

UNIVERSITY OF THE WITWATERSRAND

Title: The extent to which Grade 7 educators in a Full-service School apply differentiated instruction to promote inclusive teaching and learning.

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DECLARATION

I, Wendy Groeneveld declare that this research report is my own, unaided work. This research report is being submitted for the degree of Masters of Education as required by the University of the Witwatersrand, Johannesburg. It has not been submitted before, for any other degree or examination at any other university.

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Signed

March, 2016

ABSTRACT

Educators at full-service schools in South Africa are required by policy, to respond to the diversity of learners in the classroom by means of differentiating the learning environment, teaching methods employed and the manner in which the learners are assessed. Within the South African context, three studies relate specifically to differentiated instruction and multi-level teaching: Nel, Kempen and Ruscheinski (2011); de Jager (2013); Walton, Nel, Muller and Lebeloane (2014). The above research was concerned with using differentiated instruction to modify the curriculum of the 'Learn Not To Burn' Programme to make it accessible for learners at a special school, challenges with regard to implementing differentiated learning activities within a high school context and investigating responses of educators at a full-service school in the long term, to training they had undergone in multi-level teaching.

The topic of this study aims to explore and describe Grade 7 Mathematics and English First Additional Language educators' understanding, knowledge of and ability to apply differentiated instruction in relation to inclusive teaching and learning within a full-service school. The research was conducted at two, full-service schools in Gauteng, over the course of three weeks. There were six participants in total, including three Grade 7 Mathematics and three Grade 7 English educators. A qualitative research methodology was adopted. Data was collected by means of an initial questionnaire, a preliminary interview, classroom observations, document analysis (analysis of lesson plans and assessment tasks) and post-observation interviews.

The patterns which arose from the data analysis were determined by initially summarising the data at an individual level for each participant and then comparing the six participants' responses with each other in relation to the codes. An analysis of the GPLMS lesson plans indicated that the lesson plans specified core concepts of the curriculum, essential questions relating to the topic were evident, where the topic was divided into specific units to be covered in a particular order. Curricular strategies in relation to content, process and product were stated. However, a key pattern to emerge was that there is an over-reliance on GPLMS lesson plans as opposed to independent planning for differentiation. During classroom observations, the Grade 7 Mathematics and English educators identified big ideas when covering the curriculum, visual supports were evident; the educators varied the format of their instruction and demonstrated sensitivity to the learning needs of individual learners that had been identified during the lessons. While 'common sense' inclusive practices were observed, they cannot be described as differentiated instruction *per se*. The third pattern to emerge was that assessments were not differentiated optimally, as the focus was centred too heavily upon curriculum coverage and ensuring performance on the Annual National Assessment (ANA) exams. Results from this research suggest that at a basic level, some aspects of differentiated instruction are being included in Grade 7 Mathematics and English classrooms in full-service schools in Gauteng. This is not at a sufficient level to facilitate transformation and inclusion. (Key Words: Transformation, inclusion, differentiated instruction, full-service school, GPLMS lesson plans, curricular strategies, assessment tasks).

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ABBREVIATIONS

ANA: Annual National Assessment

CAPS: Curriculum and Assessment Policy Statement

GPLMS: Gauteng Primary Language and Mathematics Strategy

ILST: Institutional-Level Support Team

LSE: Learning Support Educator

SIAS: National Strategy on Screening, Identification, Assessment and Support

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Internationally, the Salamanca Statement (UNESCO, 1994) and nationally, the South African Schools Act (RSA, 1996), set the stage for transformation in education. In South Africa, transformation in education meant addressing the core concepts of “access, equity, redress and quality” (Engelbrecht, 2006). *Education White Paper Six: Special needs education. Building an inclusive education and training system* (DBE, 2001) provided a framework within which to implement change, with the view to transform the entire education system. This policy document, (Engelbrecht, 2006, p. 256) is in accordance with the principles of the Salamanca Statement and defines inclusive education as being based on freedom and equality, as stated in the South African constitution. Furthermore, inclusive education “is seen as a single system of education dedicated to ensuring that all individuals are enabled to become competent citizens in a changing and diverse society”

Globally, as illustrated in the literature, there exist a number of challenges to inclusive education. These challenges include a lack of common understanding of the concept, i.e. what inclusive education means and how it should be applied. Due to the fact that there is such variation of the context within which inclusive education is implemented, it is difficult to derive a definition that is universal and not bound by context. This in turn has resulted in a variety of different inclusive practices, which is confusing for educators, some of whom are resistant to change, preferring to adhere to archaic practices (Makoelle, 2014).

Recent research conducted in South Africa confirmed that educators need to be personally involved in order to embrace change relating to educational practice. They need to be taught action research skills and collaboration is essential, in order for educators to change their conceptions and beliefs regarding inclusive practice. Pre-service training, prior to the recent developments in education policy, has been shown to influence profoundly, the extent to which educators will embrace inclusive education. Establishing communities of enquiry and involving educators in the “process of developing inclusive practices” could result in a more positive attitude, as the educators take ownership for implementing inclusive education (Makoelle, 2014, pp. 132-133).

1.2 Background to the study

Within the broader context of inclusive education, differentiated instruction can be defined in the following way:

As a transformation in society and schools evolves, effective teachers in contemporary classrooms will have to learn to develop classroom routines that attend to, rather than ignore, learner variance in readiness, interest and learning profile. Such routines may be referred to as “differentiating” curriculum and instruction. (Tomlinson, Brighton, Hertberg, Callahan, Moon, Brimijoin, Conover & Reynolds, 2003, p. 121)

With regard to the historical context of differentiated instruction, Stanford and Reeves (2009), explain that differentiated instruction originated from gifted education practices. Changes in legislation, namely the No Child Left Behind Act (2001) and Individuals with Disabilities Education Improvement Act (2004), created a dilemma for regular education educators. They had to teach the rigorous mainstream curriculum and simultaneously include learners who have disabilities and learners who are English Language Learners (ELL). As a means of responding to this dilemma, Tomlinson and McTighe (2006) started to take concepts from differentiated instruction in the gifted classroom and build on them, so enabling educators to apply differentiated instruction in the regular classroom (Stanford & Reeves, 2009, p. 3).

1.2.1 Knowledge Gap

When reviewing the international literature, Subban (2006, p. 944), clearly states that future research needs to investigate how differentiated instruction impacts on educator efficacy, how time and resources are managed during differentiation and the impact that teaching experience has on a educator's ability to differentiate instruction. Furthermore, research needs to investigate how educators respond to differentiated instruction, what they perceive to be the strengths and challenges of implementing differentiated techniques and the need for educators to "investigate their applications of differentiated thinking toward instructional planning and implementation of lessons" (Logan, 2011, p.7). Together, the gaps in our knowledge about differentiated instruction, described above, lead to a problem which needs to be addressed through research.

1.3 Problem Statement

Stated in *Guidelines For Responding To Learner Diversity In The Classroom* [Department of Basic Education (DBE) 2011], are the requirements for educators to respond to diversity in the classroom through differentiating the content of the curriculum, differentiating the environment in which learning takes place, differentiating teaching methods, as well as differentiating how assessment is conducted. Despite these explicit guidelines issued by the Department of Basic Education (DBE), educators lack training in differentiated instruction as responsive teaching and do not have an empirically-based, resource pool of differentiated instruction strategies to which they can refer (de Jager, 2013, p.91-92).

1.3.1 Rationale

The relevance of this proposed study is that there is a need for research in South Africa that explores and describes educators' understanding, knowledge of and ability to apply differentiated instruction as it relates to inclusive teaching and learning within the context of full-service schools. In the course of reviewing the literature, I could find only three studies, relating specifically to differentiated instruction and multi-level teaching within the South

African context: Nel, Kempen and Ruscheinski (2011); de Jager (2013); Walton, Nel, Muller and Lebeloane (2014).

1.4 Purpose Statement

1.4.1 Aims and Objectives

In their article, Artiles, Kozleski, Dorn and Christensen (2006) referring to Dyson (1999), explain that the professional discourses around inclusive education can be categorized according to whether they are concerned with justifying the need for inclusive education or about the actual implementation of inclusion. The focus for this particular study is ‘the implementation of inclusion’ discourse, which is concerned with issues relating to pragmatics. This means that the research aims to “explore the question: ‘How does it work?’” (Artiles et al., 2006, p.68). Hence the objective of this research could be understood as, “How does differentiated instruction work within the context of teaching Grade 7 Mathematics and English First Additional Language at a full-service school?”

The primary aim of the research study is to discover and describe how Grade 7 First Additional Language and Mathematics educators use differentiated instruction as a way of responding to the diverse interests, levels of readiness and learning profiles of their learners. In addition to this, the research aims to explore how the Grade 7 educators might use differentiated instruction strategies as part of their instructional routines. More specifically, the study also aims to investigate whether the educators will proactively incorporate differentiated instruction from the outset, when they plan their lessons, or whether they will use differentiated instruction reactively, as a response to discovering that the learners are not progressing in their understanding of the curriculum and the application of the required skills. The final aim is to investigate whether and how Grade 7 English First Additional Language and Mathematics educators apply differentiation to the assessment of learners.

1.5 Research Questions

Main question: To what extent is differentiated instruction used by Grade 7 Mathematics and English First Additional Language educators in a Full-service School, to promote inclusive teaching and learning?

Sub-Questions:

- When planning lessons, how do Grade 7 Mathematics and English First Additional Language educators respond to diversity with regard to learner interests, levels of readiness and learning profiles?
- When delivering the curriculum (CAPS), for Grade 7 Mathematics and English First Additional Language, how do educators employ differentiation strategies as part of their instruction?

- How is differentiation incorporated into Grade 7 Mathematics and English First Additional Language assessment tasks?

1.6 Structure Of The Report

Having introduced the research, Chapter Two proceeds to critically examine the conceptual framework upon which the core concepts underpinning the research are based, as well as to review literature related to the research topic. Chapter Three describes the qualitative research design adopted, motivates why a case study approach is best suited to this research and links back to the literature, when explaining the various data collection tools. The conclusion of Chapter Three is concerned with the process of data analysis and explains how the data for this study was summarised and compared during triangulation. Leading to the introduction of Chapter Four, is a summary diagram which represents the outcome of the data analysis. Following this, the rest of Chapter Four, using evidence presented from the data collection tools, presents a picture of what the research shows. Hence, Chapter Four will analyse the data with reference to the research questions stated in Chapter One. Having presented an analysis, Chapter Five returns to a number of key discussants, whose research was introduced in Chapter Two. The discussion in Chapter Five explores the results of this study in relation to the findings of research conducted on differentiated instruction and multi-level teaching within the South African context. Then the discussion continues to compare the outcomes of this study to the practical aspects of differentiated instruction and how expert educators incorporate differentiated instruction within their classrooms. In conclusion, the discussion in Chapter Five refers back to the concept of ‘transformability’ stated at the beginning of Chapter Two. Chapter Six presents an overview of the outcomes of the study, which is then followed by a reflection on the limitations of the research. Specific recommendations are then made as to how the implementation of differentiated instruction can be further developed at three levels, at full-service schools.

CHAPTER TWO: REVIEW OF THE LITERATURE

2.1 Introduction

The concepts of inclusive pedagogy and differentiated instruction are the cornerstones of the research question. They form the basis on which this research aspires to build. Before exploring inclusive pedagogy and differentiated instruction however, it is necessary to refer to Shulman's (1987) Model of Pedagogical Reasoning and Action, as an introduction to the concept of the educator being an agent of transformation. 'Transformation' serves as a common thread, linking inclusive pedagogy and differentiated instruction. Therefore, this chapter begins by introducing Shulman's (1987) Model of Pedagogical Reasoning and Action, followed by an explanation of the key principles of inclusive pedagogy. These principles are further elaborated upon by means of a discussion of research on inclusive education conducted both in the United Kingdom and South Africa. This is then followed by highlighting of the theoretical underpinnings and core concepts of differentiated instruction and how they translate practically to the classroom. Challenges to differentiated instruction are addressed and various models that can be used to apply differentiated instruction are described. Next, will be a discussion about local and international research on differentiated instruction and the relevance of this to my research.

2.1.1 Shulman's (1987) Model of Pedagogical Reasoning and Action

Shulman's Model of Pedagogical Reasoning and Action represents teaching as a cyclical process, through which educators transform their understanding of the content they teach in such a way that it is "pedagogically powerful and yet adapted to the variations in ability and background presented by students" (Shulman, 1987, p. 237). Transformation takes place specifically by means of the educator critically examining and interpreting the teaching material, then considering the multiple forms in which the ideas can be represented to the learners. Following this is the selection of various strategies for instruction, including different ways of co-operative learning, facilitating learning by discovery, employing critical thinking (Socratic dialogue) and exploring wider contexts beyond the classroom environment (Shulman, 1987, p. 238). The process of transformation is then completed by means of adaptation of the lesson to both individual needs of the learners and specific characteristics of the class as a group. Adopting Shulman's (1987) Model to their teaching may encourage educators to reflect upon and transform their own pedagogical practice in the classroom, whereby educators may be more receptive to and feel more confident about employing inclusive pedagogy.

Achieving a new comprehension, a deeper understanding of the learners and subjects taught, is the ultimate goal of the pedagogical process illustrated in Shulman's (1987) Model and is also the ultimate goal of differentiated instruction, as the educator consistently seeks new ways in which to improve differentiation of the content, process and product of what has been

taught. While not without its flaws, Shulman's (1987) Model serves as a starting point for the achievement of transformation and attaining a deeper understanding of the process of teaching.

2.2 Conceptual Framework

2.2.1 Full-service Schools

According to *Guidelines for Full-service/Inclusive Schools* (DBE 2010a, p. 22), a full-service school can be defined as a mainstream school that provides “quality education to all learners by supplying the full range of learning needs in an equitable manner”. It is incumbent upon full-service schools to provide additional support to learners and to create an awareness of diversity. This is to be achieved by means of teaching methods which facilitate transformation of the curriculum and within the school itself, as an institution. An education which strives to achieve the values of access, equity, quality and social justice, is the goal of full-service schools. Furthermore, the education that is to be provided at full-service schools has to be responsive to diversity in the classroom, by means of appropriately addressing the individual needs of learners, despite social problems, disabilities and differences with regard to learning style and the pace at which children learn.

The principles of inclusion are supposed to underpin the central philosophy of full-service schools, where, according to *Guidelines for Full-service/Inclusive Schools* (DBE 2010a, p. 22), the diversity of learners should be celebrated by means of “recognising potential, increasing participation, overcoming and reducing barriers, and removing stigmatization and labelling.” A distinctive feature of full-service schools is that these schools are expected to have the capacity and the potential to develop and provide the required support services for those learners who need them.

Providing further clarification, Walton, Nel, Muller and Lebeloane (2014), state that learners with ‘moderate’ or even ‘high’ support needs should be included in full-service schools, according to the ‘principle of natural proportion’, whereby “the number of learners with disabilities requiring additional support in the school should proportionately reflect the number of such learners in the community that the school services” (Walton et al., 2014, p. 320). In the long term, the Department of Basic Education would like to see all mainstream schools become inclusive schools (Motshekga, 2012, cited in Walton et al. 2014).

According to *Guidelines for Full-service/Inclusive Schools* (DBE 2010a, p. 25), when learners at a full-service school are assessed to determine the barriers to learning that they are experiencing, there needs to be a system in place, whereby the assessments are conducted “according to the procedures outlined in the Strategy on Screening, Identification, Assessment and Support (SIAS).” The procedures for Stages 2, 3 and 4 of the SIAS process were relevant within the context of this research. As stated in *National Strategy on Screening, Identification, Assessment and Support* (DBE 2008, pp. 14-15), for Stage 2, educators would be required to identify both curriculum challenges, as well as contextual factors, which are creating barriers to learning. Once the nature of the support needs of the learner have been

identified, an Individual Support Plan (ISP) should be drawn up by the educator, in consultation with the Learning Support Educator (LSE), Institution-level Support Team (ILST), other support specialists, the learners' parents and the learners themselves. This document is then implemented and monitored. Once further, formal assessment has been conducted, it is then decided what level of support (low, moderate, high) the learner requires and the nature of the support package that the learner will receive. This is Stage 3 and it is managed and coordinated by the District-based Support Team (DBST). The DBST, in Stage 4, draws up an Action Plan, based on the review of the learner's Diagnostic Profile and verification of the proposals made regarding support (DBE 2008, p.21). The challenges faced by the participants of this study with regard to the SIAS process, are discussed in Chapter Four.

Within the context of this study, the concept of a full-service school provided a specific research site within which to explore differentiated instruction. Furthermore, application of differentiated instruction by Grade 7 Language and Mathematics educators within the context of two, full-service schools is what makes the research topic for this study, unique.

2.2.2 Inclusive Pedagogy

2.2.2.1 *Defining 'inclusion' and 'inclusive pedagogy'*

The contributions of Ainscow, Booth and Dyson (2006) to the development of inclusion as a concept, is acknowledged by Florian and Spratt (2013) in their discussion of inclusive pedagogy. The term, 'inclusion', according to Ainscow et al. (2006), refers to "the processes of increasing the participation of students in, and reducing their exclusion from curricula, cultures and communities of local schools" (Florian & Spratt, 2013, p. 122). In addition, 'inclusion' is maintained to be about valuing the individual, collaborative learning and active engagement in learning and teaching (Black-Hawkins, Florian & Rouse 2007, cited in Florian & Spratt, 2013, p.122). The criteria for inclusive pedagogy are defined as "A pedagogy that... is based on principles of teaching and learning that reject deficit views of difference and deterministic beliefs about ability, but see individual differences as part of the human condition" (Hart 1998, Hart et al. 2004, cited in Florian, 2009, p. 49).

2.2.2.2 *Key Concept: Transformability*

Building on Shulman's Model and the idea of how educators transform knowledge, Florian and Linklater (2010) in their discussion about inclusive pedagogy, explain in relation to the book, "Learning without limits" (Hart, Dixon, Drummond & McIntyre, 2004), that 'transformability' is the key idea to describing the relationship between teaching and learning. 'Transformability' asserts that the capacity for all children to learn can be changed in a positive way, depending on current circumstances (Florian & Linklater, 2010, p. 372).

The original context of the concept of 'transformability', which later influenced the work of Florian and Linklater (2010), was the "Learning Without Limits Project". The aim of this project undertaken in 1999 at the University of Cambridge Faculty of Education, was to

develop a pedagogy that would challenge the notion of fixed ability and to become involved in “further developing and articulating theoretically, approaches to teaching underpinned by a more optimistic view of human educability” (Dixon, Drummond, Hart & McIntyre, 2002, p.8).

‘Transformability’, as explained by Dixon et al. (2002), offers an alternative to a pedagogy based upon the premise that ability is fixed. In contrast to ‘ability’, ‘transformability’ is all about creating the future within the present. Therefore, “with transformability-based teaching, the future is inherently unknowable. Pupils’ academic futures are in the making in the present; they are being created in and by the present” (Dixon et al., 2002, p.9).

Through their reflections and their actions, in the present, educators open up opportunities for all their learners, removing “external limits on learning that might otherwise have constrained pupils’ achievement” (Dixon et al., 2002, p. 9). In this way, both the current patterns in the classroom and the possibilities for the future are transformed. A key component of ‘transformability’ is what Dixon et al. (2002) refers to as “an ethic of everybody”. Inherent within this ethic, is the idea of ‘universal entitlement’, whereby equal importance is placed with regard to learning and the contributions made to the learning environment. Practically, in the classroom, this means that there are no exceptions when educators create approaches to teaching and learning. Everybody engages in the provided activities, everybody contributes to the learning taking place in the classroom and everybody must “feel a sense of safety and belonging” (Dixon et al., 2002, p. 9).

In contrast to the transformability position, is the view that there are limits to the learning ability of each individual child, which in turn will influence his or her capacity to learn. Labelling a child as having a learning disability, it could be argued, has a role to play in ensuring that the learning needs of such children are identified and addressed accurately, particularly with regard to barriers to learning. According to this view, it would be illogical to talk about ‘barriers to learning’ without providing specific labels for these barriers. Labels cannot be avoided without the effect of ignoring the fact that some learners do display ‘atypical characteristics’. Provided that an appropriate label has been assigned, it can be argued that this may, in fact, lead to a reduction in stigma and also result in important information regarding the disability being communicated (Hockenbury, Kauffman & Hallahan, 2000, p.5). The fields of neuropsychology and medicine for example, would not recommend the removal of diagnostic labels. Furthermore, there is support for the “special education” school of thought, where it is argued that “some” learners do require “special pedagogies” in order to progress at school. Examples of such “special pedagogies” are direct instruction, mnemonic instruction and strategy training.

According to Hockenbury et al. (2000, p. 6), instruction for ‘atypical learners’ “often must be different in content or be made more explicit, carefully controlled, carefully monitored, intensive, and sustained than instruction for typical learners.” Authors including Farrel (2010), Hornsby (2012) and Kaufmann and Hallahan (1995), cited in Makoelle (2014, p. 307), would express the view that special schools are more beneficial to children who experience barriers to learning, in terms of these schools being in a better position to provide

specific forms of support. This is because special schools focus on mediating the curriculum and behaviour management in a way that is substantially different in terms of content, rate and level, than do regular schools. Furthermore, special education offers a service (educational and other related services) to the learners who require this throughout their entire school career (Hockenbury et al., 2000, pp. 6-7). Proponents of inclusive education (Ainscow, Booth, Black-Hawkins, Dyson, and Florian) would respond to such claims by arguing that the enhancement of the learning capacity of every learner can be achieved through transformation. As further explained by Artiles, Kozleski, Dorn and Christensen (2006, p. 67), the focus of inclusive education is to transform school cultures in order to increase access and promote acceptance of all learners, to maximize learner participation, as well as increase the achievements of all learners.

2.2.2.3 Key Principles: 'Co-agency, Trust, Everybody'

The core concept of transformability is underpinned by the pedagogical principles of 'co-agency', 'trust' and 'everybody' (Hart et al., 2004, in Florian & Linklater, 2010). Both educators and learners share responsibility for learning, they are co-agents of transformation. Educators have trust in their learners' ability to reflect upon their experiences, in order to create meaning and find relevance and purpose. "Everybody" is about how equity is demonstrated through unity and how educators are ethically responsible for enhancing and transforming the learning capacity of all their learners (Florian & Linklater, 2010, p 372-373).

2.2.2.4 Key Principle: Teaching for all

Inclusive pedagogy is therefore about transformation and adaptation, as the educator responds to the individual differences amongst the learners, in his or her manner of teaching and assessment. The nature of the educator's response is to make the curriculum available to 'all' children instead of differentiating the work for 'some' children, classified as having barriers to learning. While there are misgivings about inclusive pedagogy, one thing is certain and that is, that inclusive pedagogy represents a shift in the way we think about teaching, changing our practice from teaching for 'most' learners and specialising for 'some', to creating learning opportunities available to 'all' children (Florian & Linklater, 2010, p.370).

2.2.3 Research on inclusive pedagogy

Florian, Young and Rouse (2010) were guided by Shulman's (2005) concept of three apprenticeships, when considering a student teacher course, namely the Professional Graduate Diploma in Education (PGDE), with the view to preparing students to become inclusive practitioners (Florian et al., 2010, p. 712). The idea of professional learning being an apprenticeship of the head (knowledge), hand (skill or doing) and heart (attitudes and belief) lent itself favourably to the practical expression of inclusive pedagogy in terms of 'knowing', 'doing' and 'believing'. Therefore, in practice, this is the interaction of three key concepts of inclusive pedagogy; namely "to respect and respond to human differences in ways that include", "to extend what is ordinarily available to all" and "the creation of lessons

and learning opportunities that enable all learners to participate in classroom life” (Florian, Young & Rouse, 2010, p. 712). Shulman’s (2005) concept of three apprenticeships in relation to professional learning served to provide a framework for a project, called the Inclusive Practice Project (IPP).

As discussed earlier, the concept of ‘transformation’ (Hart et al., 2004, cited in Florian and Linklater, 2010), was reiterated in the discussion of the IPP, which aimed to put the above-mentioned principles of inclusion into practice. Transformability was a core concept within the IPP and was defined as follows; “Transformability recognises that all children’s capacity to learn can change as a result of decisions and choices made in the present” (Florian & Spratt, 2013, p. 122). The key principles of inclusive pedagogy were emphasised and how these principles express achievements in learning as a result of collaborative partnerships within the learning community (Florian & Spratt, 2013, p. 122). As discussed earlier, these key principles are ‘co-agency, ‘everybody’ and ‘trust’.

In summary, the objective of the IPP (Florian & Spratt, 2013), was to develop a framework, whereby the inclusive practices of educators could be interrogated. The three themes which formed the foundation of the framework were ‘Understanding Learning’, ‘Social Justice’ and ‘Becoming an Active Professional.’ These themes were in turn based on the following core principles of inclusive pedagogy; ‘Differences must be accounted for as an essential aspect of human development’, ‘Educators must believe that they are qualified/capable of teaching all children’ and ‘The profession must continually develop creative new ways of working with others’. Analytical codes were then devised as a crucial component of the framework to investigate how the above principles of inclusive pedagogy may manifest in teaching practice.

According to Florian and Spratt (2013), when used to interrogate practice, the framework has led to greater understanding about what distinguishes the decisions made by educators who are committed to inclusive pedagogy from other decisions. Researchers in education may find the framework useful as a tool “for exploring inclusive pedagogy in action”. Furthermore, the framework could also serve as a guide with regard to the recognition and analysis of an inclusive pedagogical approach to teaching (Florian & Spratt, 2013, p. 133).

Perhaps the IPP can be understood as a response to the call made by Dixon et al. (2002) for the creation of an ‘alternative improvement agenda’, based upon ‘transformability’, “which offers a different, more readily sustainable and self-regenerating approach, rooted in teachers’ own values, commitments and aspirations” (Dixon et al., 2002, p. 12). This, in turn, has relevance for this particular research, in that the agenda is also about ‘improvement’, specifically with regard to differentiated instruction.

The analytical codes of the framework designed by Florian and Spratt (2013, pp. 127-129) relevant to differentiated instruction are the following; “Differentiation achieved through choice of activity for everyone”, “Rejection of ability grouping as main organisation of working groups”, “Flexible approach-driven by needs of learners rather than ‘coverage’ of material.”

2.2.4 Inclusive education within the South African context

Within the South African context, in their research, Nel, M., Engelbrecht, Nel, N. and Tlale (2014) focused on gaining an understanding of how collaboration with regard to implementation of policy and pedagogical practice within the context of an inclusive education system, is viewed by educators. Citing evidence from policy documents as well as previous research, including that of conducted by Florian and Spratt (2013) discussed earlier, Nel et al. (2014) conclude that collaboration must be emphasised, to facilitate the effective implementation of inclusive education. Furthermore, the researchers concluded that educators “downplay” their ability to participate meaningfully, as role players in the collaboration process (Nel et al., 2014). Both within the South African context and the broader international context, studies have suggested the following obstacles to the implementation of inclusive education; “the concept of inclusion not being clearly understood, policy changes, low self-efficacy of teachers, a lack of training, inadequate resources and poor support structures” (Nel et al., 2014, p. 913). These results corroborate the observations discussed by Makoelle (2014) described in Chapter One.

Within their recommendations, Nel et al. (2014) stress the roles of pre-service and in-service training programmes and “sustainable support systems for school communities” to facilitate effective collaboration and implementation of inclusive practices at schools (Nel et al., 2014). This has relevance for differentiated instruction, as differentiated instruction is dependent on a whole school, collaborative approach, to make learning accessible for all learners.

In her research, Pather (2011) found evidence of inclusion and support for learners with physical disabilities, despite the afore-mentioned barriers to inclusive education. The research was conducted at a rural, mainstream school, not identified to be converted to a full-service school. Despite the context and obstacles of poverty and a lack of basic resources, there was evidence to show that the learners with physical disabilities nevertheless received support from their educators, peers and the wider community, including support from a special school, local businesses and parents. The principal and educators did not allow the challenges they faced to deter them from including the physically disabled learners. In fact, these challenges were used to spur the inclusion process into action, reflecting an understanding of inclusion as being “value-based and about community, rights, compassion, belonging and respect” (Pather, 2011, p. 1114). This evidence was used to support the argument that instead of focusing on the conversion of mainstream schools and special school to full-service schools and resource centres respectively, more research needs to be conducted on reviewing and strengthening inclusive practices already in place, as well as those practices which have the potential to be developed further. Similarly to de Jager (2013), (see Problem Statement), Pather (2011) states the necessity to disseminate and share promising inclusive practices, in order to “alleviate the evident fears and misgivings amongst mainstream educators towards inclusion” (Pather, 2011, p. 1115).

A number of case studies were conducted in South Africa, Botswana and Namibia, as part of a collaborative project with Sweden, entitled “Teaching for inclusion and democracy: a North/South partner-driven cooperation project.” The findings of the case study research were presented at a workshop on the 2nd and 3rd of December 2013, entitled “Learning for

Democracy in an Inclusive Education System: Implications for Educator Development.” In summary, what emerged from the research was how context plays a role with regard to how responses to policy are framed, resisted and limited. Both the medical/deficit discourse and the social rights discourse appear to be operating alongside each other resulting in contradictory manifestations at a practical level in schools. Educator developmental programmes need to address the incorporation of pedagogical methodologies which promote reflection on how assumptions, ideologies and values shape an educator’s understanding of what inclusion is and how the educator constructs the concept of ‘difference’. Other findings presented at the workshop which have significant implications for my research, are now discussed.

The need for educators to develop skills in differentiating the curriculum was highlighted in the presentations given by Dr. Muthukrishna (University of South Africa), Dr. Mukhopadhyay (University of Botswana) and Professor Volmink (MIET, Africa). This was further reiterated in the summary of debates from the four commissions that engaged in small groups during the workshop. The need for competency in differentiation of the curriculum and knowledge about diversity teaching was highlighted. It was suggested that knowledge in diversity teaching be a requirement for registration with the South African Council for Educators (SACE) and that skills in curriculum differentiation be infused into all initial teaching education programmes. A concern raised was the “lack of clarity on how to differentiate, straddle, manage pacing etc. to accommodate diverse needs”, [Department of Basic Education (DBE), 2013, Pretoria, p. 19].

Other barriers with regard to a responsive curriculum identified during the debates, were a lack of teamwork, educators not being suitably qualified in their subject areas, the content of the curriculum being inflexible and educators not planning effectively to create learning experiences and assessment tasks which are authentic and linked to the real life situations experienced by learners. The need for educators to have the theoretical knowledge regarding multilevel and multi-grade teaching and the practical knowledge of relevant strategies was emphasised.

While not the only way to implement inclusive pedagogy, differentiated instruction shows the potential to promote the realisation of the principles of inclusive pedagogy outlined earlier. Differentiated instruction continues the transformation process, in that it is concerned with how educators transform their practice as they engage in responsive teaching. Before fully exploring the nature of differentiated instruction, it is necessary to explain the concept of a full-service school in South Africa, as the context in which differentiated instruction is supposed to be taking place.

2.3. Differentiated Instruction

2.3.1. Introductory metaphor

Tomlinson (2003) uses a metaphor to illustrate the workings of differentiated instruction. Picture in your mind a clockwork, consisting of three cogs which are interrelated and

interdependent, working together to keep the clock functional. The first cog represents the needs of the learner, where he or she seeks affirmation, contribution, power, purpose and challenge. It is important that the educator responds (the second cog) to these needs, as they are the gateway to learning (Tomlinson, 2003, p. 11). The ways in which the educator responds (the second cog) are through invitation, persistence and reflection. Both the curriculum and instruction techniques serve as a medium through which the educator responds to what the learner is seeking. The third cog, called 'Curriculum and Instruction Are the Vehicle' is the driving force behind how differentiated instruction works. Instruction and the curriculum need to be significant, focused, engaging, demanding and scaffolded.

2.3.2 Theoretical Underpinnings

Multi-level teaching involves a strategy for differentiation where a single topic or concept is taught at different levels of complexity within the same classroom (Walton, 2013). It is important that the specific level at which the child is working is suitably challenging for that learner, facilitating what is encompassed under the social constructivist concepts of the 'Zone of Proximal Development' (ZPD) and 'equilibration' from Vygotsky's and Piaget's theories respectively. The relevance of Piaget's concept of 'cognitive conflict' is that during co-operative learning, interaction with their peers will give rise to cognitive conflict. To regain a sense of equilibrium, learners will 'adapt and re-design' their understanding of the concepts. Learning will then take place, as balance between 'accommodation' and 'assimilation' is restored. The implications of Vygotsky's concept of the ZPD, is that through mediation provided on a regular basis by the educator and 'more able' peers, the perimeters of each learner's ZPD is shifted continuously, so keeping the learner constantly within his or her ZPD, to ensure that learning takes place. 'Scaffolding', is also a key theoretical principle, underpinning multi-level teaching. It is based on Jerome Bruner's principle of learners grasping the underlying structures of a concept in order to move from the familiar to the unfamiliar (Engelbrecht, 2013, pp. 39-41).

Learning is understood to be an active process, where learners are agents in constructing their own knowledge (constructivism). Furthermore, learning activities are embedded within a particular socio-cultural context (situated cognition). Multi-level teaching is supported by the 'guided discovery' approach. In opposition to direct instruction, guided discovery is about learners engaging with the concepts through discovery that is highly structured. Educators intentionally and specifically guide the learners through the structural framework of the content, strategies for acquiring the content and how to further apply strategies to reach higher levels of thinking.

Two other theories within which multi-level teaching, including differentiating the curriculum is grounded, are Gardner's 'Theory of Multiple Intelligences' and 'Bloom's Taxonomy' (Engelbrecht, 2013, pp 41-42). Educators can use Bloom's Taxonomy as a framework for differentiating assessment and for designing tasks on a topic that reflect a spectrum of varying levels of difficulty, (DBE 2011, pp.15-18). When planning lessons, educators are encouraged to reflect upon multiple intelligences, so that when organising classroom activities, these activities will provide the learners with a range of opportunities to

employ various learning styles and to demonstrate their individual strengths (DBE 2011, pp.10-11). Having outlined the theoretical underpinnings of multi-level teaching, I now proceed to highlight the philosophical principles of differentiated instruction.

2.3.3 Philosophical principles of differentiated instruction

In the introduction of their literature review with regard to differentiated instruction (DI), Tomlinson et al., (2003), argue that schools are a reflection of the degree of transformation of any particular society. This is a reality and it is inevitable that educators will have to decide how they will respond to the academic diversity represented in their classrooms. Differentiation is a set of principles, a philosophy which views teaching and learning in a particular way. Core principles of this philosophy are that each student should have equal access to excellent learning opportunities as well as that maximising the capacity of each student for learning is a central goal of teaching (Tomlinson & Imbeau, 2010, pp. 34-37). Challenges to this philosophy are that instead of differentiated instruction being viewed as a philosophy, educators may perceive it as a fad, a passing phase and equal access to excellent learning opportunities has not yet become a reality in the South African context.

2.3.4 Definition of Key Concepts

The core of differentiation as a practice, is how the educator modifies content, process, product and affect (relating to the curriculum) as a response to learner readiness, interest and learning profile (these aspects reflect learner diversity).

2.3.4.1 “Content”, “Process”, “Product” and “Affect”

“Content” is defined as what is being taught and the manner in which the material is accessed by learners. The aim of differentiated instruction is to focus not so much on varying the ‘what’, but rather on “varying how students get access to specified content to address students’ needs” (Santangelo & Tomlinson, 2009, p. 308).

“Process” refers to the activities that promote increased levels of understanding in relation to the topic being taught, thereby resulting in the information making sense to the learner.

“Product” is related to how formative assessments “allow students to demonstrate how much they understand and how well they can apply their knowledge and skills” following a lengthy period of instruction (Santangelo & Tomlinson, 2009, p. 309). Differentiated product assignments promote “creative and critical thinking, requiring the analysis and synthesis of multiple sources of information, and allowing for varies modes of expression” (Santangelo & Tomlinson, 2009, p. 309).

The term, “Affect” is about the way in which emotions impact on learning. This is central to the curriculum because it is related to motivation to learn, ability to work with others and the child’s self-concept as a learner (Tomlinson & Imbeau, 2010, p. 16).

2.3.4.2 “Readiness”, “Interests” and “Learning Profile”

“Readiness” is how a student’s prior learning and life’s experiences, attitude, cognitive and metacognitive proficiency shape his or her knowledge, understanding and available skills relating to the section of the curriculum that the educator is intending to introduce. This is linked to differentiation, in that the goal is to provide each student with learning experiences which are appropriately challenging for him/her. In other words, the learner is pushed by the demands of the task, to go a little beyond his/her comfort zone, but there is enough support provided to help bridge the gap between the known and the unknown (Santangelo & Tomlinson, 2009, p. 308).

The reasons why it is important to incorporate ‘Interests’ within differentiated instruction are that this prompts the learners to become engaged in the lesson, they sustain motivation and make connections with the content to what is valuable to them personally.

“Learning profile”, i.e. the way in which a child learns most effectively for himself/herself, encompasses group orientation, cognitive styles, intelligence preferences and learning environment preferences (Santangelo & Tomlinson, 2009, p. 208).

2.4 Practical Application

Within the context of a differentiated classroom, the educator endeavours to discover and become familiar with the readiness, interest and learning profile of each learner. The next step is the educator modifying the content, process and affect, to maximise each learner’s opportunity to attain success and growth in learning.

Examples of strategies that promote content differentiation are providing texts on the same topic, but at varied reading levels and levels of complexity, as well as the educator using audiotapes, visual demonstrations and manipulatives. Ways in which the educator can differentiate process include providing graphic organisers and structured activity guides, as well as varying the pace of work and offering the learners varied levels of support (Santangelo & Tomlinson, 2009, p. 309).

This is ideal practice, but in reality, educators may think that there is only one way in which to differentiate instruction. There may be uncertainty about how to assess readiness and match it with appropriate resources (Logan, 2011). Furthermore, educators may feel that they lack the necessary repertoire of instructional strategies needed to modify what they are teaching. An educator could argue that his or her approach “works” and that there simply is not enough time in an already busy day to plan for differentiated instruction (Heacox, 2002, cited in Hawkins, 2009).

Key elements of differentiated instruction include a flexible approach to teaching and understanding how, based on individual differences, learners will differ in terms of the nature and amount of scaffolding that they will require throughout the learning process. The educator needs to constantly reflect on learner progress and based on this, makes plans which

are specific and constantly evolving, to ensure that each learner makes that connection with the core content of the curriculum (Tomlinson & Imbeau, 2010, p. 14). This is well-illustrated by means of the prescription of tiered assignments by the educator.

Based upon diagnosis of the individual needs of each learner, Heacox (2009) describes tiered assignments as being “the most prescriptive, learner-responsive, and sophisticated strategy for differentiation” (Heacox, 2009, p. 85). Being both purposeful and highly specific, tiered assignments are managed by the educator by means of flexible instructional groups. The practice of setting tiered assignments involves recording of learning goals and creating tiers which have been determined by the student’s learning needs. The educator can tier by readiness, level of challenge and complexity, degree of structure, degree of abstraction, level of support and learning preference (Heacox, 2009, pp. 95- 99).

It could be argued that the key elements of differentiated instruction may be found in other approaches to inclusive pedagogy, such as Response To Intervention (RTI), Universal Design for Learning (UDL), co-operative learning, review and practice, direct instruction and formative assessment and feedback (Heacox 2009; Stanford & Reeves 2009; Mitchell 2008; Jiménez, Graf & Rose 2007). The connection between differentiated instruction and Response to Intervention (RTI) as well as Universal Design for Learning (UDL) is now discussed.

2.5 Connection to RTI and UDL

Tomlinson and Imbeau (2010, p. 39) explain that the philosophy which shapes an educator’s actions and the educator’s level of competency with regard to how to set and follow a particular course of action, will determine how that educator responds to the cognitive and affective needs of his or her learners. This concept of ‘responsiveness’ in differentiated instruction is fundamental to Response to Intervention (RTI). RTI can be defined as “a teaching and learning process using research-based instructional practices that reflect learners’ needs, monitor student learning process, and modify and adjust instruction as necessary to ensure continued growth” (Heacox, 2009, p. 153). “The critical elements of differentiation serve as the very foundation of Response to Intervention”, while “RTI has the potential to strengthen and deepen the practice of differentiation in the classroom” (Heacox, 2009, p. 153). Both RTI and differentiated instruction share similar foundational beliefs and of significance here is that educators can use RTI’s reflective process, as they determine when and how to differentiate instruction. RTI’s Reflective Process involves identification of a learner’s academic difficulties, determining the learner’s strengths, interests and talents, reviewing data on the progress made by the learner and then designing specific interventions to increase the opportunity for that child to experience successful learning (Heacox, 2009, pp. 154-155).

Originating from concerns about how to create accessibility in architecture, within an educational context, Universal Design For Learning (UDL) can be defined as “ a theoretical framework that guides the development of curricula that meet the needs of all students” (van

Garderen & Whittaker, 2006, p. 13). Providing learners with a wide variety of options with regard to curricular materials, in order to access information and support learning, is a common, overlapping feature of both UDL and differentiated instruction. UDL emphasises planning to address varying readiness, needs, interests and learning preferences from the start. As is explained by van Garderen and Whittaker (2006, p.13), “Teachers are encouraged to design materials and activities that can meet the needs of all learners initially, rather than make modifications after the fact.” Instead of modifying lesson plans later, the strategies utilised in differentiated instruction are incorporated at the very beginning, when educators plan to offer their learners choice with regard to content, process and product. It is when an educator uses strategies for differentiation, that he or she is actually also utilising Universal Design (Heacox, 2009, pp. 155-156). An additional, relevant contribution of UDL is the emphasis placed on digital technology and multiple media formats.

The significance of the article by van Garderen and Whitaker (2006) is that the key principles of differentiated instruction, UDL and multicultural education are clearly outlined and relevant examples provided. Furthermore, the authors combined the key elements of all three approaches to inclusive education to devise a lesson plan template. I have used this template as a guide, upon which to base the criteria for document analysis for my research.

2.6 Research on educator expertise in differentiated instruction

During the course of their research, including more than 35 hours of interviewing and observing ‘master’ educators, Carolan and Guinn (2007) identified four common characteristics, shared by the ‘expert’ educators, relating to “how successful differentiators overcome common obstacles and seamlessly weave differentiation strategies into their practice while staying true to their personal style” (Carolan & Guinn, 2007, p. 44).

The first characteristic was “offering personalized scaffolding.” in an inclusive classroom. Carolan and Guinn (2007, p. 45) observed that their participants actually incorporated sufficient one-on-one time with their learners into the class structure. The second common characteristic observed by Carolan and Guinn (2007, p. 45), was that the ‘master’ educators ‘used flexible means to reach defined ends.’ This means that the educators would strike a balance between the structure of their lessons and offering the learners a choice, with regard to learning activities. This was achieved when the educators “designed and facilitated multiple paths” that the learners could take to reach the same, defined learning goal. In this way, different thinking patterns were accommodated and the learners experienced personal ownership of achieving the learning goals.

The third common characteristic shared by the ‘expert’ educators in Carolan and Guinn’s (2007, p. 46) study, entails an educator being familiar with the ‘landscape’ of the subject and having the ability to ‘navigate’ this landscape in multiple ways. Therefore, the educator will have an understanding of the way in which their learners come to know the subject, what pre-conceptions the learners may bring to the lessons and the potential stumbling blocks that the learners may encounter. Having subject-area expertise would assist the educator in “how to

match content with instructional method in a way that connects to different learning styles and levels” (Carolan & Guinn, 2007, p. 46). The participants in Carolan and Guinn’s (2007, p. 46) study created caring classrooms, the fourth common characteristic, by means of “turning differences into assets, modelling respect for diversity and encouraging students to acknowledge and value the unique attributes of their peers.”

In Chapter Five, the classroom observations made during the course of this study are discussed in relation to the above four characteristics of educators who are ‘masters’ of differentiated instruction, as identified by Carolan and Guinn (2007) in their study. The aim of the discussion is to reflect upon how the participants in this study, within a South African, full-service school, demonstrated expertise in differentiated instruction and where this expertise still requires further development.

2.7 Challenges to Differentiated Instruction

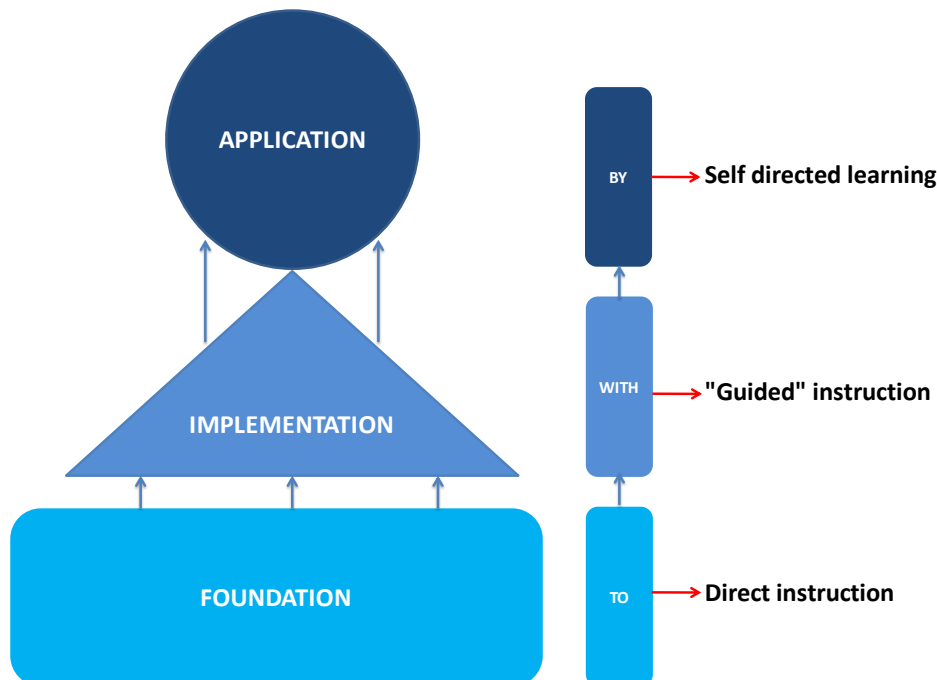
Despite all the practical guidelines provided by Tomlinson (2003, 2006, 2010), there are however, a number of challenges to the successful implementation of differentiated instruction. The curriculum is standards-driven and annual standardised assessments are conducted. Educators may question the feasibility of implementing differentiated instruction within this context, expressing the concern that learners will not be ready for standardised tests. Managing large classes while conducting differentiated activities simultaneously could pose a problem and educators may question whether grading is conducted in a manner that is fair, considering that learners are working at various levels of difficulty (Heacox, 2002, cited in Hawkins, 2009). Furthermore, despite being knowledgeable about it, educators may seldom implement differentiated instruction and when they do, it may be reactive and not planned and substantial (Tomlinson, 2003, cited in Hawkins, 2009).

Another concern is that differentiation could be interpreted as being about individualisation, focusing on the well-being of the individual, at the expense of teaching children to become good citizens, based on developing a keen sense of culture and social justice (Raveaud, 2005). This very issue is discussed by Walton (2013) within the context of a “dilemma of difference”. On the one hand, differentiation is about responding to the individual needs of learners, i.e. individually relevant education. On the other hand, inclusive education has to pursue social justice and equality, focusing on a democratic, rigorous, common educational experience for all learners. If there is too much focus on the commonalities, some learners will not receive the individual support that they need. However if the educator spends too much time attending to individual needs, it could place too much emphasis on the differences between the learners, possibly resulting in fragmentation and exclusion. Within the context of a differentiated classroom, the educator will hold both sides of this dilemma in tension, addressing the importance of responding to individual needs and simultaneously focusing on unity for social justice and equality, at the appropriate times.

2.8 Models of Differentiated Instruction

The review of the literature continues to expand on the work of Carol Ann Tomlinson, by means of giving a brief overview of relevant models with regard to the implementation of differentiated instruction. Furthermore, the literature review introduces and discusses three studies on differentiated instruction conducted in South Africa.

TO-WITH-BY: A three-tiered model for differentiated instruction (based on the model by Campbell 2009, pp 7 – 10)



Campbell (2009, p. 9) argues that the 'To-With-By Model provides a useful framework for differentiation that educators can use to plan their lessons. This model encourages educators to consciously, deliberately apply differentiated instruction. Due to the fact that this is not a complex model, it can "be applied by any educator, in any subject area, at any grade level." The 'To-With-By' Model is based on the content of the curriculum, directed by the educator and is structured in such a way that resources, instructional strategies and assessments can be differentiated to meet the individual needs of the learners. It is student centred "and provides students with multiple entry points into the content areas and personal choices based on their individual strengths or learning profiles" (Campbell, 2009, p. 9).

The 'To' level of this tiered model serves as the foundation and is concerned with the educator introducing basic skills and concepts. Therefore, the educator controls this level of differentiated instruction, where teaching will be lecture-based and involve direct instruction strategies, including visual aids, hand-on activities, mnemonics, graphic organizers, questioning strategies and reflective tasks (Campbell, 2009, p. 8).

The second tier focuses on guided instruction for the implementation of the skills introduced in the first tier. Differentiated instruction now involves the classroom being organised into

learning centres, where small, flexible groups of learners are rotated, as the children practice the same skills in differentiated ways (Campbell, 2009, p.8) Rotating groups and multi-level teaching ensure that there are multiple approaches to the same concepts and skills.

The third tier of the 'To-With-By' Model involves application of skills independently by the learners themselves. At this level, learning is self-directed where children complete projects independently, choosing the modalities that they would prefer to use to demonstrate understanding (Campbell, 2009, pp. 8-9).

The REACH Model provides a blueprint for educators, which they can use to “chart a course of action for developing and refining the use of differentiated instruction” (Rock, Gregg, Ellis & Gable, 2008, p.34). All five quality indicators (the teacher variable, the content variable, the learner variable, the instruction variable and the assessment variable) are based on effective practices proven by research. The five steps of the model guide the teacher through the process of reflection, evaluation of the curriculum, analysis of the learners, crafting lessons that are research-based and using homing in on assessment data to further inform teaching practice. Instead of feeling overwhelmed by what they may perceive to be a “mandate” from the Department of Education, educators can use REACH to set attainable goals, so gaining confidence in their ability and level of expertise in differentiated instruction (Rock et al., 2008).

Another model in the literature on differentiated instruction is the Model of Dynamic Differentiation (MoDD), presented by Smith (2008). Positive aspects of this model are that it is grounded in the concept of classroom ecology and therefore looks at differentiation within the context of an ecological framework. Furthermore, the model allows for differentiated instruction to be extended beyond the classroom, to the school community, including parents, care-givers and guardians. The dynamic nature of differentiated instruction plays a key role in this model and is reflected in the way in which each of the five concentric rings can be “telescoped or collapsed in on others, so facets within each ring touch, overlap and concertina in and out as consideration of the individual student’s needs are addressed or different learning opportunities, ecologies or instructions are provided” (Smith, 2008, p. 10).

These models are relevant in that they provide educators with practical ideas regarding the implementation of differentiated instruction in the regular classroom. In this way, differentiated instruction will hopefully move beyond being a philosophy, to a practical reality in South African classrooms. The REACH Model provided some guidelines upon which to base the criteria for the observation checklist, relevant to this particular study, while the Model of Dynamic Differentiation (MoDD) played a significant role in the research conducted by Nel, Kempen and Ruscheinski (2011), to be discussed next.

2.9 Research on differentiated instruction and multi-level teaching in South Africa

It was shown in a study conducted by Nel, Kempen and Ruscheinski (2011), that the Model of Dynamic Differentiation (MoDD) can be used successfully as a framework for

investigating how differentiated instruction can be applied when modifying the curriculum. The differentiated instructional practices which these researchers discovered to be effective were: scaffolding, splitting content into smaller steps, repetition, providing immediate feedback, practical and hands-on activities, providing visual stimulation, group activities, vocabulary development, visual literacy activities, as well as adapting the social and physical environment, e.g. enlarging worksheets and shifting furniture to accommodate wheelchairs (Nel et al., 2011, p. 206). This study also proved the importance of collaboration, when using differentiated techniques to modify the curriculum. Limitations of this research were that it did not extend to the fifth ring of the MoDD framework, to the wider, school community, i.e. parents, care-givers and that the curriculum which was modified, was a burn prevention programme, not the standard curriculum.

This research project was discussed by Professor Nel (2014) in her inaugural lecture entitled, “Inclusive Education: Beyond the Chalkboard or Just another Brick in the Wall?” In her lecture, Professor Nel compares obstacles to inclusive education as metaphorical bricks, building a wall, which in turn results in a feeling of isolation experienced by learners. Academics involved in the training of educators and educators themselves are challenged to be agents of change, bringing about transformation, so that inclusive education “goes beyond the chalkboard”, where it does not just become “another brick in the wall”, as in the lyrics of the Pink Floyd song (Nel, 2014, p. 42).

Confirming the importance of differentiated instruction, Professor Nel stated, “It was noticeable that when making use of differentiating teaching methods, that support materials; assessment procedures, learner interests, learning styles and strengths (assets) need to be taken into consideration to ensure that they have grasped all the concepts” (Nel, 2014, p. 40). Not only were the learners able to show that they had developed an understanding of the ten core messages of the “Learn Not To Burn” (LNTB) curriculum, but they could apply these messages as well. One of the outcomes of the research project has been the inclusion of the adapted LNTB curriculum in the Birth to Four Curriculum of the Early Childhood Education Institute of the Gauteng Department of Education (Nel, 2014, p. 40).

When discussing the roles of educators in inclusive education, as compared across various countries, Professor Nel (2014) reiterated the need of educators to be able to implement differentiation, multilevel teaching, Universal Design for Learning (UDL) and evidence-based pedagogy. It was argued that educators also need to develop their research skills, so that they know “how to engage in research on interventions, modifications, accommodations and adaptations that can or should be made to the curriculum and how to implement multilevel teaching, particularly in the South African context (Nel, 2014, p.4). Next, will be a discussion regarding research conducted by de Jager (2013), followed by exploring the research conducted by Walton, Nel, Muller & Lebeloane (2014) on professional development in multilevel teaching in a full-service school.

Research conducted by de Jager (2013), focused on identification of the challenges that high school educators in South Africa face when they implement differentiated instruction learning activities. The findings of this research identified the following challenges with

regard to the implementation of differentiated instruction learning activities: inadequate educational support with regard to lesson plans, learning strategies and required resources for differentiated instruction to meet learning needs ; insufficient support structures in terms of speech therapists, occupational therapists, psychologists and classroom assistants; lack of parental involvement and negative perceptions about inclusive education, where it is viewed as being burdensome, demanding upon funding and resources and not “always seen as essential in the classroom” (de Jager, 2013, p. 42). A problematic issue which arose during the research was the “gifted” and “average” learners were not sufficiently engaged in the lessons, so becoming noisy, while the “slow” learners did not always cope with the content of the differentiated tasks and their work pace was slower. Two positive aspects that were reported were the fact that the visual aids created for the children with barriers to learning were useful for the rest of the learners in the class and the learner educators reported a sense of “work satisfaction” because all learners had been afforded the opportunity to achieve the outcomes of the lessons. Recommendations made were that specialists in differentiated teaching, educators, parents, neighbouring schools and members of the community should work together to “share practical, effective, differentiation strategies” to create a “knowledge pool from all over South Africa” (de Jager, 2013, p. 91). Furthermore, the way in which the curriculum is adapted, should be “practice oriented and based on ‘best practices’” (de Jager, 2013, p. 91).

In their article, Walton, Nel, Muller and Lebeloane (2014) concur with de Jager’s (2013) conclusion that “the majority of South African teachers were ‘... not trained to create effective differentiated teaching activities’” (Walton et al., 2014, p. 322). Educators from a full-service school realised this, when they attended a course at the special school, where the curriculum adaptations to the “Learn Not To Burn” programme (Nel et al., 2011) were implemented. As a response to the request made by the educators of the full-service school, a two day workshop on multilevel teaching was conducted at the school.

Eight months after the workshop, findings arising from the focus groups that were held, indicated that the educators felt dissatisfied with regard to the practical application dimension of the course. They felt that a greater number of practical examples or demonstrations should have been provided, in order to become more competent at implementing differentiation and multilevel teaching. In their view, explicit guidance from full-time personnel based at the school was required, in order to master every aspect of multilevel teaching. While there was evidence of the implementation of some inclusive strategies, this was limited as a result of a number of contextual and systemic constraints (Walton et al., 2014, p. 328). At the time during which the research was conducted, transition to a full-service school had been fairly recent. This meant having to teach and include learners with barriers to learning in classes with large numbers of learners. The researchers argued that how the educators viewed the differentiation strategies taught at the workshop was significantly influenced by their perceptions of the class size being ‘unmanageable’. Furthermore, it also seemed that the educators could not envisage themselves taking the content of the workshop on board because there were no classroom assistants and site-based personnel at the school at the time, to provide support (Walton et al., 2014, p. 330).

The above studies, as well as the studies conducted by Nel, Kempen and Ruscheinski (2011) and de Jager (2013), constitute the seminal literature which is discussed in relation to the findings of this research study in Chapter Five.

CHAPTER THREE: RESEARCH DESIGN

The following chapter provides information about the research methods that were used to carry out the research.

3.1 Introduction

A detailed description of the research design follows, outlining who the participants were, how they were selected, where the research took place and the ways in which the data was collected and analysed.

3.2 Research Methodology

3.2.1 Qualitative Approach

A qualitative research methodology was best suited to address the research question. This is for two reasons. Firstly, when the literature does not yield much information about the research topic, as is the case with the application of differentiated instruction in South Africa, where it is necessary for the researcher to expand his or her knowledge through exploration, it would be more appropriate to use a qualitative research design, as described by McMillan and Schumacher (2010, p. 23). Secondly, a qualitative research design lends itself towards the study of a “central phenomenon”, which is in fact a key concept, idea or process. My study was based on a central phenomenon, “differentiated instruction”, which therefore justifies the appropriateness of the selection of a qualitative research design (Creswell, 2008, p. 53). Due to the fact that the process of answering my research questions involved describing and analysing differentiated instruction as a key concept, it is argued that the intended research methodology to be employed can be accurately described as “Analytical Research” (McMillan & Schumacher, 2010, p. 24-25).

Qualitative inquiry is about interpretation. This is a key feature/characteristic of qualitative research. Interpretation can be thought of as “progressive focusing” (Parlett & Hamilton, 1976, cited in Stake, 1995, p. 9). During data gathering, the role of the qualitative researcher is to interpret the data in a rigorous manner and to ensure that this process is maintained. Deriving ‘assertions’ or ‘conclusions’ is part of the process of interpretation. The qualitative researcher will not only present his or her interpretations, but those of other researchers as well, acknowledging the resources of these alternative interpretations (Stake, 1995, pp. 8-9). In addition, a qualitative study can provide a detailed description of a particular practice and can serve to “increase participants’ own understanding of a practice to improve that practice” (McMillan & Schumacher, 2010, p. 325).

3.2.2 Case Study

Due to the fact that differentiated instruction is something that is particular, is functional within a system and not out of the ordinary, which can be described in context and interpreted in an objective manner, it appears to meet the criteria for defining a case (Stake, 1994). I have no interest in building a theory or researching abstract constructs. Instead, I have an intrinsic interest in differentiated instruction and my goal is to develop a better understanding of differentiated instruction as a case or “unit of analysis”. Therefore, a single, intrinsic case study would be the most appropriate choice of research method for this particular study.

This is further corroborated by Black-Hawkins (2010, p. 23), who states that “the use of a case study approach in the field of inclusive education not only supports the notion of ‘the school’ as being important (both as a locus for the work and the level of analysis) but also allows the kind of detailed contextual exploration of schools”. Drawing upon Stake (2006), Black-Hawkins (2010, p.34), explains the “importance of describing the overall phenomenon” when conducting a case study. The goal of case study is to understand the complexities that exist within the phenomenon, by means of gaining an understanding of how the phenomenon works under a variety of local conditions.

The features of a case study relevant to educational research, are summarised by Smith (1974, p.7) in Walker (1980). Firstly, case studies have a ‘quality of undeniability’, where the rationale and the support for the issues addressed in the case study accumulates and as a result, cannot be ignored. Case studies can be described as being vivid, concrete and paying attention to detail, as well as being ‘holistic’, as they attend to all the elements involved in the study. Other features of case studies are that they can be individualised and demonstrates how a process unfolds and changes over time (Walker, 1980, pp. 41-42).

According to Baxter and Jack (2008, p. 245), a case is a unit of analysis and one of the key questions which the researcher can pose is “Do I want to analyse a process?” My research questions are “How” questions and using a case study approach is suitable for answering such questions (Baxter & Jack, 2008, p. 245). In using a single, intrinsic case study approach, the aim would be to represent differentiated instruction as a “bounded system”, as it functions within a full-service school, where as the researcher I would be drawn “toward understanding of what is important about the case within its own world, not so much the world of researchers and theorists, but developing issues, contexts and interpretations” (Stake, 1994, p. 242). I would concentrate on what is ‘particular’ or unique about the case and not be focused on whether or not my findings can be generalised. Emphasis would be placed on understanding the case itself. This is referred to as ‘particularization’ (Stake, 1995, p.8).

In conclusion, a case study approach is about both process and product. Using a single, intrinsic case study as a research design, allows me to engage in the process of learning about differentiated instruction as my selected case. The end product should be an objective, informative and useful contribution to the existing pool of knowledge regarding application of differentiated instruction within the South African context.

3.3 Research Site

The search for an appropriate research site began with obtaining a list of the full-service schools in Gauteng, which are within reasonable travelling distance. According to the definition provided in *Guidelines for Full-service Schools* (DBE 2010a, p.1), “In building capacity of these schools, special emphasis will be placed on inclusive principles, which include flexibility in teaching and learning and the provision of education support to learners and educators.” High expectations are made of full-service schools as they are regarded as “the front runners for inclusive education in the country” (Walton, Nel, Muller & Lebeloane, 2014, p. 320).

At a full-service school, it would be expected that the educators would have had training in differentiated instruction strategies and that differentiation would be a regular part of classroom routine and practice.

Research for this study was conducted at two, full-service schools, over a three week period during August. Transition to becoming a Full-service School has been relatively recent for both these schools and the learners are primarily black and coloured children. When visitors enter the reception area at School A, you see an Annual National Assessment (ANA) countdown chart and many trophies are displayed in a beautiful glass display cabinet. Behind the cabinet is a well-maintained garden, as well as a fishpond, creating a calm, cool atmosphere. To the right of the garden, is a whiteboard, which serves as a notice board. There is an inspirational message and a breakdown of diary events for the week. Spatially, the board is well-organised and because the weekly calendar is written up so neatly, educators can easily refer to the board and see at a glance, what the week’s planned activities are. Relevant newspaper articles are displayed on the wall to the left of the notice board, as well as tiles which were painted by the learners. The tiles reflect moral values and lessons, including: ‘knowledge is power, be happy, respect everyone, be patient.’ At School B, there are ramps for wheelchair accessibility directly outside the administration block as well the learners’ toilets. Although the ramps are there, I did not observe any learners in Grade 7, use wheelchairs and the ramps, to gain access to mobility around the school. I also did not notice any learners using assistive devices, such as hearing aids, audio processing devices, voice recorders and assistive computer technology. The learners were using neither laptops, nor tablets, nor iPads and there are no interactive smartboards in the classrooms. At both schools, there are more than forty learners per class. There are 1 800 learners enrolled at School A and 1 100 learners enrolled at School B.

3.4 Ethical Considerations

Ethics in research needs to be understood within the context of respect for democracy, respect for truth and respect for persons. Within the context of a democratic society, the researcher enjoys the freedom to ‘investigate and ask questions’, to ‘give and receive information’ the freedom ‘to express and also provide critical observations of the ideas of others’ and the

freedom ‘to publish research findings’ (Bassey, 1999). However, with these freedoms, comes the responsibility of respect for truth and respect for persons. When collecting and analysing data, as well as reporting research findings, researchers are ethically bound to be truthful at all times. The initial ownership of the data by the research participants should be recognised by the researcher. Furthermore, the researcher should “respect them as fellow human beings who are entitled to dignity and privacy” (Bassey, 1999, pp. 73-74).

Permission to conduct research was first obtained from the Gauteng Department of Education and second, from the Ethics Committee of Wits School of Education. The Ethics Committee played an important role in ensuring that all possible sources of harm had been considered and that the research design itself was of an acceptable standard (Bell, 2005, p. 46). Following this, application to six full-service Schools was made, regarding obtaining consent from the principal, the Grade 7 Mathematics and English First Additional Language educators, the learners and their parents. The letters which were submitted addressed the key issues of informed consent, where the potential participants were assured of their right to choose not to participate and to withdraw at any time from the research, as well as confidentiality, anonymity and the right to no harm.

Every effort was made to ensure the provision of a comfortable environment, with as low a level of inconvenience for the participants as possible. Taking notes and recording on the observation checklist was to cease immediately, should the educator engage with a learner whose parents did not grant permission for him or her to be observed. It was my aim to ensure that the participants find the research to be an efficient experience. No data was shared amongst the participants and there were no focus groups for feedback. All preliminary and post-observation interviews were conducted in private, on a one-on-one basis, thereby ensuring a high level of confidentiality.

With regard to anonymity, neither the names of the participants nor the names of the full-service schools are disclosed. All data pertaining to the research is stored manually in a file, as well as electronically. A back-up copy of the electronic files and the research report is stored on a password-protected, portable hard drive. It is possible that the data and research results may be used with the view to a doctorate degree in the future. After five years all electronic data will be deleted and all hard copies will be destroyed.

3.5 Sampling

Following the obtainment of permission to conduct research by the Gauteng Department of Education (GDE) and clearance from the Ethics Committee at Wits School of Education, the principals of six, full-service schools in Gauteng were approached. Brief meetings were held, during which the purpose of the research was explained and the principal of each school was given a permission letter to stamp. Only three principals stamped the permission letter, allowing me to approach the Grade 7 educators.

A meeting was then held at each of the three full-service schools, the purpose of which was to inform the Grade 7 Mathematics and English First Additional Language educators about the aims of the research study and to present them with the educator permission letter to sign. The outcome of the meetings was that the Grade 7 educators at one school did not grant their permission to conduct research. Consent, was however given, by the Grade 7 Mathematics and English educators at the other two full-service schools to complete the questionnaire (Appendix 1), as well as to conduct interviews and observe lessons.

The questionnaire was originally supposed to serve as a screening tool. However, as the events of the research unfolded, the questionnaire actually provided a baseline assessment of the participants' knowledge and experience of differentiated instruction, so setting the stage for the preliminary interviews. As Bell (2005, p. 137) explains, a questionnaire can be used as an introduction to a follow-up or pilot interview, "where it is important to know which aspects of the topic are of particular importance to the respondents." While the respondents were required to write their names on the questionnaire, they were reassured that their responses would be viewed only by the researcher.

3.5.1 Sample Criteria

The initial research design entailed the selection of three potential research sites, after which purposeful sampling was supposed to take place, in order to select the participants from one of the three full-service schools. Initially, the role of the preliminary interviews (Appendix 2) was to discern the level of understanding of differentiated instruction on the part of the Grade 7 Mathematics and English First Additional Language educators and to obtain a sense of the extent to which these educators in practice apply differentiated strategies in the classroom. This type of sampling can be described as 'concept/theory based', whereby the researcher selects "information-rich persons or situations known to experience the concept or be attempting to implement the concept/theory" (McMillan & Schumacher, 2010, p. 327).

3.5.2 Selection of participants

The participants, namely the Grade 7 Mathematics and English educators, were ostensibly to be selected based upon the extent to which they meet the criteria outlined in the preliminary interviews, regarding understanding of and practical experience in differentiated instruction. The interviews were one hour long and were audiotaped. They were "guided" or "focused" interviews, where a framework of selected topics guides the interview, during which the respondent still has a considerable 'degree of latitude', where he or she has the freedom to give his or her views (Bell, 2005, p.161). Advantages of interviews are that they encourage the researcher to "follow up ideas, probe responses, and investigate motives and feelings" (Bell, 2005, p. 157). Recording the interviews was useful, because it allowed the researcher to summarise, encode and note comments made by the participants which were of particular interest, without having to write all of this down during the actual interview (Bell, 2005, p. 164). Reassurance, with regard to confidentiality and anonymity was provided at the beginning of the interview. The transcripts were viewed by the researcher, her supervisor and

the participants only and will be shredded five years after completion of the research. Audio recordings will be deleted.

3.5.3 Sample Size

According to the original research design, the final research site was supposed to be selected following the outcome of the preliminary interviews. At that particular full-service school, I initially proposed to identify two, Grade 7 Mathematics and two, Grade 7 English Language educators as participants for the research. The actual outcome of the research process was that the research was conducted at two sites, Full- service School A and full-service School B. There were four (two Grade 7 Mathematics educators and two Grade 7 English First Additional Language educators) participants from School A and two participants (one Grade 7 Mathematics educator and one English educator) from School B. Therefore, the final sample size was six participants. The following table presents comparative data on the participants.

Table 1: Comparative data on the participants.

	Subject	Age Range	Experience
Participant 1	Maths	40 – 50 years	Overall, 27 years. 20 years Grade 7 Maths
Participant 2	English	25 – 35 years	2 years teaching Grade 7 English
Participant 3	English	50 – 60 years	28 years teaching English
Participant 4	Maths	45 – 50 years	1 st year teaching Grade 7 Maths with more than 5 years' experience teaching Grade 5 Maths
Participant 5	Maths	45 – 50 years	1 st year teaching Grade 7 Maths at full-service school with more than 15 years' experience.
Participant 6	English	50 – 60 years	1 st year teaching Grade 7 English with 29 years Biology/Science teaching experience.

Each participant completed a questionnaire, participated in a pre-and post-observation interview and consented to lesson observations. Consent to observe and audio record during the lessons was also obtained from both the Grade 7 learners and their parents.

3.6 Data Collection Instruments

Within the context of action research, there are three approaches which researchers can use when collecting data, which lend themselves positively to my intended research. These three approaches are 'experiencing', 'enquiring' and 'examining'. 'Experiencing' as an approach entails the use of observation, where the researcher seeks to gain an understanding of "the variables, participants and other phenomena" (McMillan & Schumacher, 2010, p. 448). During 'enquiring' the researcher could use interviews, questionnaires and tests to obtain new data, while 'examining' involves document and artefact reviews of data that have already been collected (McMillan & Schumacher, 2010, p. 448).

With regard to my position as the researcher in relation to the participants, the balance of power favoured the educators. Unlike collaborative action research and participatory action research, I did not participate in any teaching at all. The educators themselves were at the centre of the action, while I remained a sole, impartial observer.

The following description of the data collection tools describes the qualitative methods that were used, as well as the above action research approaches, namely “experiencing, enquiring and examining.”

3.6.1 Initial Questionnaire

The questionnaire (Appendix, 1) is comprised of fifteen statements regarding differentiated instruction to which the educators responded, by selecting from a scale, which ranges from ‘never’; ‘seldom’; ‘sometimes’; ‘often’; ‘always’. This questionnaire served as a baseline assessment to elicit the six participants’ understanding of differentiated instruction and how they purport to implement differentiated instruction in practice. In the following chapter, the outcome of the questionnaire, which in turn serves as the initial testimony of the participants, is discussed in relation to what was observed in practice.

3.6.2 Preliminary Interviews

The preliminary interview (Appendix 2) consists of fourteen, open-ended questions. These questions aimed to elicit qualitative data, based on the prior knowledge, practical experience and personal opinions of the Grade 7 educators, with regard to differentiated instruction. Therefore, the preliminary interviews provided the participants with the opportunity to expand upon their original accounts provided by their responses to the questionnaire.

3.6.3 Classroom Observation

Classroom observation took place over the first two weeks in August during the third term. It was important to guard against preconceived ideas and bias as potential problems and to also place what was observed within its organisational and/or curricular context (Bell, 2005). Prior to the commencement of classroom observations, letters requesting permission for the researcher to observe and audio record in the classroom, from both the Grade 7 learners and their parents were delivered to the schools and distributed to the learners. The signed consent forms were then collected and stored. The terms relating to anonymity and confidentiality, stated in the letter to the learners and their parents, were upheld. A schedule to observe lessons was arranged with the educators beforehand and there were no interruptions with regard to the delivery of the lessons, curriculum coverage and preparation for the ANA (Annual National Assessment) exams whatsoever. Apart from Participant Two (total lessons observed was two, one hour English lessons) each participant was observed for a total of at least three, one hour lessons. Qualitative, field notes were written during lesson observations, to supplement the checklist, discussed below.

3.6.3.1 Classroom Observation Checklist

The checklist (Appendix 3) is comprised of eighteen behaviour indices and is adapted from the questionnaire in the article by de Jager (2013) and the REACH Inventory, originally devised by Rock, Gregg, Ellis and Gable (2008). Examples of the behaviour indices included are: scaffolding, multilevel teaching, adjusting pacing, providing visual supports and flexible grouping. Directly upon each lesson observation, the researcher would record which behaviours were observed and make comments. The recordings marked on the observation checklist and the handwritten field notes were then typed and stored electronically as summaries of each lesson observed. In total, the field notes and checklist results of fifteen lessons were summarised. These summaries, in turn, formed the basis for the discussion during the post-observation interviews.

Upon completion of the classroom observations, post-observation interviews were conducted. Feedback was given by the participants; therefore the interview was not about an ‘expert’ researcher giving a critical evaluation. The aim was to consult with the participants with regard to accurately describing and reflecting on the action that was observed, in an objective, unbiased manner.

3.6.4 Post-Observation Interview

The post-observation interviews (Appendix 4) were audiotaped and were about thirty to forty-five minutes in duration. The interview consists of ten questions which served as points of discussion within the context of descriptive feedback relevant to the research sub-questions, stated in Chapter One. Therefore, the participants were encouraged to reflect upon their lessons within the context of how differentiated instruction was incorporated into planning the lessons and the differentiation strategies employed to respond to the needs of the learners that were identified during the lesson. Furthermore, the six participants were required to reflect upon how they differentiated assessment items, particularly with regard to class tests written by the Grade 7 learners, during the school observation period. At both full-service schools, at the time when school observation was taking place, the participants and their learners were also preparing for the Grade 7 English and Mathematics ANA exams. Hence, questions relating to the extent of differentiation observed in the ANA revision books for Grade 7 Mathematics and English were also discussed during the post-observation interviews.

3.6.5 Document Analysis

3.6.5.1 Lesson Plans

Both scepticism and empathy were adopted, as internal criticism, with the goal to “gradually gain more insight and detailed knowledge, so leading to a greater appreciation of the worth of the evidence from the documents” (Bell, 2005, p. 133). The data gleaned from the interviews and classroom observations were supplemented by an analysis of the lesson plans submitted by the Grade 7 Mathematics and English First Additional Language educators (Appendix

5A). Seven criteria, based on the “Unit Planner Template” in van Garderen and Whittaker (2006, p. 17), were used to analyse the lesson plans. During the course of this research, the six participants, as educators teaching at full-service schools, were expected to base their lessons on the plans provided by the Gauteng Department of Education. The Gauteng Primary Language and Mathematics Strategy (GPLMS) was implemented as an educator support intervention plan, in that province, in order to assist educators in full-service schools and poorly-performing schools, to bridge the gap between instructional practices and the demands of implementing the new curriculum (CAPS). As described by de Clercq (2014, p. 311) the GPLMS lesson plans are “standardised daily lesson plans with time frames for structured tasks and activities based on a weekly routine.” The aim of these lesson plans is to assist struggling educators with pacing their lessons for curriculum coverage and to change their teaching practices. As explained by de Clercq (2014, p. 312), “The idea is not to impart educators explicitly with greater knowledge of their subject matter or pedagogical content knowledge.” Furthermore, the GPLMS lesson plans can be utilised by coaches as both a tool to support educators, as well as a means of monitoring curriculum coverage (de Clercq, 2014).

3.6.5.2 Assessment Tasks

Application of differentiated instruction to assessment is a component of the research. Therefore, the six participants of the study were required to submit a copy of any tests and assignments, which the learners completed during the school observation period. The criteria (Appendix 5B) used when analysing the assessment and assignment tasks, are based on “Guidelines for Responding to Learner Diversity in the Classroom – Curriculum Assessment Policy” (DBE, 2011). Key aspects included in the twelve criteria are a variety of resources, using assistive technology, multiple intelligences, grade level curriculum standards, multiple entry points, four modes of presentation, concessions and items reflecting varying levels of difficulty (Bloom’s Taxonomy). It must be noted that the taxonomy referred to in the policy document (DBE, 2011, pp. 16-18) was a version of Bloom’s Taxonomy adapted from Dalton and Smith (1986) and not the revised edition by Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, Raths & Wittrock (2001). The fact that the criteria for evaluating the assessment tasks were based on the policy document, meant that the researcher used the categories, “Knowledge, Comprehension, Application, Analysis, Synthesis and Application”, from the older version of Bloom’s Taxonomy, for the purpose of this study.

3.7 Data Analysis

3.7.1 Process of inductive analysis

With regard to data analysis for this particular study, an inductive process is appropriate, in order to uncover crucial themes regarding planning, classroom instruction and assessment, as components relating to the extent to which Grade 7 Mathematics and English First Additional Language educators use differentiated instruction to promote inclusive teaching and learning. Inductive analysis can be described as “The process through which qualitative researchers

synthesize and make meaning from the data, starting with specific data and ending with categories and patterns. In this way, more general themes and conclusions emerge from the data, rather than being imposed prior to data collection” (McMillan & Schumacher, 2010, p.367). Analysis and data collection should occur simultaneously, in a series of iterative phases, between collecting data and analysing information acquired earlier (Creswell, 2008, pp 244-245). Raw data is generated as the data collection tools seek to answer the research questions. Once the raw data is stored, where they can be traced back to a specific reference, analytical statements should be drafted. Next, an iterative process takes place, where “the draft analytical statements are tested against the data items, and amended or discarded as necessary” (Bassegy, 1999, p. 85). The analytical statements are re-expressed as empirical findings once the iterative process has been exhausted. These findings are then expressed in the form of a narrative report.

In order to assist with the identification of themes, a code has been assigned to each behaviour index, listed in the Classroom Observation Checklist. In their article, Florian, Young and Rouse (2010, p. 714) describe how the codes which had been selected became further developed, leading to a deeper analysis of the data. From first of all being descriptive, the codes evolved to more complex levels, moving up a level to being functional and strategic, “to bridging and translating, to principles and theoretical codes based on philosophical underpinnings” (Florian et al., 2010, p. 714).

Data obtained from the interviews, lesson plans and the observations are compared to the analysis of the documents, namely, the assessment and assignment tasks set by the educators. This comparison in turn provides further insight into the extent to which differentiated instruction made a difference to teaching and learning. Evidence from the different types of data and methods of data collection in support of the themes which were uncovered are then corroborated. The information draws on multiple sources, which in turn will lend credibility and accuracy to reporting the findings (Creswell, 2008, p. 259).

3.7.2 Measures to ensure trustworthiness

Within the context of a case study, internal and external validity are problematic in terms of proving a cause and effect relationship that can be generalised to other contexts. Due to the fact that a case study is related to the intrinsic interest of the researcher, it is not a ‘typical example’ as is normally shown in an empirical manner. Reliability is also a problem, as the case, being unique, may make it difficult to replicate the research findings. Therefore, the researcher conducting a case study would strive for “trustworthiness” (Lincoln & Guba, 1985, cited in Bassegy, 1999) as an alternative to validity and reliability. Eight questions, four of which are based on the work of Lincoln and Guba (1985), need to be taken into consideration, in order to facilitate ‘trustworthiness’. The questions (Lincoln & Guba, 1985, cited in Bassegy, 1999) are based on persistent engagement with data sources, persistent observation of emerging issues, engaging a critical friend to challenge the findings and the existence of an adequate audit trail. Other aspects essential to ‘trustworthiness’ (Bassegy, 1999, pp. 74-77) are checking raw data adequately with their sources, ensuring that there has been sufficient triangulation of raw data, providing an account of the research that is

sufficiently detailed and making sure that the hypothesis, evaluation or emerging story from the report, has been systematically checked against the analytical statements.

3.7.3 Triangulation

Triangulation, defined as “a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation” (Stake, 1994, p. 241), should be used in order to lend trustworthiness to the data analysis. An important principle of case study research design is that the case is “viewed and explored from multiple perspectives”, through a variety of lenses, so uncovering and leading to an understanding of the “multiple facets” of the phenomenon itself (Baxter & Jack, 2008, p. 544). In their article, Baxter and Jack (2008, p. 556) argue convincingly that triangulation can be used to support this principle where the quality of the data is enhanced because it is based on “idea convergence and the confirmation of findings” (Knafl & Breitmayer, 1989, cited in Baxter & Jack, 2008, p. 556). When describing methodological triangulation, Stake (1995, p. 114) explains that by using multiple approaches within a single case study, some extraneous influences can either be nullified or illuminated. Observation, interviews and document reviews remain the principal methods in a case study for data collection. The process of triangulation highlights the fact that data analysis is not a simple process. As Stake (1995, p. 114) observes, “Triangulation regularly sends us back to the drawing board.”

During the process of triangulation, similarly coded data are grouped together into categories or themes, where the main ideas expressed by the data are represented by the themes. Following this, the objective is to seek to identify relationships between these categories, i.e. the focus is on discovering patterns. During the search for patterns, the intention is to “try to understand the complex links among various aspects of people’s situations, mental processes, beliefs and actions” (McMillan & Schumacher, 2010, p. 378). Once tentative patterns have been identified, they could be modified and some may even have been refuted, in the light of discrepant and negative evidence, where the evidence from the data contradicts the pattern. The next step is to shift back and forth between codes, categories and tentative patterns, to determine “how well the data illuminates the research problem and which data are central” (McMillan & Schumacher, 2010, p. 378).

Some codes are applicable to multiple patterns, as is demonstrated by means of their elasticity. Other codes which emerge from the research data may have to be excluded, as they might not be centrally related to the research questions. The content of each category on its own and in comparison with other codes and categories, give rise to “patterns of meanings” (McMillan & Schumacher, 2010, p. 378). After having investigated alternative explanations, only those patterns which provide reasonable explanations central to the research questions are considered. Such explanations are deemed to be ‘plausible’. ‘Plausibility’ can be defined as “a matter of judgement about the quality of the data” and is shown by how rigorous the data analysis is and the presentation of the data (McMillan & Schumacher, 2010, p. 380). Making such judgements involves carefully considering and selecting “what is really important and meaningful in the data” (McMillan & Schumacher, 2010, p. 378). Once the

final patterns have been selected, they serve as a framework for reporting the findings of the study and also to organise the research report (McMillan & Schumacher, 2010).

3.7.4 Triangulation process for this study

The codes pertaining to this particular research were pre-determined, as illustrated earlier when explaining the criteria relating to classroom observation and document analysis [Reference: Appendix 3, Appendix 4(a) and 4(b)]. The categories have also been pre-determined, in that they are directly related to the research sub-questions, as stated in Chapter One. Therefore, the three categories are; ‘Planning for Differentiated Instruction’, ‘Observing Differentiated Instruction in the Classroom’ and ‘Differentiated Instruction and Assessments’. An additional theme arising from the data gleaned from the questionnaire and preliminary interviews is “Participants’ Understanding of an Experience in Differentiated Instruction”. At first, a summative approach was taken, when analysing the data. Therefore, summaries were constructed of each preliminary interview and the field notes for every lesson observed. Following this preliminary analysis at a ‘vertical’ level, the data were then compared at a ‘horizontal’ level. All the information gleaned from the questionnaire was transferred onto a table grid, allowing the researcher to interpret the responses of the participants vertically, at an individual level and to also compare the participants with each other, horizontally. The summaries of the interviews were utilised to draft comparative notes, comparing the participants’ responses to every item of the preliminary interview. All the lesson observation checklists and field notes were compared, to determine which criteria for differentiated instruction were met consistently, which criteria were met occasionally and which criteria were not observed at all. This same process was also applied with regard to the lesson plans and assessment documents. The final patterns, which were identified, are a synthesis of the analysis of the codes. Figure 4.1, in the introduction of Chapter Four, is a summary of the triangulation process for this study.

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF DATA

4.1 Introduction

The quotation below reiterates the following principles of inclusive pedagogy: the importance of participation of all learners in the classroom and while differences are acknowledged, they are not the focus point.

“By focusing on how achievements in learning are realised through participation in the community of a classroom, the inclusive pedagogical approach acknowledges that there are individual differences between learners but avoids the problems and stigma associated with marking some learners as different.” (Florian, 2015)

Chapter Four commences with a diagrammatical illustration of the research findings, the four key themes which arose from the study and how these themes are supported by evidence from the data. Figure 4.1 on the following page, serves as a summary and is followed by the presentation and analysis of the data.

The sequence of the presentation of the data is as follows:

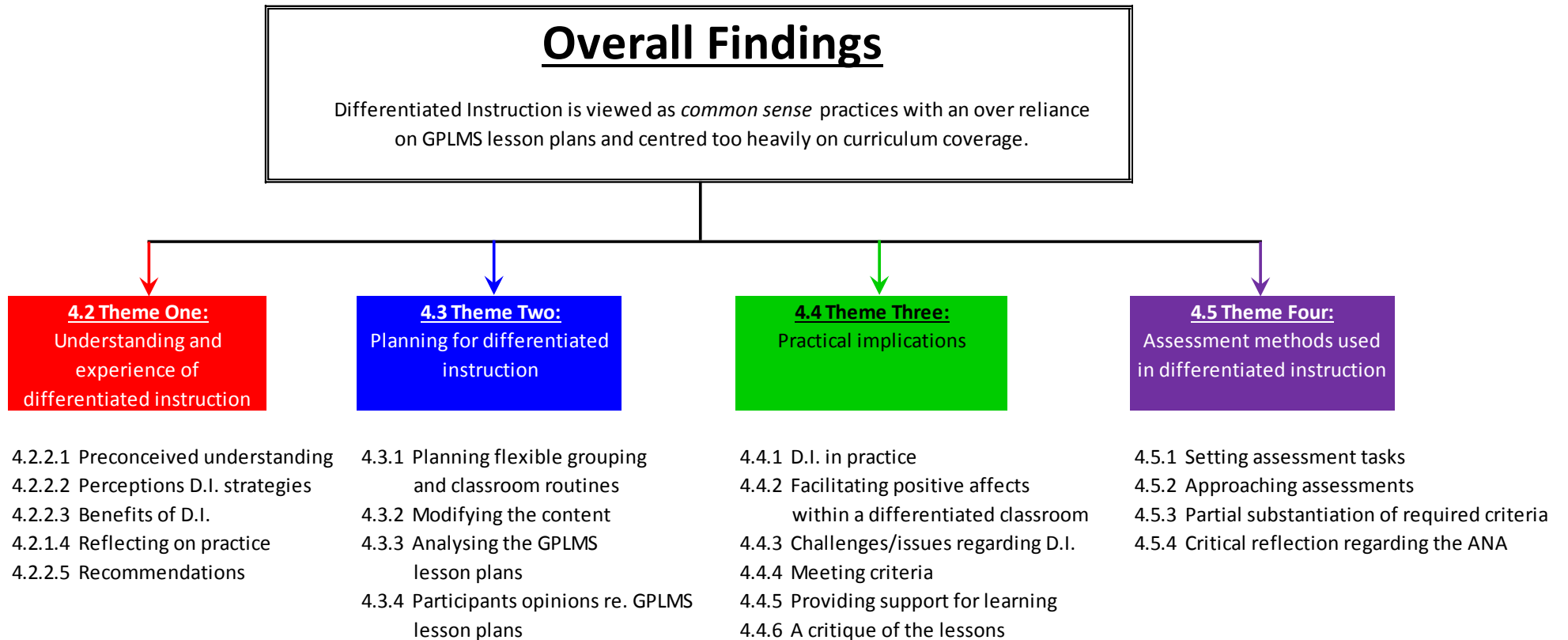
Table 1 on page 45 presents the data from the questionnaire.

Table 2 on page 52 represents the findings of the analysis of the submitted GPLMS lesson plans and is followed by an explanation of these findings.

Table 3 on page 54 compares the eighteen criteria from the Lesson Observation Checklist that ideally should be met when teaching in a differentiated classroom, to what was actually observed during Grade 7 Mathematics and English lessons. This is followed by an analysis of the lesson observations.

The chapter is then concluded by means of an analysis of the assessment tasks submitted, represented by Table 4 on page 60, where feedback is provided in relation to the criteria for the analysis of the assessment tasks.

Figure 4.1 Summary of Findings



4.2 Theme One: Understanding and experience of differentiated instruction

4.2.1 Presentation of the data gleaned from the questionnaire

Table 2 presents a summary of the responses of the six participants to the questionnaire. The aim of the questionnaire was to obtain a preliminary glimpse of how the participants interpret and apply a number of aspects relating to differentiated instruction, for example, flexible grouping, multi-level teaching and scaffolding. The questionnaire served as a testimony, whereby the six participants reported on how they view themselves implementing differentiated instruction.

Their responses were ranked in the following way: A response of “often” and “always” to each statement was considered to be significant. The number of ‘often’ and ‘always’ responses for each statement were added and then ranked accordingly.

Questionnaire	Never	Seldom	Sometimes	Often	Always	Rank
I modify the curriculum using differentiated instruction as a way of responding to learner diversity.			4	1	1	2
I organise my learners in flexible groups when differentiating instruction.		2	2	2		2
During lessons and the presentation of assessment tasks, my pupils use various modalities to demonstrate their knowledge.		1	3	2		2
I use individual learning profiles to inform my responses to the learners. * (Participant Four did not respond)		2	1	1	1	2
I allow for and provide various types of support materials, e.g. manipulatives, assistive devices and computer technology.			4	1	1	2
I incorporate differentiated instruction when I plan lessons.			3	3		3
I feel confident with regard to my experience in and ability to set tiered assignments.			3	2	1	3
I feel that I am able to incorporate differentiated instruction into my classroom routine.			3	3		3
When I teach, I make use of scaffolding, as a differentiated instruction strategy. * (Participant Six did not respond)			1	3	1	4
I collaborate with colleagues when planning and implementing differentiated instruction.			2	3	1	4
When conducting assessments I allow for multiple intelligences and set questions reflect varying levels of complexity and abstraction.			2	2	2	4
I reflect on how I've applied differentiated instruction as a way to further inform my teaching practice.			2	2	2	4
I teach a topic within my subject area at various levels, to accommodate the diverse points of entry and levels of readiness of my pupils.		1	1	3	1	4
I make use of a variety of texts on the same topic at various reading levels in order to differentiate instruction.		1		4	1	5
I gear lessons to the varied interests of my learners.			1	3	2	5

Table 2: Synthesis of responses to questionnaire items

4.2.2 Presentation of the data obtained from the preliminary interviews

4.2.2.1 Preconceived Understanding

The six participants focused on various aspects when asked to define their understanding of differentiated instruction. These aspects included children learning at different paces, in different ways and at different levels of understanding, as well as learners coming from different backgrounds. Participant Three reflects the common focus on ‘differences’, when she says, *“I would look at the word, ‘differentiate’. It means ‘different’, so obviously ... there has got to be some sort of difference in your teaching method, you’re approaches, your activities.”* Participant Six’s understanding of differentiated instruction was centred upon *“... catering for learners who have a special need, who do not fully understand, who are not au fait with particularly English and Afrikaans.”* For Participant Five, differentiated instruction is about the instructions and examples given at the very beginning of the lesson.

4.2.2.2 Perceptions of differentiated instruction strategies

When discussing strategies for differentiated instruction, providing mediation within the context of flexible groups, set up according to various levels of understanding, was important to Participant One, though he expressed concern about this, saying, *“But it is very difficult to do that, because new content must be taught ... And in the end, the whole class is going to write an assessment on the work that was covered in the term ... some of the guys wouldn’t have covered the content.”* Participant Two shared that *“... letting children explain is a strategy I like to use.”* In addition to this, she reported that, *“I like questioning and leading, so I could have a question and at the same time lead the child to the correct answer.”* Much emphasis was placed on key concepts of the TESOL (Teaching English to Speakers of Other Languages) course by Participant Three, who felt inspired by the programme. For this educator, differentiation strategies are about reducing TTT (teacher talking time) and enhancing one’s teaching method *“...by introducing a warmer, by activating the lesson, by getting them engaged and eliciting the meaning from them.”* The relevance of the above approach is highlighted by Participant Three when she elaborates that, *“They are making more meaning out of their learning because they are doing it by self-discovery.”*

Participant Four’s understanding of differentiated instruction strategies is that it entails asking learners questions at different levels, providing examples, drill work, focusing on vocabulary, teaching learners how to test the accuracy of their answers and exploring different ways in which the answers could have been derived. Key for Participant Five, is going back to basics and what she calls, ‘incidental teaching’, which is changing your approach as an educator, as the needs of the learners shift during the lesson. *“I teach and as I go along a lot of times I come up with co-incidental teaching as I pick up things.”* Participant Five strongly emphasised that, *“...the basics in maths are the most important for any lesson of differentiation.”* Responding to the question on strategies for differentiated instruction caused some discomfort for Participant Six. He had been teaching Grade 7 English as a subject for a few weeks only (his subjects are actually science and biology). He was of the view that one has to be a subject specialist in order to employ strategies for differentiated instruction,

saying, *“Like I say, that question is rather difficult to answer in my opinion because I am not a language specialist ...”* This educator would, as will be shown in his recommendations, support the argument in favour of specialised pedagogy, as opposed to inclusive pedagogy.

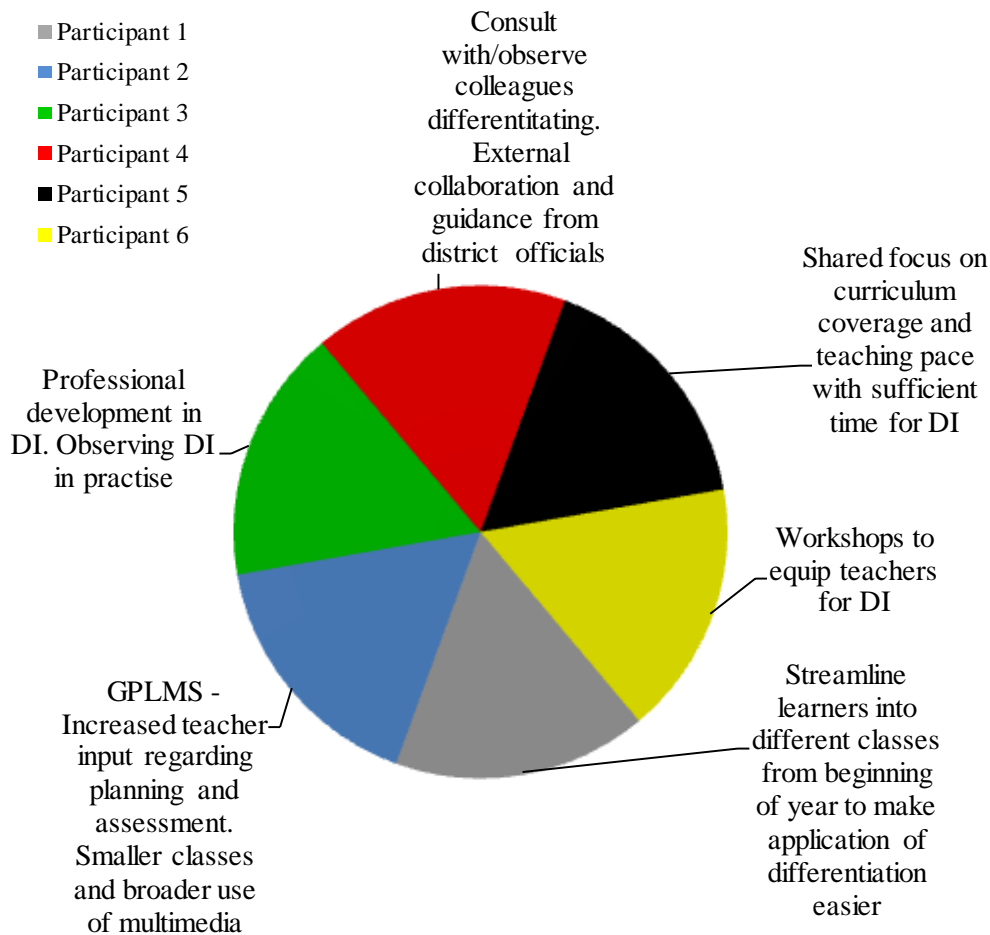
4.2.2.3 Benefits of differentiated instruction

The participants demonstrated a variety of views with regard to the benefits of differentiated instruction. Participant Two reported that, *“Every child gets to learn in their own way and they go home with the knowledge of something new they have learned”*, whereas Participant Three argued that the benefit of differentiated instruction is that it facilitates growth, independence and discipline, but *“only if it is structured”*. For Participant Four, *“differentiation helps you assess the activities in a better way, in a way that you can set different questions on the same concept in various ways.”* Another benefit was that because of the different strategies used, as well as the focus on more than one modality, *“...differentiation ... can help me to make it more accessible for the child.”*

4.2.2.4 Reflecting on practice

Responses to the item in the questionnaire relating to an educator reflecting upon differentiated instruction to inform future practice, revealed that two participants ‘sometimes’ do this, two participants ‘often’ reflect, while two participants reported that they ‘always’ reflect upon how they differentiated their instruction. Both Participant Two and Participant Three, who teach Grade 7 English, reported that they complete the “Reflections” component of the GPLMS lesson plans. As Participant Two stated, *“...sometimes the lesson goes in a different direction, but not in a negative way, in a positive way. So then, I would go back to my educator reflection and write it down, so the next time I teach the lesson I can see this is how the learners interacted, this is what they brought to the lesson plan.”* Participant Two further added that filling in the reflection component of the lesson plan on a daily basis is helpful for when an educator needs to complete the GDE Support Form for the learners’ profiles. It is significant that two participants reported that they ‘seldom’ refer to their learners’ individual profiles to inform their responses to the learners.

Pie Graph 1: The following pie graph is a summary of the recommendations made by the participants in the study.



4.2.2.5 Recommendations

Participant Three and Participant Four recommended observing colleagues who are experienced in implementing differentiated instruction. In this way, one learns practically, how to differentiate your instruction. For example, Participant Three says, “*I think that the educators are in need of more development with regard to differentiated instruction. More development, that is the key. And actually observing of practical, of lessons, observing how it is done in practice.*” She is fully supported in her suggestion by Participant Four, who states, “*...You can consult your fellow colleague, go and see how they teach differentiation... identify those teachers who are good at it and go see how they differentiate and then apply it in your own teaching method or teaching style.*” The relevance of the above recommendations is confirmed by Carolan and Guinn (2007, p. 47) who explain that “*Observing how real educators practice differentiation illuminates the complexity of addressing the needs of all students.*” To further illustrate their point, Carolan and Guinn (2007, p. 47) state that “*To master a strategy as complex as differentiation, educators need concrete examples and a common analytic vocabulary.*”

Participant Six's view was that while one should not do away with workshops altogether, there needs to be a change in the workshops that are provided, in order to ensure that educators are better equipped to meet the needs of the learners in a full-service school. Hence his argument, *"This school has become a full-service school madam, but the educators are not equipped to teach in a full-service environment... you need to hold regular workshops, you have to equip teachers."* For Participant Six, when the workshops succeed at enabling the educators, this will in turn benefit the learners, which is why he says, *"Teachers need to be equipped fully in order for them to make a success of everything, of the teaching experience as a whole. And likewise it will rub off on the learners."*

Participant Four also mentioned attending workshops as a recommendation. He was the only participant who suggested external collaboration with colleagues from other schools, as well as obtaining some guidance from the subject-coordinator from the nearest District, with regard to how best to differentiate.

In their recommendations, both Participant One and Participant Five referred to grouping of the Grade 7 learners and teaching pace. Participant One suggested that the learners be streamlined into different classes from the beginning of the year, which according to his view, would make it easier to adjust teaching pace and the extent to which practical apparatus would be used, as well as make it easier to implement different levels of teaching from the concrete to a more advanced level. Feeling very strongly about the pace of teaching determined by the CAPS syllabus for Grade 7 Mathematics, Participant Five argued that, *"...It comes back to CAPS. We are chasing the syllabus but the learners are sitting blank... we are thinking the Department is coming, they are going to see how far we are... It is unfair! To the learners and the teachers because the teachers feel incompetent ... I would group the learners differently, I would work at their pace and not rush through things."* She states emphatically, *"So, give me time to differentiate."*

When presenting her recommendations with regard to improving differentiated instruction, Participant Two focused on two aspects that she feels strongly about; namely the GPLMS lesson plans and assessment tasks and the use of multimedia in the classroom. Participant Two suggested that educators should be allowed greater flexibility with regard to devising their own lesson plans and adapting assessments. The reasoning behind this recommendation is that because the educators know their learners' individual strengths and weaknesses, it places them in a more suitable position than the Gauteng Department of Education, to plan the lessons and construct the assessment tasks. As Participant Two says, *"...I know the children in my class. I know what their strengths are, I know what their weaknesses are, so who better to set up a lesson plan than myself? Now, if it's given to me, I am not getting to every child."* In her article, de Clercq (2014, pp. 312-313) outlines three criticisms of the GPLMS lesson plans. Firstly, the prescriptive nature of the lesson plans undermines the autonomy of the educator with regard to the decisions made about the content being taught and the teaching methodology to be used. The consequences of this could be "suppressing educator creativity and leading to some boredom in the teaching and learning process." The second criticism is related to educators not having the required level of subject-related, pedagogical content knowledge. This backlog is not prioritised in the GPLMS lesson plans,

where “Even if educators follow and repeat the instructional routines of the lesson plans, most of them will not be able to infer and learn their underlying or embodied knowledge” (de Clercq, 2014, p. 313). The third critique is concerned that the GPLMS lesson plans may not be appropriate for certain classroom contexts, for example, such as in both full-service schools represented in this study, where the class sizes are large. This is supported by Participant Two’s final recommendation, which was that class sizes should be smaller.

4.3 Theme Two: Planning for differentiated instruction

4.3.1 Planning, flexible grouping and classroom routine

When responding to the questionnaire, three out of the six participants stated that they ‘often’ incorporate differentiated instruction when planning lessons and ‘often’ feel able to incorporate differentiated instruction into their classroom routine. While the intention may be to incorporate differentiated instruction into their planning, in practice it was observed that all six participants tended to strictly adhere to the GPLMS lesson plans provided by the Gauteng Department of Education. They may feel a strong sense of accountability with regard to implementing these plans and hold the assumption that differentiation is already incorporated with the lesson plan structure. As Participant Six reported, “... *they come directly from the Department and we have to teach it verbatim as is ... I’m sure the Department has already structured it in such a way that differentiation is accommodated for, in my opinion.*” With regard to arranging learners into flexible groups for differentiated instruction, two participants responded that they ‘seldom’ do this, while two answered that they ‘sometimes’ apply flexible grouping. Only two participants responded that they ‘often’ arrange their learners in flexible groups. During the course of the lesson observations, no group work was observed. The learners were not instructed to complete activities within the context of flexible groups at all.

4.3.2 Modifying the content

With regard to modifying the content of the lesson, as part of differentiated instruction, his response during the preliminary interview suggested that Participant One ideally would like to group the learners, based on their different levels of understanding. However, he concedes that “... *it is very difficult to do that.*” Participant Four stressed using various resources, including manipulatives, to modify content, “*They have to work with it, they have to hold it, so that they can see what it is.*” For Participant Five, using humour and differentiating the examples given by the educator to introduce the concept, are key to modifying the content. As she explains, “*Like I said, these differentiated examples are going to lead to a differentiated content.*” In relation to using humour, she says, “*Every time I show them something, a technique or make a joke ... they actually look at me like I am performing a miracle, I am making magic.*” The ways in which Participant Three described how she would modify the content of the lesson, is consistent with the routine she follows and what was seen during the lesson observations. Participant Three reported that, “*I bring colour in ... so that it can be stimulating and create an interest in whatever topic it is they are doing – other than just chalk and talk.*” “... *We start off with flashcards, posters, pictures; a poster relevant to the theme, to introduce it. I do dictionary work, I do a lot of questioning ...*” This educator also related letting the learners interact with each other and using colourful reading books with pictures, as other ways in which an educator can modify the content.

Criteria for differentiated lesson plans:

1. Reflects specific student characteristics relating to individual learning needs, interests and learner profiles.
2. States, in relation to content, process, product and learning environment, the curricular and instructional strategies that will be used to address these individual student characteristics.
3. Core concepts of the curriculum to be taught in that unit are specified.
4. Essential, critical questions relating to the topic are evident
5. A schedule is provided of how the topic will be divided into specific units and the sequence in which these units will be taught.
6. Reflects characteristics of the class as a whole, in terms of class dynamics, taking race/ethnicity, culture and socioeconomic status into account
7. The plan reflects collaboration and notes which members of staff work together.

Feedback: criteria NOT met

- information from profiles of learners with specific individual needs, who experience barriers to learning, not reflected on lesson plans
- collaboration between Grade 7 Mathematics and English educators not reflected
- particular characteristics of individual classes are not reflected
- GPLMS lesson plans - confirms de Clercq (2014) prescriptive, suppress educator creativity, do not take backlog regarding pedagogical knowledge in relation to subjects into account, not suitable for all classroom contexts

Table Three: Template for analysis of lesson plans

These criteria are based on the “Unit Planner Template” in van Garderen and Whittaker (2006, p. 17)

4.3.3. Analysing the GPLMS lesson plans

An analysis of the GPLMS lesson plans which were submitted, indicated that the following criteria based upon the “Unit Planner Template” in van Garderen and Whittaker (2006, p. 17) were being met; the lesson plans stated in relation to content, process, product and learning environment, the curricular and instructional strategies that would be used and the core concepts of the curriculum to be taught within that specific unit were specified. Other criteria which were met were that the lesson plans reflected how the topic would be divided into units and the sequence of these units.

The GPLMS lesson plan structure did not include a section for how the lessons of a particular unit of the curriculum would be differentiated for learners with specific learning needs. It is also significant that the GPLMS lesson plans did not include a section relating to how best to differentiate for the various Grade 7 classes, with regard to the learning profiles, interests and levels of readiness of the learners, contributing to the unique characteristics of each class.

4.3.4 Participants’ opinions regarding the GPLMS lesson plans

Participant Six and Participant Four share the opinion that the GPLMS lesson plans for English and Mathematics respectively, are somewhat basic. Participant Six suggested that, *“GPLMS is a little watered down, a little watered down. So I suppose in that way GPLMS caters for the weaker learner to an extent, right?”* Participant Four stated unequivocally that, *“The work here is very, very easy actually. It is elementary, the work here – that I can guarantee you now. The work in the text book (Platinum, Macmillan) is much more difficult.”* Of importance to Participant Three, is taking the context of the learners into account when working with the lesson plans. She strongly advises, *“...You have to do a lot of guidance, a lot of assistance, you cannot get frustrated. You have got to understand a lot of contexts, where they are coming from, what they are exposed to, so the planning was vitally important.”*

Table Four: Feedback on classroom observations

<u>Prerequisite criteria for Differentiated Instruction</u>		<u>Feedback</u>
C1:	Was able to identify barriers to learning during lesson	This criterion was fully met.
C2:	Was able to create multiple learning activities	It would appear that the English lessons observed lent themselves better to creating multiple learning opportunities, in that there were oral, reading and writing activities based on the same topic
C3:	Demonstrated sensitivity to the learning needs of individual pupils	This criterion was fully met.
C4:	Used varied resources, catering to different interests	The educators tended to mostly use the resources provided by the DBE. More could have been done to cater for the interests of the learners.
C5:	Identified big ideas when delivering the curriculum	This criterion was fully met.
C6:	Adjusted pace accordingly	Pace of teaching appeared to remain constant and was determined to a large degree by the need to adhere to the timeframe of the GPLMS lesson plans and the impending ANA exams.
C7:	Varied format of instruction	This criterion was fully met.
C8:	Grouping was flexible	No group work was observed during any of the lessons.
C9:	Used manipulatives	Manipulatives were observed occasionally.
C10:	Allowed for assistive technology	No iPads, tablets, voice-recognition software observed. No interactive smartboards. Assistive technology needs to feature more prominently.
C11:	Visual supports were evident	This criterion was fully met.
C12:	Text materials used were of varied levels of reading difficulty	Only one reading level observed: DBE books and GPLMS-based readers.
C13:	Feedback was frequent, immediate and constructive	This criterion was fully met.
C14:	Evidence of scaffolding observed	Scaffolding was observed occasionally. A greater amount of scaffolding, multi-level teaching and flexible grouping of learners, according to their levels of readiness and various interests, is required.
C15:	Planned activities reflect a high level of choice based on various interests	Provision of choice regarding learning activities was limited. There ought to be a wider provision of choice.
C16:	Multi-level teaching observed	Same level of work set for everyone, although some remediation and extension were provided.
C17:	Physical environment was conducive to differentiated instruction	The furniture was not arranged as working stations for completing differentiated activities. A wider variety of resources at learning stations set up in the classroom, should be available, where there are texts on the same topic at different reading levels.
C18:	Questioning techniques observed facilitated learners making critical connections	Use of questioning techniques observed frequently.

4.4 Theme Three: Practical Implications

4.4.1 Differentiated Instruction in practice

Responses to the items of the questionnaire indicated that four out of the six participants ‘sometimes’ use differentiated instruction to modify the curriculum. Four out of the six participants reported that they ‘often’ use a variety of texts on the same topic at various reading levels. This was not confirmed by lesson observation however. The participants would mainly use the GPLMS-based readers, ANA revision books and DBE books for Mathematics and English, only occasionally supplementing this with other resources. Of the six participants, four responded that they ‘sometimes’ allow for and provide various types of support materials, such as assistive devices, computer technology and manipulatives.

4.4.2 Facilitating positive affect within a differentiated classroom

Participant Two was thinking about assessment when responding to the interview question about how differentiated instruction could create a positive climate (affect) in the classroom. Her argument was that the GPLMS assessment lends itself to a negative classroom atmosphere. The reason for this opinion is stated by the following words, “...if I could change the GPLMS (assessment) to support the learners that I know has a barrier ... when they sit next to another person that has achieved, I can see the look in the learner’s face and it really hurts as a teacher because you feel like you are failing.” In Participant Three’s view, differentiated instruction is about making every learner feel acknowledged, where she says, “I think it will definitely bring about a positive climate if the children see that ‘I am being acknowledged’; within my weakness I am being acknowledged.” Making every child feel welcome and accepted was also important to Participant Three as is illustrated by her comment, “So you have got to try and make them feel welcome, accepted in the class as a whole, but also to know that I am looking after your needs and making sure that I do see that you are on track with me, that you are worth understanding what I am doing.” This sentiment is supported by Participant Five, who emphasised that every learner should be made to feel important and that there should be a sense of belonging, To further illustrate this, Participant Five says, “Nothing should feel strange – so that alone makes the learners feel that they belong in the grade.”

Participant Six placed emphasis on mixed ability groups, where peer assistance and peer teaching would, in his opinion, create a positive mood or affect in the classroom. According to Participant Four, how an educator interacts with the learners and inculcates a love for the subject is the key. He demonstrates this by reflecting in a compassionate manner that, “You must be positive always, optimistic. The child must have a love for the subject ... if you, in your teaching, how you speak to them, show kindness and empathy towards them; you must be able to get their attention in a way that they should master and love the subject.” A concern for Participant One is that the learners will be discouraged from attempting Mathematics by their peers ridiculing them. Therefore, he is strict regarding not allowing anyone to laugh if a learner attempts a sum and the answer is incorrect. He wants to create an

atmosphere of support and helpfulness in his classroom. *“I always tell my students that this is the opportunity to show me whether you understand the concept or not, and we are here, we are not going to laugh at you when you get it wrong, we are here to help you.”*

4.4.3 Challenges/Issues regarding differentiated instruction

In relation to the preliminary interview question regarding challenges that educators face when implementing differentiated instruction, Participant One stated that multi-level teaching is a challenge. Both Participant One and Participant Five raised the issue of differentiating the curriculum, yet still being expected to complete the entire CAPS syllabus for the year. Participant One’s concern was that learners following a differentiated syllabus will fall behind *“and they won’t be able to complete the syllabus, but they are expected, or they are tested on the year’s work or the term’s work, like the other children.”* He is fully supported by his colleague, Participant Four, who reported, *“But you know, it is only limited time that you have to explain the concept and then you have to move on.”* Participant Five was adamant about not wanting to forge ahead with the syllabus when concepts have not yet been consolidated by means of differentiated instruction. In her view, the biggest challenge to differentiated instruction is the amount of reinforcement required, where the educator has to recap all the time. Speaking with fervor, she says, *“I cannot go further according to the syllabus. I need to go further, but I can’t ... I am going to waste my time and the learners’ time going further if there is a backlog of understanding the concept. I don’t think the Department clearly understands that, hopping from one concept to the next.”* In support of this, Participant Four declared that, *“You have to revise the previous day’s work. You cannot start with a new concept. You have to, you must make time for that. And sometimes there is not enough time...”*

Other challenges that were mentioned during the interviews were class size and as Participant Three said, *“The amount of planning that goes into it and the time.”* Participant Four’s opinion is that if 80% of the class understand the concept, it is unnecessary to differentiate, which provides some relief from time pressure. According to Participant Five’s argument, the amount of planning need not be a problem if an educator is experienced and is able to use co-incidental teaching, picking up on issues and addressing them, as he or she teaches. Both Participant One and Participant Five emphasised the importance of working with practical apparatus for Mathematics, yet a concern for Participant Five in particular, is that time spent on practical work in Mathematics is insufficient. She is adamant that, *“There is not enough practical work done in Mathematics and we are dealing with learners with visual needs. These children we are dealing with today need to see to remember and understand.”*

Participant Six was adamant and persisted with the view that implementation of differentiated instruction requires specialised subject knowledge. In his experience, the biggest challenge he faces, is the fact that he is not a language specialist. While acknowledging that one does not have to be a specialist educator to incorporate differentiated instruction, he persisted in

saying, *“I hear you but I still think we need specialists, with experience on that particular barrier to learning ... we need a specialist who can address that particular problem. You can’t expect a single teacher, a class teacher, to be able to have that ability to address each and every barrier...”* With regard to barriers to learning, Participant Two raised issues concerning parental involvement in the screening, identification, assessment and support (SIAS) process, when further learning support is required in addition to differentiated instruction provided in the classroom. The specific concerns raised were that, *“Not even half of the parents came to sign ... the parents don’t want their kids to feel isolated maybe, different, so they don’t come to sign the papers ... they feel like we are just taking the child out of the classroom, we are just sending the child to the Learning Support Educator (LSE). So that is a challenge we have at school.”* Although she teaches at a different full-service school, Participant Five experiences the same challenges as Participant Two. The screening, identification, assessment and support process was described as, *“It is a hell of a long process, it is tedious. You don’t get all the information from the parents. They go with a letter now to home and it is hopeless; it takes a while ... Some parents are not happy, some give us flack. They don’t want to admit there is damage. Sometimes they say they don’t have the reports we require. Our reporting goes as is – open to parents ... but in most cases parents are in denial.”*

4.4.4 Meeting Criteria

The checklist for the lesson observation was adapted from the questionnaire in de Jager (2013) and the “Reach Inventory”, in Rock, Gregg, Ellis and Gable (2008). The items of the checklist served as pre-determined codes by which to analyse the data gleaned from the classroom observations. The following discussion analyses the data obtained during classroom observations in relation to the codes

In relation to the third theme, when comparing the checklists and the field notes, it was observed that in practice, six out of the eighteen criteria for differentiated instruction were met. All six participants identified the big ideas across the curriculum. Visual supports were evident in a number of the lessons observed, including flashcards, manipulatives, posters, photocopied notes and exercises. Feedback provided by the educators was frequent, immediate and constructive and for the most part, the participants demonstrated sensitivity to the learning needs of individual learners. During the lessons, the educators were able to identify barriers to learning, in other words, particular difficulties that the learners were experiencing at the time. The format of instruction was varied, in that it was observed that the educators would stand and teach, enlist participation from the learners, provide support for learners individually at the blackboard, whiteboard or overhead projector and incorporate independent working time, all within the same lesson.

4.4.5 Providing support for learning

Examples of how learning support was provided included through questioning techniques leading the learners to the correct answer, providing easier examples and once the learners could manage these, refer them back to their seats to continue with the same work as their

peers. Building in revision of vocabulary and terminology and repetition into the lesson, having a set classroom routine and linking to other subjects and general knowledge, were the other ways in which the participants in the study supported their learners. For those learners experiencing difficulties, the Mathematics educators in particular, would re-explain the skills, while the learners who had a more advanced level of understanding were assigned problem-solving activities in their DBE books.

4.4.6 A critique of the lessons

The lesson observations did not indicate the amount of multi-level teaching, flexible group work, tiered assignments, wide variety of activities to choose from and scaffolding, required for authentic, effective differentiated instruction. The samples provided (Appendix 8) of field notes taken during observations of a Grade 7 English and Mathematics lesson illustrate the analytical comment made above. However, this critique must be understood within the context of the fact that the participants were teaching more than 40 learners per class, they had to follow the GPLMS lesson plans and the DBE books, as well as implement a revision programme to prepare the Grade 7 learners for writing the Annual National Assessment (ANA). It can be argued that the extent to which the Grade 7 Mathematics and English educators applied differentiated instruction was influenced by factors relating to accountability, as well as expectations of the full-service schools to perform in the annual, standardised assessments, placed upon them by the Department of Basic Education.

4.5. Theme Four: Assessment methods used in differentiated instruction

4.5.1 Setting assessment tasks

As far as setting questions at various levels of abstraction and incorporating multiple intelligences is concerned, the participants' responses to the questionnaire reflected the following: two participants 'sometimes' do this, two participants 'often' include Bloom's Taxonomy and multiple intelligences as part of differentiation, while two participants reported 'always' considering multiple intelligences and Bloom's Taxonomy when differentiating their instruction. Classroom observations revealed that only verbal-linguistic and logical-mathematical intelligences were accounted for. All six participants, during their interviews, indicated an understanding that assessment questions in particular, must reflect varying levels of difficulty and abstraction.

4.5.2 Approaching Assessment

This research seeks to explore how Grade 7 Mathematics and English educators incorporate differentiation into the assessment tasks that they set. Her response during the initial interview, revealed that as far as Participant Five is concerned, differentiated instruction is another term for Bloom's Taxonomy, it is nothing new. *"Differentiating, when it comes to assessment, is probably just a new word. Since I started teaching, I was taught as a student, that you must differentiate your questions according to the abilities of the learners, from the known to the unknown ... So it is nothing new, they are just changing Bloom's Taxonomy to*

differentiated instruction.” “*You need to differentiate, because obviously we are all unique, we are all different... I am different, my brain works differently. So we need to cater for all the learners’ abilities. That is why assessment, whether it is verbal, whether it is written ... should be differentiated.*” Participant Two feels strongly about having more freedom to design her own assessments, instead of having to administer the GPLMS assessments, which are pre-set and cannot be altered as such. The reason why this educator favours Bloom’s Taxonomy is that, “*... I like the fact that the questions build up ... because I can start off easy and maybe that way I can build the learner’s confidence in the question paper.*”

Both Participant Two and Participant One shared about their experiences of when they acted as scribes for learners who had difficulty with writing down their answers. This was done unwittingly, as Participants One and Two did not realise at the time that this is not compliant with the Screening, Identification, Assessment and Support (SIAS) process. It is relevant that for both these participants, acting as a scribe was a natural part of employing an inclusive approach to assessment. During her interview, Participant Three mentioned the SIAS document, explaining that while the curriculum needs to be completed, this document takes the context of the learner into consideration, such as a Grade 4 learner, who is suspected to be an autistic child. Participant Three confirmed with the child’s educator that she could allow the learner to draw a sequence of pictures, instead of written responses, for his tests and exams. As Participant Three explained, “*You are differentiating the activity and the assessment ... to make it easier for him to work.*”

Participant Six understands that applying differentiated instruction to assessment is that the educator must set two tests. In the second test, the comprehension questions have to be at a simpler level. As he explains, “*... We set two different tests, one as normal for the class as a whole and as for those who are struggling; you give them a simplified test. You know easier questions and so on, just to make sure.*” During school observations, Participant One permitted his learners to rewrite their Mathematics class test. A very small number of learners had initially completed the test early, so Participant One called them up to his desk and marked the test with the learners, mediating to them where they had made errors. The learners rewrote the test and there was an improvement in their marks. Participant One described the process of post-test, individualised feedback as being “*very time consuming*” and he expressed that, “*I wish I had all the time to go through each test like that, and show them where they went wrong.*” His words would suggest that for Participant One, providing post-test individualised scaffolding may lead to an improvement in assessment scores. Participant Four’s argument with regard to assessment was that even though all the learners write the same test, “*... after the test you can show them the different ways how they could have got the answer ... so those methods are how I would differentiate an assessment.*”

Table Five: Criteria for evaluating assessment documents – Based on *Guidelines For Responding To Learner Diversity In The C*

lassroom – Curriculum Assessment Policy (DBE, 2011).

1. There are differing levels of task completion within an assessment unit.
2. The assessment tasks reflect grade-level curriculum standards.
3. The tasks allow for different modes of presentation, including: writing, making, doing and saying.
4. The tasks reflect concessions awarded based on the individual needs of the learners, e.g. extra time, spelling amanuensis.
5. The tasks allow for the use of assistive technological devices, e.g. voice recognition programme on a laptop, such as “Dragon Speak”.
6. Learners were allowed to use a variety of resources.
7. The tasks include self-reflection/self-assessment.
8. The tasks include a variety of entry level points into the content, based on various levels of readiness.
9. Assessment tasks have allowed for group assessment.
10. Tasks and assignments allow learners to display ability in multiple intelligences (bodily-kinaesthetic, verbal-linguistic, logical-mathematical, interpersonal, intrapersonal, visual-spatial and musical).
11. Assessment/Task items reflect varying levels of difficulty based on Bloom’s Taxonomy (knowledge, comprehension, application, analysis, synthesis and evaluation).
12. Is a positive reflection of what the learner knows and can do.



Feedback: criteria NOT met

- assessments should allow for demonstration of other kinds of intelligences, apart from logical-mathematical and verbal-linguistic
- there needs to be an increase in test items which reflect "application, analysis and synthesis and evaluation" from Bloom's Taxonomy
- self-assessment and group assessment ought to be incorporated to a greater extent
- differing levels of task completion should be made available to learners, in order to accommodate varying levels of mastery of the skills and concepts

4.5.3 Partial substantiation of required criteria

With regard to Theme Four, two class tests (One English and One Mathematics), two GPLMS tests (One English and One Mathematics) and an ANA exemplar exam (Mathematics only) were evaluated based upon the criteria stated in *Guidelines for Responding to Learner Diversity in the Classroom – Curriculum Assessment Policy* (DBE 2011). When considering all the assessment documents submitted, only four criteria were met. Firstly, that the assessment must reflect grade-level standards, secondly that the test items reflect varying levels of difficulty based on the older version of Bloom's Taxonomy. There was evidence in the level of questions, of the inclusion of 'Knowledge', 'Comprehension' and 'Application', but insufficient evidence for 'Analysis', 'Synthesis' and 'Evaluation'. In relation to the revised edition of Bloom's Taxonomy (Anderson et al. 2001) the assessment tasks presented in this study would have met the criteria for 'Remember' and partially met the criteria for 'Understand' and 'Apply'. Evidence for 'Analyze', 'Evaluate' and 'Create' was insufficient. The only concession permitted was extra time, so amanuensis, spelling concessions and having a reader, were not options for Grade 7 learners who experience barriers to learning. The fourth criterion which was met to a limited extent was that learners should be allowed to display their ability in multiple intelligences. Only two intelligences were incorporated into the assessment tasks and assignments, namely 'verbal-linguistic' and 'logical-mathematical'.

4.5.4 Critical reflections regarding the Annual National Assessment (ANA)

Both Participant One and Participant Four were of the opinion that the Mathematics Grade 7 Exemplar Exam in the ANA revision book did not reflect differentiation sufficiently. The items in the exam were set largely at a challenging level, yet the ANA Revision Booklet is at an elementary level, where it covers the skills but does not sufficiently scaffold for the learners, to enable them to meet the challenging level of the ANA exam. This point is illustrated by Participant One, when he suggests that, *"I would say this exemplar; the standard is very high, seeing that we are a full-service school. The questions are high questions and it should be spread along the question bed; like 50% should be easier questions, 30% maybe more challenging and then 20% for the brighter learners."*

CHAPTER FIVE: FINDINGS AND DISCUSSION

5.1 Introduction

This chapter reflects upon whether Grade 7 Mathematics and English First Additional Language (FAL) educators at a full-service school can meet the requirements stated in *Guidelines For Responding To Learner Diversity In The Classroom* (DBE 2011), despite a lack of training in differentiated instruction as responsive teaching and an empirically-based, resource pool of differentiated instruction strategies. The results of this study are discussed within the context of literature, relevant to addressing the research questions concerning planning for and implementing differentiation strategies, as well as incorporating differentiation into assessment.

To begin, there are three key journal articles, which pertain specifically to research relating to differentiated instruction, conducted within the South African context. The three articles, by de Jager (2013), Nel, Kempen and Ruscheinski (2011) and Walton, Nel, Muller and Lebeloane (2014), were initially introduced in Chapter One, as contributing to the rationale for this research. In Chapter Two, the specific outcomes of the research conducted by these authors, as relevant to this study, was described in the review of the literature.

5.2 Investigating perceptions, challenges, advantages and recommendations

Similarly to the respondents in de Jager's (2013) study, the participants in this study also experienced challenges with regard to differentiated instruction. Common concerns raised in both studies are that large classes hamper the implementation of differentiated learning activities and that when learners who experience barriers to learning participate in these differentiated activities educators may find it difficult to complete the syllabus with these learners. The results of this study confirm two conclusions drawn by de Jager (2013, p. 92), when researching the implementation of differentiated instruction in secondary schools. The two conclusions which are supported by this study are that "the majority of the teachers are not trained to create effective differentiated strategies" and that "lesson plans, teaching and learning strategies are still inadequate for the many learners' differentiated needs."

With regard to the advantages of differentiated instruction, only Participant Six in this study also perceived an advantage of differentiated instruction as leading to an improvement in literacy. When asked to make recommendations, again only Participant Six, in this study, also suggested that there should be regular in-service training, in the form of workshops, in order to acquire the necessary skills for working with learners who experience barriers to learning. The recommendations made by the participants in this study were presented in Chapter Two.

De Jager (2013, p. 92) described the perception of the respondents in her study towards the implementation of differentiated learning activities, as being “negative”, where inclusive education was viewed as being ‘burdensome’ and ‘not always seen as an essential in the classroom.’ This observation was not confirmed during the course of this study. None of the participants complained about differentiated instruction entailing an additional workload being placed upon them. Unlike the participants in de Jager’s study (2013), the relevance of inclusive pedagogy was never brought into question by any of the participants. As educators teaching at a full-service school, the participants of this study appeared to be accepting of the fact that they are required to implement inclusive educational practices.

5.3 Using differentiation strategies to modify the curriculum

When comparing the teaching strategies used by the participants in the study conducted by Nel, Kempen and Ruscheinski (2011) to differentiate the curriculum, both studies shared the following strategies; vocabulary development, use of repetition, the provision of immediate feedback to the learners, as well as employing visual stimulation as a teaching tool.

Other teaching strategies, reported by Nel et al., (2011) not confirmed during the course of this study at both full-service schools, are the following; implementing practical, hands-on activities, planning of group activities, making specific adaptations to the physical and social environment in the classroom and scaffolding the lessons, in order to simplify the content, so that the curriculum delivery best suited the level of the learners.

Similarly to the participants in the study conducted by Nel et al., (2011, pp. 205-206), who used a wide variety of resources to achieve the maximum level of participation by the learners, the Grade 7 Mathematics and English educators at the full-service schools in this study did use a variety of resources, e.g. readers, posters, flashcards, photocopied notes, the dictionary and English study guide, DBE books and other textbooks. However, it can be argued that a greater variety of resources should have been provided. In this way, the English lessons in particular, would have tapped into the various interests of the learners better and there would have been the opportunity for the learners to read about the GPLMS themes within the context of various text genres at different reading levels. It must be noted that the Grade 7 Mathematics curriculum covered during the lesson observation period was ‘Algebraic equations’, which does not lend itself so easily to using practical apparatus and incorporating hands-on activities. In conclusion, the findings reported by Nel et al. (2011) are partially substantiated by the results of this research.

5.4 Training in multi-level teaching

5.4.1 Training

The research conducted by Walton, Nel, Muller and Lebeloane (2014), discussed earlier in the review of the literature has relevance for this study, in that the context of this research was also a full-service school. When discussing the findings of their research, Walton et al., (2014, pp 328-329) stated that the participants at the full-service school “expressed a strong sense of a lack of agency or self-efficacy”, as though they were novice educators, upon whom the transition to an inclusive school had been imposed. A feeling of insecurity with regard to pedagogical skills and the perception of being ‘powerless’ in the light of curriculum demands, requirements with regard to assessments and constraints within the education system itself, resulted in the educators not being able to envisage transferring the training they had received on multi-level teaching, at an independent level. Therefore, the educators requested more “detailed and explicit guidance”, including more practical examples, classroom assistants and site-based support personnel (Walton et al., 2014, p. 329).

In contrast to Walton et al.’s (2014) research, none of the participants in this study had undergone training in multi-level teaching and differentiated instruction. While mention was made of the assistance provided by the Learning Support Educators (LSEs), contradicting the findings of Walton et al. (2014), none of the participants in this research expressed the need for classroom assistants and full-time, on-site personnel to continue providing explicit guidance with regard to multi-level teaching and differentiated instruction. Only Participant One, similarly to the educators in the study conducted by Walton et al., (2014), referred to large class sizes as being a barrier to implementing training relating to inclusive education. Participant One had attended a one week long workshop on inclusion, where there was a two-day follow-up on the training. In his opinion, *“We gained a lot of knowledge, but now putting it in practice ... what makes our work difficult is our classroom; we have about 43 or 44 children in the class. And the ‘special’ kids: we have about 10 kids in the class, so what justice are we going to do?”*

5.4.2 Annual National Assessment

The findings of this research, based upon the post-observation interviews, support the concern raised by the participants in the study conducted by Walton et al., (2014). Their concern was that the Annual National Assessment tests (ANA) had not been modified or adapted to meet the needs of the learners at a full-service school. According to what the participants in this study reported, the ANA assessment scheduled for Grade 7 Mathematics and English in 2015, would not be specially modified for the learners experiencing barriers to learning at full-service schools. Extra time would be the only concession to be granted. Participant Three confirmed that amanuensis would not be allowed and she stated that *“... the learners with time concessions, we put a little yellow sticker on their table.”* At both full-service schools, ANA revision books for Grade 7 Mathematics and English were distributed and a revision timetable for this assessment, scheduled to take place in September, was implemented. According to both the Grade 7 Mathematics and English educators, the Grade 7

ANAs would be based upon the revision books, blue DBE books and the GPLMS lesson plans (i.e. CAPS compliant). For example, Participant Six related that, *“The guideline that they do give us though, is to follow the ANA revision book as well as the DBE book that they sent us.”* Of all six participants, only Participant Five mentioned how stressful these tests are for the learners. Showing empathy for the learners, she said, *“... The children are under pressure because they know it is the ANA ... there are different invigilators, seating arrangements are strictly organised alphabetically, no talking, no pen holders, no going to the toilet. It is stricter than the normal exam.”*

On the eleventh of September, 2015, shortly before the Grade 7 learners were due to write the ANAs for the first time, the Department of Basic Education (DBE) released a media statement, informing educators and learners that the exams had been postponed. According to the press statement, the ANA will be remodeled and the task team will collaborate with the educator unions, *“So that the future design features of the national assessment are more amenable to the schools, educators, learners and parents.”*

The conclusion reached by Walton et al., (2014), was that providing training on inclusive education practices by means of workshops was in itself insufficient to equip the educators to teach effectively within the context of a full-service school. This conclusion is supported only by Participant Six in this study. When giving his opinion regarding the few workshops he had attended on how to teach CAPS, he expressed the view that, *“I don’t feel we are equipped enough to teach CAPS ... You attend a workshop for example and you leave learning nothing ... So it is a waste of time going to these workshops ... It is not fruitful at all.”*

Walton et al. (2014) suggest that developing Professional Learning Communities (PLCs) at full-service schools may offer an effective, alternative means by which to address the professional development needs of educators. According to Walton et al. (2014, p.330), *“With their emphasis on collaborative learning, PLCs are well suited to an inclusive school, and they have the potential to offer educators some of the ongoing and contextually relevant support they seek.”* Chapter Six includes a recommendation regarding the role that PLCs could play at full-service schools, relating specifically to subject area expertise and differentiated instruction.

Next, the data obtained from both the lesson observations, as well as the interviews, is discussed within the context of the findings of the research undertaken by Carolan and Guinn (2007), related previously in Chapter Two.

5.5 Characteristics of educators who are ‘experts’ in differentiation

5.5.1 Provision of scaffolding

The findings of this research partially substantiate the first conclusion reached by Carolan and Guinn (2007). The participants in this study were observed guiding their learners by means of questioning techniques, tailoring examples by means of working through easier examples when the learners were experiencing difficulty, as well as providing learning

support on the spot. Overall, however, more scaffolding is required. Educators at a full-service school within the South African context need to be able to draw more upon enrichment ideas, as well as a variety of metaphors, to make the content of their lessons more accessible to all the learners in an inclusive classroom. Unlike the study conducted by Carolan and Guinn (2007), the participants in this study did not incorporate sufficient one-on-one time with their learners as part of the class structure.

5.5.2 Multiple routes to the same destination

Within the South African context, in a full-service school, the participants in my research did not meet this criterion. My finding is contradictory, in that the Grade 7 Mathematics and English educators adhered rigidly to the GPLMS lesson plans, in order to complete CAPS. They expressed a feeling of accountability to the Gauteng Department of Education (GDE) and did not want to fall behind in their GPLMS-based lessons. As Participant Two says in relation to the GPLMS lesson plans, “... *it's a programme that you have to follow, but I don't know if we can deviate from it ... so you are sticking to that programme so that you don't fall behind and so that you don't have to catch up.*” This could imply that within a full-service school in the South African context, the Grade 7 Mathematics and English educators would not be inclined to offer learners the same kind of choice and flexibility in relation to achieving the curricular goals for Mathematics and English respectively.

Furthermore, this study, when analysing the GPLMS lesson plans, supports two conceptual weaknesses of the GPLMS identified by de Clercq (2014, pp. 315-316). She argues that the acquisition of pedagogical content knowledge by educators is necessary in order to “make sound judgements when faced with learners’ misunderstanding and to scaffold learners’ learning up to the complexity of the task,” yet this is ‘seriously overlooked’ by the GPLMS. Secondly, de Clercq (2014) concludes that educators would “require expert support” to enable them to address the needs of learners from multilingual backgrounds as well as those learners who experience barriers to learning. By not addressing these two needs of educators at underperforming schools, the GPLMS, argues de Clercq (2014, p. 316), “is failing to acknowledge the different priority needs” of these educators. The analysis of the GPLMS lesson plans in this study suggested that there was insufficient evidence within the lesson plans, relating to the provision of scaffolding as a means of support, as well as specific guidelines for educators to assist learners with barriers to learning, so supporting de Clercq’s (2014) conclusions.

5.5.3 Drawing upon subject-area knowledge to differentiate

In relation to this study, Participants One, Three, and Five, met this criteria, as they have many years teaching experience and expertise in the subjects which they teach. Therefore, the findings of this research partially confirm the third conclusion reached by Carolan and Guinn (2007). For Participant Two, this is only her third year of teaching English as a subject. She felt anxiety about this, yet the support she receives from Participant Three has helped her to feel more confident in her ability to teach English as a subject. She expressed her gratitude by saying, “*Participant Three is wonderful; ... She has been teaching me and*

guiding me to understand the subject ... I was like 'Oh, never taught English before' but because of her guidance and the way she helped me, it is not that difficult ... Although this is Participant Four's first year teaching Grade 7 Mathematics, he has many years teaching experience in Grade 5 Mathematics. His mother tongue is Afrikaans, so he sometimes experiences difficulty with regard to pronouncing the mathematical terms accurately in English, *"... but apart from that ma'am the work is quite easy for me, I understand the work. They wouldn't have given me the subject if I couldn't do the work as such."* Participant Six could have associated differentiated instruction strategies with subject area expertise, which is probably why he expressed discomfort in answering some of the interview questions, stating that he is not a 'language specialist'. Although Participant Six has taught for twenty-nine years, this is the first time he has had to teach Grade 7 English, replacing the previous educator who had resigned. He described his experience in the following way, *"... Transition to teaching both Afrikaans as well as English has been difficult initially, but you tend to ... one tends to overcome the obstacles and do your best, as far as you possibly can."*

5.5.4 Differentiation and positive affect

The results of this study confirm the above observation made by Carolan and Guinn (2007). During my research, it was observed during the Grade 7 English lessons that the theme for that week was about the rights of children, including the right of HIV positive children not to be discriminated against and the right of children to practice their religious beliefs. The related reading passages, upon which the GPLMS lessons were based, were about Nkosi Johnson (HIV/Aids) and an interview with Renash (the religious festival of Diwali and Hinduism). In this way, the curriculum itself, within the South African context, promotes respect for cultural diversity and respecting the basic human rights of all people. Participant One creates a caring classroom by not tolerating teasing, while Participant Two encourages her learners not to engage in bullying, to be more caring towards each other. Speaking firmly, Participant One said, *"That is the culture we have here at school, the children laugh at each other. I don't tolerate it."* When explaining her approach to bullying, Participant Two related that, *"This is something that really is a problem at school ... the bullying, the teasing. So I wanted them to leave the lesson with the thought of let's be more open-minded, let's not notice the things that are wrong in others, we are all the same ... A lot of the times I start with how to be more loving towards others. A lot of my time I start my lessons that way."* One way in which Participant Three creates a caring classroom, is by promoting peer assistance. She calls the boys, 'Sir' and the girls, 'Madam' and she will request, *"Madam, you must please help Sir over here, he is struggling a little bit today. He needs to get where you are."*

5.6 Differentiation and the 'To-With-By' Model

In relation to the 'To-With-By Model' for differentiated instruction (Campbell, 2009), the results of this study suggest that differentiation took place only at the first tier, the "To" Level or Foundation Level. The evidence for this is the fact that during lessons, the Grade 7 Mathematics and English educators were primarily teaching "to" their learners, complementing their direct, lecture-based instruction with visual aids, using manipulatives and facilitating interaction with the learners, by means of questioning strategies, encouraging

responses and providing constructive feedback. The fact that while sitting in on lessons, there was no group work observed within the context of learning centres or ‘work stations’, indicates that at the time, there was no scaffolding taking differentiated instruction to the next level. Therefore, the educators did not work “with” the learners in groups, using guided instruction to employ different approaches to the same content and skills. The most advanced tier, self-directed learning “by” the learners, was also not observed during this study. At the time of the research, the Grade 7 learners were not engaging in individual research for project-based learning. Instead, the focus was on completing the revision booklets for the ANA exams, as well as GPLMS-related assessment tasks and assignments.

5.7 Linking back to ‘Transformability’

Chapter Two commenced with the introduction of Shulman’s (1987) Model of Pedagogical Reasoning and Action, focusing on ‘transformability’. As Shulman (1987, p. 237) explains, curriculum (content) and pedagogy intersect, where the educator then employs his or her capacity “to transform the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by the learners.” Evidence from the data collected in this study, as discussed throughout this chapter, would appear to suggest that transformation at full-service schools, in context of the above definition, is superficial and limited. Lesson plans, instruction in the classroom and assessment tasks need to reflect to a greater extent and in a more deliberate manner, integration of what Shulman (1987, pp. 237-239) refers to as the ‘components of transformation’, namely; preparation, representation, instructional selection, adaptation and tailoring.

Florian and Linklater (2010, p. 372) assert that ‘transformability’ is about what the educator is presently doing in the classroom to change the capacity of all the children to learn. This is well-illustrated by Participant Three, where she argues that the learning environment needs to be conducive to the ability of all children to learn, despite the barriers to learning that some children experience. Participant Three also clearly states the connection between understanding the learning environment and differentiating it. She says, “*They (parents and learners) need to understand what is inclusivity; because at the moment we have ADD children in the class, we have emotional trauma going on in classes, we have got like a lot of societal problems going on, we have a lot of HIV-related cases ... We have got like child abuse, children are not saying, but they are not learning. Why can they not learn? Because every child can learn. The situation is not right for learning, therefore they will not learn. The environment is not conducive for learning and you need to understand it to differentiate it.*”

The recommendations made in Chapter Six extend the extent to which differentiated instruction is implemented by educators at full-service schools. Mastery of differentiated instruction is necessary if transformation is to take place at a more meaningful level. As educators grow in their expertise relating to differentiated instruction, they will be increasingly confident in their ability to change the classroom environment to meet the needs of all their learners and to increase the capacity of every child to learn.

CHAPTER SIX: OVERVIEW, LIMITATIONS OF THE STUDY AND RECOMMENDATIONS

6.1 Overview

By means of concentrating specifically on planning, instruction and assessment, the research aimed to describe the way in which differentiated instruction is applied by Grade 7 Mathematics and English First Additional Language educators, within the context of a full-service school.

6.1.1 Planning

The conclusion that was reached with regard to planning, is that although Grade 7 Mathematics and English educators regard taking the interests and levels of readiness of their learners as important (according to the responses to the questionnaire), when planning their lessons, they adhere strictly to the provided GPLMS lesson plans. Reflecting upon their lessons was also ranked highly according to the results of the questionnaire. This was confirmed during the interviews, where completing the relevant section on the GPLMS lesson plan, was regarded as being necessary in order to update learner profiles. Taking learner profiles into consideration when planning lessons was not ranked highly according to the analysis of the questionnaire. This was supported during lesson observations, where the educators would complete a separate form for the learners' profiles.

6.1.2 Instruction

The conclusion that was reached with regard to instruction is; Although the Grade 7 Mathematics and English educators are combining resources provided by the Gauteng Department of Education (DBE books, GPLMS lesson plans and GPLMS supporting materials), together with “common-sense”, experienced-based strategies to meet the needs of their learners, their classrooms do not meet the criteria for a ‘differentiated classroom.’ Lesson observations suggest that the basic curricular requirements are being met and that the educators are creating a firm foundation upon which the Grade 7 learners can build. The evidence which supports this argument is that the educators identified the big ideas in the curriculum, they varied the format of their instruction and used visual supports as well as questioning techniques.

Lesson observations also demonstrated ‘responsive’ teaching, in that the educators provided individual support for the learners at the blackboard and overhead projector and they assisted learners experiencing difficulties by means of providing these learners with easier examples to work through at the whiteboard. The highly structured lessons, stable classroom routines, revision of vocabulary and terminology, re-explaining concepts, use of humour and repetition, as well as linking concepts to general knowledge and other subjects, are all evidence of ‘common sense’ teaching practices, based on years of teaching experience.

Their responses to the questionnaire indicated that the Grade 7 Mathematics and English educators understand that scaffolding and providing texts on the same topic at different reading levels, are necessary for differentiated instruction. The lesson observations however, indicated that this needs to occur on a more frequent basis. Flexible grouping, tiered assignments, using manipulatives and including assistive devices and computer technology, did not receive a high ranking, according to the questionnaire analysis. This was supported by the lesson observations.

The classroom furniture was not organised to accommodate flexible grouping. There were no visible working stations reflecting a high level of choice regarding tiered assignments and multi-level teaching was not observed. Together, this evidence suggests that the Grade 7 classrooms for English and Mathematics cannot be described as differentiated classrooms.

6.1.3 Assessment

Evidence from the responses to the questionnaire and interview questions indicates that the Grade 7 Mathematics and English educators fully understand and value the importance of incorporating multiple intelligences and varying levels of abstraction, according to Bloom's Taxonomy, when assessing their learners. However, the conclusion that was reached is that curriculum coverage (GPLMS lessons and related assessment tasks) and completion of revision tasks in preparation for the impending Annual National Assessment (ANA) exams, took priority over differentiating instruction and assessment. As explained during the interviews, every learner would be expected to complete the same assessment task. Additional time for some learners would be the only concession granted and the option of differing levels of task completion would not be available.

6.2 Limitations of the study

The sample size was very small, consisting of a total of six participants. Results of this study are applicable only to Gauteng Province, where the GPLMS support system has been implemented and monitored at full-service schools. Furthermore, this study is restricted to senior phase subject educators, specifically the Grade 7 Mathematics and English First Additional Language educators and how they implement differentiated instruction. The role of the Learning Support Educators (LSEs) with regard to supporting the implementation of differentiated instruction at full-service schools is not included in this study. Another limitation is that the scope of this study did not address the part played by the Institution-Level Support Team (ILST), and the District-based Support Team (DBST), with regard to implementing differentiated instruction at full-service schools. Finally, the duration of the study was short-term, which therefore did not allow for a follow-up study in 2016, on whether differentiated instruction had an impact on how the Grade 7 learners at both full-service schools performed on the ANA exams.

6.3 Recommendations

According to the *Guidelines for Full-service/Inclusion Schools* (DBE 2010a, p. 22) one of the roles of the Institutional-Level Support Team (ILST) is to guide “educators to develop and implement Individual Support Plans and effective curriculum differentiation.” Furthermore, the ILST also has to establish teams specifically involved in the planning for individual support for learners. As stated in the above guidelines (DBE, 2010, p. 21) the Learning Support Educators (LSEs) are supposed to “assist in co-ordinating the work of the institutional-level support team” as well as to provide support with regard to the professional development of educators. The following proposal outlines how both the ILSTs and LSEs at full-service schools could become involved at three levels, in order to further facilitate the implementation of differentiated instruction:

At a fundamental, foundational level, it is recommended that the LSEs and members of the ILST collaborate in order to provide training on current evidence-based teaching practices, as well as direct instruction strategies. This is necessary, in order for differentiated instruction to effectively reach and provide greater support for learners at full-service schools who experience barriers to learning, for example, visually-impaired learners, learners who experience specific learning disabilities such as dyslexia and learners who are hearing impaired. This need is confirmed by the conclusion reached by de Clercq (2014, p. 326), where she states that educators in poorly performing schools in Gauteng “require expert support to effectively teach their ‘slow’ learners from poor socio-economic and multilingual backgrounds as well as those with learning barriers.” Enlisting support from colleagues who have expertise in dealing with learning difficulties is encouraged by Florian and Linklater (2010, p. 371), when they assert that “... the expertise of colleagues who specialize in learning difficulties, and those from related disciplines can be used to support teaching and learning in the mainstream classroom.”

At a more advanced level, it is recommended that members of the ILST and LSEs at full-service schools undergo training by experts specifically in differentiated instruction and multi-level teaching. This training should then be implemented and monitored by the ILST. Members of the ILST should consult regularly with the experts in differentiated instruction, in order to receive ongoing support, guidance and updated information based on recent research on differentiated instruction. The goal would be for the ILST, the LSEs and the educators at full-service schools to continue to derive the benefit from training in multi-level teaching and differentiated instruction in the long term. In other words, with ongoing support and continuous reflection, Educators at full-service schools should themselves become experts at differentiated instruction. Dr. Diane Heacox (2009, pp. 159-164) outlines eight steps, which the members of the ILST and LSEs can implement, for a “School-Based Action Plan For Differentiation.” Furthermore, the “Walkthrough Indicators of Differentiation in Action” (Heacox, 2009, p. 166), followed by post-conferences with the educators, could be useful to encourage reflection on and further development in skills relating to differentiated instruction. Professional growth in differentiated instruction will be ongoing and will also be an individualised process, as each educator at a full-service school will be “in a particular and

personal stage of her or his professional development in differentiation” (Heacox, 2009, p. 165). This must be borne in mind when planning for continued professional development.

At the most advanced level, as they engage in project-based learning, learners will employ higher-order thinking skills as related in Bloom’s Taxonomy, including ‘application, analysis and synthesis’, as well as ‘evaluation’. In order to effectively engage in differentiated instruction at this level requires expertise in and a deep level of understanding in the subject area being taught. In concurrence with the recommendations made by Walton et al. (2014), Professional Learning Communities (PLCs) should be established at full-service schools. As members of the PLC, the LSEs and other members of staff involved with providing academic support should collaborate with educators who have subject knowledge expertise. Collaboration within the context of such communities would provide educators at a full-service school the opportunity to discuss challenges, share success stories, learn from each other and broaden their subject area knowledge. Within the context of PLCs, the expertise of educators with regard to differentiated instruction will continue to grow. In fact, PLCs would serve as a suitable context for applying the tips suggested by Heacox (2009, p. 147) “For Keeping Differentiation Alive In Your School.” PLCs can furthermore offer a supportive framework to promote authentic differentiation practices and to encourage activities that facilitate differentiated instruction becoming a habit. Heacox (2009, pp. 168-169), outlines twelve criteria for authentic differentiation and specifies what the habits of differentiation are.

6.4 Conclusion

Mastering differentiation and making differentiation a habit to facilitate transformation should be the goal of full-service schools. If this does not happen, we may continue to see differentiation being implemented only at a superficial, basic level. As Heacox (2009, p. 168) explains, “Differentiation done well becomes the way you think about teaching and learning in your classroom. It becomes a habit, an almost automatic response in how you engage in the art and science of teaching ... Differentiation becomes the way we do the work in today’s academically diverse and increasingly challenging classrooms. It’s a habit worth developing.”

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APPENDICES

Appendix 1 Initial Questionnaire

Name: _____

Questionnaire	Never	Seldom	Sometimes	Often	Always
I incorporate differentiated instruction when I plan lessons.					
When I teach, I make use of scaffolding, as a differentiated instruction strategy.					
I collaborate with colleagues when planning and implementing differentiated instruction.					
I modify the curriculum using differentiated instruction as a way of responding to learner diversity.					
When conducting assessments I allow for multiple intelligences and set questions reflect varying levels of complexity and abstraction.					
I reflect on how I've applied differentiated instruction as a way to further inform my teaching practice.					
I feel confident with regard to my experience in and ability to set tiered assignments.					
I organise my learners in flexible groups when differentiating instruction.					
I make use of a variety of texts on the same topic at various reading levels in order to differentiate instruction.					
During lessons and the presentation of assessment tasks, my learners use various modalities to demonstrate their knowledge.					
I feel that I am able to incorporate differentiated instruction into my classroom routine.					
I teach a topic within my subject area at various levels, to accommodate the diverse points of entry and levels of readiness of my learners.					
I use individual learning profiles to inform my responses to the learners.					
I gear lessons to the varied interests of my learners.					
I allow for and provide various types of support materials, e.g. manipulatives, assistive devices and computer technology.					

Appendix 2 Preliminary Interview Questions

1. How would you personally describe your understanding of what “Differentiated Instruction” is?
2. Can you give me an example of how you used differentiated instruction to modify the content you were teaching?
3. In terms of the process of teaching, i.e. instruction, what types of differentiated strategies do you use?
4. In what way, in your experience, is differentiated instruction incorporated into the assessment of your learners?
5. How, in your experience, could differentiated instruction serve to create a positive climate in the classroom?
6. In your experience, what are the benefits of differentiated instruction?
7. What have been the challenges that you’ve faced, as you have implemented differentiated instruction?
8. Describe any training or professional development relating to differentiated instruction that you underwent.
9. What, in your opinion, are the misconceptions about differentiated instruction?
10. What suggestions can you make with regard to improving the implementation of differentiated instruction?
11. Explain how, in an inclusive classroom, you would identify if a learner has ‘special’ needs.
12. How would you use differentiated instruction as a framework within which to address these needs?
13. In what way, in your opinion, could an educator use differentiated instruction effectively, in relation to the multicultural diversity reflected in South African classrooms today?
14. How, would you suggest, a educator adapts his/her knowledge of differentiated instruction to address the needs of English Language Learners (ELLs)?
15. Describe how you would incorporate differentiated instruction within your daily classroom routine.
16. In your experience, describe a lesson plan where differentiated instruction was implemented successfully.
17. When applying differentiated instruction, what kinds of materials and resources lent themselves positively to the process?
18. Which particular topics within the curriculum for your subject, lent themselves favourably to differentiated instruction?
19. Which topics, within CAPS, for your subject, were difficult or challenging to differentiate?
20. How have you handled the situation, where in your experience, differentiated instruction has not met the needs of a learner in your class?

Appendix 3 Observation Checklist

Date of observation:

Time:

Class:

Participant:

C1: Was able to identify barriers to learning during lesson

C2: Was able to create multiple learning activities

C3: Demonstrated sensitivity to the learning needs of individual learners

C4: Used varied resources, catering to different interests

C5: Identified big ideas when delivering the curriculum

C6: Adjusted pace accordingly

C7: Varied format of instruction

C8: Grouping was flexible

C9: Used manipulatives

C10: Allowed for assistive technology

C11: Visual supports were evident

C12: Text materials used were of varied levels of reading difficulty

C13: Feedback was frequent, immediate and constructive

C14: Evidence of scaffolding observed

C15: Planned activities reflect a high level of choice based on various interests

C16: Multi-level teaching observed

C17: Physical environment was conducive to differentiated instruction

C18: Questioning techniques observed facilitated learners making critical connections

Adapted from: questionnaire in de Jager (2013) and “The Reach Inventory” in Rock, Gregg, Ellis & Gable (2008)

Classroom observation (continued)

Code	Yes	No	Comments
C1			
C2			
C3			
C4			
C5			
C6			
C7			
C8			
C9			
C10			
C11			
C12			
C13			
C14			
C15			
C16			
C17			
C18			

Summary of field notes:

Appendix 4 Document Analysis

4(A) Lesson Plan Checklist

Date of lesson:

Subject:

Participant:

<u>Criteria:</u>	<u>Yes</u>	<u>No</u>
1. Reflects specific learner characteristics relating to individual learning needs, interests and learner profiles.		
2. States, in relation to content, process, product and learning environment, the curricular and instructional strategies that will be used to address these individual learner characteristics.		
3. Core concepts of the curriculum to be taught in that unit are specified.		
4. Essential, critical questions relating to the topic are evident		
5. A schedule is provided of how the topic will be divided into specific units and the sequence in which these units will be taught.		
6. Reflects characteristics of the class as a whole, in terms of class dynamics, taking race/ethnicity, culture and socioeconomic status into account		
7. The plan reflects collaboration and notes which members of staff work together.		

These criteria are based on the “Unit Planner Template” in van Garderen and Whittaker (2006, p. 17).

Comments:

4(B) Assessment Tasks/Assignments Checklist

Date of assessment:

Subject:

Participant:

<u>Criteria:</u>	<u>Yes</u>	<u>No</u>
1. There are differing levels of task completion within an assessment unit.		
2. The assessment tasks reflect grade-level curriculum standards.		
3. The tasks allow for different modes of presentation, including: writing, making, doing and saying.		
4. The tasks reflect concessions awarded based on the individual needs of the learners, e.g. extra time, spelling amanuensis.		
5. The tasks allow for the use of assistive technological devices, e.g. voice recognition programme on a laptop, such as “Dragon Speak”.		
6. Learners were allowed to use a variety of resources.		
7. The tasks include self-reflection/self-assessment.		
8. The tasks include a variety of entry level points into the content, based on various levels of readiness.		
9. Assessment tasks have allowed for group assessment.		
10. Tasks and assignments allow learners to display ability in multiple intelligences (bodily-kinaesthetic, verbal-linguistic, logical-mathematical, interpersonal, intrapersonal, visual-spatial and musical).		
11. Assessment/Task items reflect varying levels of difficulty based on Bloom’s Taxonomy (knowledge, comprehension, application, analysis, synthesis and evaluation).		
12. Is a positive reflection of what the learner knows and can do.		

These criteria are based on: *Guidelines For Responding To Learner Diversity In The Classroom – Curriculum Assessment Policy* (DBE 2011).

Comments on assessment task:

Appendix 5 Post-Observation Interview Questions

(To be conducted with Grade 7 educators following lesson observations)

1. According to their profiles or pre assessments, what are the specific learning needs of the learners in this class that you would have taken into account when planning the lesson?
2. Describe how the plan for this particular lesson catered for including the specific learning needs of the Grade 7 learners in your class.
3. Explain how the lesson plan was designed to include the various interests as well as levels of readiness on the part of the learners, relating to the topic that you were covering.
4. Which concepts did you want your learners to understand after this lesson?
5. Describe the skills that you would have expected your learners to apply accurately after this lesson.
6. Which differentiated instructional techniques did you use during the lesson in order to respond to the needs of the learners?
7. What evidence of student learning could you identify during the lesson?
8. Describe any modifications that were applied to the tasks that the learners had to complete.
9. During some lessons, the goal was to prepare the Grade 7 learners for the Annual National Assessment (ANA). What is your opinion regarding the revision booklets for this assessment?
10. In your opinion, how do the Annual National Assessments, which the Grade 7s will write for the first time in September, reflect differentiation?

Based on the research questions and on “Descriptive Feedback”, the third step in: “Steps for a Coaching Session” (Heacox, D., 2014).

Appendix 6 Ethics Clearance Letter From Ethics Committee



Wits School of Education

27 St Andrews Road, Parktown, Johannesburg, 2193 Private Bag 3, Wits 2050, South Africa. Tel: +27 11 717-3064 Fax: +27 11 717-3100 E-mail: enquiries@educ.wits.ac.za Website: www.wits.ac.za

26 March 2015

Student Number: 8908742M

Protocol Number: 2015ECE006M

Dear Wendy Groeneveld

Application for ethics clearance: Master of Education

Thank you very much for your ethics application. The Ethics Committee in Education of the Faculty of Humanities, acting on behalf of the Senate, has considered your application for ethics clearance for your proposal entitled:

The extent to which Grade 7 educators in a Full-service School apply differentiated instruction to facilitate inclusive teaching and learning.

The committee recently met and I am pleased to inform you that **clearance was granted**.

Please use the above protocol number in all correspondence to the relevant research parties (schools, parents, learners etc.) and include it in your research report or project on the title page.

The Protocol Number above should be submitted to the Graduate Studies in Education Committee upon submission of your final research report.

All the best with your research project.

Yours sincerely,

A handwritten signature in black ink that reads 'M Mabete'.

Wits School of Education

011 717-3416

Cc Supervisor: Dr Moeniera Moosa

Appendix 7 Letters To The Participants

LETTER TO THE PRINCIPAL

DATE: May 2015

Dear

My name is Wendy Groeneveld. I am a Masters learner in the School of Education at the University of the Witwatersrand. I am doing research on the extent to which Grade 7 educators in a full-service School apply differentiated instruction to facilitate inclusive teaching and learning. My protocol number is: **2015ECE006M**.

My research involves obtaining an understanding of how Grade 7 Mathematics and English First Additional Language educators apply differentiated instruction within the context of a full-service school. The initial questionnaire will serve as a screening tool, in order to select those educators whose knowledge of and experience in differentiated instruction will best serve the purpose of my research. The full-service School which has the highest number of suitable participants will then be selected as the research site. Preliminary interviews will take place after school in order to further establish the nature of the participants' knowledge of and experience in differentiated instruction. Ideally, following the interviews, I would then select and invite two Mathematics and two English educators to be willing participants in the research. Classroom observation is the next data collection tool, where I would be a non-participating, silent, impartial onlooker. During observation, I will be audiotaping the lesson, working on a checklist and taking field notes. There would be no disruption whatsoever to the timetable and delivery of lessons. Every observation session would be arranged beforehand with the educators. Before the lesson, I would ask the participating educators for a copy of their lesson plans and any assessment tasks which they have prepared. These documents will be analysed according to criteria set in government policy and research literature. After school, post-observation interviews, on an individual basis, will take place with the participant educators. The aim of these interviews is to provide descriptive feedback and the opportunity for reflection and to generate new ideas. In total, the entire research process at the school would be no longer than four weeks.

The reason why I have chosen your school is because my research needs to take place specifically at a full-service School.

I am inviting your school to participate in this research to gain further insight into the successes and challenges involved in having to differentiate the curriculum for Grade 7 Mathematics and English First Additional Language, in order to be inclusive of all learners at a full-service School.

The research participants will not be advantaged or disadvantaged in any way. They will be reassured that they can withdraw their permission at any time during this project without any penalty. There are no foreseeable risks in participating in this study. The participants will not be paid for this study.

The names of the research participants and identity of the school will be kept confidential at all times and in all academic writing about the study. Your individual privacy will be maintained in all published and written data resulting from the study.

All research data will be destroyed between 3-5 years after completion of the project.

Please let me know if you require any further information. I look forward to your response as soon as is convenient.

Yours sincerely

Wendy Groeneveld

57 Louis Botha Drive, Florida Hills, 1709, Roodepoort

wends.groeneveld@gmail.com

H: (011) 672-5097 C: 072 285-5953

PERMISSION LETTER FROM THE PRINCIPAL

To: the Human Research Ethics Committee at the WITS School of Education, University of the Witwatersrand

As the principal of Discovery Primary School, I confirm that the school district (Johannesburg West) grants permission to the applicant for the proposed research to be conducted.

Researcher: Wendy Groeneveld, learner number 8908742M

Research Proposal: The extent to which Grade 7 educators in a Full-service School apply differentiated instruction to facilitate inclusive teaching and learning.

Printed Name of School Principal

Signature of School Principal

Date

Dear Learner

My name is Wendy Groeneveld and I am a Masters learner in the School of Education at the University of the Witwatersrand.

I am doing research on the extent to which Grade 7 Educators in a full-service/Inclusion School apply differentiated instruction to facilitate inclusive teaching and learning. My protocol number is **2015ECE006M**.

My investigation involves being personally interested in differentiated instruction and learning more about it. The best way for me to learn about differentiated instruction is to see how your Mathematics and English teachers put it into practice in class. This means that my study will concentrate on what your teachers are doing and not on you at all. I will sit quietly in the classroom and take notes, as well as mark off certain criteria relating to differentiated instruction on my checklist. I will arrange with your teachers beforehand as to when I will observe the lessons, so that you will not be disturbed.

I was wondering whether you would mind if I invited you to take part in my research project. There will be no changes and no interruptions to your timetable and lessons, so don't worry about that. I need your help with regard to observing how Grade 7 learners respond when their educators differentiate Mathematics and English lessons. This means that I would observe and audio record, as they are teaching you, how your teachers respond to your individual learning needs, how they allow for different ways of showing what you've learnt and how they draw upon the various interests that you have. In other words, I would like to learn how the Mathematics and English teachers achieve the goal of implementing differentiated instruction.

Remember, this is not a test, it is not for marks and it is voluntary, which means that you don't have to do it. If you decide not to participate, you would not be excluded from any lesson at all and I will not write about what you said or did in class, in my report. Also, if you decide halfway through that you would prefer to stop, this is completely your choice and will not affect you negatively in any way.

I will not be using your own name but I will make one up so no one can identify you. All information about you will be kept confidential in all my writing about the study. Also, all collected information will be stored safely and destroyed between 3-5 years after I have completed my project.

Your parents have also been given an information sheet and consent form, but at the end of the day it is your decision to join us in the study.

I look forward to working with you!

Please feel free to contact me if you have any questions.

Thank you

Wendy Groeneveld

57 Louis Botha Drive, Florida Hills, 1709, Roodepoort

wends.groeneveld@gmail.com

H: (011) 672-5097

C: 072 285-5953

Learner Assent Form

Please fill in the reply slip below if you agree to participate in my study called:

The extent to which Grade 7 educators in a Full-service/Inclusion School apply differentiated instruction to facilitate inclusive teaching and learning.

My name is: Wendy Groeneveld

Permission to observe you in class

I agree to be observed in class. YES/NO

Permission to be audiotaped

I agree to be audiotaped during the observation lesson YES/NO

I know that the audiotapes will be used for this project only YES/NO

Informed Consent

I understand that:

- My name and information will be kept confidential and safe and that my name and the name of my school will not be revealed.
- I do not have to answer every question and can withdraw from the study at any time.
- I can ask not to be audiotaped, photographed and/or videotaped.
- All the data collected during this study will be destroyed within 3-5 years after completion of my project.

Name of learner: _____

Sign _____ Date _____

INFORMATION SHEET PARENTS

DATE: July, 2015

Dear Parent

My name is Wendy Groeneveld and I am a Masters learner in the School of Education at the University of the Witwatersrand.

I am doing research on the extent to which Grade 7 educators in a full-service School apply differentiated instruction to facilitate inclusive teaching and learning. My protocol number is **2015ECE006M**.

My research involves observing how the Grade 7 Mathematics and English First Additional Language educators not only deliver the curriculum, "CAPS", but how they differentiate lessons and assessment tasks in order to make the curriculum accessible to all the learners in the class. Differentiating the curriculum is related to inclusive teaching, which in turn can be thought of as "responsive teaching". I propose to take notes and complete an observation checklist, as I see how the educators respond to your child's interests, learning profile and level of readiness when teaching the curriculum.

The reason why I have chosen your child's class is because I want to learn how Grade 7 Mathematics and English educators could use differentiated instruction to meet the requirements of the curriculum, while simultaneously fulfilling the need to be inclusive of all learners in the class and preparing them for high school.

I was wondering whether you would mind if I invited your son/daughter to participate in my project. Rest assured that teaching will proceed as normal, with no interruptions. I will not be interacting in any way with your son/daughter, but will simply observe and audio record his/her Mathematics and English educators when they differentiate their lessons. My intention is to describe how the lesson plans which the educators will submit, actually unfolded at a practical level, in the classroom.

Your child will not be advantaged or disadvantaged in any way. S/he will be reassured that s/he can withdraw her/his permission at any time during the scheduled two week classroom observation period, without any penalty. This means that your child will still participate in all lessons, but observation of his/her interaction with and response to the educators will not be included in the research report. There are no foreseeable risks in participating and your child will not be paid for this study.

Your child's name and identity will be kept confidential at all times and in all academic writing about the study. His/her individual privacy will be maintained in all published and written data resulting from the study.

All research data will be destroyed between 3-5 years after completion of the project.

Please let me know if you require any further information.

Thank you very much for your help.

Yours sincerely,

Wendy Groeneveld

57 Louis Botha Drive, Florida Hills, 1709, Roodepoort

wends.groeneveld@gmail.com

H: (011) 672-5097

C: 072 285-5953

Parent's Consent Form

Please fill in and return the reply slip below indicating your willingness to allow your child to participate in the research project called: **The extent to which Grade 7 educators in a Full-service School apply differentiated instruction to facilitate inclusive teaching and learning**

I, _____ the parent of _____

Permission to review/collect documents/artefacts

Circle one

I agree that my child's learning profile form can be used for this study only.

YES/NO

Permission to observe my child in class

I agree that my child may be observed in class.

YES/NO

Permission to be audiotaped

I agree that my child may be audiotaped during observations.

YES/NO

I know that the audiotapes will be used for this project only

YES/NO

Informed Consent

I understand that:

- my child's name and information will be kept confidential and safe and that my name and the name of my school will not be revealed.
- he/she does not have to answer every question and can withdraw from the study at any time.
- he/she can ask not to be audiotaped, photographed and/or videotaped.
- all the data collected during this study will be destroyed within 3-5 years after completion of my project.

Sign _____ Date _____

Dear Grade 7 Educator

My name is Wendy Groeneveld and I am a Masters learner in the School of Education at the University of the Witwatersrand. I am doing research on the extent to which Grade 7 educators in a full-service School apply differentiated instruction to facilitate inclusive teaching and learning. My protocol number is: **2015ECE006M**.

My research involves gaining insight into how differentiated instruction is implemented by Grade 7 Mathematics and English First Additional Language educators, within the context of a full-service School. Gaining such insight would entail educators completing a questionnaire, to enable me to select the most suitable potential participants. At a mutually-agreed time that is convenient for you, I propose to conduct preliminary interviews, which will provide more detailed information regarding the knowledge of and experience in differentiated instruction of the potential final participants. These interviews will be audio-recorded and transcribed and will be the basis of the selection of the four participants in the study. Ideally, I would like to invite two Grade 7 Mathematics and two Grade 7 English educators to participate in my study. Prior to classroom observation when it is convenient for you, I would request copies of lesson plans and assessment/assignment tasks for document analysis. This data will then be compared to my field notes written in my research diary, the audio tapes from audio recording the lessons and the data obtained while completing an observation checklist. It would be ideal if you would permit me to observe two Mathematics (one hour each) and two English lessons (one hour each) over a two week period. The educators are the central core of my intended research and my aim, as a non-participant, impartial researcher, is to accurately record what I've observed as a case study. This research, being a case study, is narrative in its focus. It will be about sharing and telling of your experiences, not evaluating differentiated instruction as though it's a programme you're implementing. The post-observation interviews will not be critical and evaluative in nature. Instead, they will serve as a means to provide feedback to you, the participants.

The reason why I have chosen your school is because it is a full-service school, where I would most likely be presented with the opportunity to observe differentiated instruction taking place within the context of the practice of inclusive education. I need your help in contributing to research on differentiated instruction within the South African context.

I was wondering whether you would mind if I invited you to be a participant in my research. As educators currently engaging in the practice of inclusive pedagogy, I invite you to share your knowledge and experience of implementing differentiated instruction with me, in order to create a valuable resource pool about what works, where the challenges lie and what needs to be changed with regard to implementing differentiated instruction in the future.

Your name and identity will be kept confidential at all times and in all academic writing about the study. Your individual privacy will be maintained in all published and written data resulting from the study. All research data will be destroyed between 3-5 years after completion of the project.

You will not be advantaged or disadvantaged in any way. Your participation is voluntary, so you can withdraw your permission at any time during this project without any penalty. There are no foreseeable risks in participating and you will not be paid for this study.

Please let me know if you require any further information. Thank you very much for your help.

Yours sincerely,

Wendy Groeneveld

57 Louis Botha Drive, Florida Hills, 1709, Roodepoort

wends.groeneveld@gmail.com ; H: (011) 672-5097 C: 072 285-5953

Educator's Consent Form

Please fill in and return the reply slip below indicating your willingness to be a participant in my voluntary research project called: **The extent to which Grade 7 educators in a Full-service/Inclusion School apply differentiated instruction to facilitate inclusive teaching and learning.**

I, _____ give my consent for the following:

Circle "YES" or "NO":

Permission to review/collect documents/artefacts

I agree that (copies of lesson plans and templates of Grade 7 Mathematics and English tests/assignments) can be used for this study only. YES/NO

Permission to observe you in class

I agree to be observed in class. YES/NO

Permission to be audiotaped

I agree to be audiotaped during the interview or observation lesson YES/NO

I know that the audiotapes will be used for this project only YES/NO

Permission to be interviewed

I would like to be interviewed for this study. YES/NO

I know that I can stop the interview at any time and don't have to answer all the questions asked. YES/NO

Permission for questionnaire/test

I agree to fill in a question and answer sheet or write a test for this study. YES/NO

Informed Consent

I understand that:

- My name and information will be kept confidential and safe and that my name and the name of my school will not be revealed.
- I do not have to answer every question and can withdraw from the study at any time.
- I can ask not to be audiotaped, photographed and/or videotaped.
- All the data collected during this study will be destroyed within 3-5 years after completion of my project

Sign _____

Date _____

Appendix 8 Samples Of Lesson Observation Field Notes

Sample One: Lesson Observation Field Notes

Date of observation: 6 August

Time: 9:20 a.m.

Class: 7A

Participant: Participant 6

C1: Was able to identify barriers to learning during lesson

C2: Was able to create multiple learning activities

C3: Demonstrated sensitivity to the learning needs of individual learners

C4: Used varied resources, catering to different interests

C5: Identified big ideas when delivering the curriculum

C6: Adjusted pace accordingly

C7: Varied format of instruction

C8: Grouping was flexible

C9: Used manipulatives

C10: Allowed for assistive technology

C11: Visual supports were evident

C12: Text materials used were of varied levels of reading difficulty

C13: Feedback was frequent, immediate and constructive

C14: Evidence of scaffolding observed

C15: Planned activities reflect a high level of choice based on various interests

C16: Multi-level teaching observed

C17: Physical environment was conducive to differentiated instruction

C18: Questioning techniques observed facilitated learners making critical connections

Adapted from: questionnaire in de Jager (2013) and “The Reach Inventory” in Rock, Gregg, Ellis & Gable (2008)

Code	Yes	No	Comments
C1			
C2			No role-play, no reading of various dialogues, no comic strips provided as an additional resource
C3			
C4			
C5	√		All the essential rules regarding direct speech were covered thoroughly
C6			
C7			Format remained the same throughout: notes and exercises written on the board, learners copy down in their books, Participant 6 explains the rules and the learners then complete the tasks
C8			
C9			
C10			
C11			No posters, no readers, no core/theme words written on flashcards, no photocopied notes
C12			
C13			A lot of Participant 6's interaction was about maintaining discipline and reprimanding the learners for bad behaviour
C14			
C15			
C16			Everything is at a basic level
C17			
C18			

Summary of field notes:

- Revision of the definition of direct speech – Participant 6 emphasises that direct speech is also called reported speech
- The stickman figure with the speech bubble from the GPLMS lesson is drawn in yellow chalk on the blackboard – below this are the notes from the GPLMS lesson plan on direct speech
- Referring to the stickman figure, Participant 6 links direct speech to speech bubbles and he emphasises the point that in direct speech the exact words of the speaker are used
- Participant 6 is reassured by the learners that they remember what inverted commas are – he draws inverted commas in yellow chalk on the blackboard
- Participant 6 moves on to clauses (revises what a clause is) and then explains the role of the introductory verbs, “said” and/or “asked”
- Participant 6 goes through the next steps of adding the comma and writing the direct speech inside the inverted commas – He asks, “Any questions on this?” The learners reply, “No”
- Participant 6 revises all the steps quickly and then reminds the learners that the first word of the direct speech must start with a capital letter
- Participant 6 now writes up three sentences about Diwali on the blackboard – These sentences are from the GPLMS lesson plan
- The content of each of the three sentences is exactly the same, they are all syntactically correct – however, the syntax varies in each example
- The goal is for the learners to be able to apply direct speech in a different way each time – this is their homework task
- The learners actually don’t know about Diwali , as the school has not been supplied with the necessary reader required for the GPLMS lessons, which contains the interview with Renash
- Participant 6 is more concerned with revising the rules for direct speech than the actual topic on Hinduism and Diwali

Sample Two: Lesson Observation Field Notes

Date of observation: 4 August

Time: 11: 05 a.m.

Class: 7E4

Participant: Participant 1

C1: Was able to identify barriers to learning during lesson

C2: Was able to create multiple learning activities

C3: Demonstrated sensitivity to the learning needs of individual learners

C4: Used varied resources, catering to different interests

C5: Identified big ideas when delivering the curriculum

C6: Adjusted pace accordingly

C7: Varied format of instruction

C8: Grouping was flexible

C9: Used manipulatives

C10: Allowed for assistive technology

C11: Visual supports were evident

C12: Text materials used were of varied levels of reading difficulty

C13: Feedback was frequent, immediate and constructive

C14: Evidence of scaffolding observed

C15: Planned activities reflect a high level of choice based on various interests

C16: Multi-level teaching observed

C17: Physical environment was conducive to differentiated instruction

C18: Questioning techniques observed facilitated learners making critical connections

Adapted from: questionnaire in de Jager (2013) and “The Reach Inventory” in Rock, Gregg, Ellis & Gable (2008)

Code	Yes	No	Comments
C1			
C2	√		A number of examples were completed carefully
C3			
C4			
C5	√		Core concepts of expressions and formulae covered comprehensively
C6			
C7	√		Sometimes he lectured, at other times he explained using a transparency at the overhead projector and he also involved the learners, by asking them to solve the equations on the transparency
C8			
C9			
C10			
C11			
C12			
C13	√		Reprimanded appropriately regarding incomplete homework, but also praised the learners
C14			
C15			
C16			
C17			
C18	√		

Summary of field notes:

The lesson starts with Participant 1 checking homework. One boy hasn't completed his homework, so Participant 1 writes a note in red pen in the learner's book. Now he moves over to the overhead projector to go through the homework. He writes $5p + 2$ and asks, "What do you call this?" The learners are reminded that this is an expression. Then, Participant 1 proceeds to revise the vocabulary:

Participant 1 uses a blue marker pen to draw lines to label and identify the components or terms of the expression

5 – Co-efficient

2 – Constant

P - Variable

In the example $y - 6z$, Participant 1 explains that the co-efficient is 'y' and **not** 1. All is quiet in the classroom as everyone is marking homework. The context of the lesson is all about the terms of an expression. Learners are called upon individually to give answers. One learner who did not put his hand up to volunteer an answer is called upon to do so. Participant 1 makes the learners aware of two, different ways in which one can describe algebraic expressions in words. The learners have to finish corrections and must leave their books on their desks. They are instructed to take out another book, a homework exercise book.

Participant 1 introduces $2x + 7 = 17$ and asks, “What’s the difference between an equation and an expression?” He provides the answer by explaining that you can solve an equation but you can’t solve an expression. Next, Participant 1 presents the analogy with a scale. He asks the learners about what would happen to balancing the scale when something is taken away from the left side. He then explains that you have to add something to the right hand side to restore the balance. So Participant 1 establishes the rule for solving equations: What you do to the left, you must do to the right.

The following example is given: $a + 3 = 10$. The learners give the answer orally, which is $a = 7$. Participant 1 focuses on calculations, the step-by-step process of solving an equation. He asks the learners how to get rid of the + three. The next example is provided by the learners:

$b + 7 = 13$ the learner who is called up to the overhead projector solves the equation correctly

$d \div 7 = 5$ the learners become a little bit restless as they find this example to be challenging

Participant 1 elicits the answer orally and praises the learners. Now, he moves on to the steps, using the rule of inverse/opposite operations. A link is made to fractions, where Participant 1 revises that we call this ‘cancelling out’. He reinforces the ‘left hand side must equal the right hand’ rule.

$$2x + 7 = 17$$

For the next example, at a more challenging level, Participant 1 uses the strategy of covering the variable ($2x$) with his hand, so that the learners are not put off. He then uses the lhs/rhs rule to first of all get rid of the +7. We now have $2x = 10$. Participant 1 revises that $2x$ means 2 multiplied by the variable x . He asks, “‘2’ is in my way, how do I get rid of it?” The learners respond, “Divide by 2.” After doing exactly this, Participant 1 demonstrates checking your work, by means of substituting your answer for x into the equation to see if everything balances out. In the meantime, the learners are supposed to be copying these examples in their homework books.

Now, the learners have to solve this equation independently: $2x + 5 = 11$ Once everyone is finished, the learners have to put their pens down and watch how the learner who is standing at the overhead projector, solves the problem. She does not want to explain the steps, but solves the equation accurately. Participant 1 praises her by saying, “Great stuff!” The learner even substitutes the value for x to check her answer. The class applauds her.

A worksheet for homework is handed out by Participant 1. One can hear the learners mumbling. Participant 1 explains that the homework task will be graded, starting at a simple level and moving on to a more challenging level.

Appendix 9 Transcript of Preliminary Interview: Participant 3 (English)

Participant Three

Researcher: Right, this is spot on, we are ready to start. That's excellent! So welcome Participant no. 3, really appreciate it. Before we begin I would like to actually convey my sincerest thanks and gratitude to you, for giving your consent to this interview and for your willingness to participate in the research. I really appreciate it

And Ja, before jumping straight in to differentiated instruction I thought we could just have a little introductory chat about how your day has been!

Participant Three :(laughs)

Researcher: Obviously busy! So Ja, what has been a highlight for you, for today?

Participant Three: Well today we went on an awareness campaign, we took the learners out on a march Wendy, at 11.45, the district facilitator came to monitor our preparations and input and what we put together to celebrate the Africa week. So we took the children out, we had them chanting slogans, and some were dressed in traditional African clothes, others had flags, hoisted flags; and we just put them in a line and they were just singing Nkosi Sikelele and the School Song and traditional African songs. And they were standing there and the photographer was there, covering for the local newspaper and the journalist interviewed some children and they explained what they understand when we say Africa Unite and No to Xenophobia. So yes, it was altogether a very awesome day!

Researcher: Well that is fantastic that the school is so involved with that. And I think that it is great that the district gets to be part of that and to witness the effort on the part of the school, you know to contribute so meaningfully to Africa Week!

So obviously this has been part of the school format or routine throughout this particularly busy week. You said earlier, before the interview began, that exams are coming up soon and...

Participant Three: Yes and the LEC's are busy screening our children

Researcher: Oh yes, that's right!

Participant Three: And we are attending workshops at the same time and still you know, we work on the pull out system, so we still have children that..

Researcher: Needing remedial work.

Participant Three: Yes, doing remedial work with. So Ja, we are very busy! Very busy!

Researcher: I suppose those folks will get back to routine next week, for the screening and the remedial ones.

Participant Three: Yes they will, they will

Researcher: Their workshops. Sjoe!

Participant Three: Yes, and it is also good that the workshop is tomorrow because tomorrow we write exams, so we can't really take the children out of class.

Researcher : No, no, no! Obviously.

Participant Three: So it is a good day for them to have their workshop tomorrow, now we have got the exam structure for tomorrow. So it has worked out perfectly okay for us.

Researcher: Well just to put everything in context, obviously your role at the school, just one of your many roles is obviously teaching the grade 7s English.

Participant Three: Yes

Researcher: So obviously your Grade 7 learners will be writing exams. I just want to ask you as a matter of interest; are there any Grade 7 children pulled out for remedial by the district officials?

Participant Three: Yes, the Learner Support Educators have children that are on the pull out system from grade 2 - actually grade 1, because there are some grade 1 failures – all the way to grade 7 they have children that they are on the pull-out system with. So tomorrow it is perfect that it is exams and they are going to a workshop. So it sorts out of balances it.

Researcher: Balances everything out, where the educator is at least might have the chance to get the children focused around ‘guys tomorrow ...’

Participant Three: You can go to exams, yes, yes

Researcher: I think the children will probably feel more at ease thinking ‘okay I am not having remedial therapy tomorrow so ...’

Participant Three: Because they are writing an exam.

Researcher: And you also play other roles within the school, tell us a little bit about that before we move on to differentiated instruction?

Participant Three: Okay, I am the head of department also for the English Department and Life Skills, so I manage that from Grade 4 to Grade 7

Researcher: Okay!

Participant Three: So I was currently today just checking all my question papers to make sure that they are all in order, so that we can conduct the exams. We are having a school assessment team meeting this afternoon, so we can compile the paper, the exam timetable, so we can give it to them tomorrow; because tomorrow they are only writing the English Paper 3 and the Afrikaans Paper 3.

Researcher: What is English Paper 3?

Participant Three: Essay writing, the creative writing.

Researcher: Okay.

Participant Three: So tomorrow they will receive the timetable for the rest of the exams, after the final discussions with the assessment team.

Researcher: Ja, obviously to confirm ...

Participant Three: Ja, because we had a district team assessment meeting yesterday so we are cascading information to the management team today. We compile the timetable today and give it to the children tomorrow.

Researcher: Wow!

Participant Three: To prepare for the exam.

Researcher: Whew!

Participant Three: And on top of that I am also the SBST coordinator. So yes, I am coordinating the Learning Support Educators, making sure of everything, that they are on target with their screening, they must target their screening this term, because we need to assess them as psychologists next term.

Researcher: Okay, right!

Participant Three: So Ja, we are working according to our management plans that we have got worked out. And then besides that I am also the PMDS coordinator. So I have got quite a number of tasks that I am busy with.

Researcher: You carry a huge amount of responsibility on your shoulders! Indeed! Wow! I mean making an invaluable contribution, that's incredible! Wow!

Participant Three: It's hectic!

Researcher: I'll say – to put it mildly! Alright, just to obviously fill you in as to the purpose of the interview, you very kindly filled in the questionnaire, so now the interview basically gives you the opportunity to further elaborate upon your responses to the questionnaire, and it will also give you the opportunity to bring in other things you would like to discuss about the differentiated instruction – that you might not have had the opportunity to do, just filling in the questionnaire. So it is really moving the questionnaire into something that is far more deeper and at a wider scale. And yes of course, obviously as this particular school has transitioned into becoming a full service school, so it becomes so important and again why I appreciate your willingness to participate, because your responses during this interview – which should last approximately 45 minutes or so – will make such a valuable contribution to that body of knowledge about differentiated instruction which is still developing and growing as one researches it more and as one gathers more data and information, as to how differentiated instruction is applied within the context of a full service school. And obviously I would also like to assure you that the initial guarantee of anonymity and confidentiality will be upheld and of course in addition to that, if at any stage you feel that you are uncomfortable you are within your right to then request that the interview be terminated. And of course as you can see there is a voice recorder, it is being audio recorded, just for the sake of the accuracy of the data being stored and retrieved.

Participant Three: No problem.

Researcher: Perfect. Alright so having clarified this I trust that we can proceed and now move on to the questions about differentiated instruction.

Participant Three: Sure

Researcher: Great, so my first question to you is how would you personally describe your understanding of what differentiated instruction is?

Participant Three: I would look at the word 'differentiate', it means different, so obviously when you are busy with the learners there has got to be some sort of difference in your teaching method, your approaches, your activities that you are operating them – because they are not all the same, and especially in the context of being a full service school; we have got the learners with learning support numbers, where we have got to adapt the curriculum for them a little bit, so Ja, our activities must be different and they don't all learn the same. They learn differently. So you need to take that into consideration when you do your planning. How do I plan for my children who are good learners, the ones who are listening? How do I plan for my visual learners that can only really see what they need to do, they can't really take it in cognitively, but they can see this is happening. And our learners that are kinaesthetic you know? So it is fairly important to follow the VAK in planning, to differentiate.

Researcher: Alright, yes, so obviously bringing in the whole concept of multi modal teaching, picking up the elements...

Participant Three: Picking up the different intelligences, yes.

Researcher: Okay! Alright, fabulous. Can you give me an example of how you use differentiated instruction to modify the content that you are teaching?

Participant Three: Sometimes I would make use of visual materials, to bring the message – so you can see it – because they don't always read and understand. So visually I bring a lot of visual colour, I bring colour in, so that it can be stimulating, and to create an interest in whatever topic it is that they are doing – other than just chalk and talk.

Researcher: Hm. So would it be accurate to say you use a lot of visual aids?

Participant Three: Yes, visual, yes.

Researcher: Hm. I mean there is certain support in terms of research which I have had a look at, in terms of using visual aids as part of differentiation.

Participant Three: I mean we start off with flash cards on Monday. Flash cards, posters, pictures, a poster relevant to the topic or the theme, to introduce it. I do dictionary work, I do a lot of questioning, so to get responses from the learners. I let them interact with one another and a lot of reading books that are colourful, that has pictures in it, that they can relate the content to.

Researcher: Ja, I mean a lot of the children relate to the pictures within that.

Participant: Yes.

Researcher: Okay, question no. 3, in terms of the process of teaching, when you instruct the children, what type of differentiated strategies do you use? In terms of actual teaching strategies, to differentiate your teaching?

Participant Three: Okay, I have just been using this now, because I have done the TESOL course, and there they actually say reduce the TTT, the Educator Talking Time, and I find that it is awesome; I find that when you are facilitating the learning, you give the instruction, you listen to meaning, you give the instruction to the activity, and a lot of engagement with each other in pairs or in groups. I find that it works, it really does work. If they are structured, they have a structured activity to do, and it doesn't have to be the same activity in each group.

Researcher: Structured, varied activities within groups

Participant Three: Yes, yes.

Researcher: Okay.

Participant Three: Yes, it works, it works really well.

Researcher: Alright, so just to re-cap, you would start off by giving an instruction and then there is a lot of engagement amongst the learners within groups and there are lots of activities for the children to do but these activities are structured in nature, and varied as well.

Participant Three: Yes.

Researcher: And if my understanding is correct, when you are applying TESOL which is obviously Teaching English as a language, right?

Participant Three: Yes, of other languages.

Researcher: Okay, that it kind of reduces the educator talking time.

Participant Three: Yes.

Researcher: And you feel that is really ...

Participant Three: They need to engage. They need to speak, you don't need to speak that much. You just need to introduce the concept and you must sit; they need to tell you what they understand, what they understand. And I find that they enjoy it, they really do enjoy it. They are making more meaning out of their learning because they are doing it by self-discovery.

Researcher: Wow! Okay, that is quite profound. I think that is wonderful, that you are finding this course really works. That's great!

Participant Three: It has enhanced my teaching method a lot, really, by introducing a warmer, by activating the lesson, by getting them engaged and eliciting the meaning from them – not just telling them – giving them the information and elicit, let them tell you!

Researcher: Let me just write this down. That really sounds fabulous. And of course TESOL is offered by WITS University, hey?

Participant Three: Yes, yes.

Researcher: Well we will come back to that within the context of another question within the interview.

Participant Three: Okay

Researcher: In what way in your experience, is differentiated instruction incorporated into the assessment of your learners?

Participant Three: That's a difficult one because we have this SCABS (?) document that we must comply with. So we have got to complete the curriculum, but it is also taking into consideration the context of the learner. For example I have a learner in grade 4 and one of my educators said to me 'ma'am he is suspected autistic; the mother is trying very hard to get a neurological assessment for him'. Because only the neurologist can confirm that it is autism. So we have been struggling for three years, I don't know what is happening and I actually said to the educator 'maybe we should just contact Autism SA ourselves'.

Researcher: That's a good plan.

Participant Three: And get them to come out here and test him. Because she says 'ma'am I need to differentiate all of his activities because he can't write, but he can draw pictures'. So that is perfect. She said 'can I let him do all of his exams, all of his assessments, by just drawing me a sequence of pictures' and so that is fine; you are differentiating the activity and you are differentiating the assessment for him to make it easier for him to work. And then also to take note that you can have amanuensis that you can apply but they don't recommend we do it for primary school children.

Researcher: Okay, tell me more.

Participant Three: More for high school children, because they believe that we must give the smaller ones at primary school an opportunity to learn to read, but for the high school children they actually apply amanuensis where the children are able to complete their assessments in a prescribed amount of time.

Researcher: On the topic of that – amanuensis etc – perhaps you can help me out here, do the district officials who are supporting the kids with learning needs, would they do assessment reports and then apply to the high schools for concessions? Or would you organize?

Participant Three: We do, we do apply for concessions for the learners, so the high schools will apply for amanuensis concessions for the learners. So they will give the high school the concession. We do apply for the

little ones, they give you maybe five or ten minutes extra, and they actually suggest that we make a picture build you know, set the child in a bright light – that is why you will find that the paper, especially when it comes to the annual national assessment, the printing is not small, it is rather big, and it is not a lot of cluttered questions; it is not a full paper, it is set out nicely, there is a lot of space, and it has got a lot of visuals on it, pictures as well – that enables a child to ‘oh, here is a picture’ – that it can relate to, about what it is that they are reading about. So there are a lot of things that we have got in place with concessions for the learners: the pictures, the way the test is set, that we take into consideration for these children, for them to enable them to perform at least at their level.

Researcher: Is this just a schools’ test or are you referring to ANA?

Participant Three: To ANA.

Researcher: Okay!

Participant Three: Even in the schools’ test, Foundation Phase has a font that they must use. I always tell my people ‘don’t clutter the page too much. Just space, make space in between, use the font 10 or 12 – that is the national font that gets used by the department. It is a nice size. And space your paper. And use visuals on your paper as well’. Always encourage them to do that, to give that child an opportunity to relate to a picture as well.

Researcher: Absolutely. Well from what you are telling me it looks like the Annual National Assessment at least paved the way for the children to achieve success

Participant Three: Yes, yes.

Researcher: So would you argue that in terms of the Annual National Assessments that we see a considerable amount of differentiation applied within that particular assessment? Or do you think there is room for more differentiation within that?

Participant Three: I think they are adequately applying differentiation because the way it is structured, you will find different types of questions, definitely Bloom’s taxonomy is applied; there is reading texts, there is writing, there is different types of questions like your true and your false, your gap fills, your statement answers, your motivating, your explain why. So it really is differentiated, and even the weakest of children can achieve some marks.

Researcher: Some marks from that.

Participant Three: Yes.

Researcher: Wow! Okay. Fantastic. Moving on to the next question: how in your experience could differentiated instruction serve to create a positive climate within your classroom? That links to effect, or emotion.

Participant Three: Hm. I think it will definitely bring about a positive climate if the children see ‘that I am being acknowledged: within my weakness I am being acknowledged’ and we are so inclined to look at this overall picture in our head; we are expecting all the learners to be at the same level, and they are not. So if I make it a little simpler for the child who cannot perform and achieve at the optimum level at least that child is going to feel worthy of the input that I have put in and I acknowledged the child – ‘well done, I am proud of you! Excellent work!’ – that is what the child can accomplish, and that is what we need to take into consideration. So don’t say ‘do the entire thing’, he can’t do the entire thing, what are you doing to the confidence and self-esteem of that child? You are just breaking it down. So if they have a chunk of work to do, you do A, B and C, the rest of you do A, B, C, D and E. That is all I expect from you because that is what I know you can do for me for today. It is fine. It’s awesome.

Researcher: And then obviously build up their confidence and they feel some form of acknowledgement.

Participant Three: Yes! 'I am part of this class!' And you will be surprised how children understand. If you say 'listen, Mary can't complete everything, you are going to complete everything and when you are done you must go and help; go and sit next to...' I always put the child, I change them around all the time: 'Come, sit here, Madam, you must help him'. I call them 'Madam' and 'Sir' – I can't remember all their names! 'Madam you must please help Sir over here, he is struggling a little bit today; he needs to get where you are'. So they understand, don't take for granted that they don't understand what is going on in your class, they do. They understand very well. And if you do it and you don't explain it to them, sometimes you create ... they would go home and say 'you are favouring some children'. But if you explain why I am doing it and you involve them in the process, you just have no problems in your class.

Researcher: Okay! So differentiated instruction obviously ameliorates the negative effects of what could be perceived as being favouritism. Because nobody is being favoured because everybody is being included and everybody has a role to play – some maybe a greater role than others but nevertheless everybody is part of the classroom environment so therefore nobody can say 'oh ma'am, you are favouring this child over me', you involve them. Favouritism only leads to ill feeling really.

Participant Three: Yes! 'Educator doesn't like me, she only likes that one'. It is not the case. So you need to actually explain it to them and involve them in the decision making in the class, and how are we going to go about helping each other, so that we can all achieve good results.

Researcher: Sure, it is all about everybody achieving something or accomplishing something at the end of the day. You know realistically, in whatever they are able within their own capabilities to accomplish.

Participant Three: Hm.

Researcher: Okay. In your opinion what are the benefits of differentiated instruction?

Participant Three: Oh many! There are really many. Like I said it is once more, in the context of that learner: you know like they understand, the understanding that 'I need to work a little bit more with Mary over here. You need to continue'. And they are so helpful; that is one of the benefits. They would even come and say 'ma'am what can we do? How can we assist?'

Researcher: Ah that is lovely!

Participant Three: You know? 'You need to engage quietly while I work with this group because I need to help them; they need to also get there where you are, your understanding, work on your own'. And you are making them independent, and you are helping them grow. And they also become more disciplined, because they understand that you are working here. We mustn't disturb ma'am, she is working with those children. But if that is it is structured – only if it is structured.

Researcher: Okay, so there is greater discipline if differentiated instruction is highly structured.

Participant Three: Yes. You can't just tell the one group 'you carry on, you carry on while I work.' No. They need to be actively engaged and they need to understand, they need to know the purpose of what they are doing.

Researcher: Sjoie, I mean that is many, many benefits.

Participant Three: There is. There really is.

Researcher: Alright, moving on from the benefits to the challenges, what do you understand, or in your experience, are the challenges of implementing differentiated instruction?

Participant Three: The time for the planning. The time and the planning, the amount of planning that goes into it, and the time. For me I find I can manage with the planning but then I am really not paying attention to everything else around me; I am only concentrating on my planning. I must change it, I must differentiate it. I

can't teach the same way as I am teaching all the other children you know? It takes a great amount of preparation and planning.

Researcher: I'm sure

Participant Three: Because now you have got to plan for a different structured activity and the time is not always there, because we are so engaged with other things.

Researcher: Sure. Ja, that happens in the day to day activities of a school.

Participant Three: Hm.

Researcher: You know where you might have the planning but there is no time.

Participant Three: There is no time. There are so many contextual factors on a daily basis. Like today we went out. Half an hour of the children's contact time has gone because we also have to make them aware of things, global things, worldly things. We can never catch up that half an hour that we have lost today.

Researcher: Sjoie! Any other concerns about the amount of time it takes to plan, and time constraints itself?

Participant Three: I am such a multi-tasker, I don't really have challenges. Really. I can multi-task.

Researcher: But maybe if somebody who is not so good as you are with multi-tasking, they may find that a bit of a challenge.

Participant Three: Hm.

Researcher: So I am going to say, would you say that you have to be able to multi-task quite effectively?

Participant Three: Yes. Yes, you must. And I believe in a diary, and a planner.

Researcher: Okay. And then can you please describe any professional developments or training related to differentiated instruction that you have underwent?

Participant Three: The TESOL course

Researcher: Okay, right. Tell us a little bit about that – what its foundations are, or ...

Participant Three: It is teaching English to speakers of other languages and in a communicative approach, using the different learning styles – the visual, auditory, and kinaesthetic – and the warmer (?), to engage the learners to activate their learning through a lot of visual aids and a lot of structured activity. And eliciting from them, and their understanding. And drilling, and drilling. That is also for me, the drilling.

Researcher: Okay, so that is another important component of TESOL

Participant Three: Yes.

Researcher: Well I find that to be quite nice because to me, correct me if I am wrong, but it looks like it is going back to basics, and also the fact that everything is so highly structured, it seems to maybe have established a nice basic foundation.

Participant Three: Yes

Researcher: But perhaps because it is eliciting the learners' understanding of what they are being taught, that might lend itself to perhaps greater cognitive challenges for the children, they can really lead to further deeper development or maybe allow you, the educator perhaps, to look at something at a more abstract level? Or would you say 'no'?

Participant Three: Yes, I think we engage with that abstract. You know when we were studying earlier we would say that we were going from the concrete to the abstract, and it is also very abstract to them. So we must clarify, a lot of clarification with the eliciting, so at the end of the day they can see the broader picture of what it is you are trying to teach them. And through using the visual aids, it is not that abstract anymore, because now they can relate.

Researcher: Well maybe as you say, if the kids get the broader picture then maybe would you say one can then move into the abstracts from there perhaps?

Participant Three: Yes, yes, yes.

Researcher: Great! How long did the TESOL training take?

Participant Three: 12 weeks – it was the whole of January, February, March, up to April, and we started last year December – 12 weeks?

Researcher: Wow! That is long, a quite intensive process.

Participant Three: Twice a week, three hour sessions.

Researcher: Well I just think it is fantastic that you feel able to incorporate this within your teaching methodology.

Participant Three: Hmm, I actually have developed some of my team members you know, with the approach, the open palm approach – don't point them, don't intimidate learners with a pointing finger, use the open palm you know, embrace them, welcome them into the learning process. That is something that struck me that was really awesome!

Researcher: That's lovely, gee!

Participant Three: Hmm, especially when you are drilling, don't point you know? Open your palm and acknowledge them.

Researcher: Yes, that makes sense, open palm seems to suggest well I acknowledge you and what you bring.

Participant Three: And I am embracing it as well.

Researcher: Okay!

Participant Three: It is beautiful, it's really lovely, I said to all the young ladies 'you should consider it; go and do that course. You will see a educator in a new light. Really, it is amazing'

Researcher: Wow! That is awesome. To move on to the next question: what suggestions can you make with regard to improving the implementation of differentiated instruction?

Participant Three: I think that the educators are in need of more development with regards to differentiated instruction. More development. That is the key. And actually observing of practical, of lessons, observing how it is done in practice.

Researcher: Okay!

Participant Three: Because you find that they are willing but they don't have the know-how; they ask 'ma'am how do you do it?' You need to demonstrate how you do it for them to really understand it.

Researcher: Okay! I mean that would certainly go a long way to improving the situation. I mean that is why I am doing this research now, so that I can myself take this time to observe differentiated instruction

as it is practically applied, and then write up the report so that those reading can then... so I am hoping that my narrative skills and the way I report on what I observe, will give my readers enough insight. So it is almost as if they are there in the classroom with me, next to me, observing this! Because wouldn't it be lovely if all the educators had this opportunity?!

Participant Three: Yes

Researcher: Amazing – that would be amazing, in an ideal world!

Participant Three: Yes.

Researcher: Wow! Any other issues you want to discuss with regard to improving differentiated instruction? Apart from greater professional development for the educators?

Participant Three: I don't think so. For me that was the challenge that I observed with my team members

Researcher: Sure, sure. Okay. To talk about learners who have learning difficulties or have special learning needs that must be addressed. How would you use differentiated instruction as a framework within which to address the needs of those particular learners? How would you reconcile differentiated instruction and addressing the special educational needs of some of our learners in a full service school?

Participant Three: Sjoel! One of my greatest fears is that you have got ...there are four service learners in your class, and it is a spectrum of learning barriers that you have got.

Researcher: Wow, quite a wide spectrum!

Participant Three: Yes, so my thinking is to eliminate the stress of differentiated instruction you know, to give one educator - maybe partially hearing or partially sighted children - then you know how you need to enlarge the print, your class must be bright you know? You need to do a lot of reading in that class because now they are going to depend a lot on the auditory senses. Not have all these different learning disabilities or barriers: now you have got visual ones, auditory ones, physical ones, you have got some struggling with emotional trauma, you know? You have some with social issues. So it makes it really difficult to differentiate your instruction. And then you find a educator just screaming at the children because of sheer frustration! So to streamline it: okay in this class you have these children, in that class you have these children, and also to create an awareness amongst the children and the parents, so that we all belong here. We are all here for one reason, to learn, to get educated, even though some of us learn differently. So differentiated instruction is not just the educator teaching differently; it is about the awareness, the greater awareness of parents, the greater awareness of children; they need to know why I am different and how I am going to be treated and how I am going to be taught. It will not always be the same as the 60% of the class. And they need to understand what is inclusivity. Because at the moment we have ADD children in the class, we have emotional trauma going on in classes, we have got like a lot of societal problems going on, we have a lot of HIV-related cases, which is not disclosed, so you don't know, but it is there – you know it is there. We have got like child abuse, children are not saying, but they are not learning. Why can they not learn? Because every child can learn. The situation is not right for learning, therefore they will not learn; the environment is not conducive for learning. And you need to understand it, to differentiate it.

Researcher: Ja. I mean as one of the foundations of differentiated instruction is, or inclusive education, is that every child can learn. I mean that is a fundamental concept or basis of inclusive education.

Participant Three: Yes!

Researcher: But as you say obviously the environment isn't always conducive. And I suppose would you say that is one of the challenges of differentiated instruction, is to structure the environment so that it is conducive?

Participant Three: Yes. Definitely. Okay, for us as a full service school, we have the moderate cases – very mild, to moderate cases. So if it is a severe case the child shouldn't be here. But you are still sitting with mild to moderate cognitive children in the classroom, you are still sitting with some children that are diabetic and epileptic and you know? So you need to give the child that is diabetic the opportunity to go and inject and have something to eat. The epileptic child to create an awareness – so the children can't concentrate for very long periods of time, you can't give them an activity for too long, it has got to be a short activity, short questions. Because some of them can't concentrate long, their concentration span is short. So you need to take that into consideration too! Others can't sit still for very long.

Researcher: Hmm, hyperactive.

Participant Three: Yes

Researcher: Sjoie, all of those things, and as you say, such a wide spectrum one sees within, or barriers, within one class!

Participant Three: Hm. It makes it very difficult for the educator. Yes

Researcher: Absolutely. That I can well appreciate. Gosh! And then how would you suggest a educator adapts his or her knowledge of differentiated instruction with regard to addressing the needs of English language learners, our learners for whom English is not a home language? How would you use differentiated instruction as a framework to address the needs of those learners?

Participant Three: Well they do have the basic understanding in their own language, you just have to bring it across as English. Right? So once again the concrete apparatus, the visual aids, the use of the visual flash cards, to have your classroom print-rich, make the classroom conducive. It must speak to English you know, and not over-correct. Not to correct every error also. Because the next time you correct me I am going to just keep quiet. And I don't want to keep quiet, I want you to engage with me.

Researcher: Right. Ja I mean that engagement is important, and I guess it would take courage on the part of the English language learners to engage in the first place.

Participant Three: Yes, and if you keep on telling me it is wrong, it is wrong, I am just going to be quiet. What is the purpose? It has got to become communicative. If you can't communicate you won't be able to write!

Researcher: Right! So it must be communicative.

Participant Three: Yes.

Researcher: Would you say TESOL is linked to assisting English language learners? Would you be able to apply what TESOL has taught?

Participant Three: Yes, definitely! Definitely! I think that the department couldn't have sent the educators on a better course. It was awesome, it was really great; that was excellent development for educators.

Researcher: Alright. Describe how you would use differentiated instruction within your daily classroom routine? Is it just part of your routine, or is it something that you deliberately need to put your mind around and say 'right, today I will differentiate'. Or is it part of your routine, and if so, how would you describe that?

Participant Three: It is not part of the daily routine, it is more planned. It is more structured. It depends. It depends on what you are actually teaching for the day. If you are teaching basically phonic spelling and you are doing the phonics and the syllables, it is enriching for those that can, whereas you are also helping those that can't. So I don't take a group aside. I do that with the entire class, because I believe I am enriching your knowledge and I am developing you who is struggling. So I also don't create that image where 'oh you can't

read, you don't know your phonics' – it is inclusively, everybody together. I will differentiate when it comes to reading. So they read on their same ability, then they will be grouped and we give them graded readers.

Researcher: Okay, so it is definitely differentiated, you have groups according to reading ability.

Participant Three: Yes.

Researcher: Okay, and any other way in which you would describe differentiated instruction as part of your routine?

Participant Three: Sometimes I find that the topics for essay writing is also a little difficult.

Researcher: Sure.

Participant Three: So like I was busy with a narrative, and some topics are more difficult than others, because it has got to be realistic, their writing has got to be realistic. So you cannot tell the child to write a narrative story on an experience that they have never been on; it is going to be very difficult to relate.

Researcher: Absolutely.

Participant Three: So differentiate there also; give them maybe two or three topics to choose from.

Researcher: Gosh, I hear you. Okay, so that must also be differentiated. Okay. And then to talk about the curriculum itself in terms of CAPS for grade 7 English. In your opinion what particular topics within the curriculum for your subject, English, lend themselves favourably to differentiated instruction?

Participant Three: Reading. Reading definitely.

Researcher: Definitely the reading side of things. Okay and what topics did not lend themselves so favourably? Which topics particularly within CAPS were more challenging maybe?

Participant Three: Language structure. Whew, language structure! And there it is very difficult: you have got to teach numerical adjectives to the entire class. It's very difficult. You cannot change it; a numerical adjective is a numerical adjective. A preposition is a preposition. You can't change it! So they have got to learn it. It is maybe the activity that you can give them that can be different, but the concept you can't change. You must teach it the way it is prescribed. My one child said to me 'Ma'am', I was doing prepositions of time, place, and movement, and she went out of the class and she came back and she said 'Ma'am aren't those adverbs?' And I said 'No, you are talking about adverbs of time, manner and place. We are talking about preposition of time, movement and place'.

Researcher: Oh wow! Yes!

Participant Three: So she picked it up! Adverbs speak to time, manner, place and preposition to time, movement and place.

Researcher: Now that is very tricky, I mean how can one differentiate that? I mean that is just the finer, nitty gritty knowledge and understanding of the ...

Participant Three: Yes, it is language structure

Researcher: ...language structure themselves.

Participant Three: Ja, it is very difficult to differentiate the language structure. You can just give them a differentiated form type of activity but at the end of the day they need to know what is a numerical adjective, what is a complex noun, what is an advert of time, what is a preposition of movement. It is like learning maths timetables.

Researcher: Absolutely.

Participant Three: Within the context of a sentence.

Researcher: Yes. Ja, well at least thank goodness the reading lent itself well to differentiated learning and probably the essays as well.

Participant Three: Yes, the writing as well.

Researcher: Thank goodness for that. And that then leads me to the conclusion of the interview. Again thank you so much for your time

Participant Three: It is a pleasure

Researcher: And I do hope and pray and I am sure that the learners will do well this week on Friday they are writing their essays.

Participant Three: Thursday. Tomorrow

Researcher: Oh Thursday, tomorrow they write their essay exam.

Participant Three: Hm.

Researcher: Holding thumbs for everybody there. And of course I will get a typed transcript for you of the interview, for you to sign, just so you can check that what has been transcribed is an accurate reflection of what we have discussed.

Participant Three: Okay, that's a pleasure, thank you so much.

Ends.

**Appendix 10 Transcript of Post Observation Interview: Participant 5
(Mathematics)**

Participant Five

Researcher: This gives me great pleasure to chat again with Participant Five, and I would like to start off by saying thank you ever so much for allowing me to observe you conduct lovely lessons in your class, I really appreciate that. It has been such a pleasant experience. So thank you very much again indeed for that. Before we start just as an introduction I know you clarified before how you were teaching Grade 6s and then moved on this year to teaching this year's Grade 6s – now in Grade 7 for the first time. How many years have you been teaching at this particular school?

Participant Five: It's going on for two years.

Researcher: Okay, so you are relatively new member of staff.

Participant Five: Yes. Of this staff.

Researcher: Right. Okay. It is just important to place everything in context so that the reader of the report can understand where you are coming from. So you are in your second year here and obviously your first year in this school of teaching Grade 7 maths

Participant Five: Yes

Researcher: And you have one class for maths and then of course the vice principal takes the other Grade 7 learners for maths

Participant Five: Yes

Researcher: Fantastic. So to begin I would love to chat to you about two lessons in particular. The first one is of course the GPLMS mathematics assessment task 1, 2 and 3, where I observed the learners and yourself addressing that particular assessment in class.

Participant Five: The assignment, yes

Researcher: And the other lesson which was lovely was the lesson you conducted with regard to data handling which I observed last week. So that is just a prompt for you and I...

Participant Five: To know

Researcher: Yes, just to know what we are talking about so that we can link in nicely to the question. First of all question 1: according to the profiles of the learners, if not profiles then perhaps any pre-assessments that you might have done. What in your view are the specific learning needs of the learners in Grade 7, in this class, that you would have taken into account when planning both these particular lessons?

Participant Five: The learners have a learning barrier in reading. That is why the grade 6 English educator comes in on a Saturday as well as myself, because we have realised that reading is a problem, it causes a problem in all other subjects. They cannot read or understand, not all learners but the ones with barriers, it is mostly a reading barrier. If they don't understand what they are reading they might be able to do computation, but they don't know what they are reading, they don't comprehend what they are reading. That is why I insist that they must read the question at least 3 times, to know what is required of them. Also I pick up, and I brought it up at Saturday's workshop we had, there is a hell of a backlog. I can't say, I have no proof, but I think, what I gather, is that there is a backlog in the junior (inaudible – intercom announcement drowns it out). There is not enough practical work done in mathematics and we are dealing with learners with visual needs.

Researcher: Visual needs.

Participant Five: These children we are dealing with today need to see to remember and understand. They are bored basically with talk and chalk. They need to see what you are talking about – especially maths – when it comes to volume, when it comes to measurement, when it comes to anything, even fractions, even perimeter, measurement, anything- they need to actually do it physically. You can't just explain 'this is what it is'. How did you get to that formula? We need to work around that practically, they need to physically measure things. They need to physically see, even if they have to measure the whole classroom because obviously they can't measure it with a ruler.

Researcher: Certainly

Participant Five: So I think that is a barrier, I think that is the biggest one, where practical work is neglected and I am going to say it and I said it Saturday in the workshop as well, I am frustrated, because I cannot do junior phase work – I am not saying they are incompetent, I speak under correction, they are not incompetent, I am not saying they are not doing their work but they must make a time for practical work, even if it is one day in the week, where the learners actually see 'oh there is 500 ml, 2 of those will make one litre'. They must actually see, they must count from bottle to bottle, and the shapes of the bottles doesn't make a difference. They must know these things, because as I said before, when I do it, it was like I am performing miracles. I am making magic, and I did it in Grade 6 – and I don't think it is my job to do it in Grade 6 again. It was redone in the lower grades

Researcher: Yes that is certainly obviously a concern for you, working in the senior phase with our Grade 7s where they don't have according to what you say, that practical experience which they should have gained in the lower grades. Would you say that having that practical experience might ameliorate some of the barriers to...

Participant Five: Definitely, most definitely. Instead of messing you, if I had heard about Wendy, if they had seen Wendy in a crowd I might just pass you in the street, but if I had a chat with you I would remember you. Because I have seen you more than once, we have spoken more than once. It is practical.

Researcher: Yes.

Participant Five: Even adults... it is the same like baking a cake. I can't read the ingredients and say I can bake it; I must actually bake it to see if I can bake it.

Researcher: Indeed, you need the practical follow through

Participant Five: Do you understand what I am saying?

Researcher: Absolutely

Participant Five: And baking a cake too has a lot to do with maths

Researcher: Oh yes baking is, oh one can go on and on with all the practical implications

Participant Five: Yes

Researcher: For sure. Okay so to get back this GPLMS mathematics assessment task, the way you conducted that and the way you conducted last week's lesson, and with the graphs about crickets chirping and the temperatures in Cape Town, Durban, Johannesburg, and I have missed out one city I think. Anyhow the plans for those lessons, how would you have addressed these specific learning needs of the children when you planned for those two lessons?

Participant Five: Well first of all there is geography involved as well. That is a very broad lesson though. I would have... I actually do need geography text books for time zones.

Researcher: Okay so reading geography text books beforehand is part of your plan

Participant Five: Yes

Researcher: To link the maths to the geography

Participant Five: Yes, but now in this case for the graphs I did last week, for the different provinces, some of the learners do not know they are dealing with provinces. So first I will have to show them why we are comparing this to that, because we are not in the same place, we are in different provinces. So the temperatures in the provinces are different. So obviously in that case I would have had a map with me as well. And different colour chalk, ink or whatever, crayons or whatever they need, to dot different colours for different provinces. So they can know. And it doesn't have to be a certain way, the graph doesn't have to be horizontal, it can be vertical, it can be any way to be able.

Researcher: Yes, that was very clear in the lesson

Participant Five: What I could also do is for them just to see immediately, due to time constraints also: I would have made an example, for them to just draw a simple graph quickly, just saying I would go to the supermarket and buy bananas, say 50 or a kg or whatever, I buy apples, I buy ten oranges, ten peaches, and the price is with it. Draw a graph according to that, quickly – a bar graph, a dotted graph, a line graph, whatever graph. By the information I am giving you verbally: coincidental teaching. For 2 kgs peaches I paid R50, just an example – draw a graph according to that. Obviously they must know the axes, y and x or a and b – whatever you want to make it. The one side would be the rand because I paid so much. It shouldn't take long. It is just to see if they understood – which I am planning to do today, given the time

Researcher: Ah yes, within time constraints, of course

Participant Five: The one side would have the rands and the other side the fruit and then we see which fruit costs the most. That is just coincidental test, it is quick. They can come up with their own examples, there are so many ideas you can come up with quickly, to see if they understand. Ten boys played soccer today, ten played rugby yesterday, sport on the one axis and the boys or girls – whichever sport you are dealing with, because graphs normally comes from the information you are dealing with collectively.

Researcher: That's right. I remember when I was observing the lesson, obviously with temperature you went right back. Explain how you linked in with regard to the liquid in the thermometer

Participant Five: That too! That is science.

Researcher: Right

Participant Five: Because I was amazed that they didn't know, because one child if you recall said it is ink.

Researcher: Yes

Participant Five: Now my feeling is they should know...

Researcher: So you had to link in because they didn't know

Participant Five: So then again, because I cannot teach science and maths. I can incorporate it but my understanding at this level is that they should have known it is mercury – at least some tried, they said ink, but how are we going to remember that, because mercury is poisonous, it is heavy – so that they know that if that thing breaks it is not safe. I thought they should have known.

Researcher: Indeed, one is surprised all the time I guess. From what I have observed you are constantly addressing the general knowledge side

Participant Five: Exactly

Researcher: Another example of that which I will ask you to please expand on has to do with the story of the GPLMS mathematics task. And I recall when we were looking at the table with the sum to do with the gravy, the pie and the crisps, looking at kilojoules, protein, fat and fibre. Can you recall and please explain to us, how did you link that to general knowledge on helping the children out with their problem solving?

Participant Five: Also signs, it has got to do with health that is life skills. The life skills – the eating habits, especially the girls in that grade specifically, it is actually a good question I think because they eat whatever they see. So at least they have an idea, if I eat too much of this, too much of that – because do we need all those things in our bodies? If I had to carry on in detail, it would have taken up a lot of my time. But that too is surprising because some of the learners don't know that a protein is needed in your body.

Researcher: That was going to be my next prompt and I am so glad you recalled that, because some of the learners did know exactly...

Participant Five: I am not sure if they actually do realise that eggs too are a protein. I don't know, I am not sure if they know because I don't teach natural science, I don't teach life skills in that regard, but maybe some of the learners clicked. But I really like that question though because it is really broad, it is mathematical, it's life skills, it makes the learners...like I say they learn what they mustn't eat too much of, because if you eat too much fat, if you eat too much of this... that question leads to actually when you go to the shop, look at the kilojoules, because every packet has that on it. When they do shopping, don't eat too much of this, don't eat too much of that. This is the kilojoules, this is the protein of this, and our bodies need all that. So it was a very ... I enjoyed that question because it was broad, it covered a lot of subjects.

Researcher: Talk us through the question about the water and the glasses being full of water, and its mass.

Participant Five: What question was that?

Researcher: It was Question B. I remember you had a plastic cup. So let me not talk, you continue to tell the story. How did you incorporate that in the lesson, and what was the tricky part there in terms of your teaching?

Participant Five: That was tricky because the question was set up wrong.

Researcher: Okay

Participant Five: According to... and that was my mistake because I should have double checked before I actually... I got it from Mr Reyneke as is, and I am not blaming him, I was supposed to double check. To me it sounded okay because I could have said the half of the glass is half already. I am addicted to water so I know – half of a glass – and the extras, it is $\frac{2}{3}$ fold up $\frac{3}{4}$

Researcher: Oh the $\frac{2}{3}$ comes with the other question

Participant Five: Ja, you must fill up half. When a glass if full of water the mass of the water is 380 gm when the glass is half full. So when the glass is full basically the mass is 380. Obviously when it is half the mass is 270. The question was printed wrongly. So the learners couldn't figure it out

Researcher: Tell me about the learners. In the front of the class you had a group of young ladies who seemed to be quite sharp

Participant Five: Yes

Researcher: And there is a lovely way that they interact with you and the one young lady did come up with the answer and you affirmed that.

Participant Five: I affirmed that.

Researcher: Tell me about this group.

Participant Five: They are, they are very ... they always ask questions, even this young girl. She used to come to the extra classes even though she was doing well. She is very ambitious. She could give me the correct answer but not how she got to the answer. Now that I found is a problem, so that is why I will get back to them with the right question – which I did.

Researcher: Okay. And when you got back how did you mediate, because it was a bit of a tricky one

Participant Five: The question was printed wrong, there was another set that Mr Reyneke had given me.

Researcher: You can see how I managed to wrangle a different number combination to come up with the same answer as you and the young lady derived. But I even I had to sit back and play around, because of the way it was worded.

Participant Five: For a lot of the learners what I did say they can do in the meantime is get a difference of the glass full and the glass half – in the meantime.

Researcher: Thank you.

Participant Five: Just give the difference in the meantime, of when it is full and when it is half empty.

Researcher: So to do as much as one can to solve the problem up to a point

Participant Five: Until we get clarity

Researcher: Until we get clarity. Okay, and then the one with the orange cake.

Participant Five: That too was printed wrong.

Researcher: Yes, tell us a little bit about that.

Participant Five: The way the question was set up made it very difficult. The one with the granny, oh the cakes and the tart. Some of our learners who can't read, because tart and cake, they are going to wonder 'tart'

Researcher: They don't know the difference maybe?

Participant Five: Between a tart and a cake – that alone, for learners with barriers to English, it would have been difficult for them too. It was confusing for some of them. Besides that the question should have been $\frac{2}{3}$

Researcher: Yes indeed, and it brings in a whole new dimension

Participant Five: Exactly

Researcher: Which is a division of a whole number by...

Participant Five: Which I also came back to the learners with

Researcher: Oh fantastic!

Participant Five: I couldn't read the copy. I showed them the right way, I explained to them that there was an error, and we corrected it together, so they know if it should appear somewhere else again that is the way it should be done

Researcher: Can you think of any other techniques – I observed up until the end of the table with the different foods and kilojoules, are there any other techniques you might have used to be inclusive? Any other differentiated techniques to make it easier for the learners who do experience difficulties?

Participant Five: What I found out on Saturday, even though I knew, we are not always to do practical work like I say, but I realised why rush through the work when you can just have this time and you know they know it. Take time and it is going to be solved and it won't be a recurring problem right through their school career; the minute they know it they know it. So in the case of the fractions, like the $\frac{2}{3}$ of 6

Researcher: Oh yes with the orange cake

Participant Five: I would have them have the fraction walls, which I have there, with a ruler, and get them to $\frac{2}{3}$ – $\frac{2}{3}$ and count up to 6 with a ruler measuring basically. $\frac{2}{3}$ means $\frac{2}{3}$ – it is a fraction, a piece of 6 basically; it is not a whole number, it is a fraction piece. So I would first then go to my table like you see it on the board, then I would have my comma after the units and then my 10s and 100s, show them the place. So after that they know that $\frac{2}{3}$ is a piece, it is not a whole number, because a whole number starts from units – before the comma

Researcher: That is really grade 1, back to the basic

Participant Five: Basics, exactly, and I found out that this helps – go right back. Anything after the comma is fractional pieces. So in other words $\frac{2}{3}$ I would then first convert to decimals so that we can place it – I am showing you now – and do the fraction, the decimal and the percentage – all three in one

Researcher: Okay

Participant Five: Then they have a better idea of $\frac{2}{3}$; it is not 2 or 3 of 6, it is a fraction piece of the 6. I think there and then and together with the fraction wall, with the ruler, go to $\frac{2}{3}$, or go to $\frac{1}{3}$ and $\frac{2}{3}$ and see what it ends up. Do you understand?

Researcher: Okay, yes!

Participant Five: So I believe all the children should have a fraction wall in their books, all the time.

Researcher: That's a good technique to use hey? Really good. Let's move quickly on to the next question. You might have addressed an element of it already. So you are going through these, LSM assessment, or you have got your lesson there on data handling. Now obviously your learners will come in at different levels. Some learners might be more familiar with particular concepts than others. In your lesson plan how would that have included addressing the different levels of entry points of your learners in terms of their understanding of the concept that you are going to introduce?

Participant Five: From my experience, I taught them data handling last year, they actually did a practical assignment on data handling, where information is gathered. You cannot do anything, not even a graph, without information. Market research basically. So it is not just graphs, you must sit and work out basically, you cannot just start off. You need to map out everything for yourself – what am I doing first, what is the question, which group am I going to target – old people, young people, boys and girls, how am I going to lay out money for no reason, what am I going to sell, are the people interested? So in other words you are trying to get a feel of community or the school or whatever you are busy with. From there I am telling you honestly, they find this the most interesting lesson for the year, because they are doing surveys, they are doing questionnaires, they are asking questions all the time, they collect the information, from the information they go to graphs, and from there they can analyse and after that they can figure out this is what I mustn't sell because I won't make money; I might as well sell it to all ages, all races, all grades, all gender, male/female. From there they can figure out such a lot and I did tell them when doing that, that you can't just start something, it is business like – it will help them in the future.

Researcher: So basically you are saying everybody is at the same page because you come in with a good, solid general introduction, a good solid foundation for everyone.

Participant Five: Yes

Researcher: So would you say that prevents this problem of where you have got Johnny who has a level of understanding way more advanced than Sue?

Participant Five: No, they understand this with because I have done it last year with them.

Researcher: So it is like a leveller

Participant Five: And it is practical.

Researcher: It is practical, it is a leveller where everybody comes in at the same entry point

Participant Five: Yes, except the new learners coming to our school; I had to reintroduce the information. If they come from a new school or different province, I have to reintroduce, explain the information – which I have to do in any case.

Researcher; I have seen you do that because when I observed the lesson you specifically did link up to Grade 6 data has been last year

Participant Five: Yes

Researcher: So that would be your example of really addressing different entry points to make sure ‘Guys are you all with me?’

Participant Five: Are you with me?

Researcher: I often hear you say that

Participant Five: It is a habit, to make sure

Researcher: To make sure everybody is on the same page. So that you don’t have different levels of understanding all over the place. And you are wanting to pull your hair out because...

Participant Five: No, I always ask, it is just a habit. But I find this is very practical, and they thoroughly enjoy it because they collect the information, they do tally tables, they do different graphs and the graphs are always... If it is a pie chart, a bar graph, a line graph – it is obviously going to come from the information collected.

Researcher: Obviously that actually ties up to another part of the question because it says how the lesson plan was designed to include the various interests. So now obviously as the learners move on and progress in data handling they will find it interesting, because it will be their own surveys, their own questionnaires, their own data that they have captured.

Participant Five: Yes, and it teaches them

Researcher: That makes me think of yet another question linked to differentiated instruction, which is as their maths educator would you give your learners the opportunity to display their data in different forms?

Participant Five: Oh definitely, yes.

Researcher: You wouldn’t have an issue with some doing pie graphs, some line graphs.

Participant Five: It depends on the question too

Researcher: Of course

Participant Five: The rubric is set, because there is a rubric that I mark it to. If it wasn't specific that I want a bar graph, and I want a pie chart and a line graph, then I wouldn't mind. But I won't disqualify them. At least show me one graph, but it depends on the question because there are questions linked to the assignment.

Researcher: I see

Participant Five: But if it is specific then they have to do it, and if not then...

Researcher: Then they have a choice.

Participant Five: Yes

Researcher: So what you are saying is it depends on assessment criteria etc. that have been stipulated

Participant Five: Yes, and it is...

Researcher: So depending on how specific those criteria are the less specific perhaps the more choice or leeway you might give your children to display their information they have gathered.

Participant Five: Yes, for example they can, the Grade 6s, not the Grade 7s – which they are going to do soon, any time this week – the question did not ask for line graph though, it asks for a bar graph and a pie chart. I said draw the graph that suits them, just to see if there is any other learner that will maybe do a line graph or a picture graph or pictograph or any other graph - just to challenge the learners – where they are short marks then I will add marks there, just for the initiative.

Researcher: Oh, lovely! That is really being very inclusive because you would obviously give credit to those learners who might have done things a little bit differently or extra.

Participant Five: Yes, or if the other graphs are not right – because all the graphs should add up together – because it is the total learners that is interviewed – if one of the graphs are wrong then they can score the extra one they did that wasn't in the question paper. I credit them for that.

Researcher: That's great, that is really, really great. So to go back to the GPLMS test and data handling lesson, mathematically speaking which concepts did you want your learners to understand after those two lessons? I think maybe it might be easier just to talk about the data handling

Participant Five: Measurement. Measurement.

Researcher: Okay

Participant Five: Conversion. Conversion of fractions, of units of measurement, they should know how to measure, how to convert any measurement, mms to metres, back forward, either which way – how to collect information, how to identify the different graphs – that is why I brought in the doctor – when they go to the doctor, simple things. The doctor obviously has a file with your temperature that goes up and down daily. They should know these things happen in real life. My main aim was to show them they are not doing maths for no reason; everything we are doing has got to do with daily lives. Every single thing every day in maths has got to do with our daily lives. If you drink a glass of water, if you drink a $\frac{1}{4}$ glass of water, if you drink $\frac{1}{2}$ a glass – whichever way – how many grams are you filling your body up with? If you do pie, how many proteins or kilojoules are you filling your body up with? To be aware of the daily things basically, that is the main aim, to get through to them that we are not doing maths for no reason.

Researcher: Those are wonderful goals and objectives certainly in terms of concepts. And then perhaps I am repeating myself but are there any specific mathematical skills that you would have expected your learners to apply accurately after those two lessons?

Participant Five: Yes. To be able to draw their own graph. Like I said before it is repetition, to draw a graph, given information, if I just tell them, mentioning the previous, if I says go to the supervisor and my apples and pears and fruit - coincidental teaching, to be able to do it right now

Researcher: Right here and now

Participant Five: Yes, that is a skill to be able to know they can draw a graph, I can convert a kilogram to grams, if it is grams they must know it is a smaller unit of kilograms, to reinforce and instil that they should know certain things in maths. They cannot be taught, they must learn it after having done it practically. Units and measurement, there are two sides to the ruler. If I say 10 cm turn the ruler around and see how many mm it is. Practical, it is right in front of you, there is no reason not to be able to give that answer. Because it is in front of you. I honestly believe in practical work. I have seen it, I have experienced it, I believe it. There is no other way.

Researcher: In many ways it could be a practical subject

Participant Five: I have seen it with the good learners as well.

Researcher: Oh right, yes, certainly one could differentiate. How about if one used differentiated instruction to articulate ...

Participant Five: Yes, say I do grams and kilograms, I just do bigger jars, or bigger bottles. Because the children seem to become nervous when they see big totals. Or commas or kilograms or tons. They become nervous. Those are our challenges with those kinds of questions. And the slow learners will stick still to grams and kilograms and mm and metres, because they don't seem to have learnt that doing it by degree you can actually see this is the truth – she is not lying! If I say 10 mm you cannot stand in front of the class and say 10 mm is equal to 1 cm – they must see it. And then they never forget it. They must take the ruler and measure it. Like when I did the volume, they were so amazed it was like I was performing magic. Now that makes me wonder where ... I can only see it in the junior phase – maybe it is the paper work, that makes them not able to do the practical, but I still feel the department must draw up something that one day of the week it is only times tables or that same day just practical. Just practical, bring whatever you can from home, empty bottles, empty jars, digital clocks, analogue clocks – let us see – because even the timetables we can do from the clock. Use the clock to do it. There are so many ways to do it

Researcher: Certainly, well that would be wonderful wouldn't it, if time was set specifically for...

Participant Five: I say if I was in government and in maths I would recommend that because we are fighting a losing battle, we are going on and on and the problem is we are in the class, we know the problem is practical work, time, we are overloaded with paper work and we are rushing through the curriculum, it is not benefiting us or the children. We are stressing ourselves to finish it but we are not getting results.

Researcher: Well that brings me to some other questions: during the two lessons I observed obviously within the context of time constraints, time to get through the curriculum; in your lessons, how would you identify an evidence of learning in the two lessons you conducted? How would you know 'great, my learners have understood these stories or they have understood the data handling'? What evidence of learning could you identify?

Participant Five: By them doing it in class, because the one was an assessment: do it in class as activities, I give them activities to see if they can do it. They have the DBE book as well that the Department printed for them, which has the same work in it. The GPLMS comes in that book, what are the activities in there. And just go back – 'how did you find that question?' – just ask them. What was the most difficult question that you struggled with? Because I am a person who won't carry on with the following lesson if there was a hiccup

Researcher: That was made quite clear in your preliminary interview

Participant Five: Yes

Researcher: You don't like moving ahead without...

Participant Five: No

Researcher: So two big things for you is looking at finding evidence in the work done in the learners' DBE books and through the questioning you use whilst teaching

Participant Five: And whilst teaching – they do it immediately – like the graphs as an example

Researcher: Oh, incidental

Participant Five: I will ask them to give me ideas to make their own graph.

Researcher: Let me add that in. Also through ...

Participant Five: Incidental teaching and ideas coming from learners. They enjoy doing that, giving their own information.

Researcher: Yes now you see with the incidental charts obviously the learners aren't expecting that

Participant Five: Exactly

Researcher: So it will make it fun

Participant Five: And I do a lot of coincidental teaching, it is just also a habit. When I do long additions then I will get my answer and from my answer I will do expanded notation, (repeats) from my answer

Researcher: So that is productive hey? So you will take the answer and work backwards

Participant Five: Yes, just to carry on reinforcing what they should have known. I mean what they should know; even if they know it, I will take that same answer and just remind them, let them say the answer allowed, write it and explain it, listen to what you hear, write down what you hear – where they expand the number. That is why when they write down 100 million, 10s, units or whatever, write down the 10s as well, zeros and things like that, in case the following question asks 'what is the value of the two – and it falls under the 100 = it is 200. And they know immediately because the answer is already in front of them.

Researcher: I think it is important there. If they can't identify the process that they are using to derive their answer then you know they haven't understood so now you will have to make a plan again to re-look that concept

Participant Five: Yes

Researcher: But if they can say to you this is how I got my answer, I did a b c and d and they can backtrack

Participant Five: Yes, it doesn't matter the method as long as they can show me

Researcher: So that for you is another sure fire way of assessing

Participant Five: Yes.

Researcher: Their understanding

Participant Five: And the story sums as well: I always insist they must only use the numbers in the work zone. They cannot add numbers that are not there, they must only use what is given in that story sum and make do with it. The first thing they should ask themselves is 'what operation must I do to get to my answer, I cannot just write my answer.' They should read it more than once to make sure they understand what is expected of them. And what operation will get me to my answer. So as far as that is concerned I showed them what I used to do

when I was at school. I used to make pictures of what I read, draw, three dolls, six shoes etc – then I will draw the shoes next to the girls – and then I know I must either multiply or subtract or whatever

Researcher: So you used pictures, you encourage them to draw little pictures or diagrams.

Participant Five: Write as they read. Yes.

Researcher: I noticed that in explaining some of the story sums and even the data handling you did go to your board and draw diagrams every now and again – not all the time but sometimes you did quite like to do that

Participant Five: When you see the faces look dazed then I must show them; I know the learners and I know when there is a problem, and they are too shy to ask. Then I can see ‘oh, that did help’ – going to the board – because you will notice my board is not written full. All the work is done and they must just come in and write. I teach, I write, as I write I explain and I always tell them to make notes – whether it is in a scrapbook – because it is not the work that I... it must be written work in the book. It is explanation and reduction. So draw those little pictures I do, draw the ladder of descending and ascending order – it is fine, as long as it is going to remind you what I explained in class. If you see the ladder you say ‘oh, she meant climb up or climb down the stairs’. Do you understand?

Researcher: Oh okay.

Participant Five: The picture, whatever I teach in class – I recall as a child when I was at school – the educator made this example or made this joke – oh now I remember!

Researcher: Yes, so diagrams and humour are excellent memory tools.

Participant Five: Yes

Researcher: Okay, Question eight. Did you have to modify any of the activities including this assessment or any of the tasks on the data handling for the children, or did everybody do the same task?

Participant Five: Everybody did the same task – with assistance because it is an assignment, it is not a test. With assistance, whether it is myself or any other maths educator or the parents – it is an assignment. So it wasn't a test where they had to wander along, they could ask for help. That is why the one girl said her father said the answer is 160. But she couldn't tell me how she got to 160.

Researcher: Right.

Participant Five: You recall?

Researcher: Ja, I keep on forgetting that GPLMS was an assignment not an assessment.

Participant Five: Yes, that one was assignment

Researcher: Yes, so there they could ask for assistance if need be.

Participant Five: Yes and they must not get it done for them, they must know what they are doing

Researcher: Of course. Before I forget that reminds me of the learning support educators. Correct me if I am wrong, some of the learners who really struggle with maths who might be say performing at a level well below Grade Seven would go to the LS folk. However would you say that at the end of the day the exams and so on, are those modified at all for those particular learners or does everybody write the same exam?

Participant Five: No, I think it is modified per learner, given where they are, because they are not all at the same level so it is not all for the same; they need special learning in that addition, they need to pack it out; the other

learner might need some other thing. So they cannot do it on paper that is why we apply for concessions at the Department, for those learners who cannot read. But they do understand the work.

Researcher: And how are you finding that whole process?

Participant Five: It is a hell of a long process, it is tedious, you don't get all the information from the parents, they go with a letter now to home, and it is hopeless, it takes a while. But I think it is more frustrating for the learner to sit in the class whereas there are schools where they can do practical work, where they are going to feel more comfortable. Because it does cause insecurity; they become insecure because they are frustrated, they don't know what is going on. They are just going with the flow. Three of the children need to be placed at special needs schools, not inclusive schools. It doesn't mean because we are an inclusive school, we are a special needs school. Those learners must be given the opportunity to do what they are good at.

Researcher: And you feel the best forum for that would be appropriate placement at a former special needs school, or a resource centre.

Participant Five: Yes, after having us try everything – extra work, work at a lower level – it is not going to benefit them.

Researcher: To continue within a full service environment, in your opinion

Participant Five: Yes. We are not all good at the same things and we must admit that

Researcher: Oh sure

Participant Five: One learner can maybe fix a car that I had no clue of! Do you understand?

Researcher: Yes, of course

Participant Five: I could be reading, I can be writing, teaching, but I could really do much better...

Researcher: Looking at their strengths. And in terms of the report comments are there any modifications there as you do your report comments on the learners?

Participant Five: We just refer, we call the parents in all the time to inform them that the learners are struggling; we are in constant contact with the parents as well, where they need to know the progress of the learner, it is helping or it is not helping. Some parents are not happy, some give us flack, and they don't want to admit there is damage. Sometimes they say they don't have the reports that we require. Our reporting goes as is – open to the parents, but not in all cases but in most cases parents are in denial.

Researcher: I acknowledge that, that is what you guys are experiencing at this point

Participant Five: Exactly

Researcher: Okay, well from my learners who are really struggling to what everybody has to do, this coming month, that is the Annual National Assessments: could you please share what is your opinion regarding the revision booklets for the other Grade 7 maths?

Participant Five: Outstanding! We didn't expect it, it came very unexpected, it is excellent because it a combination of the past papers which all learners don't have access to, where the parents can't download it for them. It is compiled in a very nice form, activities, paper with memorandums at the back. The only problem I find is that there are printing mistakes; I don't think the book was edited and these little things where the Department don't proofread what they have sent makes ... I know we should go through it as well ourselves, but coming from the Department I think it is.... But it amazed us, it is an excellent book and I would recommend it to any school. It is very helpful; it covers everything they do and coincides with the DBE book,

the blue book that we are using every day. So if I do something in class I say open that book, go to that page, and a certain page in the DBE book – it is the same one, just do that exercise as well. So it reinforces.

Researcher: Okay, so the Annual Revision Book reinforces the DBE book

Participant Five: Yes, it comes from there. That is why each learner in SA has both, it is a national paper that has been set up. So there is no way either which one of the books – whether you finished the one – it is going to be based on those books. We are not sure what specific questions will be asked but it is coming from there.

Researcher: Wow, so the ANA exam will be based to a large extent upon the revision book

Participant Five: That's right. We are just not sure which specific questions it is needing to cover. Everything. And the only thing with the ANA is the children are under pressure because they know it is the ANA, it is a national paper; it is even worse than the normal exam. Do you understand?

Researcher: Yes

Participant Five: And there are different invigilators so they are under more pressure. Strictly sitting arrangements are alphabetically, no talking, no pen holders, no going to toilet. It is stricter than the normal exam.

Researcher: One more last question and then we are finished: in your opinion there is a sample of last year's exam paper obviously in the revision booklet. Would you say that reflects effectively, what is your opinion about that past exam paper and whether it reflects differentiation or not?

Participant Five: It does, it does.

Researcher: Okay, how?

Participant Five: It is GPLMS based because the book the department has given them is basically GPLMS based. I would rather GPLMS covers inclusive learning. It is based on the blue book and the blue book is very practical also, it is very colourful and that too makes it interesting, it is very direct, they give examples. They give activities as well. The only thing is the memorandum at the end of the book. But there is differentiation from the known to the unknown, but the ANA is just obviously combination because I think they are aware that a lot of parents cannot download, that is why they gave us these books.

Researcher: Yes, sure. I mean it is helpful to have the hard copy. So it is the DBE book which is colourful, lots of examples, practical in some ways

Participant Five: It is based on our lesson plans, the DBE is based on exactly how our lesson plans are set up. But it is unfortunately a lot, like I said it is jumping from division to multiplication to this to that.

Researcher: Jumps a lot

Participant Five: That is also a problem we are sitting with. They can set it out, same book but on one concept at a time

Researcher: Okay, so set out a little differently so we are not hopping around

Participant Five: Yes, today we are doing division, tomorrow multiplication. Do you understand what I am saying?

Researcher: Yes

Participant Five: And then back to division and then in three weeks' time they have forgotten already

Researcher: Perfect. Thank you so much Participant 5 for your input and wishing you and your learners all the best for your ANA exams and that everybody attains good results.

Participant Five: Thank you

Researcher: Only a pleasure, thank you for your time, most appreciated.

Ends