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Mwangi, Lynette Wanjiku
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Strathmore University

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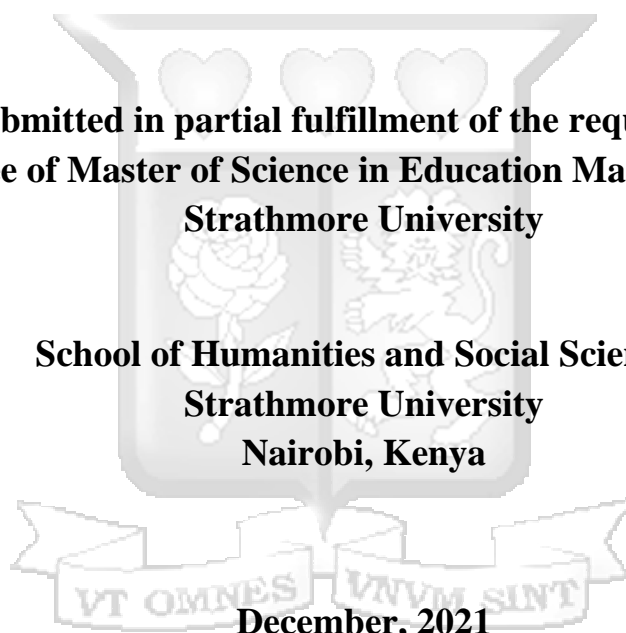
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**Factors Influencing the Implementation of a Differentiated
Instruction Model in Kianjiruini Primary School**

Mwangi Lynette Wanjiku

**A thesis submitted in partial fulfillment of the requirements for the
Degree of Master of Science in Education Management at
Strathmore University**

**School of Humanities and Social Sciences
Strathmore University
Nairobi, Kenya**



December, 2021


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Mwangi Lynette Wanjiku

Signed: 

Date: 25/11/2021

Approval

The thesis of Mwangi Lynette Wanjiku was reviewed and approved by the following:

Dr. Catherine Dean (Supervisor)

Senior Lecturer, School of Humanities and Social Sciences

Dr. Magdalene Dimba

Dean, School of Humanities and Social Sciences

Dr. Bernard Shibwabo

Director, Office of Graduate Studies

ABSTRACT

The differentiated instruction model has been cited as an effective tool in enhancing inclusive education by enabling teachers to give all learners personalized attention. A differentiated instruction model caters for diversity in an inclusive education setting whereby learners have mixed skills levels thus ensuring that needs of each learner are met. However, use of a differentiated instruction model is faced by rampant challenges such as hostile learning environment, lack of adaptive aids, lack of appropriate teaching and testing methodology and lack of training for teachers. There are various factors that influence the successful implementation of a differentiated instruction model. The study looks at the following categories: school-based factors, teacher personal factors and the interplay between school-based factors and teacher personal factors as outlined in the social model of disability. The study also contextualizes the differentiated instruction model using Tomlinson's model. Conducting the research offered a solution to the various challenges encountered when implementing a DI model. The study utilized a mixed research methodology taking a case study approach. The case study approach was appropriate as it provides an in-depth understanding of the research problem in a real-life environment. The study population constituted of the head teacher, 30 teachers and 17 guardians of pupils with disabilities in Kianjiruini Primary School, Murang'a County. Since the target population is small, the study did not sample but rather conducted a census. This constituted 48 respondents. The study used primary data collected using semi-structured questionnaires and a key informant interview guide. The questionnaires were used to gather data from the teachers and guardians while the key informant interview guide gathered data from the head teacher. The questionnaires were self-administered to the respondents using the drop and pick later method while the key informant interview was conducted face to face. The analysis of quantitative data was facilitated by use of Statistical Package for Social Sciences (SPSS) version 24. On the other hand, qualitative data was thematically analyzed using content analysis. The data was presented in continuous prose form. Ethical considerations regarding confidentiality, anonymity and voluntary participation were adhered to. Since the study was case study research, the outcomes of the research can be used to develop a study of a number of integrated schools to check whether the various factors influencing implementation of a differentiated instruction model in an inclusive setting can be generalized to a wider population. The study concluded that school-based factors, teacher personal factors and the interplay between school-based factors and teacher personal factors influenced use of the DI model in Kianjiruini Primary School in Murang'a County. The study results reveal that the concept of use of DI is still new with only few schools using it in an inclusive setting. Hence, this study recommends that the government of Kenya through the MOE should pass across the message on the importance of DI more so in an inclusive setting. This will involve upgrading of more schools so that they can take up SNE learners. This will in return aid in distribution of the SNE learners in more schools thereby decongesting the current schools that have enrolled many SNE learners. The study recommends that a similar study be conducted in a different county for comparison purposes.

Keywords: Inclusive Education; Differentiated Instruction; Special Needs Education; Kenya.

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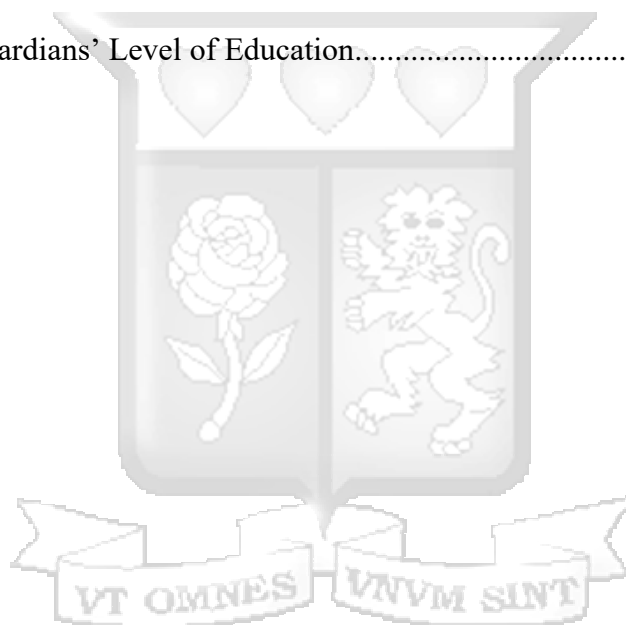
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LIST OF ABBREVIATIONS

ADL	Activities for Daily Living
BOM	Board of Management
CBC	Competency Based Curriculum
CSN	Children with Special Needs
CWD	Children with Disability
DI	Differentiated Instruction
EFA	Education for All
FPE	Free Primary Education
HBDI	Hermann's Brain Dominance
ID	Intellectual Disability
IE	Inclusive education
INEE	Inter-Agency Network for Education in Emergencies
KCPE	Kenya Certificate of Primary Education
KICD	Kenya Institute of Curriculum Development
MBTI	Myers-Briggs Type Indicator
MSS	Mean Standard Score
NACOSTI	National Commission for Science, Technology, and Innovation
PWDs	Persons with Disabilities
SNE	Special Needs Education
SOW	Schemes of Work
TPAD	Teachers Performance Appraisal and Development
TSC	Teachers Service Commission
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization

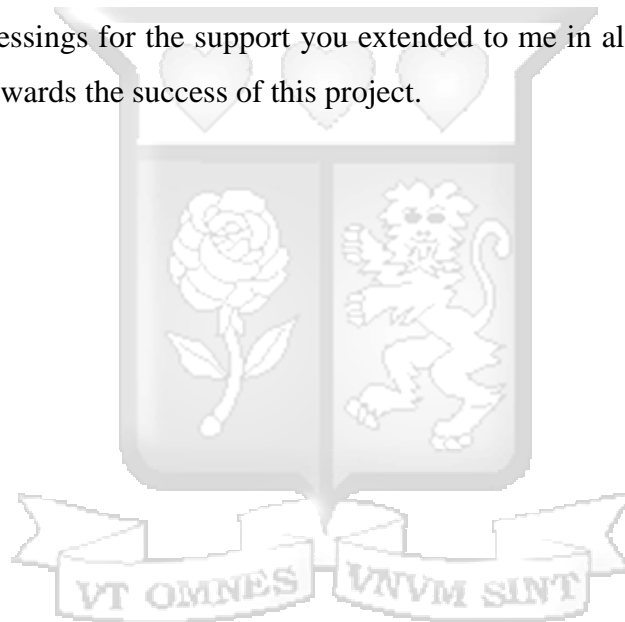
UPE	Universal Primary Education
SPSS	Statistical Package for Social Sciences
MoE	Ministry of Education
UK	United Kingdom



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DEFINITION OF KEY TERMS

Differentiated Instruction – this is an instructional strategy that allows teachers to teach diverse learners based on learning styles and talents in the same class. In the context of this study, differentiated instruction will only focus on the aspect of a learner having a disability or not having a disability.

Inclusive education: this is a heterogeneous practice that provides an instructional environment that involves both students with disabilities and non-disabled students in a regular classroom.

Inclusive Teaching: refers to teaching approaches that address needs of students with a variety of backgrounds, learning styles, and abilities. These strategies contribute to an overall inclusive learning environment in which students feel equally valued.

Learners with disabilities: refers to those who have long-term physical, mental, intellectual, or sensory impairments, which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others

School based factors: refer to factors such as attitudinal, inaccessible environment, inadequate teaching, and learning resources, lack of trained teachers, language barriers, and rigid curriculum.

Teacher personal factors: refer to factors such as teachers' attitudes, age, and level of education.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter captures the study background, statement of the problem, overall aim of the research, research objectives, and questions that the study seeks to answer. The chapter also outlines the scope of the study, study significance and the chapter summary.

1.2 Background to the study

Access to education creates necessary human capital to achieve sustainable economic development and reduce poverty at the national level; improves livelihood of family members, disabled, and not disabled; helps integration of people with disabilities into economic life, sustaining country economic growth; and helps change attitudes toward people with disabilities (World Bank, 2009). Education is an inalienable and non-derogable right that cannot be compromised. This is clearly stipulated in article 26 of the Universal Declaration of Human Rights 1948 (UN, 1948). Education provides skills that people need to reach full potential and to exercise other rights, such as the right to life and health (Inter-Agency Network for Education in Emergencies [INEE], 2010).

Current educational trends across the globe reflect significant changes in student populations. The inclusion of students from non-English speaking backgrounds, students with disabilities, students from diverse cultural backgrounds and students on accelerated programs, compel educators to relook at teaching and instructional practices. The homogeneity of yesteryear has been replaced by widespread diversity, however in many contexts, teachers do not appear to have adjusted their methods to keep abreast of these trends (Subban, 2006). Teachers need to know how to respond to the increasing diversity of contemporary classrooms. Use of one-size-fits-all curriculum no longer meets needs of the majority of learners. In the same way, use of single-paced lessons delivered through a singular instructional approach disregards the different learning styles and interests present in all classrooms (Subban, 2006).

Quest for universal access to education has been a legitimate priority the world over in the bid to fulfil the Education for All (EFA). In Africa, nations have been keen to catch

up with more developed countries by supporting inclusive education (Chabra et al 2010). However, inclusive education is faced by rampant challenges such as a hostile learning environment, lack of adaptive aids, content-based training, lack of appropriate teaching and testing methodology and feeling of inadequacy by teachers. Additionally, learners with special needs do not receive expected quality testing in education from the regular schools (Forlin, 2011).

The existence of these challenges is mirrored by the Education for All (EFA) Global Monitoring Report (2020). The report pointed out that in low- and middle-income countries, 19% of children with disabilities are less likely to achieve minimum proficiency in reading than those without disabilities (UNESCO, 2020). As stated by the 2015 EFA National Review, Kenya is committed to achieving the EFA goal and ensure that all learners have an equal opportunity to education. However, realization of this goal will call for implementation of measures ensuring that all children including those with disabilities access basic quality education without discrimination. Even though education in Kenya is free, there are no proper provisions for learners with disabilities since they are integrated in regular schools which are not learner friendly environment for children with disabilities (Kibias, 2015). This necessitates use of the Differentiated Instruction model (DI will be used to represent Differentiated Instruction in the rest of the research proposal) in the education setting, which should be understood within the context of inclusive education.

Inclusive education means educating learners with special educational needs in regular education settings (Mitchell, 2015). However, inclusive education is not limited to only placement, rather, it means facilitating education of students with special needs with a whole suite of provisions which include curriculum adaptation, adapted teaching methods, modified assessment techniques, and accessibility arrangements. Effective inclusion of students with special needs in the mainstream curriculum is dependent on adequate differentiation of the teaching approach to match individual learning characteristics of the students (Tomlinson, 2014).

Inclusive education means that all students attend and are welcomed by neighborhood schools in age-appropriate, regular classes and are supported to learn, contribute, and participate in all aspects of the life of the school (Lisdiana, Hufad, Tarsidi & Aprilia,

2019). Inclusive education (IE will be used to represent Inclusive Education in the rest of the research proposal) which has been cited as one of the strategies for meeting goals of the Dakar Framework for Action-Education for All (INEE, 2010). IE is a means of ensuring that barriers to participation and learning are removed and teaching methodologies and curricula are accessible and appropriate for students with disabilities (INEE, 2010). The United Nations Convention on the Rights of the Child (1989), the UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities 1993, UNESCO'S Salamanca Statement (UNESCO, 1994) and the Dakar Framework on Action-Education for All (UNESCO, 2001) affirm the principle of inclusive education and the importance of working towards 'schools for all'.

The use of DI is a preferred method to reach students with varied learning needs in a classroom with mixed skill levels. According to (Vigdor, 2013), DI is used to make learning meaningful for students who otherwise would have fallen further behind. Thus, the recommended approach for educators to prevent students from falling behind is providing a plethora of learning options for students to be able to learn and grasp varied concepts. For teachers to effectively implement DI, they must know the learning profiles of students to meet individual needs in an inclusion-based classroom (Herrelko, 2013). Varying the content, process and product enables students to grasp the concepts by meeting them where they are (Latz & Adams, 2011).

DI involves students with learning disabilities, and others with diverse learning needs, being supplied with instructional methods and materials that are matched to their individual needs (Scruggs, Mastropieri, & Marshak, 2012). Use of DI requires general and special educators to possess flexible teaching approaches as well as to be flexible in adjusting the curriculum based upon student need (Obiakor, Harris, Mutua, Rotatori, & Algozzine, 2012). DI improves the possibility of academic success for diverse students (Alexander, 2014). The use of DI also creates independent, responsible, and confident learners. Moreover, it moves students toward academic achievement by meeting their individual needs (Avery, 2017; Logan, 2011; Tomlinson, 2014).

It is also acknowledged that DI is one of many best practices that is used, in addition to other instructional strategies, to increase student achievement and learning outcomes for special education students (Rachmawati, Widasmara, & Wibisono, 2016). Dixon et

al. (2014) recommend that teachers differentiate both curriculum and instruction to meet needs of students. Since, students who receive DI are taught at level of readiness, inclusive education setting increases higher order thinking skills and exposure to advanced curriculum.

Even though, use of differentiated instruction has been shown to be an effective strategy for diverse learners (Joseph, Thomas, Simonette & Ramsook, 2013), there are a number of factors that lead to differentiation not being applied effectively (Logan, 2011). These factors are as outlined in the Social Model of Disability by Mike Oliver in 1976. The theory postulate that it is possible for SNE learners to be integrated in regular schools and it's the responsibility of the school administrators to ensure that the school has the right resources and infrastructure and that teachers possess requisite skills to accommodate the SNE learners. These factors are categorized into school-based factors, teacher personal factors and stakeholder/guardians related factors. The school-based factors include teaching aids and equipment, dynamic curriculum, class size, continuous training to teachers, support system (Wachira, 2012). The teacher personal factors include in-service training, attitude, level of education, daily workload of teachers, understanding of DI (Shareefa et al., 2019) while stakeholder/guardian related factors include team support, guardian involvement, family school relationships (Ismajli & Imami-Morina, 2018).

1.3 Problem Definition

Various studies relating to IE and DI have been conducted in the past both internationally and locally. For instance, Keyona (2020) examined DI in middle school inclusive education classrooms to support special education students in South Carolina. The study was informed by Tomlinson's (1999) model of Differentiated Instruction (DI). The study was qualitative in nature utilizing an instrumental case study approach. Though similar to the current study in by focusing of DI and IE, the study exudes a methodological gap as it was purely qualitative. Additionally, the study exudes a conceptual gap as it focused on the components of DI while this study focused on the factors that influence the use of DI. A study by Owour (2014) investigated the determinants of IE in public primary schools in Kisumu municipality, Kisumu County, Kenya. The study reveals a theoretical gap it was guided by the classical liberal theory

of equal opportunity and social darwinism theory. The study also adopted a different methodology as it utilized a descriptive survey research design. Further, the study differs conceptually from this study as it focused more on the determinants of inclusion of SNE learners. Another study by Omanga (2011) investigated the factors that are influencing successful implementation of IE among learners who have special needs in education in primary schools in Nairobi County. The study exudes a methodological as it utilized a descriptive survey research design and a theoretical gap as it utilized the social learning theory. The past studies have focused more on provision of IE through use of DI model without delving deeper into establishing the factors that influence the use of DI. Additionally, the fact that this study was conducted during the pandemic aided to reveal the level of preparedness of primary schools to emergencies such as the COVID 19 pandemic and more so towards provision of inclusive learning to SNE learners.

Despite there being many studies on IE and DI, there is no study that is based in Murang'a County and particularly focusing on Kianjiruini Primary School. The choice of this school was informed by various reasons namely, the school offers integration, the school has two teachers who are trained on how to deal with special needs students, the Covid 19 pandemic which limited movement to various schools to collect data, and it is the only schools that has adopted a DI model in Murang'a County. This school has a special unit which caters for special needs students. Upon admission to school, the special needs teachers assess the learner's degree of disability (profound, severe, or mild). After two years of equipping learners with pre-requisite skills in separate classrooms, only those with mild disabilities are included in the regular classrooms. As a teacher trained in handling special needs and posted to the special unit department in January 2020, the researcher decided to investigate a DI model which would offer a solution and enhance effective Inclusive Education in the regular classrooms. This study sought to fill the gap in research about the factors that influence implementation of DI.

1.4 Research Objectives

The overall aim of the research was to investigate the factors that influence the implementation of DI model in Kianjiruini Primary School in Murang'a County.

The study was guided by the following research objectives:

- i. To establish the extent to which school-based factors influence the use of the DI model in Kianjiruini Primary School in Murang'a County.
- ii. To assess the extent to which teachers' personal factors influence the use of the DI model in Kianjiruini Primary School in Murang'a County.
- iii. To examine the interplay of school-based factors and teacher personal factors and their influence on the use of the DI model in Kianjiruini Primary School in Murang'a County.

1.5 Research Questions

The study sought to answer the following research questions:

- i. What is the influence of school-based factors on the use of the DI model in Kianjiruini Primary School in Murang'a County?
- ii. What is the influence of teachers' personal factors on the use of the DI model in Kianjiruini Primary School in Murang'a County?
- iii. What is the interplay of school-based factors and teacher personal factors and their influence on the use of the DI model in Kianjiruini Primary School in Murang'a County?

1.6 Scope of the Study

The study was limited to investigating factors that influence implementation of DI in Kianjiruini Primary School in Murang'a County. The respondents were the head teacher, all the 30 teachers and 17 guardians of pupils with disabilities in the school. The choice of this school over other primary schools was informed by various reasons namely, the school offers integration, the school has two teachers who are trained on how to deal with special needs students, it is the only schools that has adopted a DI model in Murang'a County and lastly is the Covid 19 pandemic which limited movement to various schools to collect data. The researcher had ease in accessing information from the selected respondents as the researcher and the respondents live within the same locality. The choice of a single case study is supported by Ellet (2007) who argued that a case without a significant issue has no educational value. In this case,

Kanjiruini Primary School it is the only schools that has adopted a DI model in Murang'a County.

1.7 Limitations of the study

It comprises of a Special Unit within a Primary School setting, which has three categories of Special Needs Learners (Home-based, integrated and those in Special Unit- Foundation and Intermediate level). This implies that the study results may not be replicated elsewhere. The outcomes of the research are also restricted to theories of DI model in an IE setting.

The research had limitations of case study methodology. The research, which is quantitative in nature is expected to contribute to theory and practice. This is owing to the fact that it allowed for in-depth examination of the factors that influence the implementation of a DI model in inclusive education setting. The research refers to only one school and thus there is need for other researchers to conduct a similar study in other settings in order to develop better generalizations in terms of DI model in an Inclusive Education setting, this implies a further quantitative study. The case study technique is difficult to organize, and outcomes are prone to problems of observer bias and as a research method, it is not easily open to cross checking given it is selective and subjective (Yin, 1994). Interpretivist epistemology and subjective ontology were used in this research. This means the situation and the results were seen through the eyes of participants. Since case study research combines knowledge and inference this may become an object of criticism, questioning its respectability and legitimacy (Yin, 1994).

1.8 Significance of the Study

The findings of this study may be beneficial to many stakeholders. These include teachers, head teachers, guardians, and administrators in the Ministry of Education. The study may also be useful to academicians and researchers.

The findings of the study may inform teachers and head teachers about how various school based and teacher personal factors influence the implementation of DI in an inclusive education setting. For instance, there will realize that the modern school infrastructure plays a role in ensuring that SNE students fit in an inclusive setting.

Additionally, they may learn about the challenges that hinder the use of a differentiated instruction model in primary schools. These include inadequate teaching and learning materials, insufficient funds, large classes resulting to high teacher pupil ratio and lack of cooperation from parents. This may help them identify better ways of implementing the DI model.

The guardians of children with disabilities may benefit from the study findings as they may be made aware of the factors that hinder the implementation of the DI model. They may understand that they teachers do their best but the limited resources and high number of pupils per class hinder the effective implementation of DI. They may also understand that they have a role to play in ensuring effective implementation of DI. The study will also benefit guardians by providing recommendations on how to best support the successful implementation of a DI model. These may be by providing the required basic needs to the SNE learners and briefing the teachers on the background and capabilities of the SNE learners for easier creation of accurate portfolios.

The study findings may provide vital information to the administrators in the Ministry of Education about the factors that influence the implementation of the DI model in an inclusive education setting among primary schools. They findings will shed light that the MoE ought to lobby for employment of more teachers, they ought to facilitate timely disbursement of funds as well as teaching and learning materials. Administrators may also be able to use the study findings to combat challenges or resistance toward using DI and help teachers adjust and adopt teaching techniques that may enhance inclusive education in a classroom setting. This may take the form of coordinating with primary school head teachers and arrange for in-service training for teachers on how to implement the DI model effectively. The findings will also inform them on the nature of support that is required for the DI model to be effectively implemented in an inclusive education setting.

Finally, as there is a dearth of literature in this field, this study may benefit academicians and future researchers as it may act as a reference point. Additionally, the study may increase the wealth of knowledge on which factors influence the implementation of DI models in an inclusive education setting.

1.9 Conclusion

Chapter One gives information on the background to the study, states the problem to be investigated, presents the overall aim of the research, along with the specific research objectives and questions. Finally, the Chapter discusses the scope and significance of the study.



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to factors that influence implementation of DI model in an inclusive education setting from the theoretical, contextual, and empirical perspectives. The researcher specifically reviewed literature based on three issues: school-based factors, teacher personal factors and societal factors. The chapter anchors the study on a theoretical framework as well as presents a conceptual framework.

2.2 Theoretical Review

This section sought to explore the main theories that focus on DI and how it relates to inclusive education. These theories include Tomlinson's model of differentiated instruction and the social model of disability.

2.2.1 Tomlinson's Model of Differentiated Instruction

This model was developed by Tomlinson in 1999 explaining the modalities of use of DI. According to Tomlinson (1999), teachers can provide DI by altering the content being taught, the process by which the content is taught, or the product created by the student to show mastery of the content being taught. Some general principles of DI include respectful tasks that provide challenge without frustration to a student based on their learning profile, quality curriculum intended to address state standards, flexible grouping to maintain appropriate settings for students, continual assessment for understanding, and the establishment of a community where all are respected and feel comfortable to learn (Tomlinson, 1999). According to Tomlinson (1999), DI should be based on a student's readiness, interest, and learning profile.

DI can be achieved by using three differentiating components: content, process, and product. Content involves use of varying levels of content to assess comprehension, such as, varied text levels or providing content in a different format such as audio or video (Avery, 2017; Lunsford, 2017). However, use of the content component of DI requires teachers to know students' learning profiles which enables them to identify the needs of each student (Tricario & Yendol-Hoppey, 2012). Teachers can use learning

profiles to adjust content to help students' access prior knowledge and build on previously learned concepts to cultivate academic progression (Avery, 2017).

The second component of DI is process which involves varying activities and instructional strategies teachers use to help students better understand content, such as tiered assignments and learning stations (Avery, 2017; Lunsford, 2017). Product refers to an assessment of mastery. Subsequently, this component allows for students to express knowledge and understanding through a variety of assessments adjusted to meet varied learning needs for students, such as oral presentations or diagrams (Lunsford, 2017). The three components of DI ensure that teachers are able to identify the needs of each student and adopt appropriate styles of teaching which gives each student individualized attention.

Tomlinson's model is an appropriate framework to guide this research as it outlines the various components of a DI model namely content, process, and product. This informs the study as it gives guidance on how to measure successful implementation of a DI model in Kanjiruini Primary School. The various measure of a DI model will include varied delivery of instructions, varying the activities and instructional strategies, use of multiple materials and resources, assessment of mastery and flexible grouping of students.

2.2.2 Social Model of Disability

This theory was introduced by Mike Oliver in 1976 who was a disabled lecturer. The social model of disability encourages the society to view the issue of including the People with Disabilities (PWDs) from 'a human right and equality' perspective rather than a focus on the PWDs as faulty. The model views barriers that prevent PWDs from participating in any situation limiting their ability as a form of inequality. The disability movement comprising of the PWDs, and supporters are of the view that the position of the PWDs and the discrimination against PWDs are socially created (Rieser, 2005). Through fear, ignorance and prejudice, barriers and discriminatory practices develop which disables them. The PWDs are often made to feel that it is their own fault that they are different. However, this model emphasizes that impairment does not make them lesser human beings. The PWDs' movement believes the 'cure' to the problem of

disability lies in the restructuring of the society, and not focusing on individual's impairment (Barnes, 2012). Hence, it calls for a lot of sensitizations in the society to make people change their mindset on how they view PWDs as lesser and disadvantaged and start viewing them as equal humans with equal rights who should be given equal opportunities.

In an inclusive education setting, it is the school's responsibility to re-adjust to meet learners with disability needs but not learners to adjust to meet the school's requirements. In the social model, it is clear that children with disability could experience difficulties in the education system. This could be due to extensive, demanding, rigid and inflexible curriculum, inaccessible school environment, lack of adequate resources and materials, negative attitude among others. However, the inclusive education approach suggests that difficulties should not be explained simply in terms of children's impairments. It discourages the view that the learner faces such problems due to their impairment (Shakespeare, 2006).

Under those circumstances, the option is not to establish a separate special school, which would further separate children from peers and families, neither is it cost-effective. Instead, the school should not be seen as creating barriers to learning for the learners with special needs by failing to create an enabling and supportive environment. A more appropriate response is to understand barriers to learning and work out systematically to alleviate them. This model puts more emphasis on the strength of the child, rather than the disability. The model advocates for inclusion of all children, however "severe" the disability or handicapped one is in the mainstream education system (Barnes, 2012).

The main aspects of the social model of disability identifies the systemic barriers, derogatory attitudes, and social exclusion (intentional or unintentional), which make it difficult or impossible for SNE learners to access education in regular schools. The model views disability as the outcome of SNE learners living within an environment that has various barriers impeding them from leading normal lives like the learners without disabilities. These barriers take the form of physical, attitudinal, communication and social barriers (Oliver, 2013).

The social model applies in this study as many children with special needs especially those with disabilities are locked out of education opportunities due to barriers related to school, teacher and other stakeholder factors. Effective implementation of a DI model in an inclusive education setting would require finding solutions to these challenges. This model informs this study as it outlines various factors that influence implementation of a DI model. These are teacher related factors, school-based factors, and the interplay between school-based and teacher personal factors.

2.3 Contextual Background

This presents the global, regional, and local context of the implementation of DI model.

2.3.1 Global Context

Inclusive education began with countries in Scandinavia, followed by the United States and then Britain. The world conference on education held in Bangkok in 1991 led to the declaration of education for all (UNESCO, 1991). Similarly, the results of education convention in Salamanca Spain produced the Salamanca Statement on Inclusive Education in 2004 (Rachmawati, Nu'man, Widiastara, & Wibisono, 2016).

According to Kearney (2016), the problem of students not being able to succeed in school is not only an issue across the United States but also extends to other countries. Inclusion is a global trend in education which can be attributed to poor implementation of DI (Hwang & Evans, 2011). Smith and Tyler (2011) noted that even though inclusive education has been implemented for decades in the United States, teachers across the United States have consistently reported that they do not feel adequately prepared to meet needs of all students in a classroom of students with mixed skill. Since classrooms today across the world are made up of students with mixed skill levels, education cannot be a one-size-fits-all approach, or some students will fall behind. On the contrary, a DI approach should be adopted so as to ensure that needs of individual students are met (Demski, 2012). The aspect of teachers feeling inadequate is a world over challenge as SNE learners have diverse needs making it difficult for teachers to meet all the needs an individualized level. This points out on the importance of focusing on teacher personal factors as they play a big role in effective implementation of DI.

Students with disabilities are expected to meet the same standards as the other students by the end of each school year. However, it is not acknowledged that they do not all learn the same way or at the same rate and thereby not meeting the standards (Hunter-Johnson, Newton, & Cambridge-Johnson, 2014). This explains why it is important for teachers to be conversant with the use of DI model (Dukes & Lamar-Dukes, 2009). However, this is not the case despite the make-up of classrooms today having changed where students are not separated according to skill level. Instead, special education students, regular education students, and gifted education students are all taught together which limits teachers from teaching students according to their capabilities (Dukes & Lamar-Dukes, 2009).

More students with disabilities are being placed in general education classrooms due to the passing of legislation such as Every Student Success Act of 2015 by President Barak Obama, formerly known as No Child Left Behind Act (2002), and the reauthorization of the Individuals with Disabilities Education Improvement Act which was passed by President Gerald Ford (McCray & McHatton, 2011). In particular, there has been an increase in integration of special education students into regular education setting as a result of the passing of the Least Restrictive Environment (LRE) law. The LRE law is part of the Individuals with Disabilities Education Act (IDEA) which states children who receive special education should learn in the least restrictive environment. This means they should spend as much time as possible with peers who do not receive special education (U.S. Department of Education, 2015). Along with special education students being placed in the general education setting, gifted students are also being mainstreamed in general education settings because of budget cuts (Cavilla, 2014; Seedorf, 2014). This shows that despite inclusion of SNE learners in regular classrooms, there is more that goes into successful implementation of DI and integration alone is not enough. In as much as use of DI in an inclusive education setting is yielding positive results, more needs to be done for achievement of ultimate success which would mean that every child is given an equal opportunity and are allowed to learn at their own pace.

The United Kingdom has the 'Every Child Matters' program that works to ensure that students with special education needs receive a quality education (Wu, 2013). The

teachers in the UK experience many of the same challenges as teachers in the United States for accommodating special education students in the regular education classroom. Italy also has national policies that integrate students with disabilities in the general education classrooms, but also continues to conduct research on what needs to be done to make this a successful policy (Wu, 2013). Both the UK and Italy understand that there is a need to help teachers prepare for the challenges they faced in classrooms with students of mixed skill levels (Wu, 2013). Even though many school districts, states, and countries have passed laws to include students with disabilities in the general education setting, it is not enough to guarantee these students will be successful (Meynert, 2014; Smith & Tyler, 2011). There must be support for the teachers working with students with disabilities in the general education classroom (Forlin & Sin, 2010). This shows that teachers are experiencing similar challenges when using DI in an inclusive setting as it proves difficult to meet the needs of every student at an individualized level. Hence, more teachers should be equipped more for there to be successful implementation of DI.

The educational scene in India has undergone major change over the years due to efforts of the government, resulting in better provision of education. Schooling for students with disabilities in India is conducted in regular schools or in special schools (Singh, 2016). The special school was introduced in India in the last two decades of the 19th century by Christian missionaries. Special schools are equipped with the resources to provide education to children with disabilities, and many special schools are concentrated in urban areas. The widespread belief that children with disabilities cannot be educated alongside other children, the schools, the special education system was segregated. These schools helped to provide education for children with disabilities but did not help them to enter mainstream society as learning occurred in a segregated manner. Furthermore, this special school system has major drawbacks in that it is expensive and has only limited reach (Das, Kuyini, & Desai, 2013). The social segregation against SNE learners works against successful implementation of DI and thus there is need for the society to be enlightened on the importance of embracing people with disabilities as equals.

2.3.2 Regional Context

The traditional African approach to mainstreaming of children with special needs is influenced by African beliefs, culture, and attitudes. Some studies observe that, among the factors contributing to general apathy and neglect of children with disabilities in emergent African countries are beliefs that regard disability as a curse from the Gods. Disability in Africa is regarded as a continuous tragedy with most people in the society regarding disability as a strain in their social status. Families with children who are disabled tend to hide them as disability is associated with shame. This attitude of shame breeds overprotection since people with disabilities cannot be let out to fend for themselves. Over protection can arise from the shame of others seeing a person with a disability in the family. In some instances, the individual who is disabled is not allowed out in the presence of visitors. The tragic nature of this existence is also believed to engender sadness most of the time. Many associate disability with bad luck and therefore, would not like to visit special schools, or even let their children learn alongside students with disabilities in the same classroom (Warnock, 2008). This portrays a scenario that leads to the unsuccessful implementation of DI since the SNE learners are accustomed to living a segregated life. This would call for campaigns geared towards demystifying the wrong beliefs about SNE learners for them to feel accepted in regular schools and for learners without special needs to accept to relate with them as equals.

Treatment of persons with disabilities in Africa and other developing countries is not well-documented. However, in Ghana, the most critical barriers to free universal education for students with disabilities are negative attitude and prejudice. Some Ghanaians still attribute the causes of disabilities to curses from gods (Agbenyega, Deppler & Harvey 2015). For example, the people of Northern Ghana believe that a newly born child who is disabled is not a human being. It is a fairy, a spirit, a snake, and they will find a way of doing away with that child. Others will not kill but hide the child for they would not like anybody to know because they view it as God's punishment for some disobedience. This is consistent with what Avoke (2012) noted that negative attitude and persistent low regard for students with disabilities create serious barriers to social and inclusive education in Ghana. The great undoing for

successful implementation of DI in Africa is the societal beliefs that alienate SNE learners from leading a normal life. Therefore, it is of utmost importance that the society is enlightened to embrace people living with disabilities and have a changed mindset.

In Zimbabwe, a majority of students with disabilities are from low socio-economic status background and guardians or guardians are marginally involved in schooling (Chitiyo, 2017). The higher prevalence of disabilities in children from low socio-economic backgrounds in Zimbabwe is due to lack of guardianal literacy and inadequate access to preventive medicine or healthcare. Low socio-economic status families might typically lack knowledge about appreciation of community resources that would make the student more successful in school. For example, there was a case about a father of a child with spastic cerebral palsy who received a wheelchair with the help of an international relief agency. The father used the chair as his personal chair, preventing the child from using it for personal mobility needs and transportation to school (Mutepfa, Mpofu & Chataika, 2017). This again shows that the main challenge that SNE learners face is fitting in the society. If only they are embraced, successful implementation of DI would be a lot easier as fitting in both at home and in school is their main challenge.

Countries such as South Africa, Uganda, and Lesotho, do have a national policy in favour of inclusive education. Uganda has been addressing educational needs of learners with disabilities as part of Universal Primary Education (UPE) since 1996. The Uganda government has made it financially possible for families to send learners with disabilities to school. In every family, the priority is given to the child with disability, then to girls so as to achieve UPE. Although all that has been done in Uganda, it is evident that there are some learners especially those learners with disabilities who were still out of school. This is attributed to high level of stigmatization in the society. Similarly, some of those learners with special needs who enroll in regular schools, end up dropping out of school as such schools have failed to implement DI models which would help facilitate learning for students with disabilities in an inclusive education setting (Bosa, 2013). In Tanzania, the ministry of education emphasis on educating students with albinism in mainstream schools. However, less is known about the kind of support children are receiving in order to learn effectively (Ndomondo, 2015). The

societal issues leading to stigmatization of SNE learners despite the government striving to grant them an equal opportunity remain to be the main challenge impeding effective implementation of DI.

2.3.3 Local Context

In Kenya before the Special Needs Education (SNE) policy was put in place in March 2010, implementation and practice of special education programmes was guided by the policies stated in the Sessional Paper No. 5 of 1968 and No. 6 of 1988. These policies pointed out that the needs of children with special needs should be catered for in special schools. Other policies had been adapted from presidential directives, education commissions and legal notices from the Ministry of Education (MoEST, 2005a). The SNE policy clearly points out the need to implement inclusive education as a viable means of achieving the EFA goal (MoE 2010). The implementation of Free Primary Education (FPE) by the government was a positive milestone towards achieving the EFA goal. Although this has been done and the enrolment in regular primary schools increased from 5.9 million in 2002 to 8.5 million in 2008, the number of children of school going age who do not access educational services is still high. Out of the estimated 750,000 Children with Disabilities (CWD) of school going age, only 45,000 (6%) children are placed in learning institutions. This therefore implies that about 94% of the estimated CWDs are out of school or hopefully some may be in regular schools (MoE 2009). This points out to the fact that there still exists a great need for sensitization for both teachers and parents on the need to educate all children. The realization of the importance of EFA would make implementation of DI easier.

Persons with disabilities not only represent a crucial sector of the marginalized population but also face special problems as a result of disabilities. Most have no access to education, health, employment, and rehabilitation. Majority experience hardships as a result of built-in social, cultural and economic prejudices, stigmatization and more often ostracism, abuse, and violence (Kabuta, 2014). The effect has been that laws intended as instruments of social-engineering and avenues of awareness and intervention in alleviating the plight of the persons with disabilities have not been explicit in addressing cultural and political opportunities that are available in the country (Toesland, 2019). For many children, the presence of impairment leads to a

rejection or isolation from experience that is part of normal development. This situation may be exacerbated by faulty family and community attitudes and behaviours during the critical years when children's "worth nothing" is often the prognosis in early childhood (Jelagat & Ondigi, 2017). This indicates that there is need for a shift in mindset of everyone in the society on the need to provide SNE learners with equal opportunities.

In Kenya, teachers' attitudes towards inclusive education are varied which dampens the effort to implement DI. Teachers feel that they are not prepared to handle learners with diverse disabilities in regular classrooms. They feel that they are not trained and therefore ill-prepared and unequipped with the knowledge to handle them. The teachers and other stakeholders also have negative attitudes towards inclusive education. This creates a paradox where instead of schools adjusting to meet the needs of the special need students, the view them as a problem. Further, the communities and guardians are ill prepared to support the children with special needs in education adequately. This is owing to the high level of stigmatization in the society and disability being viewed as a bad omen. Additionally, the society has not been enlightened on the need to treat persons with disabilities as equals with persons without disabilities (Kochung, 2013). The combination of a poor attitude and stigmatization towards SNE learners and lack of preparedness among teachers inhibits effective implementation of DI.

Other factors which negatively influence the implementation of DI in Kenya include: an acute shortage of teaching aids, equipment, and human resources to support inclusive education in the regular schools; the system of examination, which currently emphasizes the use of the mean score type of grading in schools (Mumbi, 2011). This practice shows that the Kenyan government through the Ministry of Education is not well prepared in facilitating the use of DI model which aid in promoting inclusive education. Due to lack of preparedness and focus of grades alone many headteachers decline to admit learners with disabilities in schools feeling that their presence will negatively affect the schools' mean in national examination grading. Teachers also lack adequate training on the use of DI model and thus they are unable to provide support to learners with special needs in the regular schools. Kochung (2013) noted that most teachers in regular schools have not been trained to work with learners with diverse

needs; curriculum used in ordinary regular schools is rigid and overloaded and does not take care of the individual needs of learners with disabilities; and the teacher-learner ratio has gone up following the provision of free primary education. Further, school-based resources such as lack of barrier free facilities; special needs desks, toilets, doors, curriculum, and paths also affect the use of DI model among most schools in Kenya (Kochung, 2013). This shows that the interplay between school-based factors and teacher personal factors is key to effective implementation of DI among schools in Kenya.

The adoption of the Competency Based Curriculum (CBC) in Kenya could change this narrative for the better as the new curriculum aims at improving the quality of teaching and learning for all learners (Andiema, 2020). Compared to the 8-4-4 curriculum which is based on summative exam, the new curriculum shifts the focus from content to competency. The new curriculum is more flexible to the teachers and learners which gives room for teachers to focus on each individual learners' capabilities with an aim of making the excel in what they are good at (Dignitas, 2018). The shift of focus from exams to developing individual learners' competency favors students with special needs in that they will access education and take functional assessments that take into consideration their level of disability at (Dignitas, 2018). This will take the form of adoption of enriched curriculum for the gifted and talented category, use of regular curriculum with adaptation and intervention program for learners with mild disabilities, use of regular curriculum with intervention program for learners with communication, emotional and behavioral disorders, and use of specialized curriculum and intervention programs for learners with acute disabilities. The new curriculum puts more emphasis on instilling seven core competencies to the learners' namely communication and collaboration, self-efficacy, critical thinking, and problem solving, creativity and imagination, citizenship, digital literacy and learning to learn (Dignitas, 2018). Implementation of the CBC curriculum will ease the implementation of DI among schools in Kenya for just like use of DI, the CBC curriculum focuses on improving each student capabilities at their level. However, there are limitations of integrating DI into CBC curriculum as teachers have meagre training and schools are not provided with adequate resources to foresee effective implementation of bot DI and the CBC curriculum.

2.4 Empirical Literature Review

This section outlines past studies related to the DI model in line with the study objectives.

2.4.1 School Based Factors and Implementation of DI model

Administrators play a crucial role in programs implemented at their schools. When implementing new projects, administrative support and being available for the teachers is crucial (Milligan et al., 2012). Change can create stress and uncertainty, so a faculty must have the support of the administration to implement DI (Weber, Johnson, & Tripp, 2013). Support from the administration can help teachers to have confidence to try new things like DI and to see it through when any challenges arise (Ahmmed et al., 2012). Administrators who embrace the implementation of DI play a major role in ensuring that DI is implemented in schools as they lead by example making it easier for teachers to implement DI (Regional Education Laboratory Mid-Atlantic, 2015). DI could be more successful in a school if teachers and administrators work together on its implementation. The administration needs to recognize the value of DI and understand that it is vital that teachers use DI. School leaders must also learn about DI to support teachers using it through provision of required resources such as teaching aids, learning materials and construction of appropriate school infrastructure. Administrators should understand why DI matters, what it ought to look like, how teachers should develop it, how to help teachers with concerns about implementing DI as knowledgeable leaders are vital to producing significant changes across schools (Regional Education Laboratory Mid-Atlantic, 2015).

Benjamin (2020) explored rural middle school teachers' experiences with incorporating components of DI to support special education students in an inclusive classroom setting in South Carolina, United States. The challenges faced when incorporating DI were also examined. Tomlinson's model of differentiated instruction framed this study, as it explores need for teachers to provide responsive instruction to meet the needs of each of their students, regardless of a student's ability (Tomlinson, 2014). An instrumental qualitative case study design. A purposeful sample of 10 middle school teachers' Grades 6–8 from various content areas participated in an interview, an

instructional observation, and submitted documents for review. Upon conducting inductive analysis to analyze teacher use of DI components, results showed that the teachers were concerned with class size, lack of resources, knowledge/preparation, and professional development. After realizing that teachers experienced challenges in implementing DI, a 3 full day program was created as a project to incorporate DI into improve middle school inclusion-based classrooms for all content teachers.

Mbugua, Cheboi, Basio and Madigu (2016) identified the factors influencing use of DI model for children with Intellectual Disability (ID) in regular classrooms by teachers. The study adopted a mixed method approach and multi-stage random sampling technique. Quantitative data was analyzed using statistical package for social scientists (SPSS) version 20.0. Manifest content analysis was used for qualitative data. It was evident that in although many students with ID had been enrolled to regular classrooms, use of DI model was still elusive. These was due to various factors which included guardians' involvement in inclusion, number of pupils with ID in the class, enrollment criteria, environment adjustment, and policy adoption. Other factors included willingness of the school administrators to include ID children, curriculum flexibility, funding, and availability of adequate teaching facilities. Mbugua, Cheboi, Basio and Madigu (2016) noted that support, supervision, and coordination with special education teacher also influenced the use of DI.

Ngiria (2013) sought to investigate the school-based factors affecting inclusion of learners with disabilities among urban refugees in public primary schools of Ruiru District, Kiambu County, Kenya. The study employed a descriptive survey design. This study targeted all the seven public primary schools with urban refugees who have disabilities in Ruiru District. All the twenty-five community volunteer workers within Ruiru District working with the refugees, head teachers from the seven public primary schools, one hundred and eighty urban refugee pupils including those with disabilities and eighty teachers were targeted. The data was collected by use of questionnaires, focus group discussions and an interview schedule. Descriptive and analytical statistics were used to analyze the data obtained. Ngiria (2013) opined that schools-based factors that affect use of DI among urban refugees learners with disabilities were environmental barriers such as inadequate teaching/learning resources, unfriendly

classrooms, inaccessible sanitation facilities, teacher, and host pupils' negative attitudes as well as lack of efficient teacher competencies in teaching. In this regard, it would be of paramount importance if head teachers to primary schools ensure construction of accessible school facilities, guardians agree to be involved in provision of necessary materials, teacher's training, awareness, and guidance on how to handle urban refugees with disabilities. Host pupils should also be sensitized on disability issues about the urban refugees as well as involved in interactive school activities.

2.4.2 Influence of Teacher Personal Factors on Implementation of DI model

Across the world, teachers indicate that they do not feel prepared to meet challenges that inclusive education legislation and initiatives demand (Philpott, Furey, & Penney, 2010). The argument is that just placing students with disabilities in inclusive settings is not enough to allow them to reach full potential. The teachers working in these inclusive settings must have the skills, resources, and training necessary to use effective research-based practices along with the support of school leaders who support the teachers and students (Smith & Tyler, 2011).

In Jordan, Siam and Al-Natour (2016) noted that teachers mandated with the task of ensuring proper implementation of DI in an inclusive education setting do not have time or skills to correctly play their roles. Instead, they generally follow the old routines inside classroom and stick to a single style of teaching, hence failure to contribute towards the required educational outcomes for all their students. In addition, existing resources for instruction and learning were not designed with students with learning Disabilities in mind. According to Abu-Hamourand and Al-Hamouz (2013) study, in spite of the joint efforts by the Ministries of Education and Social Welfare to raise awareness on "inclusion" and "disability", the realization of "inclusion" in its comprehensive sense is still far away. Rather, effort has to be made to bring educators and decision-makers together to fashion out training programs for professional teachers on the implementation of differentiated instruction for students with special needs who are placed in regular classrooms.

A study by Lora, Nancy, and Jerita (2014) looked into teachers' tendencies, classroom application and the effectiveness of differentiated instruction in the USA. The study

found that successfully differentiated instruction takes time to apply, and there is need for professional development of teachers so they can manage a class and apply effective strategies of differentiated instruction to cater for the needs of every learner within a comprehensive environment. Similarly, Dixon, Yssel, McConnell, and Hardin (2014) carried out a study entitled “Differentiated Instruction, Professional Teachers Training and Effectiveness of Teachers” into the role professional training plays in the implementation of differentiated instruction and the effectiveness and self-efficacy of teachers. The study assessed self-efficacy and the effectiveness of teachers using the variables: educational locations, basic-level schools, teachers’ experiences (number of years), and the number of professional development training (hours) they had undergone. The results showed a positive and proportional relationship between teachers’ qualifications and their effectiveness in implementing differentiated instruction.

In Singapore, Ng (2015) examined shadow teachers’ experiences and explored the factors influencing the implementation of DI in an inclusive education setting. A qualitative research approach based on semi-structured interviews was employed. Six shadow teachers participated in the study and the data was analyzed with a hermeneutic approach. The findings indicated that insufficient collaboration (in particular with the mainstream teachers and the school) negatively impacted the success of implementation of DI. Another factor that was found to have a large impact was a lack of awareness and knowledge. Large class sizes also posed a great challenge to effective use of DI.

In the USA, Wilson (2011) examined the relationship between students’ academic achievement levels and students’ learning styles matched to the instructional strategies incorporated by their teachers. The researcher intended to analyze a sample of 200 elementary leveled students in thirteen general education classes from three schools in California. The study concluded that there is a lack of strong possible relationship between the learning style preference of students in fourth grade and the instructional strategies of the teacher, and academic achievement of those students as reflected in achievement test scores.

Vadhavkar and Bhargava (2016) explored the patterns and factors affecting the sociability of children with special needs in an inclusive setting. The sample was

selected from a local inclusive school of the city through purposive sampling. The total sample comprised of 56 subjects, 17 children with special needs (CSN), 34 peers of these children, and five staff members. Multiple methods like classroom observations, in depth semi – structured interviews, chapatti diagram for teachers and sociometry technique for peers were used for data collection. The study noted that teachers were not fully satisfied with the working of the inclusive program as they were not equipped on how to utilize DI model.

In Kenya, Kirui (2015) investigated the factors that influence the integration of pupils with special needs in an inclusive setting. The theory of multiple intelligences informed the study. The research adopted a descriptive survey research design to carry out the study since it involved the study of various entities. The target population was 240 teachers and 40 PTA representatives whereby a sample of 120 teachers and 20 PTA representatives were chosen. The data collection instruments used were questionnaires and interview schedules. The study findings indicated that most of the teachers were not trained in special needs education and did not frequently attend in-service courses and workshops on special needs education. Further, hearing aids, visual aids, brailles and wheelchairs were not available in most of the schools while demonstrations and crutches were available and suitable in most of the schools. Kirui (2015) noted that there was the challenge of poor attitude by the teachers that pupils with special needs could not interact with other pupils. There was also the challenge of lack of adequate resources to facilitate implementation of DI in an inclusive education setting.

Langas (2017) examined the effects of teacher characteristic on pupil's academic performance in KCPE in inclusive classroom in public primary schools in Narok North sub-County in Narok County, Kenya. The study adopted a descriptive survey design and targeted a population of the 507 teachers, 4 Quality Assurance and Standards Officers and 983 class 7 and 8 pupils from 55 public primary schools. The study selected 202 respondents constituting 98 pupils, 100 teachers and head teachers and 4 QUASOS. The study used simple random to select the teachers and the pupils while purposive sampling was used to select the head teachers. The study used an Interview schedule for the QUASOs staff and two sets of questionnaires for the teachers and the pupils. The findings showed that school environment had the highest effect on the

academic performance of the pupils with special needs in inclusive classrooms followed by teachers' attitude; teachers training and teacher's knowledge of inclusive. The study concluded that the four factors of teachers' attitude, teachers' training, teachers' knowledge, and teachers' perception of school environment influenced academic performance of learners with special needs in inclusive primary schools.

2.4.3 Interplay between School Based Factors and Teacher Personal Factors

Majoko (2019) examined the teaching competencies perceived by special needs education teachers to be essential for inclusive education in Zimbabwe. Entrenched in inclusive pedagogy, this descriptive study draws on a sample of 24 special needs education primary school teachers purposively drawn from Midland educational province of Zimbabwe. Throughout the analysis of data, a constant comparative approach of the organization of data with continual adjustment was used. The study found that participants perceived screening and assessment, differentiation of instruction, classroom and behaviour management, and collaboration to be key competencies required of teachers for inclusive education.

Tsisindu, Joel and Edward (2016) noted that Kenya education system have been characterized by inadequate educational management practices that do not respond well to the challenges faced by special needs learners. This limits the teachers' ability to accord students necessary support despite having the will to support. Hence, it is important that school administrators and the Ministry of Education officials to collaborate with teachers in providing a conducive environment for students with special needs.

KICD (2017) noted that assessment is an important component in the teaching and learning process, since it is the basis of evaluating of the effectiveness of the implementation CBC curriculum process. In this case, teachers and learners use various modes of assessment to determine performance as well as identify gaps. Unfortunately, Eskay (2013) discovered that teachers have difficulty in assessing and appropriately placing learners with special in inclusive setting. This is owing to the fact that most schools administrators do not engage teachers in in-training programmes which would

acquaint them with knowledge on how to deal with special needs students. additionally, they lack exposure to the knowledge of special education.

Muhombe, Rop, Ogola and Wesonga (2015) examined the influence of Special Needs Education Policy on access to secondary school education by learners with hearing impairments in Nandi County, Kenya. The study was informed by the Multiple Intelligences theory and the Dewey theory of Progressivism. They observed that the implementation of the Special Needs Education Policy had led to a slight improvement on transition of learners with hearing impairments from primary to secondary schools in Nandi County. However, the influence of the Special Needs Education Policy on retention of learners with hearing impairments was deemed to be marginally small in schools in Nandi County.

2.5 Summary of Literature Review

Review of literature revealed various contextual and conceptual gaps. For instance, contextual gaps exist as various studies such as Benjamin (2020), Siam and Al-Natour (2016), Ng (2015), Wilson (2011), and Majoko (2019) were not focusing on Kenya but on other countries. Conceptual gaps exist as there is no study that is similar to this study. For instance, Benjamin (2020) explored rural middle school teachers' experiences with incorporating components of DI to support special education students in an inclusive classroom setting. Lora, Nancy, and Jerita (2014) looked into teachers' tendencies, classroom application and the effectiveness of differentiated instruction. Dixon, Yssel, McConnell, and Hardin (2014) carried out a study entitled "Differentiated Instruction, Professional Teachers Training and Effectiveness of Teachers" into the role professional training plays in the implementation of differentiated instruction and the effectiveness and self-efficacy of teachers. Wilson (2011) examined the relationship between students' academic achievement levels and students' learning styles matched to the instructional strategies incorporated by their teachers. Langas (2017) examined the effects of teacher characteristic on pupil's academic performance in KCPE in inclusive classroom in public primary schools Majoko (2019) examined the teaching competencies perceived by special needs education teachers to be essential for inclusive education. These studies are related to this study but different in various ways such that

some studies have focused on different objectives from this study while others were informed by different theories from what our study is focusing on.

Similarly, the reviewed studies exude a methodological gap since they utilized different research designs, used different sampling and data analysis techniques. For instance, Benjamin (2020) adopted an instrumental qualitative case study design and used purposive sampling, Mbugua, Cheboi, Basio and Madigu (2016) adopted a mixed method approach and multi-stage random sampling technique while Ngiria (2013), Ng (2015), Kirui (2015), and Langas (2017) employed a descriptive survey design and used simple random sampling. This study adopted a mixed research methodology taking the form of a case study and did not sample rather conducted a census as the target population was small.

2.6 Conceptual Framework

A conceptual framework is a diagrammatic representation of the relationship between variables and helps the researcher to create awareness and understanding of the area being researched on and advise on the same. Several interrelationships between variables of the study are expressed (Manzi, 2019).

Independent Variables

Dependent Variable

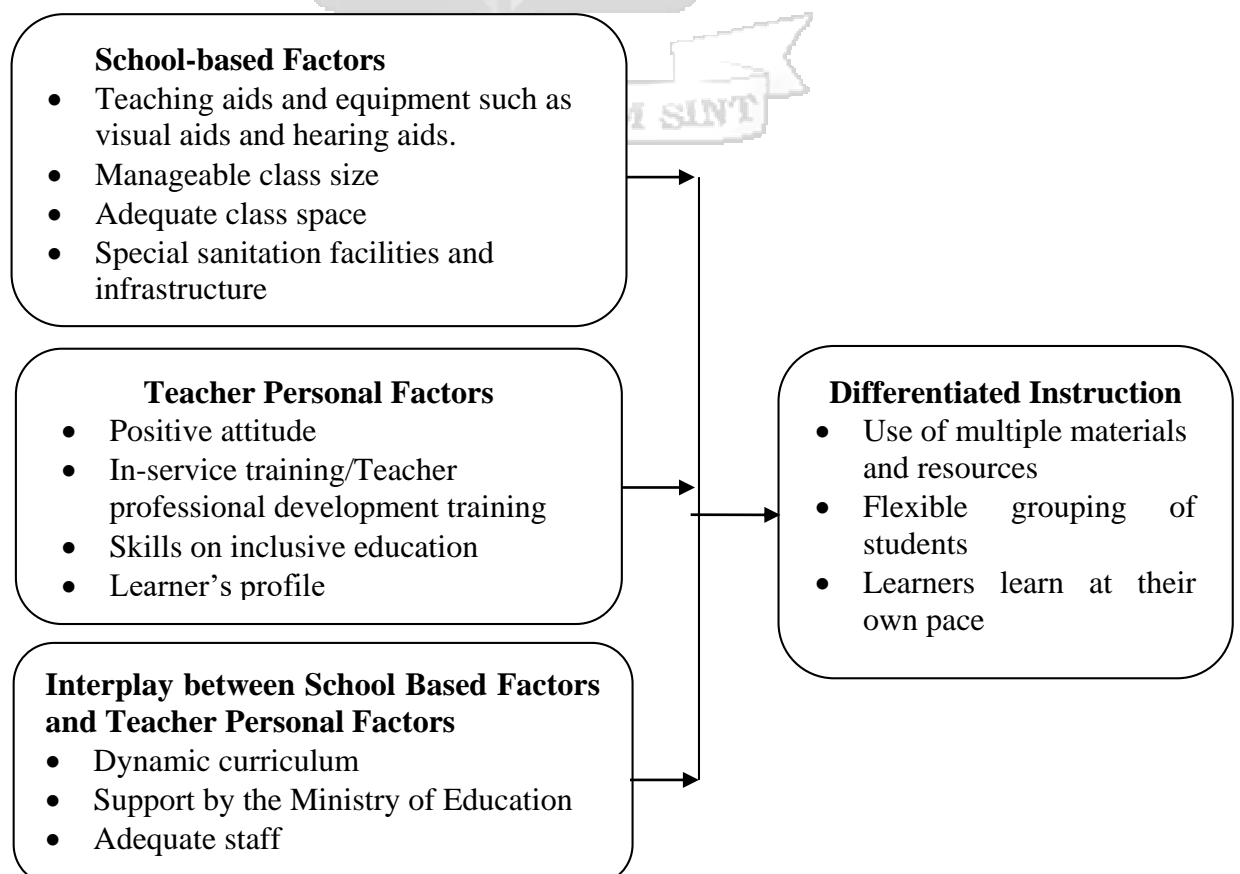


Figure 2.1: Conceptual Framework

The independent variables in this study encompass three aspects of a differentiated instructional model namely school-based factors, teachers' personal factors and societal factors. The dependent variable in this study is differentiated instruction. The conceptual framework clearly outlines the specific attributes that will help in measuring the variables. These attributes will form the basis of designing the questions that will be included in the data collection tools.

2.7 Conclusion

This chapter had four main sections namely theoretical review, contextual background, empirical literature review, summary of literature review and the conceptual framework. The theoretical review presented theories that underpinned this study. The contextual background provides a world overview on the implementation of DI model. The empirical literature review presents information from previous studies on the factors that influence implementation of the DI model. The summary of literature review outlines the various research gaps the literature review exudes. Finally, the conceptual framework shows the relationship between the independent and dependent variable in a diagrammatic form.



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design, population and sample design, data collection method and instruments, data analysis and presentation techniques, and the validity and reliability of the study. The relevant ethical considerations are discussed at the end of the chapter.

3.2 Research Design

The research design that was employed in this investigation is a mixed research methodology taking the form of a case study. This design is suitable as it allowed for use of both quantitative and qualitative data analysis methods. The research design allowed for collaborative utilization of data than do separate quantitative and qualitative data collection and analysis. According to Creswell (2014), qualitative data analysis is a method that allows for collection of data using unstructured tools to be structured in a manner that brings meaning to the data while quantitative data analysis allows for analysis of data collected using structured tools to exude meaningful conclusions.

The case study approach was appropriate as it provided an in-depth understanding of the research problem in a real-life environment. This effectively assisted in the determination of the factors that influence the implementation of DI in Kanjiruini Primary School, Murang'a County. Other researchers that have utilized a mixed research methodology taking the form of a case study include Lindsay-Smith et al., (2018) who explored the impact of membership of a multi-activity, multi-centre community group on social wellbeing of older adults and Yu and Khazanchi (2017) who used embedded mixed methods in studying phenomena, risks, and practical remedies with an illustration.

3.3 Population and Sampling Design

A population is also known as a well-defined collection of individuals or objects known to have similar characteristics (Sekaran & Bougie, 2016). A study population consists of the entire cluster of individuals, objects, items, cases, articles, or things with mutual characteristics existing in space at a particular period of time that are significant for the research findings (Burns & Grove, 2010).

The study population included the head teacher, 30 teachers and 17 guardians of pupils with disabilities in Kanjiruini Primary School, Murang'a County. The choice of the 17 guardians is due to the fact that they are conversant with the measures that the schools has put in place for effective implementation of DI. Since the target population is small, the study did not sample but rather conducted a census of the head teacher, 30 teachers and 17 guardians of pupils with disabilities in the school. This constituted 48 respondents. This aligns with Battaglia, Sampling & Lavrakas (2008) assertions that a census is best suited when dealing with a small target population.

3.4 Data Collection Methods

The study used primary data. According to Kothari (2008), primary data refers to information that a researcher gathers from the field. Primary data was collected using semi-structured questionnaires, observation, and a key informant interview guide. As stated by Newing (2011) a questionnaire is a pre-formulated written set of questions to which the respondents record the answers usually within rather closely outlined choices. A semi-structured questionnaire contains both closed and open-ended questions.

The questionnaire was used to collect data from the teachers and guardians. The questionnaires consisted of various sections with the first section seeking to gather demographic characteristics of the respondents, the second, third, fourth and fifth sections were aligned with the research objectives with each section containing questions for a specific objective. The questionnaires contained both open ended and closed ended questions. The close ended questions yielded quantitative data while the open-ended questions yielded qualitative data. The questionnaires were administered to the respondents using the drop and pick later method. Each respondent answered the questionnaire and the researcher collected it at an agreed time. Despite the prevailing conditions of a worldwide pandemic, this was the most appropriate method as the respondents are colleagues to the researcher. This helped to achieve a high response rate. Additionally, the drop and pick method allowed for direct interaction with the respondents which enabled the researcher give clarification on question that the respondents couldn't understand as well as interpret some of the question to Kiswahili and mother tongue to the guardians who could not understand English.

On the other hand, a key informant interview guide is a research instrument with only unstructured (open ended) questions. The interview guides offer advantages in that the researcher can elicit more in-depth response. However, they have disadvantages of being intrusive and reactive; being time and money consuming and it is difficult to locate respondents for call-backs (Newing, 2011). The key informant interview guide was used to collect data from the head teacher. The key informant interview was conducted face to face. The researcher had to expound further to the head teacher on what interplay meant. Additionally, an observation check list was used to evaluate the accessibility of the school for the physically challenged students.

3.5 Data Analysis and Presentation Techniques

The study gathered both quantitative and qualitative data. Quantitative data analysis was carried out using the Statistical Package for Social Sciences (SPSS) version 24. Both descriptive and inferential statistics were generated. The descriptive statistics included frequencies and percentages while the inferential statistics included a Pearson moment correlation. Results were presented in form of charts and tables.

On the other hand, qualitative data was analyzed using six steps for analyzing and interpreting qualitative data as stated by Creswell (2014). The six steps include: collecting data, (preparing data for analysis, reading through data to get a general sense, coding and labeling data into segments, coding text for descriptions in research reports, and coding text for themes to be used in research reports.

3.6 Validity and Reliability of the Study

Validity of an instrument is the extent to which research instruments measure what they are intended to measure (Kothari, 2004). To ascertain the validity of the instrument the study utilized construct and content validity. Precisely, content validity involved making use of experts in research, assistance from supervisors, peers, and other lecturers to ensure that the questions are clearly outlines and easy to understand by the respondents while at the same time aiding in answering the research questions. The content validation is important in determining the extent to which the set of items provide relevant and representative sample of the domain of tasks under consideration (Mugenda & Mugenda, 2009). This was achieved by going through the data collection

instruments, both the questionnaire and key informant interview guide, one at a time with the research objectives. The supervisors' suggestions, comments and recommendations were used to improve the final data collection instruments which were presented to the respondents.

On the other hand, construct validity was achieved by dividing the data collection instruments, both the questionnaire and key informant interview guide, into several sections to ensure that each section assesses information for a specific objective, and also ensure that the same closely ties to the conceptual framework for this study. According to Mugenda and Mugenda (2009), construct validity is viewed as the extent to which a particular measure relates to other measures in a way that is consistent with theoretically derived hypothesis that concerns the concept.

According to Roberts and Priest (2006) reliability is the measure of the degree to which research instruments yield consistent results or data after repeated trials. To test reliability of research instruments a pilot test was conducted. The Cronbach Alpha Coefficient was used. This was used to determine how items correlated among themselves. The Cronbach alpha (α) ranges between 0 and 1 and a value of 0.7 or more implies high degree of reliability of the data. A high coefficient implied that items correlate highly among themselves meaning there is consistency among items in measuring the concept of interest.

3.7 Ethical Considerations

The researcher sought ethical approval for the research from Strathmore University Institutional Ethics Review Committee. Approval for the research was also obtained from National Commission for Science, Technology, and Innovation (NACOSTI). The researcher then obtained an introductory letter from Strathmore University to explain to the respondents that the study was being conducted for academic purposes only. The researcher also ensured that no respondents was coerced to participate in the study and instead participation was voluntary.

Informed consent was obtained from the head teacher, teachers and guardians who participated in the research. The researcher also exercised a high degree of confidentiality, anonymity, and professionalism to ensure that the information given

was only used for the intended purposes. To ensure anonymity, the respondents were not required to input their identities on the research instruments.

3.8 Conclusion

Chapter three contains the research methodology that was used in this study. This encompasses the research design, population and sampling design, data collection methods, and data analysis and presentation techniques. The chapter also presents information on how the validity and reliability was achieved as well as the ethical considerations.



CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter comprises of data analysis, findings, and interpretation. Results are presented in tables and diagrams. The analyzed data was arranged under themes that reflect the research objectives.

4.2 Response Rate

There were three sets of respondents namely the head teacher, teachers, and guardians. The sample size for the head teacher was 1 and the researcher successfully managed to reach him representing a 100% response rate. The researcher also managed to successfully administer 29 out of a possible 30 questionnaires to teachers reflecting a response rate of 96.7%. Further, the researcher managed to successfully administer 16 out of a possible 17 questionnaires to guardians which represents a response rate of 94.1%. Table 4.1 captures the response rate.

Table 4.1: Response Rate

Response	Sampled Respondents	Successful Participants	Response Rate
Headteacher	1	1	100.0%
Teachers	30	29	96.7%
Guardians	17	16	94.1%

4.3 Demographic Information of the Respondents

This section presents the descriptions of the respondents in terms of their gender, age, level of education for all the three categories of respondents (head teacher, teachers, and guardians). The section also captures information on administered the number of years the head teacher had headed a school that has implemented the DI model to cater for students with special needs. The number of years teaching special needs learners using DI model for teachers and the age of child(ren) with special needs and number of children with special needs for guardians.

4.3.1 Gender of the Respondents

The headteacher was male. On the other hand, 69% of the teachers were female while the rest 31% were male. This implies that a higher proportion of teachers in primary schools are female. This is as illustrated in Figure 4.1.

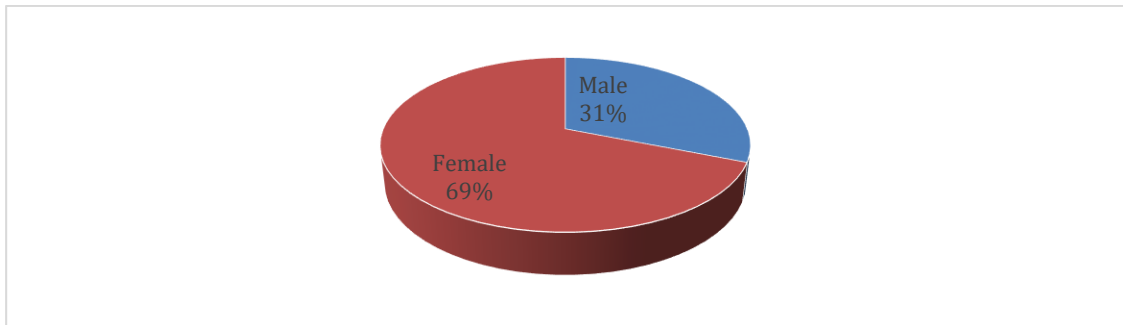


Figure 4.1: Teachers' Gender

Figure 4.2 also demonstrates that 63% of the guardians were female while the rest 37% were male. The higher proportion of female guardians can be explained by the fact women are mostly the primary care givers for children at their younger age.

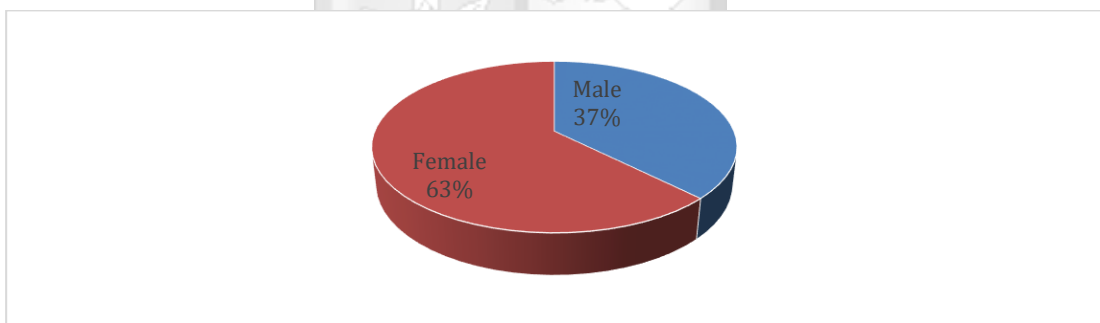


Figure 4.2: Guardians' Gender

4.3.2 Age

All respondents were asked to state their age. The headteacher was above 45 years. Figure 4.3 illustrates that 48% of the teachers were aged above 45 years, 28% were aged between 26-35 years while 24% were aged between 36-45 years. This shows that most teachers were past their middle age which implies that they had been in the teaching profession for a long period of time being that most people join their careers at an early age. This means that they are experienced teachers.

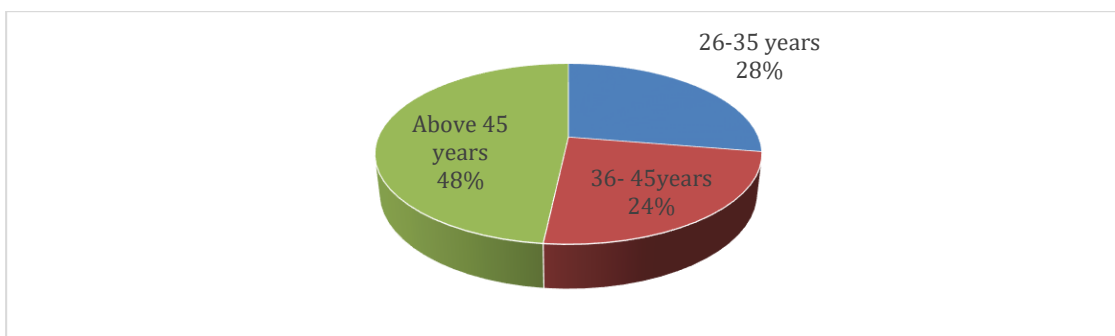


Figure 4.3: Teachers' Age

Figure 4.4 illustrates that 44% of the guardians were aged between 26-35 years, another 44% were aged between 36-45 years while 12% were aged above 45 years. The results show that most guardians are in their middle age which can be explained by the fact that most persons with learners in primary school are not elderly.

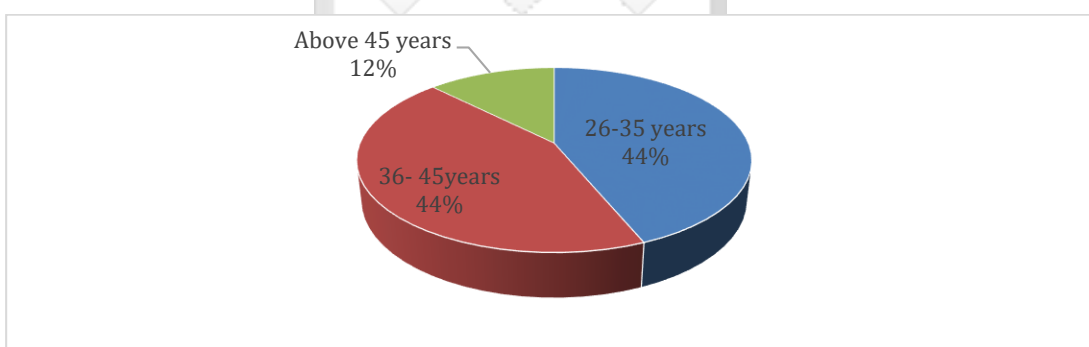


Figure 4.4: Guardians' Age

4.3.3 Level of Education

All respondents were asked to state level of education. The headteacher stated that had attained education up to diploma level. Figure 4.5 illustrates that majority (66%) of the teachers were educated up to diploma level, 31% up to high school level while only 3% were educated up to master's degree level. This shows that most teachers have attained the required training to teach in primary schools. However, it is important to note that most of the teachers who had attained education up to high school level had been in the teaching profession for many years and thus qualified to teach on merit of experience.

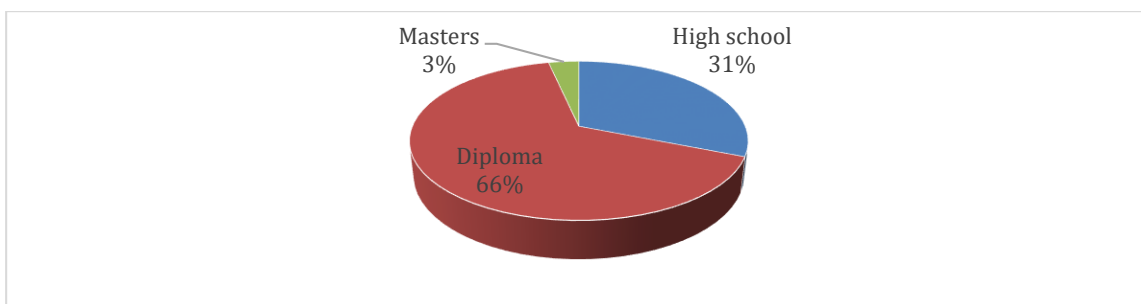


Figure 4.5: Teachers' Level of Education

Figure 4.6 illustrates that 50% of the guardians were primary school certificate holders, 38% had attained education up to high school level while 12% had less than primary school education. The results imply that most of the guardians understood the importance of education for SNE learners being that they were also educated.

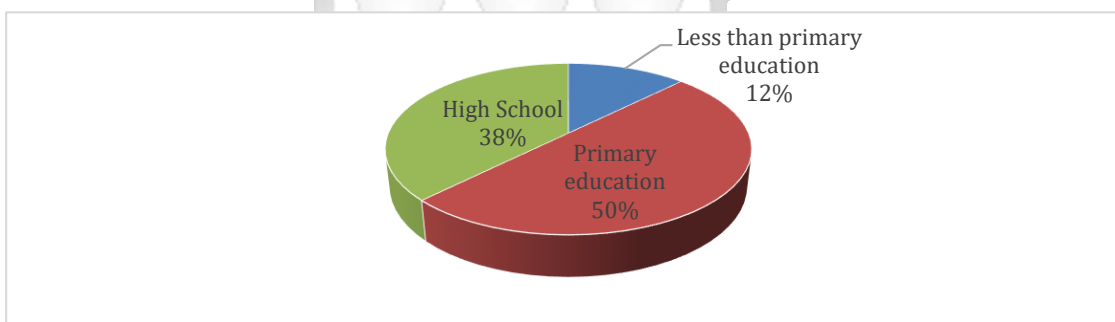


Figure 4.6: Guardians' Level of Education

4.3.4 Period Administering a School Implementing Differentiated Instruction Model

The headteacher was asked to state the period of administering a school that has implemented the DI model to cater for students with special needs. The response less than 3 years. This can be explained by the fact the concept of integrating SNE learners in regular schools has not been existent for long in Kenya. Additionally, the use of DI model has come into play after the introduction of the new CBC curriculum.

4.3.5 Period Teaching Students with Special Needs Using the Differentiated Instruction Model

The teachers were asked to state how long they have taught students with special needs using the DI model. Results illustrate that 82.8% stated 2 years while 17.2% stated 1

year. This can be explained by the fact that the DI model was introduced in Kanjiruini Primary school less than 3 years ago.

Table 4.2: Period Teaching SNE learners using DI model

Number of Years	Frequency	Percent
1	5	17.2
2	3	82.8
Total	29	100

4.3.6 Age of Child with Special Needs

The guardians were asked to indicate the age of the child with special needs. Results in Table 4.3 show that 18.8% stated 6 years, 10 years, and 15 years, 12.5% stated 8 years and 12 years while 6.3% stated 7 years, 9 years, and 14 years. The results show that most SNE learners were either transferred from special schools or enrolled to Kanjiruini primary school after the introduction of use of DI model. The results could also mean that some SNE learners were only enrolled to Kanjiruini primary school after the introduction of use of DI model. This implies that some SNE learners are learning together with their juniors in terms of age.

Table 4.3: Age of Child with Special Needs

Age of Child	Frequency	Percent
6	3	18.8
7	1	6.3
8	2	12.5
9	1	6.3
10	3	18.8
12	2	12.5
14	1	6.3
15	3	18.8
Total	16	100

4.3.7 Number of Children with Special Needs

The guardians were also asked to state how many children have special needs do they have. Results in Table 4.4 reveal that most (93.8%) stated one while 6.3% indicated 2.

Table 4.4: Number of Children with Special Needs

Number of Children with Special Needs	Frequency	Percent
1	15	93.8
2	1	6.3
Total	16	100

4.4 School Based Factors

The first objective was to investigate the extent to which school-based factors influence the use of the DI model in Kianjiruini Primary School in Murang'a County. The teachers and guardians were asked to respond to statements to show whether the school-based factors influence the use of the DI model. Results in Table 4.5 shows that majority (89.7%) agreed that the school administrator shows support for implementation of a DI model in our school, 51.7% disagreed that the classrooms in our school are a manageable size to allow for implementation of DI model while 41.3% disagreed that they have educational equipment and instruments to use for implementation of DI. Further, 37.9% of the teacher stated that their classroom space in their school is adequate while 34.4% opposed. Results also showed that 86.2% of the teachers disagreed that their school has special sanitation facilities and infrastructure to cater for the needs of special needs students. The results imply that Kanjiruini primary school has inadequate school-based resources to spur effective implementation of DI.

Table 4.5: School Based Factors (Teachers)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The school administrator shows support for implementation of a DI model in our school.	3.4%	3.4%	3.4%	27.6%	62.1%
The classrooms in our school are a manageable size to allow for implementation of DI model.	17.2%	34.5%	17.2%	24.1%	6.9%
We have educational equipment and instruments to use for implementation of DI.	10.3%	31.0%	31.0%	24.1%	3.4%
The classroom space in our school is adequate.	10.3%	24.1%	27.6%	24.1%	13.8%

The school has special sanitation facilities and infrastructure to cater for the needs of special needs students.	58.6%	27.6%	13.8%	0.0%	0.0%
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The teachers also reiterated that textbooks are not enough and the school environment such as the field, paths, doorsteps, and stairs ought to be upgraded as it does not suit SNE learners. The teachers also added that teaching and games equipment for SNE learners such as braille's are lacking. Further, they also noted that the school lacks resource personnel with specialized skills such as IT, physiotherapy, and speech therapist.

With regard to the guardians, results in Table 4.6 shows that 50% were neutral on whether the school administrator shows support for implementation of a DI, 56.3% disagreed that the classrooms are an adequate size while 75.0% disagreed that the density of students per classroom in their school is manageable. Further, 93.7% of the guardians disagreed that the school has special sanitation facilities and infrastructure to cater for the needs of students with disabilities. The guardians support the teachers and affirm that Kanjiruini primary school has inadequate school-based resources to spur effective implementation of DI.

Table 4.6: School Based Factors (Guardians)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The school administrator shows support for implementation of a DI model in our school.	0.0%	31.2%	50.0%	12.5%	6.2%
The classrooms are an adequate size.	37.5%	18.8%	25.0%	18.8%	0.0%
The density of students per classroom in our school is manageable.	56.2%	18.8%	18.8%	6.2%	0.0%
The school has special sanitation facilities and infrastructure to cater for needs of students with disabilities.	87.5%	6.2%	6.2%	0.0%	0.0%

The guardians also pointed out that the school lacked adequate school projectors whereby only one was being shared amongst all teachers to blend audio visual teaching

aids and that there was no school bus to transport SNE learners to school which makes some skip school due to long distance. Another parent noted that there was no swimming pool for learners to do physiotherapy and that specialists such as physiotherapist and speech therapist were lacking. On a positive note, one parent stated that the language policy has helped his son within one term as he can speak at least Kiswahili.

The head teacher supported the feedback from the teachers and guardians and stated that the school lacked adequate rooms to divide SNE learners into foundational level and intermediate level and that there are inadequate funds to have constructed modern sanitation facilities. Further, the head teacher stated that the classes are highly populated, ranging 60-70 learners per class, to offer DI appropriately. The headteacher also stated that there is only one ICT room serving 1200 learners which has made adoption of remote learning a challenge.

4.5 Teacher Personal Factors

The second objective was to assess extent to which teachers' personal factors influence the use of the DI model in Kianjiruini Primary School in Murang'a County. The teachers and guardians were asked to respond to statements to show whether the teacher personal factors influence the use of the DI model. To start with the teachers, results in Table 4.7 shows that majority (75.8%) agreed that teachers have a positive attitude towards implementation of DI model in the school, another 75.8% disagreed that teachers in the school are trained on how to execute inclusive education while 86.2% disagreed that teachers in the school have received in-service training/teacher professional development on how to implement the DI model. Further, 72.4% of the teacher disagreed that each learner has a profile such that teachers are able to access and ascertain their individual needs, 48.2% disagreed that teachers take time to adjust to requirements of an inclusive curriculum for proper implementation of DI model while 44.8% agreed that teachers take time to prepare the instruction for DI model implementation. The results imply that Kanjiruini primary school lacks the capacity to develop the teachers' skills so that they become competent in implementing DI.

Table 4.7: Teacher Personal Factors (Teachers)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Teachers have a positive attitude towards implementation of DI model in the school.	3.4%	10.3%	10.3%	17.2%	58.6%
Teachers are trained on how to execute inclusive education.	58.6%	17.2%	17.2%	6.9%	0.0%
Teachers have received in-service training/Teacher Professional Development on how to implement the DI model.	51.7%	34.5%	6.9%	3.4%	3.4%
Each learner has a profile such that teachers are able to access and ascertain their individual needs.	44.8%	27.6%	6.9%	17.2%	3.4%
Teachers take time to adjust to the requirements of an inclusive curriculum for proper implementation of DI model.	24.1%	24.1%	24.1%	24.1%	3.4%
Teachers take time to prepare the instruction for DI model implementation.	10.3%	27.6%	17.2%	31.0%	13.8%

The teachers also added that there are other teachers personal factors that influence implementation of DI negatively. These include a high ratio of learners to teacher, delay of Free Primary Education (FPE) funds, limited timeframe to cover the syllabus and attend to individual need of SNE learners as the workload is large, inadequate teaching and learning materials, attitude of achieving the mean score whereby teachers focus more on the bright learners, squeezed timetable, and lack of motivation. The teachers also noted that the mode of assessment used to gauge teachers' performance ought to be adjusted such that it puts into account the number of learners in a class and funds available. The current model does not accommodate DI.

With regard to the guardians, results in Table 4.8 shows that 37.5% agreed that teachers have a positive attitude towards special needs students while 31.3% disagreed. Results also show that 31.3% both agreed and disagreed that teachers access each special need student to establish their individual needs while 50.0% disagreed that teachers strive to

teach special need student at their level. Further, 43.7% of the guardians disagreed that teachers engage them when accessing the needs and capabilities of the special need students while 31.3% agreed. Fifty percent (50%) of the guardians were however neutral as to whether teachers train the students without disabilities on how to relate with special needs students, while all the guardians (100%) disagreed that teachers participate in campaigns to sensitize the community against societal discrimination. The results imply that teachers' in Kanjiruini primary school lacks the requisite skills required for effective implementation of DI.

Table 4.8 Teachers in our school: Teacher Personal Factors (Guardians)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Teachers have a positive attitude towards special needs students.	12.5%	18.8%	31.2%	25.0%	12.5%
Teachers access each special need student to establish their individual needs.	12.5%	18.8%	37.5%	18.8%	12.5%
Teachers strive to teach special need student at their level.	12.5%	37.5%	12.5%	31.2%	6.2%
engage us when accessing the needs and capabilities of the special need students.	6.2%	37.5%	25.0%	12.5%	18.8%
Teachers train the students without disabilities on how to relate with special needs students.	6.2%	12.5%	50.0%	25.0%	6.2%
Teachers participate in campaigns to sensitize the community against societal discrimination.	93.8%	6.2%	0.0%	0.0%	0.0%

The guardians also cited various aspects of teacher personal factors that influence implementation of DI. These included lack of professional development courses for all teachers on DI which would ease its implementation, teachers ought to teach Activities of Daily Living skills (ADL) such as washing (fine motor skills), teachers ought to do more homeschooling for SNE learners who are immobile at least once a week, teachers in SNE unit ought not to have lessons in upper primary so as to focus more on SNE learners and that teachers should prepare profile for learners to be integrated in advance.

The head teacher supported the feedback from the teachers and guardians and stated that majority of teachers complain of highly populated classes and huge workload,

majority of teachers cannot afford to enroll for SNE and waits for government workshops on SNE which are rare, some teachers have a negative attitude in adapting to new programs such as use of DI and that most teachers complain that integrated SNE learners drops the Mean Standard Score (MSS) and argue they should not be included in class mark list since they are required to fill the Teachers Performance Appraisal and Development (TPAD).

4.6 Interplay of School-Based Factors and Teacher Personal Factors

The third objective was to examine interplay of school-based factors and teacher factors and their influence the use of the DI model in Kianjiruini Primary School in Murang'a County. The teachers and guardians were asked to respond to statements to show whether the interplay of school-based factor and teacher factor influence use of the DI model. Results in Table 4.9 shows that 65.5% of the teachers disagreed that stakeholders from the Ministry of Education support the implementation of DI, 44.8% were neutral as to whether they use a dynamic curriculum so as to cater for the needs of all students, 68.9% disagreed that their school has adequate staff to cater for the needs of all students while 72.4% disagreed that the school's administration has put in place structures that support the integration of learners with disabilities in a regular classroom. The results imply that in as much as Kanjiruini Primary school has embraced the use of DI, there is still a long way to go in terms of preparedness as the school lacks very critical resources that are vital for effective implementation of DI.

Table 4.9: Interplay of School-Based Factors and Teacher Personal Factors (Teachers)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Stakeholders from the Ministry of Education support the implementation of DI.	17.2%	48.3%	17.2%	10.3%	6.9%
We use a dynamic curriculum so as to cater for the needs of all students.	31.0%	6.9%	44.8%	17.2%	0.0%
The school has adequate staff to cater for the needs of all students.	44.8%	24.1%	6.9%	20.7%	3.4%
The school's administration has put in place structures that support the integration of	27.6%	44.8%	20.7%	3.4%	3.4%

learners with disabilities in a regular classroom.					
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The teachers also added that refresher course organized by the school administration and the Ministry of Education would help them in acquiring requisite skill to fast track the implementation of DI effectively.

With regard to the guardians, results in Table 4.10 shows that 43.8% were neutral on whether stakeholders from the Ministry of Education support the implementation of DI, 62.6% disagreed that they use a dynamic curriculum so as to cater for the needs of all students, 93.8% disagreed that their school has adequate staff to cater for the needs of all students while 75.0% disagreed that the school's administration has put in place structures that support the integration of learners with disabilities in a regular classroom. The results concur with the teachers assertions and thus it calls for action to provide the necessary resources, in the form of school infrastructure and teachers empowerment, and support from relevant stakeholders for there to be effective implementation of DI.

Table 4.10: Interplay of School-Based Factors and Teacher Personal Factors (Guardians)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Stakeholders from the Ministry of Education support implementation of DI.	0.0%	25.0%	43.8%	18.8%	12.5%
We use a dynamic curriculum so as to cater for the needs of all students.	43.8%	18.8%	18.8%	18.8%	0.0%
The school has adequate staff to cater for the needs of all students.	75.0%	18.8%	0.0%	0.0%	6.2%
The school administration has put in place structures that support the integration of learners with disabilities in a regular classroom.	31.2%	43.8%	18.8%	6.2%	0.0%

The guardians added that parents require training on DI, the school should provide teachers with required teaching and learning resources, the environment (field) should be more adapted for SNE learners, the school should organize sports for SNE learners

separately, the school should provide audio/visual teaching aids and that the school should organize training for parents on DI for maximum support.

Further, the guardians reiterated that at the beginning of each year, the administration should organize parents meeting for the integrated learners so as to create SNE learner profile for teachers to build on prior knowledge, SNE teachers should be exempted from teaching upper primary and concentrate on SNE, learners should be divided into groups according to their abilities when teaching them instead of one pace Schemes of Work (SOW) lesson plan and that the school administration should organize workshops internally for teachers training on inclusion and use of DI model.

The guardians also stated that the administration should tailor make a dynamic curriculum through school head panels which will assist teachers attend to individual learner needs, the administration should motivates the teachers by providing instructional resources adequately for effective implementation of DI, the administration should train parents on DI for maximum support to the teacher and that teachers to train parents on how to make portfolios so as to get maximum support with the help of the administration.

The head teacher also elaborated how teacher personal factors and school-based factors influence use of DI. He stated that huge number of classes overwhelm teachers in executing teaching effectively, delayed funding slows down purchase of instructional materials for teachers and lack of ICT rooms and gadgets delay use of visual and audio-visual teaching resources.

4.7 Implementation of Differentiated Instruction

The teachers and guardians were asked to respond to statements assessing the extent to which the DI model has been implemented in their school. Results in Table 4.11 demonstrate that 44.8% teachers agreed that they use multiple materials and resources when teaching while 34.4% disagreed. Fifty-one-point seven percent (51.7%) agreed that teachers group students in flexible groups considering their respective skills. Results also show that 48.3% disagreed that teachers administer continuous assessment tests based on individual students' abilities while 41.3% agreed. Further, results reveal that 51.7% of the teachers disagreed that teachers allow students to learn at their own

pace depending on their leaning capabilities while 79.3% agreed that teachers use varied methods when delivering instructions to students according to their individual needs. The results show the implementation of DI at Kanjiruini Primary school has been ineffective due to lack of necessary resources.

Table 4.11: Implementation of Differentiated Instruction (Teachers)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Teachers use multiple materials and resources when teaching.	3.4%	31.0%	20.7%	37.9%	6.9%
Teachers group students in flexible groups taking into account their respective skills.	3.4%	27.6%	17.2%	44.8%	6.9%
Teachers administer continuous assessment tests based on individual students' abilities.	34.5%	13.8%	10.3%	31.0%	10.3%
Teachers allow students to learn at their own pace depending on their leaning capabilities.	24.1%	27.6%	20.7%	20.7%	6.9%
Teachers use varied methods when delivering instructions to students according to their individual needs.	0.0%	6.9%	13.8%	65.5%	13.8%

With regard to the guardians, results in Table 4.12 demonstrate that 43.8% disagreed that teachers use multiple materials and resources when teaching while 25.0% agreed. Fifty-six point three percent (56.3%) disagreed that teachers group students in flexible groups considering their respective skills. Results also show that 62.6 % disagreed that teachers administer continuous assessment tests based on individual students' abilities while 62.5% of the teachers disagreed that teachers allow students to learn at their own pace depending on their leaning capabilities. Further, results reveal that 37.5% disagreed that teachers use varied methods when delivering instructions to students according to their individual needs while 31.3% agreed. The results show the implementation of DI at Kanjiruini Primary school has been ineffective due to lack of necessary resources.

Table 4.12: Implementation of Differentiated Instruction (Guardians)

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Teachers use multiple materials and resources when teaching.	0.0%	43.8%	31.2%	6.2%	18.8%
Teachers group students in flexible groups taking into account their respective skills.	12.5%	43.8%	12.5%	12.5%	18.8%
Teachers administer continuous assessment tests based on individual students' abilities.	43.8%	18.8%	12.5%	18.8%	6.2%
Teachers allow students to learn at their own pace depending on their leaning capabilities.	0.0%	62.5%	12.5%	6.2%	18.8%
Teachers use varied methods when delivering instructions to students according to their individual needs.	12.5%	25.0%	31.2%	18.8%	12.5%

The head teachers were also asked to indicate to what extent he has implemented the DI model in the school. In response, the headteacher stated that he organized training for two SNE teachers in CBC training to implement it in DI, ensured that learners in intermediate level of SNE are integrated to regular school, embracing CBC (formative evaluation of portfolio and assessment measure for integration), only engaging the two teachers trained in SNE develop IEP plans for the integrated and encouraging teachers to use multiple intelligence theory (use of practical's, music, P.E., textile) which changes lessons to learner centered approach.

4.7.1 Challenges to Effective Implementation of Differentiated Model

The respondents were also asked to indicate challenges encountered when implementing the DI in their school. The challenges stated were both general and those arising from the current COVID 19 pandemic. Regarding the general challenges, the teachers stated that there are insufficient funds allocated to the SNE unit, there is delay of Free Primary Education (FPE) funds, parents don't cooperate with the government and teachers in the implementation of DI, there is lack of enough facilities to cater for both regular and SNE learners, lack of textbooks, very large classes, lack of learning and teaching materials, limited time to cater for the needs of all learners, lack of seminars and workshops to sharpen the teachers' skills on DI, delay in funding SNE activities demotivates teachers and that some parents do not check on their provision of basic needs before sending kids to school. The teachers also stated that there was negative attitude by the community towards SNE learners, individual learners' differences, and that the classes are not comfortable. Further, the teachers stated that it is difficult to cover the syllabus within the stipulated time, there are no special gadgets to cater for the visually impaired, lack of teacher motivation, mixed group abilities and the challenge of differing needs for different learners.

The head teacher cited various challenges, namely lack of ICT rooms and gadgets, large classes giving the teachers a huge workload and thus not able to attend to the individual needs of SNE learners, delayed funding, for integrated learners, teachers not willing to include them in mark list for TPAD and insufficient number of teachers trained on SNE whereby out of 30 teachers only 5 teachers trained in SNE are posted by government to teach DI in inclusive setting.

On the other hand, guardians cited various challenges namely financial challenges resulting to inability to provide basic needs for the SNE learners which makes them skip schools every so often, lack of sanitation facilities for learners on wheelchair, overcrowded classes having a population of 50 learners in a class which is a challenge for teachers to reach each individual learner needs, and that SNE learners are not taught Activities for Daily Living (ADL) and self-reliant skills. They also cited negative attitude by the community towards SNE learners, bullying of SNE learners by the regular students which could make them prefer to stay at home or not integrate time,

teachers have huge workload, few teachers are trained on special education whereby only 5 out of 30 teachers who are trained in special education, lack of transportation means for SNE learners and thus SNE learners walking far to school, lack of food for SNE unit as some do not carry food, lack of enough rooms to divide SNE learners into foundational and intermediate level, lack of the right school furniture for SNE learners, and poor environment which is unfriendly to SNE learners. The guardians also noted that the school TV was stolen which teachers used for online lessons, SNE learners are integrated in large classes which makes it difficult for teachers to attend to the individual needs of the learners, inaccessible school facilities, and inadequate teachers' skills and training on DI.

The main challenges relating to the COVID 19 pandemic as stated by the guardians were lack of ICT capability in the school which hindered remote learning during the pandemic, and that parent's lack technology to teach the SNE learners online. They also posited that the pandemic had affected them financially due to loss of jobs which made them unable to provide basic needs to the SNE learners.

4.7.2 Support Needed for the School, Teachers and Society

The respondents were requested to state the kind of support needed from the school, teachers, and society. Teachers stated that learners profiles from special school should be provided, teaching aids and equipment should be provided, more teachers should be employed to reduce the huge workload, all the stakeholders should work as a team (teamwork spirit), training on SNE and use of DI model in an inclusive setup, financial support from the government and society for constructing enough facilities to accommodate all learners, adequate teaching materials for all learners according to their different abilities should be provided, seminars and workshops to promote DI by the Ministry of Education, provision of the learners profile form the previous teacher, educate the society to accept SNE learners positively and bring them to school, teacher should change their attitude towards SNE learners and accept that they are integrated and that parents should give history of SNE learners to the teachers when enrolling them to school.

Considering the guardians, they stated that the school should introduce frequent school meetings for parents with integrated learners, and that the school should help in getting donors for various SNE learners who use specialized equipment such as wheelchairs. Particularly, one parent said “my child wheelchair is almost breaking down, can the school help look for a donor?”. The guardians opined that the school should start a feeding program for learners so that those from poor family backgrounds to benefit, teachers should do home visits immobile SNE learners, parents should be trained on DI and their role in successful implementation of DI model and that the school should ensure that teachers have supplementary learning tools given to SNE learners from school for exercises at home such as beads, the society should embrace SNE learners, government to construct boarding facilities for SNE learners, a bus to SNE learners to school should be provided, sanitation facilities should be upgraded, and that SNE learners should be enrolled in sports, music, and drama.

Further, the guardians retorted that the school should start income generating projects such as rearing chicken and rabbits, the school should organize for the purchase of tablets for SNE learners, SNE learners should be trained on ADL skills such brushing teeth, bathing, cooking, the school should have a physiotherapist, the school should do a proposal for building a modern ablution block for SNE and those female teachers to teach integrated learners on menstrual hygiene.

The head teacher posited that the kind of support that he would require would take the form of construction of a modern ablution block for SNE, since most learners do not afford a meal, if parents paid lunch fee, it would help and that the BOM to help in strategic plan to upgrade ICT room, electrification and buy more gadgets such as projectors.

4.7.3 Suggestions for Effective Implementation of Differentiated Instruction

The respondents were asked to give suggestions pertaining to effective implementation of DI in your school. The teachers reiterated that the Ministry of Education should ensure that more teachers are trained on DI, teaching materials should be provided on time, the stakeholders in the Ministry of Education should inform the community on the importance of having a positive attitude towards SNE learners, teachers should be

engaged in refresher courses to acquaint them with skills on how to use DI model effectively, the government to fund the institution in time as well as train personnel to handle SNE learners well, use of DI model should be given priority in the whole county and country and that teachers should be provided with the correct SNE learner profile. The teachers added that more teachers should be employed, there should be more inclusion of the stakeholders in the implementation of DI, learners should be examined differently taking into consideration their capabilities, regular teachers in-service training and professional development should be introduced, the administration should source for well-wishers to help in providing with resources for full implementation of DI, the government should provide more funds to facilitate full implementation of DI and that all teacher should be trained for effective roll out of the new CBC curriculum.

The guardians provided various suggestion such as teachers should ensure learning doesn't stop during a pandemic by starting IT classes, parents should be trained on their role in implementation of DI as required so as to get their full support and that parents should also trained on their role to support the implementation of CBC curriculum. The guardians added that the school should buy a school van to help ferry immobile learners to school, in case on another pandemic, and that the school should organize how SNE leaners can get tablets to continue with learning through online classes which are favorable.

Further, the guardians suggested that teachers ought to blend visual/ audio teaching resources, CBC curriculum should be used to help learners be self-reliant, more teachers should be employed as class sizes are large, they would reach the SNE learners in the regular classes better, effective ways to reach out to the individual needs of all learners should be adopted, CDF/ government to build more classes for CBC pathways, abolish end of term exams for SNE learners as they are not helpful to integrated learners, parents to be engaged at the beginning of term to make IEP, teachers should embrace DI for learners to benefit, SNE learners should be taught on how to use tablet as she likes technology, the government should disburse funds on time, the administration should plan for seminars for teachers on use of DI, teachers should blend IT in learning activities and that parents should attend school meeting to be informed about DI after the pandemic.

The head teachers gave various suggestions namely the government to post more teachers trained in SNE since it is an integrated center, Sub-County office to plan frequent workshop to train teachers on how to handle integrated classes, parents should support teachers in follow-up of their children and that alumni and BOM to come up with a plan on how to help in the successful implementation of DI in an inclusive setting.

4.7.4 Transition Rates and Retention Rates of Special Needs Students

The head teacher was asked to state transition rates and retention rates of special needs students in his school. The response was that the transition rates are good as the SNE learners in the intermediate level are integrated in regular classes. Particularly, the headteacher noted that at least 70% of SNE learners aged below 10 years are integrated into regular classes while the rate drops to 30% for SNE learners above 10 years. This can be explained by the fact that younger SNE learners can adjust easily to fit in a regular class compared to older SNE learners. The headteacher also noted that the retention rates are low as the SNE learners are affected by many factors such as unfavorable weather conditions.

4.7.5 Dealing with Challenge of Mean Score Grading

The head teacher was asked to state how the challenge of mean score grading (systemic challenges) was dealt with. The response was that CBC is helping to solve the menace in grade 4 -5 through CBC pathways, the integrated are included in the mark list as well and that they are also rewarded based on their talents.

4.7.6 What Works, What Doesn't in the Implementation of Differentiated Instruction Model

The teachers and guardians were asked to state what works and what doesn't in the implementation of the DI model. The teachers stated that despite the work being too demanding for the teachers, it is helpful to the SNE learners since they get to learn in a normal learning environment. Additionally, the posited that CBC is helping teach all children with different abilities. However, some of the CBC curriculum does not cater for rural areas.

On a negative note, they stated that understanding individual SNE learners' abilities and talents is challenging as well as talent identification and nurturing. The teachers noted that their work is very tedious, the evaluation does not work effectively, there exists a poor teacher-parent relationship which is strained by poor parents' public relations, it is a difficult to access the achievement of some objectives and that large classes do not work especially in meeting individual SNE learner's needs.

On the other hand, the guardians stated that use of DI in an inclusive setting has helped SNE learners. Particularly, there is a parent who noted their child has improved since enrolling in SNE unit just for one term''. The guardians also noted that SNE learners' capabilities have improved as they can handle more house chores than before. On a negative note, they stated that there are few teachers, and that the DI model is new to many.

Summing it up, all the respondents pointed out that Kanjiruini Primary school has inadequate resources to foresee successful implementation of DI in an inclusive setting. This can be explained by the fact that use of DI was introduced less than three years ago and hence there is still a lot of adjustment needed in regard to provision of the school-based resources. The findings paint a picture of the status of project implementation in Kenya which is slow coupled with challenges resulting from bureaucratic procedures and political interference. This can be seen by the occurrence of delayed funding for both FPE and SNE as well as inadequate funding which result to poor development of the required resources in terms of building school infrastructure and provision of training of teachers.

The results also show that the principal has a better understanding of what use of DI entails. The headteacher also has a clear understanding of the new CBC curriculum and how it can be blended in with DI. In support of effective use of DI among teachers, the headteacher advocates for training of SNE teachers on how to integrate CBC into DI. However, there is a great hurdle as only 5 teachers are trained on SNE where only 2 are conversant on how to integrate the CBC curriculum into DI. Given that the students population is large, the few teachers trained cannot spearhead successful implementation of DI and thus there is need for robust training for all teachers on both SNE and integration of CBC in DI. Another challenge is brought about by the fact that

CBC is a new curriculum and has only been introduced up to grade five. This means there is a lot of shifting happening from how teaching happened using the 8.4.4 curriculum and how CBC curriculum is modelled. However, the headteacher noted that CBC will make implementation of DI easier as it focuses more on an individual student competence and not grades which is similar to the focus of DI.

4.8 Pearson Moment Correlation (Teachers)

Results in Table 4.13 demonstrate that there exists a positive and significant relationship between school-based factors and use of DI as reflected by a p-value of 0.000 and a beta coefficient of 0.641. This implies that improving the school-based factors would increase the use of DI by 0.641 units. Results also show that teacher factors and use of DI have a positive and significant relationship as reflected by a p-value of 0.001 and a beta coefficient of 0.591. This implies that improving the teacher personal factors would increase the use of DI by 0.591 units. Further, results show that the interplay between school-based factors and teacher personal factors have a positive and significant relationship with the use of DI as reflected by a p-value of 0.000 and a beta coefficient of 0.798. This implies that improving the school-based factors would increase the use of DI by 0.798 units. The results show that the interplay between school-based factors and teacher personal factors has the greatest influence, followed by school-based factors and lastly teacher personal factors.

Table 4.13: Pearson Moment Correlation (Teachers)

Variables		UDI	SBF	TBF	Interplay between SBF and TBF
UDI	Pearson Correlation	1			
	Sig. (2-tailed)				
SBF	Pearson Correlation	0.641	1		
	Sig. (2-tailed)	0.000			
TBF	Pearson Correlation	0.591	0.623	1	
	Sig. (2-tailed)	0.001	0.000		
Interplay between SBF and TBF	Pearson Correlation	0.798	0.922	0.545	1

	Sig. (2-tailed)	0.000	0.000	0.002	
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UDI - Use of differentiated instruction

SBF - School based factors

TPF - Teacher personal factors

4.9 Pearson Moment Correlation (Guardians)

Results in Table 4.14 demonstrate that there exists a positive and significant relationship between school-based factors and use of DI as reflected by a p-value of 0.001 and a beta coefficient of 0.760. This implies that improving the school-based factors would increase the use of DI by 0.760 units. Results also show that teacher factors and use of DI have a positive and significant relationship as reflected by a p-value of 0.048 and a beta coefficient of 0.502. This implies that improving the teacher personal factors would increase the use of DI by 0.502 units. Further, results show that the interplay between school-based factors and teacher personal factors have a positive relationship with the use of DI as reflected by a p-value of 0.000 and a beta coefficient of 0.783. This implies that improving the school-based factors would increase the use of DI by 0.783 units. The results show that the interplay between school-based factors and teacher personal factors has the greatest influence, followed by school-based factors and lastly teacher personal factors.

Table 4.14: Pearson Moment Correlation (Guardians)

Variables		UDI	SBF	TBF	Interplay between SBF and TBF
UDI	Pearson Correlation	1			
	Sig. (2-tailed)				
SBF	Pearson Correlation	0.760	1		
	Sig. (2-tailed)	0.001			
TBF	Pearson Correlation	0.502	0.362	1	
	Sig. (2-tailed)	0.048	0.168		
Interplay between SBF and TBF	Pearson Correlation	0.783	0.778	0.715	1

	Sig. (2-tailed)	0.000	0.000	0.002	
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UDI - Use of differentiated instruction

SBF - School based factors

TPF - Teacher personal factors

4.8 Conclusion

Chapter four presented the research findings. The findings were categorized into demographic information of the respondents, descriptive statistics and inferential statistics which was a correlation matrix. The findings were both qualitative and quantitative.



CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter deals with the summary of the findings, the recommendations of the study, the conclusions, suggested areas of further research and the study limitations.

5.2 Summary of Findings

5.2.1 School Based Factors and Use of Differentiated Instruction

The first objective was to establish the extent to which school-based factors influence the use of the DI model in Kianjiruini Primary School in Murang'a County. All the respondents stated that school-based factors influence the use of DI in a positive way. This is reflected by the r coefficient of 0.641 for teachers and 0.760 for guardians. However, the results from the descriptive statistics show that Kianjiruini Primary School is still lagging behind in the provision of various school-based factors necessary for use of DI model. This is as reflected by the responses from the respondents. For instance, the teachers noted that the classrooms in the school are big in size to allow for implementation of DI model, they disagreed that they have educational equipment and instruments to use for implementation of DI and opined that their classroom space is not adequate. Results showed that the teachers disagreed that the school has special sanitation facilities and infrastructure to cater for the needs of special needs students. The teachers reiterated that textbooks are not enough and the school environment such as the field, paths, doorsteps, and stairs are not suitable for SNE learners. The teachers added that teaching and games equipment for SNE learners such as braille's are lacking. Further, they noted that the school lacks resource personnel with specialized skills such as IT, physiotherapy, and speech therapist.

Similarly, the guardians disagreed that the classrooms in the school are an adequate size and that the density of students per classroom in the school is manageable. They disagreed that their school has special sanitation facilities and infrastructure to cater for the needs of students with disabilities. They pointed out that the school lacked adequate school projectors whereby only one was being shared amongst all teachers to blend

audio visual teaching aids and that there was no school bus to transport SNE learners to school which makes some skip school due to long distance. The headteacher stated that the school lacked adequate rooms to divide SNE learners into foundational level and intermediate level and that there are inadequate funds to have constructed modern sanitation facilities. Further, headteacher opined that the classes are highly populated ranging 60-70 learners in a class to offer DI well and only one ICT room exists serving 1200 learners which has made adoption of remote learning a challenge.

5.2.2 Teacher Personal Factors and Use of Differentiated Instruction

The second objective was to assess the extent to which teachers' personal factors influence the use of the DI model in Kianjiruini the results revealed that teacher personal factors influence the use of DI in a positive way. This is reflected by the r coefficient of 0.591 for teachers and 0.502 for guardians. However, the results from the descriptive statistics show that Kianjiruini Primary School is still lagging behind in the provision of various teacher personal factors necessary for use of DI model. This is as reflected by the responses from the respondents. For instance, the teachers disagreed that they are trained on how to execute inclusive education and that teachers in the school have received in-service training/teacher professional development on how to implement the DI model. The teachers disagreed that each learner has a profile such that teachers are able to access and ascertain individual needs and that the teachers take time to adjust to the requirements of an inclusive curriculum for proper implementation of DI model.

The teachers added that there is a high ratio of learners to teacher, Delay of Free Primary Education (FPE) funds, limited time frame to cover the syllabus and attend to individual need of SNE learners as the workload is large, inadequate teaching and learning materials, attitude of achieving the mean score whereby teachers focus more on the bright learners, squeezed timetable, and lack of motivation. They noted that the mode of assessment used to gauge teachers' performance ought to be adjusted such that it puts into account the number of learners in a class and funds available. The current model does not accommodate DI.

Similarly, the guardians disagreed that teachers strive to teach special need student at their level and that teachers in the school engage parents when accessing the needs and capabilities of the special need students. They disagreed that teachers in their school participate in campaigns to sensitize the community against societal discrimination. The guardians noted that there lacked professional development courses for all teachers on DI which would ease its implementation, teachers did not capitalize on teaching Activities of Daily Living skills (ADL) such as washing (fine motor skills), there was no homeschooling for SNE learners who are immobile and that teachers in SNE unit had lessons in upper primary which reduced focus on SNE learners.

The head teacher stated that teachers complain of highly populated classes and huge workload, majority of teachers cannot afford to enroll for SNE and wait for government workshops on SNE which are rare, some teachers have a negative attitude in adapting to new programs such as use of DI and that most teachers complain that integrated SNE learners drops the M.S.S and argue they should not be included in class mark list since they are required to fill TPAD.

5.2.3 Interplay between School Based Factors and Teacher Personal Factors and Use of Differentiated Instruction

The third objective was to examine the interplay of school-based factors and teacher personal factors and their influence the use of the DI model in Kianjiruini Primary School in Murang'a County. All the respondents stated that the interplay of school-based factors and teacher personal factors influence the use of DI in a positive way. This is reflected by the r coefficient of 0.798 for teachers and 0.783 for guardians. However, the results from the descriptive statistics show that Kianjiruini Primary School is still lagging behind as far as the interplay of school-based factors and teacher personal factors and use of DI model is concerned. This is as reflected by the responses from the respondents. For instance, the teachers disagreed that stakeholders from the Ministry of Education support the implementation of DI and that their school has adequate staff to cater for the needs of all students. The teachers disagreed that the school's administration has put in place structures that support the integration of learners with disabilities in a regular classroom.

On the other hand, the guardians disagreed that teachers use a dynamic curriculum so as to cater for all student's needs, the guardians disagreed that the school has adequate staff to cater for the needs of all students. Further, the guardians opposed the statement that the school's administration has put in place structures that support the integration of learners with disabilities in a regular classroom. The headteacher stated that huge number of classes overwhelmed teachers in executing teaching effectively, delayed funding slowed down purchase of instructional materials for teachers and lack of ICT rooms and gadgets delayed use of visual and audio-visual teaching resources.

5.3 Discussion of Findings

The findings from the correlation analysis revealed that school-based factors influenced use of DI in a positive way. However, the findings from the descriptive statistics show that the status of school-based factors in Kianjiruini Primary School are not at par which dampens the implementation of DI in an inclusive setting as the school has both SNE and regular learners. The findings concur with those of Mbugua, Cheboi, Basio and Madigu (2016) who identified the factors influencing use of DI model for of children with Intellectual Disability (ID) in regular classrooms by teachers. It was evident that in as much as many students with ID had been enrolled to regular classrooms, use of DI model was still elusive. These was due to various factors which included guardians' involvement in inclusion, number of pupils with ID in the class, enrollment criteria, environment adjustment, and policy adoption. These findings are also consistent with those of Ngeria (2013) who opined that the schools-based factors that affect use of DI were unfavorable environmental barriers such as inadequate teaching/learning resources, unfriendly classrooms, inaccessible sanitation facilities, teacher, and host pupils' negative attitudes as well as lack of efficient teacher competencies in teaching affected urban refugee learners with disabilities.

The findings from the correlation analysis revealed that teacher personal factors influenced the use of DI in a positive way. However, the findings from the descriptive statistics show that the status of teacher personal factors in Kianjiruini Primary School are not at par which has hindered effective implementation of DI in an inclusive setting. These findings are congruent with those of Benjamin (2020) who explored rural middle school teachers' experiences with incorporating the components of DI to support

special education students in an inclusive classroom setting in South Carolina, United States. Upon conducting inductive analysis to analyze teacher use of DI components, results showed that the teachers were concerned with class size, lack of resources, knowledge/preparation, and professional development. These findings tally with those of Siam and Al-Natour (2016) who noted that teachers mandated with the task of ensuring proper implementation of DI in an inclusive education setting do not have the time or skills to correctly play their roles; they generally follow the old routines inside their classroom and stick to a single style of teaching, hence their failure to contribute towards the required educational outcomes for all their students. In addition, the existing resources for instruction and learning were not designed with students with learning disabilities in mind.

Further, the findings from the correlation analysis revealed that the interplay between school-based factors and teacher personal factors influenced the use of DI in a positive way. However, the findings from the descriptive statistics show that the interplay between school-based factors and teacher personal factors in Kianjiruini Primary School is not at par which has hindered effective implementation of DI in an inclusive setting. These findings tally with those of Majoko (2019) who examined the teaching competencies perceived by special needs education teachers to be essential for inclusive education. The study found that participants perceived screening and assessment, differentiation of instruction, classroom and behaviour management, and collaboration to be key competencies required of teachers for inclusive education.

5.4 Conclusions

The study concluded that successful implementation of DI in an inclusive setting requires for blended effort from all the stakeholders involved. This includes the Ministry of Education through offering support to headteachers and teachers in the form of processing funding and offering training. The headteacher, teachers and parents also need to collaborate so that each plays their part to foresee effective implementation.

The study concluded that school-based factors influence use of the DI model in Kianjiruini Primary School in Murang'a County. The specific school-based factors that influence use of the DI model include status of sanitation facilities, size of the class,

number of rooms available for class sub-division, the status of the field, availability of teaching and games equipment for SNE learners and availability of skilled personnel such as IT, physiotherapy, and speech therapist.

The study concluded that teacher personal factors influence use of the DI model in Kianjiruini Primary School in Murang'a County. The specific teacher personal factors that influence the use of the DI model include attitude of teachers towards SNE learners and towards use of DI, level of skill on how to implement DI, level of skill on how to teach in an inclusive setting, preparation of teaching materials, timely preparation of learners' profile, available time to cover the syllabus and availability of funds.

Further, the study concluded that the interplay between school-based factors and teacher personal factors influence the use of the DI model in Kianjiruini Primary School in Murang'a County. The specific aspects of the interplay between school-based factors and teacher personal factors that influence the use of the DI model include participation by all stakeholders from the Ministry of Education, use of a dynamic curriculum to cater for the needs of both regular and SNE learners, lobbying for parents support for easier fast tracking of SNE learners progress, exemption of SNE teachers from teaching upper primary and concentrate on SNE unit, division of learners into groups according to their abilities when teaching them instead of one pace S.O.W lesson plan and organization of workshops internally for teachers training on inclusion and use of DI model.

5.5 Recommendations

The study results reveal that implementation of DI is not at par due to existent challenges that are school based. Hence, this study recommends that the government of Kenya through the MoE should pass across the message on the importance of DI and especially in an inclusive setting. This will involve upgrading of more schools so that they can take up SNE learners. This will aid in distribution of the SNE learners in more schools thereby decongesting the current schools that have enrolled many SNE learners.

The study recommends that the county governments should allocate more funds to the education sector more so for development purposes. This way schools will be upgraded to suit the needs of SNE learners. This will take the form of building of modern

sanitation facilities which will cater for the needs of SNE learners and modification of existent classes and field to suit special needs learners. The development should also encompass building of more classes which will aid in decongesting the classes to lesser number of learners per class.

The success of implementation of DI will also be tagged on teachers' capacity. Thus, the study recommends that the MoE should roll out training programs for teachers so that they are conversant with the use of DI model. Additionally, the MoE should offer perks to teachers taking special education so that they can encourage more teachers to retrain as special education teachers. This will fill in the existent gap of few special education teachers. It is recommended that the MoE through the TSC should hire more teachers so as to reduce the workload for each teacher. This way the teachers in the SNE unit will be in a position to focus on the individual needs of every SNE learner. Additionally, the MoE should consider hiring physiotherapist and speech therapists who are going to serve schools in specific regions for instance one specialist per sub-county.

To cater for the interplay between school-based and teacher personal factors, the study recommends that the government should ensure that FPE funds and special education funds are disbursed on time. This will allow for provision of adequate teaching and learning materials in time. The allocation should be increased to allow schools to introduce feeding programs which will ensure that every learner gets a meal. Further, the MoE should fast track the implementation of CBC curriculum as it caters for the needs of SNE learners.

5.6 Recommendations for Further Studies

The study gives critical conceptual insights that ICT plays a major role in the foreseeing successful implementation of DI. It is evident that advanced technology has changed how learning happens. Particularly, during the COVID 19 pandemic where learning shifted online. Online learning would also be suitable for SNE learners especially those with mobility issues. Hence, there is need to conduct a study having ICT capabilities as an intervening variable.

The study recommends that a similar study be conducted in a different county for comparison purposes. Additionally, research focusing on the particular aspect of each factor be it school-based or teacher personal factors be conducted so as to establish which aspects schools should put more emphasis on. Further, a similar study be conducted in a school that uses a DI model, but it is not inclusive. This will help to determine the difference in the influence.

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APPENDICES

Appendix I: Consent for Teachers

Title of Study: Factors that influence the implementation of differentiated instructional model in Kianjiruini Primary School in Murang'a County.

SECTION 1: INFORMATION SHEET

Researcher: Lynette Mwangi

Institutional Affiliation: Strathmore University

SECTION 2: INFORMATION SHEET–THE STUDY

My name is Lynette Mwangi, and I am a student at Strathmore University pursuing a degree in Master of Science in Education Management. I wish to conduct research titled *‘Factors that influence the implementation of differentiated instructional model in Kianjiruini Primary School in Murang'a County’*. A questionnaire has been developed to assist gathering relevant information for this study.

Participation in this study will require that you provide answers to some questions using a questionnaire that has been designed and will be used to gather relevant information to address the research objectives of the study.

2.1: Why is this study being carried out?

This study is being conducted to establish the factors that influence the implementation of a differentiated instructional model in Kianjiruini Primary School in Murang'a County.

2.2: Do I have to take part?

You have the right to refuse participation in this study as participation in the study is voluntary. You may ask questions related to the study at any time.

All responses will be treated with utmost confidentiality.

2.3: Who is eligible to take part in this study?

The eligibility criteria for participation in this study will require that one be either the head teacher, teacher, or a guardian to a pupil with disabilities in Kianjiruini Primary School in Murang'a County.

2.4: Who is not eligible to take part in this study?

The study will not consider any other respondents apart from the ones named above to take part in the study.

2.5: What will taking part in this study involve for me?

Participation in this study will require that you provide honest information as per the outlined questions. The questions may require you to provide private information about Kianjiruini Primary School in Murang'a County. However, anonymity will be maintained, and your name will not be recorded on the questionnaire and the data collected will be used for purpose of this study and not any other.

2.6: Are there any benefits of taking part in this study?

Participation in this study will help us to learn in answering the research questions and help in understanding what are the factors influencing the implementation of differentiated instructional model. Also, important to note is that there is no remuneration/payment for taking part in the study, but the findings will contribute towards the efforts of inclusive education for children with disabilities.

2.7: What will happen to me if I refuse to take part in this study?

You may refuse or stop being in the study at any time without any consequences.

2.8: Who will have access to my information during this research?

The information provided will only be accessed and utilized by the researcher for the sole purpose of achieving the study objectives. All protocols of data security will be adhered to.

2.9: Who can I contact in case I have further questions?

You can contact me, Lynette Mwangi by phone +254 725 843097, or by e-mail lynette.mwangi@strathmore.edu . You can also contact my supervisor, Dr. Catherine Dean at the Strathmore University, Nairobi, or by e-mail cdean@strathmore.edu

If you want to ask someone independent anything about this research, please contact:

The Secretary at Strathmore University Institutional Ethics Review Board, P. O. BOX 59857, 00200, Nairobi. The email: ethicsreview@strathmore.edu and Tel number: +254 703 034 188

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and my questions were answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you.

Participation in the research study

I AGREE to take part in this research.

I DON'T AGREE to take part in this research.

Storage of information from the completed questionnaire

I AGREE to have notes from my questionnaire stored for future data analysis.

I DON'T AGREE to have noted from my questionnaire stored for future data analysis.

Participant's Signature:

Date: ____/____/____

DD / MM / YEAR

Participant's Name:

Time: _____ / _____

I, **Lynette Mwangi** certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that s/he has understood the nature and the purpose of the study and consents to the participation in the study. S/he has been given opportunity to ask questions which have been answered satisfactorily.

Investigator's Signature:

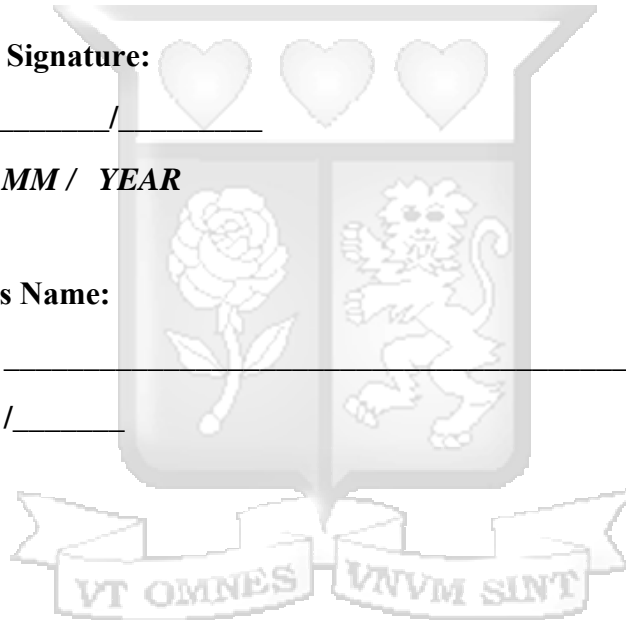
Date: _____ / _____ / _____

DD / MM / YEAR

Investigator's Name:

Time: _____

Time: _____ / _____



Appendix II: Questionnaire for Teachers

Kindly answer the following questions as honestly and accurately as possible. The information given will be treated with utmost confidentiality. Please do not write your name anywhere on this questionnaire.

Section A: Socio-Demographic Characteristics

1. Gender Male Female

2. What is your age?

Less than 25 years 26-35 years 36-45 years

Above 45 years

3. What is your level of education?

High school Diploma First Degree Masters

PhD

4. For how long have you taught students with special needs using the DI model?

.....

Section B: School Based Factors and Implementation of DI

5. Please indicate the level of agreement on how the following aspects of school-based factors influence the implementation of DI in your school on a scale of 1-5 where 5=Strongly Agree, 4=Agree, 3= Neutral, 2= Disagree and 1=Strongly Disagree.

Statement	1	2	3	4	5
The school administrator shows support for implementation of a DI model in our school.					

The classrooms are a manageable size to allow for implementation of DI model.					
We have educational equipment and instruments to use for implementation of DI.					
The classroom space in our school is adequate.					
Our school has special sanitation facilities and infrastructure to cater for the needs of special needs students.					

6. Is there any other aspect of school-based factors that influences implementation of DI in your school? Please specify

.....

Section C: Teacher Personal Factors and Implementation of DI

7. Please indicate the level of agreement on how the following aspects of teacher personal factors influence the implementation of DI in your school on a scale of 1-5 where 5=Strongly Agree, 4=Agree, 3= Neutral, 2= Disagree and 1=Strongly Disagree.

Statement	1	2	3	4	5
Teachers have a positive attitude towards implementation of DI model in our school.					
Teachers are trained on how to execute inclusive education.					
Teachers have received in-service training/Teacher Professional Development on how to implement the DI model.					
Each learner has a profile such that teachers are able to access and ascertain their individual needs.					

Teachers take time to adjust to the requirements of an inclusive curriculum for proper implementation of DI model.					
Teachers take time to prepare the instruction for DI model implementation.					

8. Is there any other aspect of teacher personal factors that influences implementation of DI in your school? Please specify

.....

.....

.....

Section D: Interplay between School-Based Factors and Teacher Personal Factors and Implementation of DI

9. Please indicate the level of agreement on how the following aspects depicting the interplay between school-based factors and teacher personal factors and their influence the implementation of DI in your school on a scale of 1-5 where 5=Strongly Agree, 4=Agree, 3= Neutral, 2= Disagree and 1=Strongly Disagree.

Statement	1	2	3	4	5
Stakeholders from the Ministry of Education support the implementation of DI.					
We use a dynamic curriculum so as to cater for the needs of all students.					
Our school has adequate staff to cater for the needs of all students.					
The school's administration has put in place structures that support the integration of learners with disabilities in a regular classroom.					

10. Is there any other aspect that depicts the interplay between school-based factors and teacher personal factors that influences implementation of DI in your school? Please specify

.....

Section E: Implementation of DI

11. Indicate the extent to which you agree with the following statements about the implementation of DI in your school on a scale of 1 to 5, where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree.

Statement	1	2	3	4	5
Teachers use multiple materials and resources when teaching.					
Teachers group students in flexible groups taking into account their respective skills.					
Teachers administer continuous assessment tests based on individual students' abilities.					
Teachers allow students to learn at their own pace depending on their leaning capabilities.					
Teachers use varied methods when delivering instructions to students according to their individual needs.					

12. What challenges do you encounter when implementing the DI in your school?

.....

13. What support do you need from the school and society?

.....

14. What suggestions do you have pertaining to the implementation of DI in your school?

.....
.....
.....

15. What works, what does not work?

.....
.....
.....





Appendix III: Consent for Guardians

Title of Study: Factors that influence the implementation of differentiated instructional model in Kianjiruini Primary School in Murang'a County.

SECTION 1: INFORMATION SHEET

Researcher: Lynette Mwangi

Institutional Affiliation: Strathmore University

SECTION 2: INFORMATION SHEET–THE STUDY

My name is Lynette Mwangi, and I am a student at Strathmore University pursuing a degree in Master of Science in Education Management. I wish to conduct research titled *‘Factors that influence the implementation of differentiated instructional model in Kianjiruini Primary School in Murang'a County’*. A questionnaire has been developed to assist gathering relevant information for this study.

Participation in this study will require that you provide answers to some questions using a questionnaire that has been designed and will be used to gather relevant information to address the research objectives of the study.

2.1: Why is this study being carried out?

This study is being conducted to identify the factors that influence the implementation of a differentiated instructional model in Kianjiruini Primary School in Murang'a County.

2.2: Do I have to take part?

You have the right to refuse participation in this study as participation in the study is voluntary. You may ask questions related to the study at any time.

2.3: Who is eligible to take part in this study?

The eligibility criteria for participation in this study will require that one be either the head teacher, teacher, or a guardian to a pupil with disabilities in Kianjiruini Primary School in Murang'a County.

2.4: Who is not eligible to take part in this study?

The study will not consider any other respondents apart from the ones named above to take part in the study.

2.5: What will taking part in this study involve for me?

Participation in this study will require that you provide honest information as per the outlined questions. The questions may require you to provide private information about Kianjiruini Primary School in Murang'a County. However, anonymity will be maintained, and your name will not be recorded on the questionnaire and the data collected will be used for purpose of this study and not any other.

2.6: Are there any benefits of taking part in this study?

Participation in this study will help us to learn in answering the research questions and help in understanding what are the factors influencing the implementation of differentiated instructional model. Also, important to note is that there is no remuneration/payment for taking part in the study, but the findings will contribute towards the efforts of inclusive education for children with disabilities.

2.7: What will happen to me if I refuse to take part in this study?

You may refuse or stop being in the study at any time without any consequences.

2.8: Who will have access to my information during this research?

The information provided will only be accessed and utilized by the researcher for the sole purpose of achieving the study objectives. All protocols of data security will be adhered to.

2.9: Who can I contact in case I have further questions?

You can contact me, Lynette Mwangi by phone +254 725 843097, or by e-mail lynette.mwangi@strathmore.edu . You can also contact my supervisor, Dr. Catherine Dean at the Strathmore University, Nairobi, or by e-mail cdean@strathmore.edu

If you want to ask someone independent anything about this research, please contact:

The Secretary at Strathmore University Institutional Ethics Review Board, P. O. BOX 59857, 00200, Nairobi. The email: ethicsreview@strathmore.edu and Tel number: +254 703 034 188

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and my questions were answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you.

Participation in the research study

I AGREE to take part in this research.

I DON'T AGREE to take part in this research.

Storage of information from the completed questionnaire

I AGREE to have notes from my questionnaire stored for future data analysis.

I DON'T AGREE to have noted from my questionnaire stored for future data analysis.

Participant's Signature:

Date: ____/____/____

DD / MM / YEAR

Participant's Name:

Time: _____ / _____

I, **Lynette Mwangi** certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that s/he has understood the nature and the purpose of the study and consents to the participation in the study. S/he has been given opportunity to ask questions which have been answered satisfactorily.

Investigator's Signature:

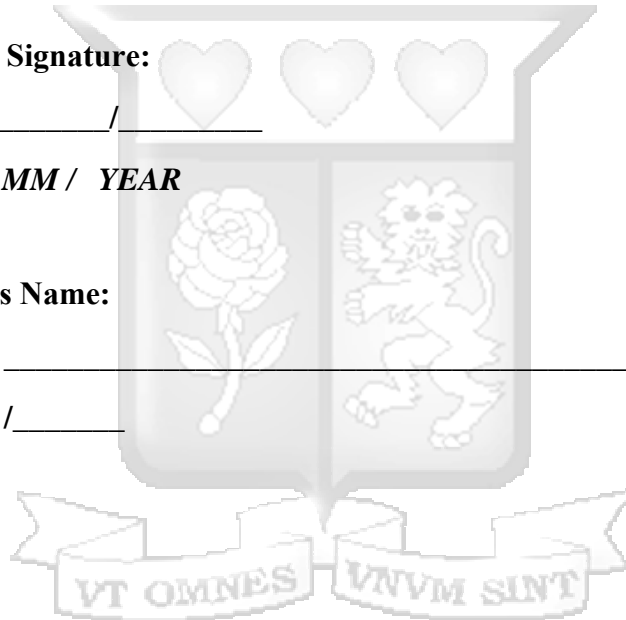
Date: _____ / _____ / _____

DD / MM / YEAR

Investigator's Name:

Time: _____

Time: _____ / _____



Appendix IV: Questionnaire for Guardians

Kindly answer the following questions as honestly and accurately as possible. The information given will be treated with a lot of confidentiality. Please do not write your name anywhere on this questionnaire.

Section A: Socio-Demographic Characteristics

1. Gender Male Female

2. What is your age?

Less than 25 years 26-35 years 36-45 years

Above 45 years

3. What is your level of education?

Less than primary education Primary education High school

Diploma First Degree Masters PhD

4. How old is your child(ren)?

5. How many children with special need do you have?

Section B: School Based Factors and Implementation of Differentiated Instruction

6. Please indicate the level of agreement on how the following aspects of school-based factors influence the implementation of DI (Differentiated Instruction which points out to adoption of a better approach by teachers such that the need of each student is met) in your school on a scale of 1-5 where 5=Strongly Agree, 4=Agree, 3= Neutral, 2= Disagree and 1=Strongly Disagree.

Statement	1	2	3	4	5
-----------	---	---	---	---	---

The school administrator shows support for implementation of a DI model in our school.					
The classrooms in our school are an adequate size.					
The density of students per classroom in our school is manageable.					
Our school has special sanitation facilities and infrastructure to cater for the needs of students with disabilities.					

7. Is there any other aspect of school-based factors that influences implementation of DI in your school? Please specify

.....

Section C: Teacher Personal Factors and Implementation of Differentiated Instruction

8. Please indicate the level of agreement on how the following aspects of teacher personal factors influence the implementation of DI (Differentiated Instruction which points out to adoption of a better approach by teachers such that the need of each student is met) in your school on a scale of 1-5 where 5=Strongly Agree, 4-Agree, 3= Neutral, 2= Disagree and 1=Strongly Disagree.

Statement	1	2	3	4	5
Teachers have a positive attitude towards special needs students.					
Teachers in our school access each special need student to establish their individual needs.					
Teachers in our school strive to teach special need student at their level.					
Teachers in our school engage us when accessing the needs and capabilities of the special need students.					

Teachers in our school train the students without disabilities on how to relate with special needs students.					
Teachers in our school participate in campaigns to sensitize the community against societal discrimination.					

9. Is there any other aspect of teacher personal factors that influences implementation of DI in your school? Please specify

Section D: Interplay between School-Based Factors and Teacher Personal Factors and Implementation of Differentiated Instruction

10. Please indicate the level of agreement on how the following aspects depicting the interplay between school-based factors and teacher personal factors and their influence the implementation of DI (Differentiated Instruction which points out to adoption of a better approach by teachers such that the needs of each student is met) in your school on a scale of 1-5 where 5=Strongly Agree, 4=Agree, 3= Neutral, 2= Disagree and 1=Strongly Disagree.

Statement	1	2	3	4	5
Stakeholders from the Ministry of Education support the implementation of DI.					
We use a dynamic curriculum so as to cater for the needs of all students					
Our school has adequate staff to cater for the needs of all students.					
The school administration has put in place structures that support the integration of learners with disabilities in a regular classroom.					

11. Is there any other aspect that depicts the interplay between school-based factors and teacher personal factors that influences implementation of DI

(Differentiated Instruction) in your school? Please specify

.....

Section E: Implementation of Differentiated Instruction Model

12. Indicate the extent to which you agree with the following statements about implementation of DI (Differentiated Instruction which points out to adoption of a better approach by teachers such that the needs of each student is met) in your school on a scale of 1 to 5, where 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree.

Statement	1	2	3	4	5
Multiple materials and resources when teaching.					
Group students in flexible groups taking into account their respective skills.					
Administer continuous assessment tests based on individual students' abilities.					
Allow students to learn at their own pace depending on their leaning capabilities.					
Use varied methods when delivering instructions to students according to their individual needs.					

13. In your opinion, what challenges do you think impede effective implementing the DI in your school?

.....

14. What support do you need from the school, teachers, and society?

.....
.....
.....

15. What suggestions do you have pertaining to the implementation of DI in your school?

.....
.....
.....

16. What works, what does not work?

.....
.....
.....

THANK YOU FOR YOUR RESPONSES





Appendix V: Consent for Head Teacher

Title of Study: Factors that influence the implementation of differentiated instructional model in Kianjiruini Primary School in Murang'a County.

SECTION 1: INFORMATION SHEET

Researcher: Lynette Mwangi

Institutional Affiliation: Strathmore University

SECTION 2: INFORMATION SHEET–THE STUDY

My name is Lynette Mwangi, and I am a student at Strathmore University pursuing a degree in Master of Science in Education Management. I wish to conduct research titled *'Factors that influence the implementation of differentiated instructional model in Kianjiruini Primary School in Murang'a County'*. A key informant interview has been developed to assist gathering relevant information for this study.

Participation in this study will require that you provide answers to some questions using a key informant interview that has been designed and will be used to gather relevant information to address the research objectives of the study.

2.1: Why is this study being carried out?

This study is being conducted to identify the factors that influence the implementation of a differentiated instructional model in Kianjiruini Primary School in Murang'a County.

2.2: Do I have to take part?

You have the right to refuse participation in this study as participation in the study is voluntary. You may ask questions related to the study at any time.

2.3: Who is eligible to take part in this study?

The eligibility criteria for participation in this study will require that one be either the head teacher, teacher, or a guardian to a pupil with disabilities in Kianjiruini Primary School in Murang'a County.

2.4: Who is not eligible to take part in this study?

The study will not consider any other respondents apart from the ones named above to take part in the study.

2.5: What will taking part in this study involve for me?

Participation in this study will require that you provide honest information as per the outlined questions. The questions may require you to provide private information about Kianjiruini Primary School in Murang'a County. However, anonymity will be maintained, and your name will not be recorded on the questionnaire and the data collected will be used for purpose of this study and not any other.

2.6: Are there any benefits of taking part in this study?

Participation in this study will help us to learn in answering the research questions and help in understanding what are the factors influencing the implementation of differentiated instructional model. Also, important to note is that there is no remuneration/payment for taking part in the study, but the findings will contribute towards the efforts of inclusive education for children with disabilities.

2.7: What will happen to me if I refuse to take part in this study?

You may refuse or stop being in the study at any time without any consequences.

2.8: Who will have access to my information during this research?

The information provided will only be accessed and utilized by the researcher for the sole purpose of achieving the study objectives. All protocols of data security will be adhered to.

2.9: Who can I contact in case I have further questions?

You can contact me, Lynette Mwangi by phone +254 725 843097, or by e-mail lynette.mwangi@strathmore.edu . You can also contact my supervisor, Dr. Catherine Dean at the Strathmore University, Nairobi, or by e-mail cdean@strathmore.edu

If you want to ask someone independent anything about this research, please contact:

The Secretary at Strathmore University Institutional Ethics Review Board, P. O. BOX 59857, 00200, Nairobi. The email: ethicsreview@strathmore.edu and Tel number: +254 703 034 188

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and my questions were answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you.

Participation in the research study

I AGREE to take part in this research.

I DON'T AGREE to take part in this research.

Storage of information from the completed questionnaire

I AGREE to have notes from my key informant interview stored for future data analysis.

I DON'T AGREE to have noted from my key informant interview stored for future data analysis.

Participant's Signature:

Date: ____/____/____

DD / MM / YEAR

Participant's Name:

Time: _____ / _____

I, **Lynette Mwangi** certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that s/he has understood the nature and the purpose of the study and consents to the participation in the study. S/he has been given opportunity to ask questions which have been answered satisfactorily.

Investigator's Signature:

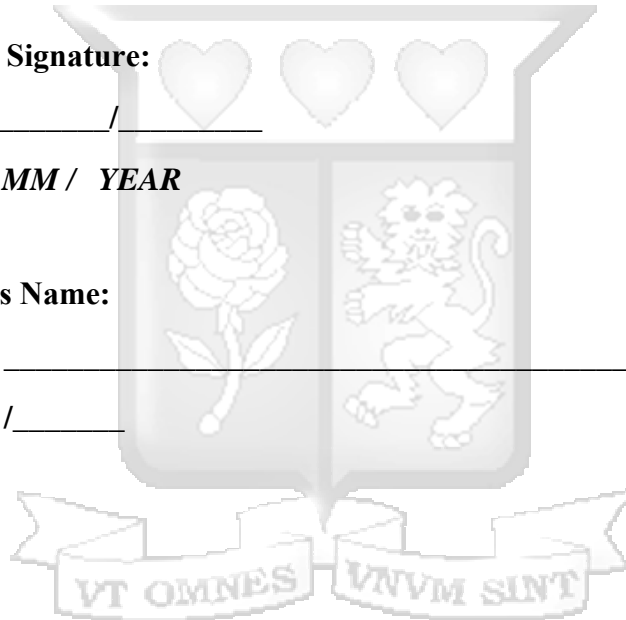
Date: _____ / _____ / _____

DD / MM / YEAR

Investigator's Name:

Time: _____

Time: _____ / _____



Appendix VI: Key Informant Interview Guide for Head Teachers

Section A: Socio-Demographic Characteristics

1. Gender Male [] Female []

2. What is your age?

Less than 25 years [] 26-35 years [] 36- 45years []

Above 45 years []

3. What is your level of education?

High school [] Diploma [] First Degree [] Masters []

PhD []

4. For how long have you administered a school that has implemented the DI model to cater for students with special needs?

Below 3 years [] 4 -6 years [] More than 6 years []

Section B: School Based Factors and Implementation of DI

5. What are the school-based factors that influence the implementation of DI in your school?

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.....
.....

Section C: Teacher Personal Factors and Implementation of DI

6. What are the teacher personal factors that influence the implementation of DI in your school?

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.....
.....

Section D: Interplay between School-Based Factors and Teacher Personal Factors and Implementation of DI

7. What is the interplay between school based factors and teacher personal factors that influence the implementation of DI in your school?

.....
.....
.....

Section E: Implementation of DI

8. To what extent have you implemented the DI model in your school?

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.....

9. What measures have you taken to ensure successful implementation of DI model in your school?

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.....
.....

10. What challenges do you encounter when implementing the DI in your school?

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.....
.....

11. What support do you need from the various stakeholders in form of technical support such as training, funding, materials/equipment?

.....
.....
.....

12. What suggestions do you have pertaining to the implementation of DI in your school?

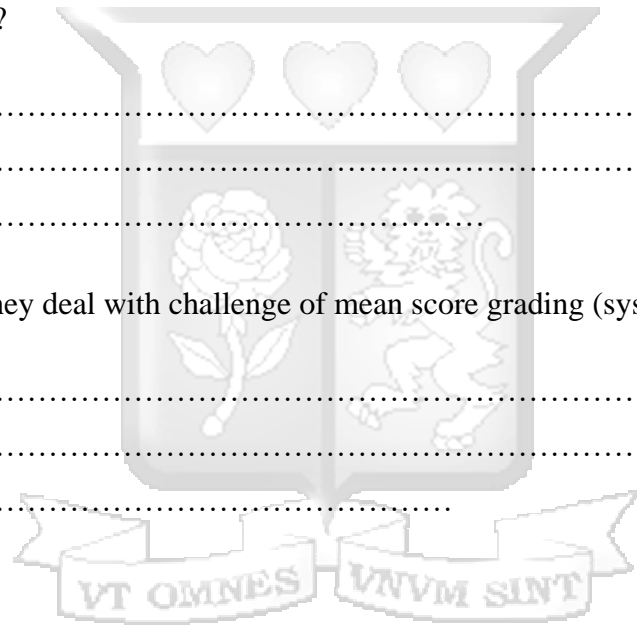
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.....
.....

13. What are the transition rates and retention rates of special needs students in your school?

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.....

14. How they deal with challenge of mean score grading (systemic challenges)?

.....
.....
.....





Appendix VII: Approval Letter from SU IERC



8th June 2021

Mrs Mwangi Lynette,
lynette.mwangi@strathmore.edu

Dear Mrs Mwangi,

RE: Differentiated Instruction Model

This is to inform you that SU-IERC has reviewed and **approved** your above **SU- master's** research proposal. Your application reference number is **SU-IERC1023/21**. The approval period is **8th June 2021 to 7th June 2022**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 48 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 48 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and also obtain other clearances needed

Yours sincerely,

for: Dr Virginia Gichuru,
Secretary; SU-IERC

Cc: Prof Fred Were,
Chairperson; SU-IERC



Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000
Email admissions@strathmore.edu www.strathmore.edu










Appendix VIII: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 667045	Date of Issue: 02/July/2021
RESEARCH LICENSE	
	
This is to Certify that Ms. LYNETTE WANJIKU MWANGI of Strathmore University, has been licensed to conduct research in Muranga on the topic: FACTORS INFLUENCING IMPLEMENTATION OF A DIFFERENTIATED INSTRUCTION MODEL IN KIANJIRUINI PRIMARY SCHOOL, MURANG'A COUNTY for the period ending : 02/July/2022.	
License No: NACOSTI/P/21/11545	
667045 Applicant Identification Number	 Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code 
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	

Appendix IX: Originality Report

Analyzed document	cdean Approved Lynette M. MEM Dissertation - 23rd September 2021.docx (D113445772)
Submitted	9/26/2021 9:32:00 AM
Submitted by	
Submitter email	lynette.mwangi@strathmore.edu
Similarity	6%
Analysis address	library.strath@analysis.urkund.com

Sources included in the report

SA	1 Rhoda Final Thesis.docx Document 1 Rhoda Final Thesis.docx (D15963958)		2
W	URL: https://ir-library.ku.ac.ke/bitstream/handle/123456789/18840/Teacher-preparedness%20in%20integrating%20information%20and%20communication....pdf?sequence=1 Fetched: 9/26/2021 9:33:00 AM		3
W	URL: http://erepository.uonbi.ac.ke/bitstream/handle/11295/56254/Joseph%20E.D.%20Masha%20E55-69824-2011.pdf?sequence=5 Fetched: 12/12/2020 4:30:14 AM		1
W	URL: http://repository.seku.ac.ke/bitstream/handle/123456789/1917/Murithi_Integration%20of%20the....pdf?sequence=1&isAllowed=y Fetched: 12/6/2020 3:20:13 PM		3
W	URL: https://docplayer.net/46972903-Kisumu-municipality-kisumu-county-owuor-o-lilian.html Fetched: 1/5/2021 12:08:21 AM		5
W	URL: http://ir.mu.ac.ke:8080/xmlui/bitstream/handle/123456789/211/Lusweti%20Pamela%20Musikhe%202014.pdf?sequence=1&isAllowed=y Fetched: 3/25/2021 3:04:43 AM		7
W	URL: https://www.vsointernational.org/sites/default/files/SNE%20Report_Full%20-2.pdf Fetched: 9/26/2021 9:33:00 AM		1
W	URL: https://files.eric.ed.gov/fulltext/EJ1065757.pdf Fetched: 9/26/2021 9:33:00 AM		1
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URL: http://erepository.uonbi.ac.ke/bitstream/handle/11295/97332/Mutua%20_Influence%20Of%20