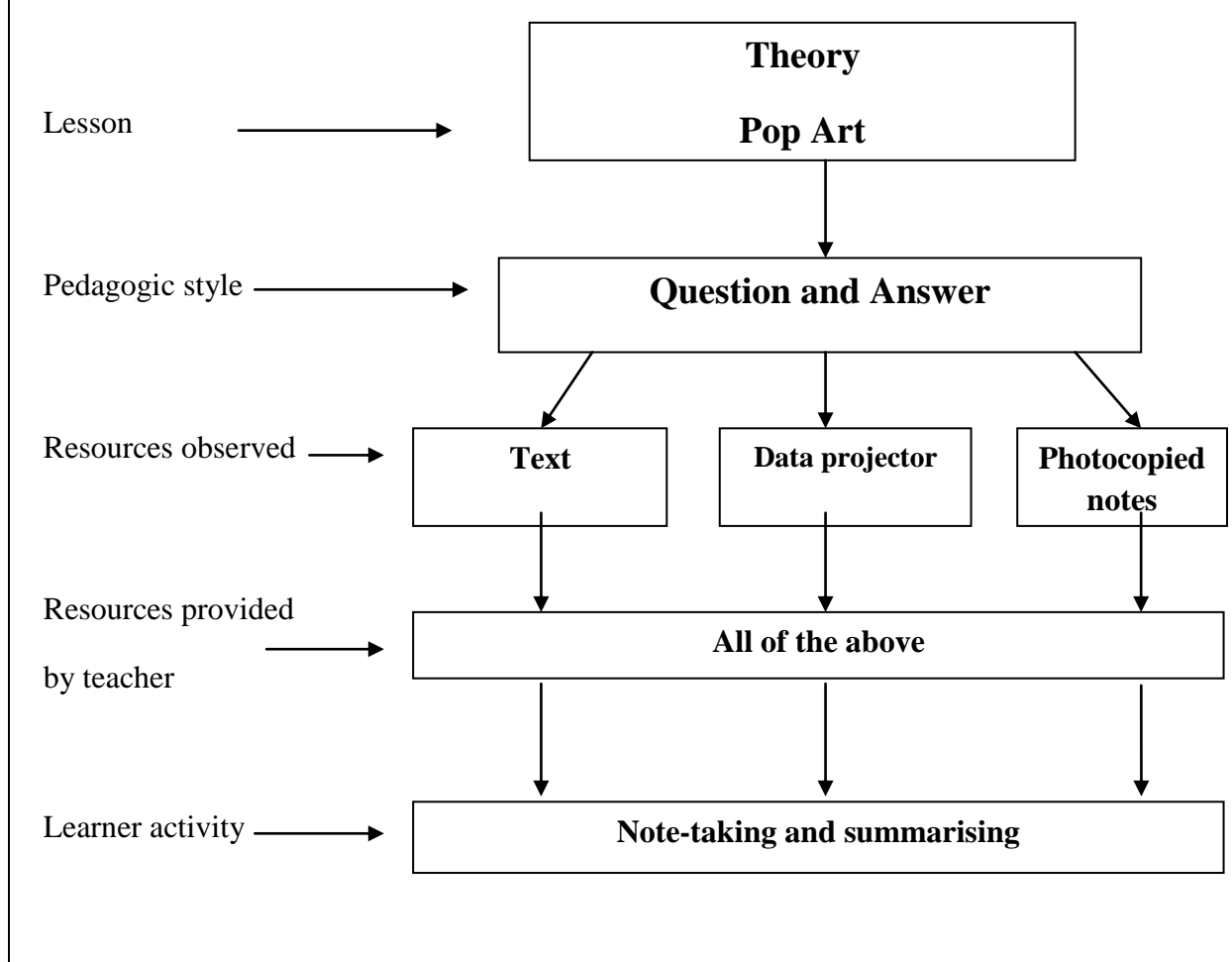
Secondary

The History of Design theory lesson that was observed was conducted with a Grade 12 Design class in a multi-purpose classroom. The areas for charts, pictures and learners' works were blocked off by steel cabinets that were against the display area at the back of the room. The furniture, i.e. desks, chairs and steel tables, were in a poor condition and some window panes were broken.

The researcher made his way into the class early and positioned himself away from the learners' desks at the back of one corner of the room, paging through a magazine. This was done to make him as inconspicuous as possible, so that the lesson would proceed without the presence of an intruder being felt by the learners. Although the learners were aware of his presence (which was apparent from their whisperings and giggles), it did not seem to matter once the lesson had begun.

Diagram 2 presents a flowchart of what was observed during the lesson conducted at Accolade Secondary.

Diagram 2: Flowchart of what was observed during the lesson on Pop Art conducted at Accolade Secondary



The lesson was on Pop Art (a movement influenced by American consumer society and the gender stereotypes of the ‘hippie’ culture of the 1960s), and Andy asked (amid the noise/chatter) if anyone knew the meaning of the word ‘pop’. When he received no response he rephrased the question, asking if they knew where the word might come from. After several attempts of trying to initiate a response and much coaxing Andy started showing signs of frustration.

He went on to explain and answer all of his own questions. Although the learners paid attention to the lesson, they made very little attempt to answer questions posed by the teacher, even with much coaxing. Andy then tried to bridge the gap between answering the question himself and waiting for the response. From my observation it appeared that the learners were unable to see the correlation between the abbreviation 'pop' and the word 'popular'.



Figure 7: Learners gathered around teacher's laptop

When the lesson was over Andy brought out his laptop from his case and started showing his learners examples of Pop Art works, and had a discussion around the examples (Figure 7). This generated a lot of interest among the learners as the examples were in colour, where they could make comments about the works. This started discussions amongst the learners themselves, as they seemed to be attaching some kind of meaning to these colour illustrations from their own perspectives. At the end of the lesson Andy passed out photocopied notes that he

had summarised, and asked them to take them down in point form in their notebooks. The duration of the lesson was approximately 25 minutes.

Summary of Observation 1

Andy's attempt at engaging the learners in a discussion on the subject matter elicited little response from them. Here the theme of curriculum context was revealed, where it was evident that this element of the curriculum was not familiar to the learners as it was not grounded in local content, and there was no point of reference for the learners to relate to.

The absence of texts and other colour visuals impeded Andy's presentation of the lesson, as Pop Art relies on visuals to convey its meaning to the learner. The researcher was aware that colour illustrations would have provided the visual stimulus to assist him in engaging the learners with the subject matter. This observation supported the theme of learning materials impacting on the teacher's experience of curriculum implementation.

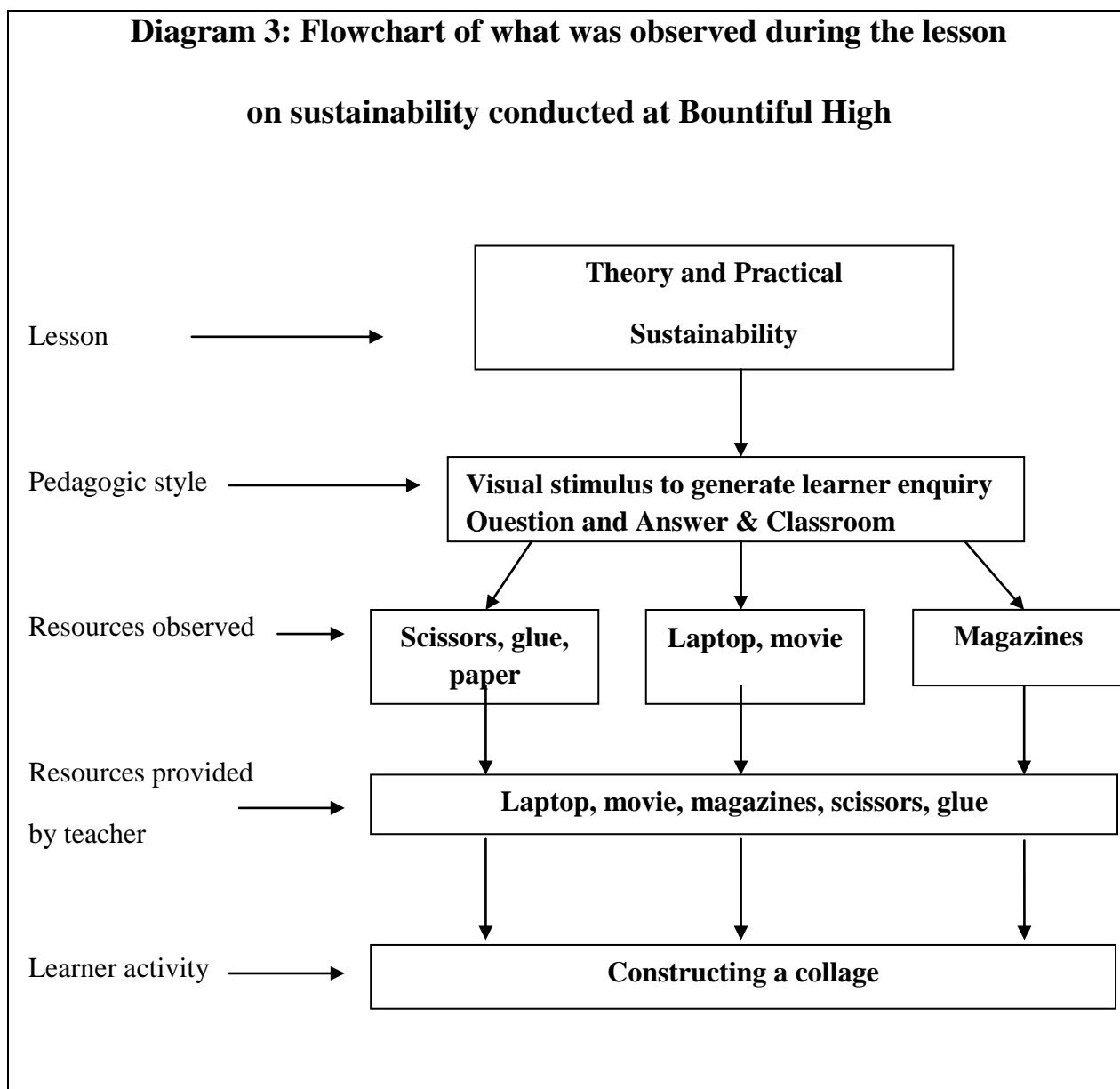
Andy initially adopted the question and answer approach to introduce the lesson, but realised that this did not stimulate learner participation. He surmounted this constraint by using his personal laptop to show the learners colour illustrations of Pop Art that he had downloaded off the Internet. Andy had further summarised the lesson content on worksheets which he had photocopied for them and distributed at the end of the lesson.

The researcher noted that although Andy had complained about barriers to implementation during the interview process, when he was in the classroom he improvised and found ways to overcome them.

4.3.2.2 Observation 2: Sustainability lesson with practical aspect conducted at Bountiful High

The second observation was a Design Practical lesson with a Grade 12 Design class. This school does have a specialist Art room, although the door's locking mechanism appeared to be broken. The furniture was scratched and damaged and some desks were unstable. Although there were learners' drawings on the walls, they appeared yellowed and dusty, which gave the impression that they were there from prior years. No charts or pictures on the walls related to sections from the Design curriculum; however, there were newspaper clippings on contemporary craft.

Diagram 3 presents a flowchart of what was observed during the lesson conducted at Bountiful High.



The researcher was intrigued when the teacher emptied the contents of the wastepaper basket (refer to Figure 8) around his table prior to the learners arriving.



Figure 8: Wastepaper basket emptied under teacher's table in preparation for the lesson

Brian's strategy of presenting a scenario of litter scattered around his table generated a discussion amongst the learners. He allowed this verbal interaction amongst the learners to continue, as it was evident that he was awaiting a response from them in order to start the lesson. His approach in attempting to generate curiosity amongst the learners elicited the desired response when a learner enquired "Sir, why is the area around your table so dirty?" Brian took this opportunity of using the visual stimulus that he had created to make them aware of the pollution that we as humans create on a worldwide scale.

He then introduced the concept of sustainability and went on to discuss Greenpeace, the organisation that makes people aware of the need to preserve our environment. Following this, Brian took out his personal laptop and showed the learners a short excerpt from the film *H 2 Oil*, a documentary on some environmental disaster taking place in Alberta, Canada. Most of the learners took an active part in the lesson, and they appeared to have enjoyed it.

Now that he had triggered the learners' interest in the concept of sustainability, Brian advised them that the practical lesson was on creating a collage using the theme of sustainability. He asked them to take out their scissors, magazines and newspapers that he had asked them to bring the previous day. Brian was upset that none of the learners had brought in the required items. However, he appeared

to have anticipated this, as he then brought out some magazines and three pairs of scissors from his bag.



Figure 9: Collage used by teacher in demo lesson

The learners shared the resources that Brian had provided. He showed them some examples of collages (Figure 9), and explained the technical aspects of constructing a collage with respect to colour, lines, shape and texture. Some of the learners paid attention to his instructions, while others appeared to be distracted. Brian and the attentive learners were unperturbed by the chatter that was coming from the rest of the class and continued with the collage-making process.

Summary of Observation 2

Teacher innovation and resourcefulness was most observable during the practical lesson on sustainability. Brian used an attention-grabber to steer the focus of the learners in the direction of the lesson he wanted to introduce. He visually created the effect of pollution in the classroom by emptying the contents of the wastepaper bin. This was a dynamic approach to the lesson as the teacher allowed the learners to develop their own ideas around the topic he was going to introduce. He followed this with the visual stimulus of the video, before engaging the learners in the practical application of the lesson. This innovative approach revealed his experience and creative ability in eliciting a positive response from the learners.

Brian also supplied both the visual aids as well as the materials required to ensure that all the learners could engage in the practical lesson. This reinforced the theme of the importance of resources and learning materials in aiding the implementation of Design.

The researcher noted that during the interview process Brian had been very vocal regarding the many constraints he faced when implementing the Design curriculum. These included second-language learners not being able to understand Design terminology, as well as the lack of equipment and resources at his school. However, when he was in the classroom he used his imagination to

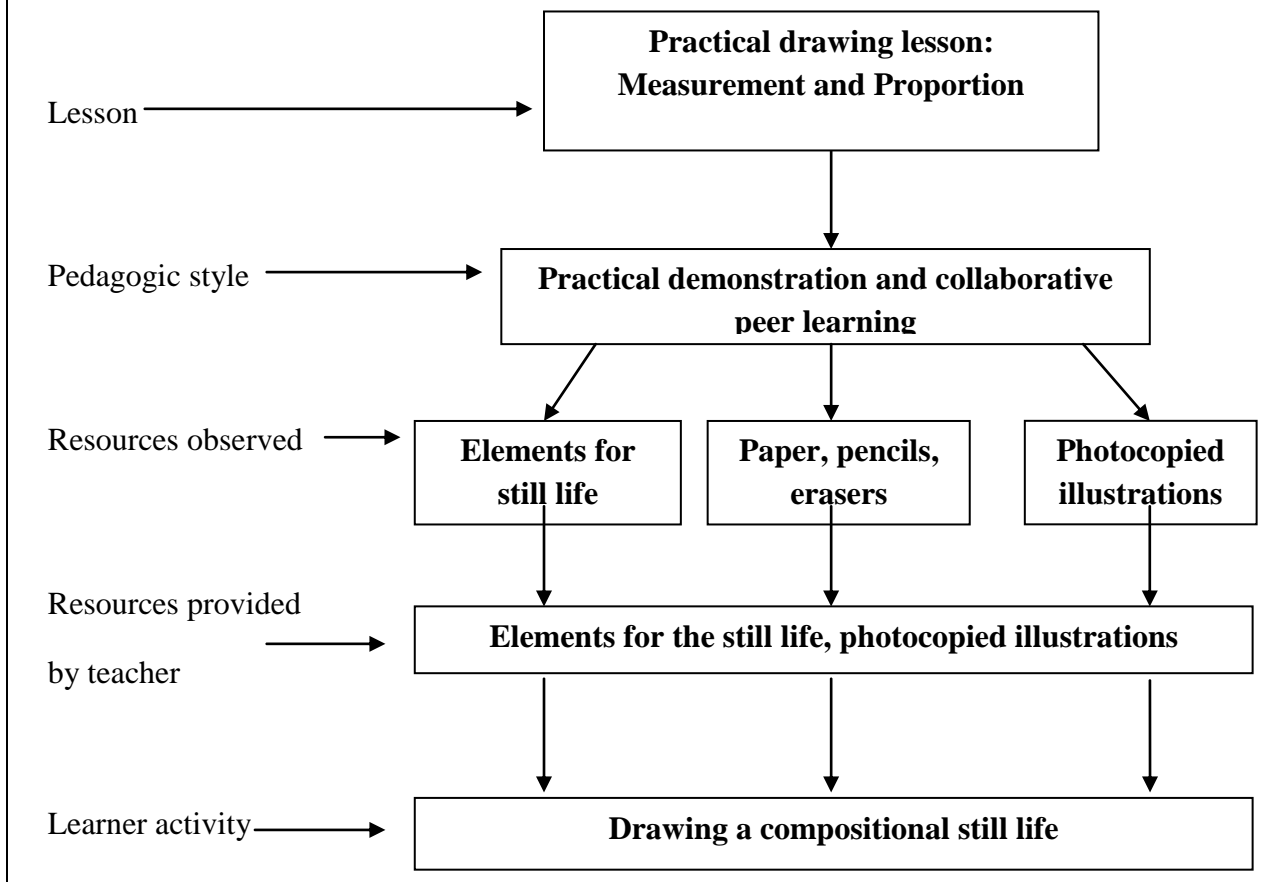
employ several techniques to ensure that his learners were fully engaged in the lesson. This lesson observation was noted by the researcher as being the most successful with regard to learner participation.

4.3.2.3 *Observation 3: Drawing lesson conducted at Complex Secondary*

A Drawing lesson in a Grade 12 class was the subject of this observation. The lesson was conducted in the Art room. This was an activity-based drawing lesson, where a composition of objects was set up in the middle of the classroom with all the learners' desks arranged in a circle facing the composition. Such an arrangement of inanimate objects is referred to as a 'still life' composition. The composition was made up of a few bottles, a shoe box and some blocks of wood picked up from the local dumpsite.

Diagram 4 presents a flowchart of what was observed during the lesson conducted at Complex Secondary.

Diagram 4: Flowchart of what was observed during the drawing lesson conducted at Complex Secondary



This Drawing practical lesson was a demonstration based on measurement and proportion, with the pencil being both the measuring tool as well as the medium to execute the drawing. In preparation for the lesson, all of the learners were asked the previous day to bring their pencils and erasers to class. Facing the still life and focusing on a single object (the block of wood) from the composition, with pencil in hand and with his arm stretched out in front of him and one eye closed, Colin instructed the learners that were in class to follow him.

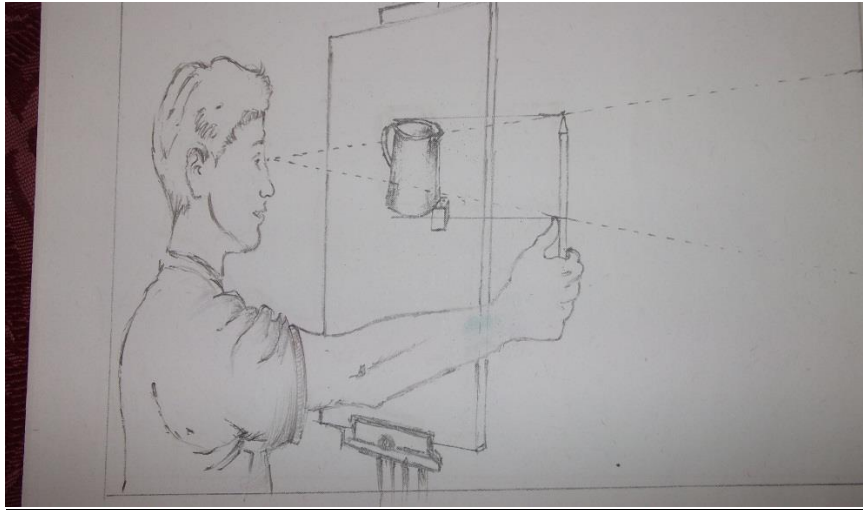


Figure 10: Demonstration of measurement and proportion

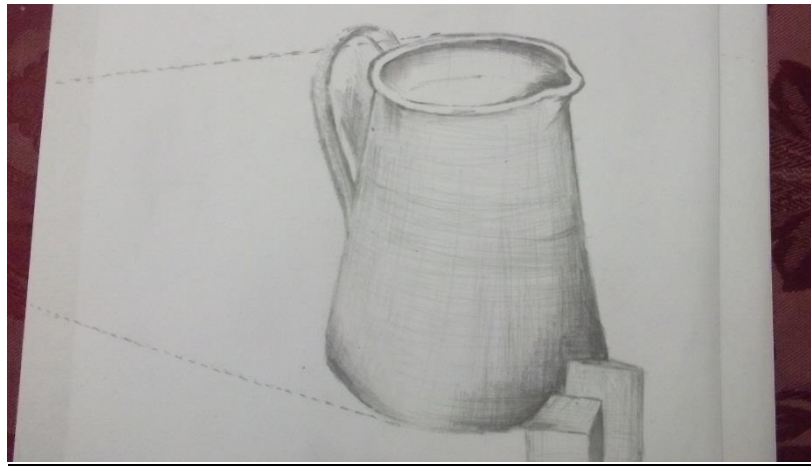


Figure 11: Resultant drawing from demo lesson

He instructed each learner to use his pencil as a measuring tool to measure the short side of the block of wood. With pencil in hand and arm outstretched, the learner had to align the tip of the pencil with one end of the short side of the block of wood. Moving his thumb across the pencil and stopping it when it reached the opposite end of the short side, would give the learner one unit of measurement.

While keeping his thumb on this spot of the pencil, which represents one unit, the learner had to work out how many times this unit would fit into the length of the

block of wood. This would give the learner the exact proportions of the block of wood, in terms of its width and height. Using this set of proportions acquired from the block of wood, the learner now had to apply this method to the other objects to construct his composition study proportionally.

Most of the learners could not easily follow at first and they started to talk amongst themselves. Colin allowed them some time for this collaborative activity and shared learning to take place, and after a while it appeared that they had helped one another to understand what the teacher was trying to explain. At this juncture of the lesson observation the researcher noted that the theme of Design literacy impeding the teacher's experience in the classroom was observable.

As Colin went on with the lesson he referred to photocopied pictures that he had stuck on the board, copies of which he had also handed to the class so they could follow the lesson. He reminded the learners several times to refer to the photocopies on the desk in front of them. Very few of the learners checked them against their own drawings. At the end of the practical lesson Colin walked around the classroom, checking the progress of learners' drawings and giving individual attention to those who required his assistance.

Before the lesson ended all of the learners put up their drawings for a discussion. Colin seemed pleased that many of the learners had produced some fairly accurate drawings. He appeared to be satisfied that he had achieved some measure of success with his learners. The researcher was aware that this was largely due to the initiative he took in ensuring that there were some learning materials available to assist the learners.

Summary of Observation 3

In the practical lesson on drawing the theme of Design literacy surfaced. Many of the learners were unable to follow the lesson as presented by the teacher and had to rely on their peers to explain to them the meaning of some of the Design terms used by the teacher. Colin was sensitive to this shared learning process and allowed the learners some time to engage in this peer learning. He displayed insight into understanding that less competent learners comprehend and benefit from collaborating with their more competent peers. He realised that some learners were able to understand better when certain terminology and concepts were explained to them by their peers.

Colin brought in the objects for the still life composition from a local dumpsite. The impact of learning materials was evident, as learners had to borrow pencils due to their being none available in the stockroom. There was also no drawing paper, so Colin improvised by handing out photocopy paper to the learners. He also took the initiative to photocopy and distribute pictures of still life compositions to assist the learners to better understand the lesson, as there were no textbooks that he could refer to.

Teacher resourcefulness was again evident in this classroom observation. Colin responded instantaneously to his contextual circumstance by allowing time for peer learning to take place, as he had an empathetic understanding of his learners' cognitive skills. It can be inferred that Colin engaged in reflecting on his teaching, evidenced by his collection of objects from dumpsites and improvising with his pedagogic style as the lesson unfolded.

4.4 CONCLUSION

The two methods of data collection that were used in this study were semi-structured interviews and classroom observations. The semi-structured interviews which answered the first critical question were presented in thematic format. This was followed by the classroom observations which answered the second critical question, presented in narrative format.

The purpose of the semi-structured interviews was to document the experiences of Grade 12 teachers implementing the Design curriculum. The essence of the observations was to see how the themes that emerged from the semi-structured interviews found expression during the classroom observations.

Although the themes documented several constraints which teachers had complained of, the classroom observations revealed a more positive picture of how they were implementing the Design curriculum. It was evident that the teachers in the study were very much involved in reflection on their practice. Through reflection and the use of imagination they developed different pedagogic approaches tailored to the contexts of their classrooms to engage with their learners.

They also drew on their many years of experience to try and overcome some of the challenges they faced in implementing the Design curriculum. All three teachers demonstrated resourcefulness and initiative when implementing the Grade 12 Design curriculum. Some of the strategies that they employed included using visual stimuli to generate curiosity and interest amongst their learners, allowing peer learning to aid learners in their understanding of the lesson content, bringing in their own learning materials to supplement the limited supplies available at their school, using their personal laptops in the absence of visual aids,

charts and pictures in their respective schools, and providing notes to their learners in the absence of texts.

The next chapter will derive the findings and interpret the data using the literature from Chapter Two, followed by suggestions for future research and the conclusion.

CHAPTER 5

FINDINGS, REFLECTIONS AND CONCLUSION

5.1 INTRODUCTION

The previous chapter dealt with the presentation and analysis of the data. This chapter provides a synthesis of the study, presents and discusses the findings, makes recommendations based on the findings, and highlights aspects of Design that need further research. Using the conceptual framework consisting of Greene's (1995) and Wenger's (1998) notions of imagination and community of practice, I will attempt to theorise the data presented as thematic constructions in Chapter Four.

As stated in Chapter One, the purpose of the study was to understand how and why teachers are teaching Design in the context in which they are teaching it, given the newness of the curriculum. The findings discussed in this chapter relate to Greene's 1995 book, *Releasing the Imagination*, where she introduces the concept of the use of imagination to develop pedagogies that have relevance to the contextual circumstances of the classroom, and Wenger's (1998) theory of communities of practice where groups of people with a common interest meet to share their knowledge and skills with one another.

This research project documented the experiences of three teachers implementing the Grade 12 Design curriculum in the KZN area. Two critical questions were used to inform the study, which revealed what their experiences were and how Design was being implemented in the Grade 12 classrooms. The first critical question was answered through semi-structured interviews presented thematically. The second critical question was answered through classroom observations presented in narrative format.

The reasons why the Design teachers experienced what they did are a complex educational phenomenon. While the intention of educational research is aimed at understanding the reasons why teachers and learners experience teaching and learning in the way they do, individual actions are subjective in nature. Researchers cannot completely understand the behaviour of teachers due to the many variables that come into play when teachers teach. I will attempt to provide a general explanation as to why teachers in this study teach the way they do, based on my findings which I viewed through particular concepts such as the power of imagination (Greene, 1995) and Wenger's (1998) communities of practice. As the reasons for teachers' experiences require much more focused and individual analysis, I would prefer to provide an explanation viewed through the specific conceptual lenses to avoid broad generalisations.

As there is a dearth of literature with respect to Design as a learning area (Oxman, 2001), the search for literature was extended to include the experiences of teachers implementing a new or revised curriculum, as provided in Chapter Two, for example Ryder and Banner (2012), Gibson and Brooks (2011), and Derby (2005). In brief, the main focus of the literature reviewed in Chapter Two was context, professional development, collaborative learning and resources. Parallels were drawn from the literature and were related to the experiences of teachers implementing the new Design curriculum (for example, Singh (2004), Govender (2010), Briscoe & Peters (1998) and Xulu (2012)).

A qualitative research approach was adopted to conduct this study, using the case study methodology. This allowed an intense and thorough contextual understanding of the three cases in my study using multiple data sources (Yin, 2003). The data collection methods that were employed included semi-structured interviews (Annexure A) followed by classroom observations utilising a semi-structured observation schedule (Annexure B). I will now proceed to theorise the data presented in Chapter Four as key findings of the study.

5.2 FINDINGS

The findings emerged from the two critical questions that informed the study. The evidence from the data revealed five key findings which are presented below.

5.2.1 Context-based experiences

Context was found to be an influential factor that impacted on the experiences of the Design teachers in my study. Context refers specifically to the area in which they teach, the school environment, Design classroom demographics and relevancy of curriculum content.

The teachers in my study had to cope with learners from culturally diverse backgrounds, with many of them being second-language English learners. As a result of the conceptual nature of Design, which employs complex terminology in its theoretical component, these teachers experienced a challenge in communicating the content of the theoretical component of the curriculum to their learners.

Colin advised that the literacy challenges had an adverse effect on the writing skills of their learners, which is an essential skill required to be Design literate. Brian stated that these second-language English learners subsequently performed poorly in the National Senior Certificate examinations, as the same terminology and concepts were employed in the question papers. This resonates with a study conducted by Prinsloo (2007), where cultural diversity presented many challenges to the teachers implementing the new Life Orientation programmes in South African schools. The study recommended that teachers be trained to find opportunities to socially integrate their culturally diverse learners in order to achieve successful teaching. Moreover, Derby (2005) found that cultural diversity

necessitated teachers having to communicate learning material to students in creative ways to accommodate this diversity, as learning styles differ amongst cultures.

Teachers made reference to the curriculum content in relation to context. Andy expressed that some aspects of the Design curriculum were not relevant to our local context, proving a challenge for learners to grasp concepts that they were not familiar with or had no exposure to and were therefore unable to relate to. Design literacy amongst learners was expected to be understood holistically, encompassing its cultural, environmental, social and historical contexts (DoE, 2003), the content of which was not fully incorporated into the Design curriculum. Each culture and society has a unique history and popular culture, and because of that a distinct voice.

My findings that teachers' experiences are context-based confirms the views of Little (2004) and Blocker (2004), who argue that in multicultural classrooms it is important to modify the curriculum to engage in multicultural art education and to study art from all the different cultures.

Given the cultural diversity of the South African classroom, contextual awareness provides an appropriate entry-point to meaningfully implement the revised curriculum.

5.2.2 Training and continuous professional development

Training and professional development workshops are conducted by the DoE with the purpose of developing and advancing teacher knowledge and skills in a particular field.

The data from the interviews revealed that the respondents in my study were optimistic in their expectations that the Design workshops would meet all their individual needs arising from their contextual circumstances. However, the facilitators of these workshops were disseminating information and were not always equipped with the appropriate pedagogic skills to help teachers implement contextually and to address teachers' specific questions. Given the complex nature of Design, there can be no blueprint for Design pedagogy as the inherent nature of Design is an imaginative, creative process.

Although the Design teachers were highly critical of the presentational format and content matter of the workshops not addressing their specific needs, the classroom observations showed that this did not have an adverse effect on the delivery of the lessons in the classroom. The respondents employed imagination to assist them in constructing lessons that were able to engage their learners successfully.

Andy complained that the presenters of the workshops assumed that all schools teaching Design were already equipped with the necessary resources to carry out what was being workshopped, not taking cognizance of the contextual realities of the public school classroom. Similarly, Brian experienced limited accessibility to materials at school level, as some of the materials were too expensive to purchase. Although they both found ways to overcome this during the lessons that were observed, the teachers were vocal that this hampered them from executing more complex projects that were undertaken at workshops.

Some of the teachers made reference to the facilitators that were employed to conduct the workshops. Colin noted that workshops were conducted by facilitators who were not Design teachers, and hence he was unable to engage with them to address his day-to-day challenges in the classroom. This is in alignment with the findings of Prinsloo (2007), who concurs that facilitators

appointed by the DoE at professional development workshops had little understanding of the contextual realities of the schools together with limited teaching knowledge and pedagogic skills which left them poorly equipped to conduct these workshops.

Although the teachers in my study expressed that Design workshops were of little benefit to them, their overriding frustration stemmed from the fact that they did not always have access to the materials that were available at these workshops. I also noticed that despite their negative utterances about the workshops, they applied their professional knowledge and skills to give expression to their work as Design teachers. While workshops often assume that teachers ‘need training,’ they are often already well trained but in need of recognition which will unlock their inherent artistic potential.

5.2.3 The impact of resources

The scarcity of relevant resources impacted on the implementation of both the practical as well as the theoretical component of Design, and was found to be a challenge to the teaching of relevant skills and assigning of projects that were appropriate to the Grade 12 level of Design.

Brian and Colin advised that there was no prescribed textbook for the Grade 12 Design curriculum, which meant there was no point of reference for teachers to introduce learners to subject-specific concepts and terminology employed in this learning area. Colin added that teachers spent personal time rephrasing and then retyping information from Design reference books and the Internet to make it more readable and understandable for the learners.

From the experiences of the teachers in my study, it was found that textbooks

are an indispensable resource required for successful implementation of this learning area, which were not available to the Design teacher. Andy and Brian pointed to a significant aspect of Design texts being the colour illustrations, which develops the teachers' critical and visual literacy skills, since this is a new learning area and teachers have to become familiar with text and colour illustrations before they can engage with these resources when teaching their learners.

However, teachers relied on photocopies of illustrations in black and white, which did not afford their learners the visual appreciation that the colour illustrations would have conveyed. In keeping with the above findings, Gibson and Brooks (2011) argue that locating relevant textbooks for the non-technical subjects can be difficult. The teachers in their study conducted their own research using multi-media tools to source relevant materials as well as the recommendations of fellow teachers.

What was highlighted in all three teachers' responses was that since Design is a complex learning area with multiple disciplines, expensive equipment is required, such as kilns for pottery as commented on by Andy, colourfully illustrated books and multimedia equipment such as computers and projectors (Andy and Brian). However, not all of these resources were accessible at their respective schools. Brian reported that he had to assign projects around available resources only, thereby limiting the transfer of skills to the learner. This restricted their overall experience of implementing this new curriculum.

In a study conducted by Johnson *et al.* (2000) schools that did not have the infrastructure and resources required to teach Science could not support the effective teaching of the subject, as they taught only the theoretical component of

the Science curriculum. This study highlighted that the availability of specific and relevant resources such as laboratory equipment and chemicals in the teaching of technical subjects was critical to the successful implementation of the curriculum, as compared to non-technical subjects.

Greene's (1995) concept of imagination in pedagogic practice helped me understand how the teachers in my study overcame the challenge of limited resources. It was evident that the respondents were constantly engaged in reflection on their practice. Acting on these reflections, these teachers drew on their imagination to source materials from their local environment to find relevant use in their classrooms.

5.2.4 Collaborative learning

Design teachers are making a concerted effort to meet, discuss and share ideas to help one another overcome challenges. The participants in my sample, as attested to by Andy and Brian, also collaborated with other Design teachers, borrowing resources and notes as well as brainstorming ideas and sharing knowledge with one another. The data reveal that Design teachers are willing to collaborate with the larger Design community and make changes to their teaching approaches, given the right platforms. In this regard Wenger's (1998) concept of communities of practice provides an appropriate way to appreciate the importance of collaborative action in the pedagogic process.

In addition, researchers from across the globe on teacher learning underscore the significance of supporting teacher collaboration when implementing a new curriculum, as this has an impact on developing and enhancing classroom practice (Ainscow & Booth, 1998). The creation of this supportive environment,

according to Barrett, Cappleman, Shoib and Walsham (2004), provides an opening for teachers to see themselves associated to the larger community of artists, facilitating dialogue about Art and Design.

Coalitions and partnerships formed have created opportunities for teachers to learn from and also impart knowledge to one another. In this kind of informal learning environment teachers of Design can come together to develop their skills, learn new disciplines, share ideas and experience alternative ways of teaching. The literature supports this idea of collaboration by advocating the forming of learning communities and partnerships with the larger Design community, which can benefit the teacher, the DoE, and the learner.

Despite the participants' experiences of the training workshops, these opportunities of meeting with fellow Design teachers provided a background which they used as reflective backdrops to critically engage their practice.

5.2.5 Creative pedagogy

Creative pedagogy refers to teachers employing innovation and creativity to modify their teaching styles to the contextual circumstances of their classrooms.

During the semi-structured interviews the participants had elaborated on several constraints that they experienced when implementing the Design curriculum. However, the irony that was revealed in the classroom observations was that despite these challenges that they articulated, all of the participants improvised and adapted to the context of their classrooms in order to make their experience of implementing the Design curriculum as successful as they could.

The many years of experience of the teachers in my study assisted them to overcome some of the challenges they faced in implementing the Design

curriculum. They varied their pedagogic approaches tailored to the contexts of their classrooms to engage with their learners. They used visual stimulation, practical demonstrations to illustrate technical aspects, peer and collaborative learning as well as innovative ways to introduce a new lesson.

In the absence of textbooks, Design teachers went to great lengths to acquire photocopied notes and illustrations from fellow teachers (Colin), and used their personal laptops to show colour illustrations during theory lessons (Andy). In addition, Andy and Brian also purchased materials from their own funds to assist learners to undertake certain projects that they had assigned to them, and Colin took the initiative to secure funding from the community to supplement their limited resources for projects. Colin also went to dumpsites and factories to collect recycled materials and blocks of wood and bottles to set up compositions to conduct still life drawing lessons.

5.3 PERSONAL REFLECTIONS AND CONTRIBUTIONS

The rationale for this study was to provide insight into and gain an understanding of how Grade 12 teachers are implementing the Design curriculum, given the newness of the learning area resulting from the recent curriculum reforms that came about due to political change.

Using the conceptual framework that I developed to understand the experiences of the Design teachers, I was able to recognise that teachers were using imagination to overcome many of the challenges they were presented with in the classroom. With a scarcity of resources, these three teachers employed creative and innovative pedagogic practices to teach this new learning area. In the absence of relevant teaching aids they borrowed from fellow teachers, created scenarios to introduce lessons and brought in resources from home (Bountiful High), used

personal laptops and downloaded colour illustrations for lesson clarity (Accolade Secondary) and allowed for peer learning to assist with language comprehension as well as used recycled materials (Complex Secondary).

The teachers in my study collaborated with one another informally to gain clarity and to share notes on the curriculum content, to share resources and visual aids and to discuss the assigning of projects in keeping with the curriculum as well as the individual contexts of their classrooms. This was done to support one another in the absence of a subject advisor and limited support from their individual schools.

Although collaboration facilitated the sharing, discussion and understanding of the new Design curriculum, it was through the use of their imagination (Greene, 1995) and their years of experience in teaching the previous Art curriculum, that these individual teachers were able to develop creative pedagogic techniques in order to teach in their classrooms, given the limitations they faced with respect to context, resources and support for this new learning area.

During the interview process the teachers had complained of several challenges that they perceived as barriers to the implementation of this new learning area. However, during the classroom observations it was noted that they found ways to overcome many of these challenges, revealing creative forms of pedagogic practice.

In light of the above, some recommendations are suggested below.

5.3.1 Appoint a Design Co-ordinator

As Design is a new subject being offered in very few schools, a Design Co-ordinator will help promote this learning area and ensure its survival in the new

school curricula. This representative of Design can address issues that are pertinent to the teaching of this learning area and attend to the needs and requirements of the Design teachers.

5.3.2 Grade-specific Design workbooks

It is recommended that the Grade 12 Design teachers form a committee to facilitate the developing of workbooks for Grade 12 Design learners. This committee can agree on the appropriate sections to be included in these workbooks to help standardise content matter. These workbooks should include good quality colour illustrations with language that can be understood by Grade 12 learners.

5.3.3 Design teachers collaborating in cluster groups

Bowins and Beaudoin (2011, p.10) define collaboration as “two or more teachers meeting to discuss the new curriculum to work on aspects of the change”, and argue that collaboration helps teachers share ideas and plan for the curriculum changes, thereby helping them to smooth the process of adaptation to a new curriculum. This type of informal learning environment where two or more teachers meet resonates with Wenger’s (2000) theory of communities of practice and has the potential to address the concerns of the Design teachers.

In this kind of informal learning environment teachers of Design can form cluster groups to develop their skills, learn new disciplines, share ideas and experience alternative ways of teaching. In this way teachers can engage with fellow Design

teachers to broaden their understanding and knowledge of the new Design curriculum, thereby allowing for the adoption of best practice in their classrooms. This will facilitate peer interaction and discussion of curriculum content and be an opportunity for teachers to table their experiences and challenges faced in their classrooms. Teachers can elicit support from one another and source new ways of teaching within context. This will promote a sense of collegiality amongst Design teachers (Govender, 2010).

The creation of this supportive environment, according to Barrett (2004), provides an opening for teachers to see themselves associated to the larger community of artists, facilitating dialogue about Art and Design.

The current literature makes a sound case for context and collaborative learning (Eckhoff, 2011). The data have shown that this will be beneficial, given the situation under which Design teachers are currently working. Working in cluster groups as opposed to working in isolation will help teachers to gain confidence in teaching this new learning area, thereby boosting their morale.

The cluster groups will go a long way to alleviating the heavy reliance on the already overburdened DoE. As these cluster groups grow and develop, teachers can hold exhibitions of their learners' works, which can assist in promoting the new learning area of Design. Learners can be given the opportunity to be seen as local artists within the community.

5.4 POSSIBILITIES FOR FUTURE RESEARCH

As there is no literature specifically related to the implementation of a Design curriculum, further research will help teachers and curriculum developers to better understand this complex learning area (Lerner, 2012).

The opportunity exists for studies to be conducted within the various disciplines of Design to determine what specific skills need to be taught in each grade level, as the level of complexity within each discipline varies.

Teaching methods for Design can be investigated in light of the new curriculum being learner-centred, taking into account that the previous Art teacher who taught within a teacher-centred, top-down approach is now the new Design teacher.

5.5 CONCLUSION

The purpose of this study was to explore the experiences of Design teachers implementing the Grade 12 Design curriculum. The literature examined shows that there is little research material on Design teachers' implementation of the Design curriculum (Oxman, 2001). This study was undertaken to provide some insight into the experiences of Grade 12 Design teachers and the subsequent development of their pedagogic practice.

The study revealed that teachers experienced challenges during implementation with respect to limited resources, curriculum terminology and contextual circumstances. However, through creative pedagogy, improvisation and collaboration with fellow Design teachers they were able to implement the Design curriculum and achieve a measure of success.

It was found that pedagogic practices for Design varied according to the contexts that teachers found themselves in. As a result, teachers employed imagination and creativity in structuring lessons. It was suggested that cluster groups can provide a forum for teachers to address their concerns, receive support and guidance and also share their successes with respect to their experiences of implementing this new learning area.

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Appendix A: Letter of consent

CONSENT

I(full name) hereby consent to participate in the above research. I understand that my participation is voluntary and I may change my mind and refuse to participate at any stage without penalty. I may refuse to answer any question or I may stop the interview. I understand that some of the things I say may be directly quoted in the text of the final dissertation, and subsequent publications. I also understand that my name will not be used. I consent to the interview being audio-recorded.

Signature: _____

Date: _____

Researcher: Mr Krishnagopaul Manickum Pillay

Signature: _____

Date: _____

Address: 152 Rose Heights Road
Arena Park
Chatsworth
4092

Telephone: (H) 031-4049224 (W) 031-4624722

Supervisor (Print name): Dr Martin Combrinck

Signature: _____

Date: _____

Faculty of Education, Edgewood Campus

Private bag X03

Ashwood

3605

Telephone: (W) 031-2603438

(Fax) 031-2603423

Mr KM Pillay

Student No. 7812295

Appendix B: Request for permission to conduct research at the schools

UNIVERSITY OF KWAZULU-NATAL

Edgewood Campus

9 Lemuria Grove

Arena Park

Chatsworth

4092

25 April 2011

The Principal

Dear Sir / Madam

Re: Request for permission to conduct research

Teacher's name _____

Persal number _____

School _____

Principal's signature _____

I, Krishnagopaul Manickum Pillay, currently a Design teacher at Ganges Secondary, request permission to conduct research at your school. As part of my professional development, I am presently enrolled for a Master's in Education, specialising in Curriculum Studies with a focus on Design as a learning area, at the University of Kwazulu-Natal. As part of my Master's programme, I am required to complete a dissertation.

I kindly request your permission for your Design teacher to be interviewed and to be observed during a Design lesson concerning the implementation of the Design Curriculum in our schools. The research may involve interviews, tape recordings, observations and photographs.

Before conducting my research, written consent will be obtained from the Department of Education and Culture. The school and the participant (Design teacher) would be assured of confidentiality, privacy

and anonymity during all stages of the research. Participants will be free to withdraw at any stage of the research. Data collected will be locked away in a cabinet for five years as per university rules and will thereafter be destroyed through a process of shredding. Audio cassettes will be incinerated.

I am hopeful that this research will highlight the need for the Department of Education to supply the required resources for the effective implementation of design.

Thank you in advance for time and co-operation.

Yours faithfully

KM Pillay

Tel No 031-4049224 (H)

031-4624722 (W)

084-9192924 (C)

Supervisor's detail's

Dr Martin Combrinck

Faculty of Education

School of Education and Development

University of Kwazulu-
Natal

Edgewood Campus

Tel No 031-2602639

Appendix C: Letter to Governing Bodies

UNIVERSITY OF KWAZULU-NATAL

Edgewood Campus

9 Lemuria Grove

Arena Park

Chatsworth

4092

25 April 2011

The Chairperson

Governing Body

Dear Sir / Madam

Re: Request for permission to conduct research

Teacher's name _____

Persal number _____

School _____

Chairperson's signature _____

I, Krishnagopaul Manickum Pillay, currently a Design teacher at Ganges Secondary, request permission to conduct research at your school. As part of my professional development, I am presently enrolled for a Master's in Education, specialising in Curriculum Studies with a focus on Design as a learning area, at the University of Kwazulu-Natal. As part of my Master's programme, I am required to complete a dissertation.

I kindly request your permission for your Design teacher to complete a questionnaire concerning the implementation of the Design Curriculum in our schools. The research may involve interviews, tape recordings and photographs.

Before conducting my research, written consent will be obtained from the Department of Education and Culture. The school and the participant (Design teacher) would be assured of confidentiality, privacy and anonymity during all stages of the research. Participants will be free to withdraw at any stage of the research. Data collected will be locked away in a cabinet for five years as per university rules and will thereafter be destroyed through a process of shredding. Audio cassettes will be incinerated.

I am hopeful that this research will highlight the need for the Department of Education to supply the required resources for the effective implementation of design.

Thank you in advance for time and co-operation.

Yours faithfully

Supervisor's detail's

KM Pillay

Tel No 031-4049224 (H)

Dr Martin Combrinck

Faculty of Education

031-4624722 (W)

School of Education and Development

084-9192924 (C)

University of Kwazulu-Natal

Edgewood Campus

Tel No 031-2602639

Appendix D: Observation schedule

The themes that had emerged from the semi-structured interviews were used as a guideline to determine the correlation between the data obtained from the semi-structured interviews and how the lessons were being conducted in the classroom. The semi-structured observation schedule was therefore constructed with reference to the themes that were generated from the interviews.

Resources, text, consumables, tools

		Available	Not Available	Teacher Brought in
1	Digital projector/laptop			
2	Design reference books			
3	Grade 12 text			
4	Charts – pictures, Design related			
5	Slide projector			
6	Tools			
7	Machinery/specialized equipment. e.g. kiln, wheel, drill, etc.			
8	Cameras			
9	Art tables specialized			
10	Steel tables			
11	Pencils, paint, paper, scissors			
12	Water, sink			
13	Cupboards			
14	Hanging/Display space			
15	Cyclo-styled notes			

Pedagogic Style		Comments
Question and Answer		
Classroom demo		
Role playing		
Discussion		
Scenarios		
Audio/visual/multi-media		

Availability of resources and in what condition is it?

POOR: Resource is totally inadequate and not able to be utilised

FAIR: Resource is in use and meets minimum requirements for use

GOOD: Resource adequately serves its purpose and is frequently utilised

		Conditions of Facilities		
Facility	Yes/No	Poor	Fair	Good
Classroom Facilities				
Specialist Art Room				
Specialist Furniture				
Kiln-wheel				
Dedicated Display Area				
Teacher table & chair				
Cupboards				
Textbooks				
Stationery- paper, paint, pencils, pallets				
Water trough/tap				
Display shelves				
Stock room				
Stock				
Educational Facilities/Aids				
Library				

Library books				
Library shelves				
Computer Lab.				
VCR, TV				
Overhead Projector				
Photocopier				
Resources				
Workbench				
Tools				
Infrastructure				
Security Systems				
Water				
Electricity				

Appendix E: Interview schedule

DESIGN LEARNING AREA

TEACHER INTERVIEW SCHEDULE

1. RESOURCES

Do you have adequate resources to teach the units?

Where and how are the resources stored?

How are you able to get the required resources in cases where they have not been supplied?

How valuable have you found in-service training provided?

How valuable have you found other forms of support (from your colleagues, principal and subject advisor) provided?

2. CONTENT KNOWLEDGE

1.1 Design is a new subject that was introduced into the curriculum in 2004.

What formal training have you received from the Department of Education
in this learning area?

1.2 What is the prescribed textbook for the grade 12 Design curriculum?

1.3 What are your concerns about teaching Design to grade 12 students?

1.4 How confident do you feel teaching Design to grade 12 students? Explain.

1.5 Design encompasses many disciplines, e.g. Ceramics, Graphics, Product Design, etc. How many of these disciplines are you trained to teach?

1.6 Do you find the workshops in Design adequate and practical to be successfully implemented in the classroom?

1.7 In your opinion, are you implementing the Design curriculum as per policy document? If not, briefly explain.