INSTITUTIONAL FACTORS INFLUENCING SUSTAINABILITY OF INCLUSIVE EDUCATION IN PUBLIC PRIMARY SCHOOLS IN NANDI EAST SUB-COUNTY NANDI COUNTY, KENYA

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DECLARATION

This Research Project is my original work and has not been presented to any other university.

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ii

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TABLE OF CONTENTS

DECLARATION..... Error! Bookmark not defined.
ACKNOWLEDGEMENT.....**iii**
TABLE OF CONTENTS.....**iv**
LIST OF TABLES.....**vii**
LIST OF FIGURES.....**viii**
ABBREVIATION AND ACRONYMS.....**ix**
ABSTRACT.....**x**
CHAPTER ONE.....**1**
INTRODUCTION.....**1**
1.1 Background to the Study.....1
1.2 Statement of the Problem.....4
1.3 Purpose of the Study.....5
1.4 Research Objectives.....5
1.5 Research Hypotheses.....6
1.6 Significance of Study.....6
1.7 Limitation of the Study.....6
1.8 Delimitation of the study.....6
1.9 Basic assumptions of the study.....7
1.10 Operational Definition of Terms.....7
1.11 Organization of Study.....8
CHAPTER TWO.....**9**
LITERATURE REVIEW.....**9**
2.1 Introduction.....9
2.2 Sustainability of Inclusive Education.....9
2.3 Adaptation of Teaching-Learning Strategies on Sustainability of Inclusive Education.....10
2.4 Availability of Adapted Instructional Resources on Sustainability of Inclusive Education.....11
2.5 Availability of Adapted Physical Facilities on Sustainability of Inclusive Education.....12
2.6 School administrative support on sustainability of inclusive education.....14

2.7 Summary 16
2.8 Theoretical Framework 16
2.9 Conceptual framework 17
CHAPTER THREE 18
RESEARCH METHODOLOGY 18
3.1 Introduction 18
3.2 Research Design 18
3.3 Target population 18
3.4 Sample size and sampling procedure 18
3.5 Research instruments 19
3.5.1 Interview Schedule for Headteachers 19
3.5.2 Questionnaire for Teachers and learners 19
3.5.3 The observation Guide 20
3.6 Validity and Reliability of the Research Instruments 20
3.6.1 Validity of the Research Instruments 20
3.6.2 Reliability of the Instrument 20
3.7 Data Collection Procedure 21
3.8 Data Analysis 22
3.9 Ethical Consideration 23
CHAPTER FOUR 24
DATA ANALYSIS, INTERPRETATION AND DISCUSSION 24
4.1 Introduction 24
4.2 Response rate 24
4.3 Demographic characteristics 25
4.4 Teaching/Learning Strategies and Sustainability of Inclusive Education 28
4.5 Instructional resources and Sustainability of Inclusive Education 33
4.6 Physical Facilities and Sustainability of Inclusive Education 37
4.7 Administrative support on sustainability of Inclusive Education 39
4.8 Inferential statistics 43
CHAPTER FIVE 49
SUMMARY, CONCLUSIONS, RECOMMENDATIONS 49
5.1 Introduction 49
5.2 Summary of Findings 49

5.3 Conclusions 50
5.4 Recommendations 51
5.5 Suggestions for further studies 52
REFERENCES 54
APPENDICES 59
APPENDIX I: INTRODUCTORY LETTER TO THE RESPONDENTS 59
APPENDIX II: QUESTIONNAIRES FOR TEACHERS 60
APPENDIX III: QUESTIONNAIRES FOR LEARNERS 63
APPENDIX IV: INTERVIEW SCHEDULE FOR THE HEADTEACHER 64
APPENDIX V: OBSERVATION SCHEDULE 65
APPENDIX VI. RESEARCH PERMIT 66

LIST OF TABLES

Table 3. 1: Sample size framework.....19

Table 3. 2: Reliability Test.....21

Table 4. 1: Response rate.....24

Table 4. 2: Demographic characteristics of Teachers.....25

Table 4. 3: Demographic characteristics of Learners.....26

Table 4. 4: Demographic characteristics of Headteachers.....27

Table 4. 5: Adaptation of teaching/learning strategies.....29

Table 4. 6: Teaching/learning strategy.....31

Table 4. 7: Learners responses on Teaching/Learning strategies.....32

Table 4. 8: Adapted Instructional Resource.....33

Table 4. 9: Adapted instructional resources.....36

Table 4. 10: Adapted physical facilities and environment.....37

Table 4. 11: Observation schedule for adapted physical facilities/ environment.....39

Table 4. 12: Correlations Analysis.....43

Table 4. 13: Model Summary.....45

Table 4. 14: ANOVA.....46

Table 4. 15: Regression Co-efficients.....46

LIST OF FIGURES

Figure 1. 1: Conceptual Framework 17

Figure 4. 1: Headteachers admission of learners with special needs in school 40

Figure 4. 2: Learners with any form of disability 40

Figure 4. 3: Support provided by headteachers towards inclusion in school.....41

Figure 4. 4: Induction course on inclusive education for teachers 42

Figure 4. 5: Attitude of the headteacher towards inclusive education in school 42

ABBREVIATION AND ACRONYMS

The following are abbreviations and acronyms used in the research project.

CBC	Competence Based Curriculum
CRPD	Conventions on the Rights of Persons with Disabilities
EFA	Education for All GoK Government of Kenya
KICD	Kenya Institute of Curriculum Development
KNBS	Kenya National Bureau of Statistics
MoE	Ministry of Education
MoEST	Ministry of Education Science and Technology
NASCOSTI	National Commission for Science, Technology and Innovation
NCSNET	National Commission on Special Needs in Education and Training
OHCHR	Office of the High Commission for Human Rights
PWDs	Persons with Disabilities
SNE	Special Needs Education
SPSS	Statistical Package for the Social Sciences
UN	United Nations
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UNDESA	United Nations Department of Economic and Social Affairs
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children' s Fund
WHO	World Health Organization

ABSTRACT

Inclusive education should be sustainable if its benefits can be achieved in the long-run. As much as the concept is still being implemented in schools, challenges are faced in the entire process. The study investigated institutional factors influencing sustainability of inclusive education in public primary schools in Nandi East sub-county. The study sought to investigate ways in which teaching and learning strategies, instructional resources, physical facilities and how administrative support enhances sustainability of inclusive education. Descriptive survey design was used, 4984 respondents targeted. Stratified and Simple random sampling techniques were used in respondents' selection. Data for the study was gathered by use of questionnaires, interviews and observation checklist. Validity of the instrument was ascertained through pre-test using split half test while test re-test method was adopted for reliability. Piloting was done using 10% of the sampled population to establish validity and reliability of research instrument. Data gathered was analyzed using both descriptive statistics and inferential statistics. Analyzed data was presented using tables, bar charts and pie charts. Results were as follows; teaching learning strategies adapted; Instructional resources adapted, Physical facilities adapted and administrative support enhanced sustainability of inclusive education. The study concluded that teaching learning strategies adapted affects sustainability of inclusive education. Sustainability of inclusive education is enhanced when interactive teaching sessions are adapted and when learners are allowed to work together in different groups. Instructional resources affect sustainability of inclusive education in public primary schools. Sustainability of inclusive education in public primary schools is enhanced when schools have enough instructional resources to cater for learners with special needs. Physical facilities adapted affects sustainability of inclusive education in public primary schools. On teaching learning strategies, the study recommended that interactive teaching sessions should continue being adapted if sustainability of inclusive education is to be enhance. On instructional resources, the study recommended that schools should continue to have enough instructional resources to cater for learners with special needs. On physical facilities adapted, the study recommended that the physical facilities adapted should suit the needs of the learners. On administrative support, the study recommended that support should continue being provided by headteachers towards inclusion in schools. The study recommends further studies to be conducted on institutional factors and sustainability of inclusive education in Public Primary Schools in other sub-counties in Nandi County and also in other counties in Kenya. The study should adopt other institutional factors besides teaching learning strategies, instructional resources, physical facilities and administrative support.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Inclusive education is an approach in which learners with severe or mild forms of disabilities, irrespective of age as well as disability have access to appropriate education within regular schools with normal children. According to UNICEF (2016), it refers to provision of real learning opportunities for a group of people who have not been having access to it due to various reasons, for examples due to disability. It is seen as a continuous process that is geared towards eliminating challenges that causes the people not to access education and more specifically include those with disabilities. World Education Forum in Dakar (UN, 2016), advocates for children with special needs access to education.

African Agenda (2063), advocate for inclusive growth through elimination of all disparity' s levels of educational barriers for a well-educated citizen. It states that universal early childhood and basic education should be developed in a manner that all children can be sustained in learning institutions. Sustainable development goal (SDG 4), underpinned that education is the key that will help reduces inequalities and to reach equality for all persons. Therefore, education financing must become a national investment priority. Sustainability of inclusive education is enhanced when education is made free as well as compulsory among others.

The Government should prioritize education in all its education agenda. It should ensure that SDG 4 is achieved, where academic facilities should not only be built but upgraded as well. The government should build facilities in academic institutions that

prioritize gender across all students. They should also make sure that children from marginalized regions are able to access education.

Globally, disability is one of the most serious barriers to education and the 1990 World Declaration on Education for All and the 1994 Jomtien declaration, provide that basic education should be accessible to all children (UN, 2016). The Salamanca statement has made all jurisdiction to from provision of education that is inclusive (UNESCO, 1994). Education for All agenda, the statement enjoins governments around the world to adopt as a matter of law or policy the principle of inclusive education. Sustainable development goal 4 upholds the vision of all children learning by ensuring inclusive and equitable quality education with commitment to transform education system to focus on the most disadvantaged, especially those with disabilities.

Several global developments on inclusive education have been endorsed and ratified by most African countries. It is estimated that 93 million (10-15%) of school-age children in Africa are under the age of 14 years, are living with one form or another of moderate or severe disabilities (UNESCO, 2010). Most African countries who are signatories to Salamanca Declaration of 1994, have made commitment on inclusive education through adoption and development of education policies for inclusion in learning institution. Inclusive education has been implemented by states as a response to increasing heterogeneity in school communities. In Rwanda, inclusive education is given a lot of consideration and allocation of funds to a tune of USD 9.2 million from World Bank grants to education for conducting comprehensive mapping and reviewing of resources, classrooms and assessment centers (World Bank, 2018). This has led to increase in enrollment of learners with disabilities in regular schools.

In Kenya, 2.2% of the population are persons with disability, majority being school going children under the age of 14 years Kenya National Bureau Statistics (KNBS, 2019). The Kenya' s education policy is centrally crafted within the EFA framework and UN Convention. With the adoption of EFA and other convention policies, special needs are mainstream into regular classrooms with normal children. Inclusion in education is perceived as a process of addressing and responding to the diversity of all children, by increasing their participation in learning and reducing discrimination, exclusion and inequality within and from education (UNESCO, 2005). This calls for reforms and restructuring of school environment so as to ensure that all learners have access to a wide range of educational and social opportunities. However, the need to restructur**e** and mak**e** reforms in school environment is still in a slow progress towards implementation of inclusive education which is sustainable more so in developing countries, where resources are inadequate compared to developed countries (UNICEF, 2018a). When a separate curriculum and special schools are used in providing education to learners with special needs and learning difficulties, it will promote an element of segregation of children who can learn normally and those who cannot.

However, the Kenyan Ministry of Education (MoE, 2018b), states that Kenya has shifted away from " the traditional view of inclusive education as ' providing education for children with special needs' ," and further conceptualizes inclusive education as " an approach in which learners with disabilities and special needs, regardless of age and disability, are provided with appropriate education within regular schools' (MoE, 2009). A baseline survey by Leonard Cheshire Foundation on inclusive education across all counties indicate that inclusivity is being practiced in regular schools (Cheshire, 2018). In Nandi East Sub-County there are 87 public

primary schools which have pupils some who have various disabilities. With the inception of competency-based curriculum (CBC), provided a strong base for inclusion in all public institutions through provision of appropriate equipment, resources, infrastructure and re-tooling of teachers for effective implementation and sustainability of inclusive education (MoE, 2017). These led to an increase in enrollment of children with disabilities in regular schools who require adaptable resources, teaching strategies and physical facilities to be sustained in the learning institutions. The special needs learners should benefit in an inclusive school by getting school facilities like ramps constructed on doorways among others (UNESCO, 2015).

Profound challenges persist, despite the strides made in inclusion, and some children who are disabled still do not get enrolment opportunities in schools (CRPD, 2016). It was therefore imperative to establish the institutional factors which affect sustainability of inclusive education in Kenyan primary schools. That will enable all the learners' get access to learning institutions which meets their diverse abilities and needs and hence this study was conducted to shade more light on the subject matter in Nandi east sub-county.

1.2 Statement of the Problem

Kenya 2010 constitution on rights of every child to education (Kenya, 2010) and the ministry of education basic education policy (MoE, 2018), which advocate for effective implementation of Education for All (EFA) laws, led to increased integration of students with special needs in public primary schools. In Nandi County, policies were developed and implemented in all the sub-counties, thus resulting in increased enrollment of children with special needs who require specialized and adapted programs for their retention in schools effectively.

Past studies done in Nandi County by Chumo, indicates that administrative support among others enhance provision of education that is inclusive. Similar study was done by Kogei and found out that student enrollment had gone down due to lack of classrooms that can accommodate students who have disabilities. According to the study instructional resources was adequate, though not outlined whether adapted for sustainability of inclusive education. The two studies in the county did not address the issue of sustainability of inclusive education through adaptation of; instructional resources, physical facilities and teaching learning strategies and administrative support. Therefore, this level of preparedness for inclusive education in public primary schools in Nandi East Sub-County is not known and hence the reason as to which this study was done. Adapted instructional resources and administrative support among others were assessed to determine their influence on sustainability of inclusive education.

1.3 Purpose of the Study

To establish institutional factors that influence sustainability of inclusive education in Public Primary Schools in Nandi East Sub-County Kenya.

1.4 Research Objectives

i. To investigate whether public primary schools in Nandi East Sub-County have adapted teaching learning strategies for sustainability of inclusive education.

ii. To assess whether instructional resources are adapted for sustainability of inclusive education in public primary schools in Nandi East Sub-County.

iii. To assess how the physical facilities are adapted for sustainability of inclusive education in public primary schools in Nandi East Sub-County.

iv. To establish administrative support on sustainability of inclusive education in public primary schools in Nandi East Sub-County.

1.5 Research Hypotheses

$H0_1$: Teaching learning strategies has no significant influence on sustainability of inclusive education in public primary schools in Nandi East Sub-County.

$H0_2$: Instructional resources has no significant influence on sustainability of inclusive education in public primary schools in Nandi East Sub-County.

$H0_3$: Physical facilities have no significant influence on sustainability of inclusive education in public primary schools in Nandi East Sub-County.

$H0_4$: Administrative support has no significant influence on sustainability of inclusive education in public primary schools in Nandi East Sub-County.

1.6 Significance of Study

Policy makers and education planners might use findings to better curriculum design in such a manner that all students are accommodated. It will still help them to assess the extent to students with special needs are enrolled on schools in the study area. This study will be a source for further studies in areas in related to inclusive education.

1.7 Limitation of the Study

Learners may not be able to respondent to the questionnaires effectively due their level of the language. Also, the study involved sample schools and therefore the findings may not be adequately generalized to cover a wider area.

1.8 Delimitation of the study

Ceiling and floor effect was minimized by use of observation and interview schedule, as it gives reliable views. The study used appropriate methods of analysis, making the findings empirical, reliable and objective.

1.9 Basic assumptions of the study

i. Teaching and learning strategies are adapted for sustainability of education that is inclusive in the schools.

ii. Adapted instructional resources influence sustainability of inclusive education in the schools.

iii. Physical facilities are adapted for sustainability of inclusive education in the schools.

iv. Administrative support influence sustainability of inclusive education in Nandi East Sub-County.

1.10 Operational Definition of Terms

Adaptation: It is the remodeling or modification of teaching strategies, instructional resources and physical facilities to meet learners' needs.

Administrative support: Refers to any assistance given to learners, and teachers among others.

Administrators: Refer to the academic and school leaders who play key roles in supporting inclusive education.

Factors: are the variables that influence sustainability of inclusive education which includes, availability of adapted physical facilities, administrative support among others.

Inclusion: is where all learners access education in the schools.

Inclusive education: is a type of education that lacks any form of discrimination that might make other learners not to be allowed in schools.

Institutional factors: are factors within the school that promote sustainable inclusive education.

Institutional physical facilities: Refers to laboratories or any other infrastructure that would likely facilitate learning.

Instructional resources: Refer to the materials teachers use while teaching.

Sustainability: are educational practices that ensures education is offered continuously.

Teaching/learning strategies: Refer to the teaching and learning techniques that promote effective individualized learning.

Vulnerable: Refers to those learners with disabilities who require extra support with their education.

1.11 Organization of Study

The research project was presented in various chapters: chapter one is on introduction and it covers study background, problem statement, and objectives among others. Chapter two is on literature review which covers introduction among others. Chapter three presents research methodology which comprises of introduction, and research design among others. Chapter four is, data analysis, interpretation and discussion while chapter five covers summary, interpretation and discussion.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The section presents a review of related literature aligned to the theme and objectives of the study. It focuses on existing research and documentation concerning adaptation of teaching learning strategies on sustainability of inclusive education, adapted instructional resources on sustainability of inclusive education, adapted physical facilities on sustainable inclusive education and administrative support on sustainable inclusive education among others.

2.2 Sustainability of Inclusive Education

Kenya' s constitution (GoK, 2010), advocates for equal access to education among all people in schools. It states that all children should be accepted in school and not treated differently on the basis of their shortfalls and the likes. Inclusion embraces the social model, where the society as a whole should prioritize non-discrimination among children with any form of challenges (Manzi, 2011). Inclusion will be enhanced if schools allow all children in schools irrespective of disabilities among others. Zhu, et al. (2019) states that positive attitudes, use of variety of instructional methods, peer support and teamwork enhance inclusiveness. They also found out that there was lack of training of teachers on special needs. A similar study was carried out by Apiyo (2017) in early childhood centers in Kisumu, established that there were inadequate qualified teachers to sustain inclusive education. The study used quantitative methodology. The two studies used early childhood centers and kindergarten for the study.

Kipkosgei (2013), states that classrooms should not be small in size and the ventilation should be good among others for execution of inclusive education to become a reality in all schools. The study used a correlational research design. Similarly, Sahin, Erden, and Akar (2011), used a correlational research design in their study on the subject matter and found that schools should have all-inclusive policies when no learner should be looked down upon on the basis of disability among other platforms that can be used to advance discrimination in school set-ups.

2.3 Adaptation of Teaching-Learning Strategies on Sustainability of Inclusive Education

Teaching and learning strategies are the techniques and methods that a teacher applies to support pupil learning in a classroom system. Teaching and learning strategies for inclusiveness enhancement, touches of infrastructural facilities among other aspects whose availability makes it easier for schools to achieve their objectives of enhancement of inclusivity (Florian &Black-Hawkins, 2011). Zhu, Li, and Hsie (2019) states that positive attitudes, use of variety of instructional methods, peer support and teamwork enhance inclusivity. They also found out that there was lack of training of teachers on special needs.

A similar study was carried out by Apiyo (2017) in early childhood centers in Kisumu, established that there were inadequate qualified teachers to sustain inclusive education. However, the two studies did not address the adapted teaching and learning strategies and it used early childhood centers and kindergarten for the study. The above studies are similar to the current study, however they did not address adaptation of teaching and learning resources which were included in this study. This study used a population of 10 public primary schools; therefore, the results were easy to replicate and generalize. The study established that learners participated maximally and

actively during the lessons, since their needs were catered for during teaching and learning process. The study is similar to the current study, since this study seek**s** to determine whether teaching and learning strategies are adapted for sustainability.

2.4 Availability of Adapted Instructional Resources on Sustainability of Inclusive Education

Instructional resources are what are used by tutors and the like to teach students. Resources of instructional have a bearing on the retention and sustainability of learners with disabilities in regular schools. Students need these resources to perform better and for the instructors to find it easy to educate the students. Adapted material resources; charts, textbooks, flashcards, posters, models, maps, video tape recorder, work books, worksheet, audio visual and electronic materials. UNESCO (2012) and CBC (MoE, 2017) states that students should be given all resources that they need for learning purposes. When the students fail to have access to the resources, they might find it hard to excel in their studies. It might also contribute to deterioration in schools' performances if the situation is able to persist for a long period of time.

Several studies on the subject exist, for example, Okongo, et al. (2015), established that resources used for instructional purposes availability influences inclusivity in the education system. They stated that as much as the resources are important, in most of the schools the resources were not enough and most students struggled to have access to it. Sharing is what was the norm in most schools but due to the large student population it was a great constraint against good performance among students in the schools. The study sought to establish availability of teaching and learning resources ECD, but this study sought to investigate whether instructional resources are adapted for inclusive education sustainability in the study area.

Kurumei (2012), stated that in most schools in Elgeyo Marakwet County, resources used for teaching purposes were not enough and most students had no access to the learning materials. This had adversely affected students' performance and according to them the students' performance would have been better if the students had access to enough learning materials. Okuta (2011), did a study in Rachuonyo, Homa Bay County and established that the resources were not enough and most of the schools lacked the resources. The end-result was poor performance in public schools. The disabled children were the most venerable and some ended-up dropping out of schools and hence inclusivity was far from being achieved in the schools.

Okongo et al. (2015) while studying availability of resources and inclusive education implementation found that resources available in schools were not enough. The findings were only limited to the three cases of disabilities, while this study focused on all cases of disabilities found in inclusive education. This helped to provide more data on the subject matter that could be used to enhance realization of inclusivity in the education sector around the globe.

2.5 Availability of Adapted Physical Facilities on Sustainability of Inclusive Education

The status of physical facilities in schools is important in enhancement of inclusive education provision. If the facilities are in dilapidated state, some parents shy away from enrolling their children in the schools. The status of the physical facilities in the schools can enhance or fail to enhance realization of inclusive education in the schools. According to (UNESCO, 2018), " inclusive schools ought to carry out a full access audit of the building and the school grounds, involving the learners." Learning is enhanced when there are adequate toilet facilities among others are available for the recommended learners and it must be accessible to all learners.

Ackah and Danso (2019) in Ghana, stated that classrooms should not only be enough but should be designed in a manner that can house all school going children whether disabled or not. Laboratories should be well equipped, and also should cater for the needs of the disabled. They should be well ventilated and doors should be wide enough to allow students on wheel chairs to be able to pass without struggling. When this is done most of the students with special needs will be able to learn without any difficulties imposed by the status of the physical facilities available in the schools. The study by Kipkosgei (2013), revealed that in Langata Sub-County, not all the schools meet the requirements needed for enhancement of education that fronts inclusivity. Classroom design in most schools does not favor the disabled. It is designed in a manner that is suitable for those who have no disabilities of any form.

Sahin, Erden and Akar (2011), in their study using correlational research design, found that physical facilities status affects inclusive education. Most of the disabled find it hard to learn in the schools unless enrolled in schools just for students with special needs. They established that environment schools lack important physical facilities that the disable need to be able learn well. However, a study by Chimwaza (2016) in Malawi, on challenges of implementing inclusive education did not looked at physical facilities, instead it focused on teachers and availability of resources. Schools had no enough physical facilities that could accommodate the disabled and therefore it was an area that needed rampant changes in the schools for inclusive education to be realized.

However, Sahin, Erden and Akar (2011) in their study on environment and performance; established that environment is as important as realization of inclusive education. The schools that do not have infrastructure that support children with disabilities find it hard to accommodate such students. The classes were not even

spacious enough to accommodate both the disabled and the non-disabled. However, Chimwaza (2016) study on challenges of inclusive education in Malawi, did not look at adaptation of physical facilities, therefore the gap will be filled by this study will to determine whether physical facilities are adapted. Kipkosgei (2013), used a case study between regular secondary and special schools in Langata. The study did not focus on inclusive education; hence the current study filled that gap by looking at sustainability of inclusive education using descriptive survey research design. This study sought to determine whether the physical facilities are adapted for sustainability of inclusive education in public primary schools in Nandi East Sub-County.

2.6 School administrative support on sustainability of inclusive education

School administrators are considered key actors responsible for operating and directing all administrative functions of school successfully and effectively. To implement inclusivity in education, all stakeholders should be brought on board and their opinions not only heard but adopted where necessary.

A study by Akinyi and Aluko (2014), in Migori County stated that inclusive education provision faces upheaval that limits its successful implementation. As much that all schools strive to achieve inclusive education, it is hard because of shortfall that exists in the schools. The study recommended for a pragmatic approach by school principals, which includes aggressive sensitization campaigns and effective implementation of policies of inclusive education. Schools with special needs were also few in the County and the few that existed were not well equipped and therefore donors and other stakeholders should have provided support in their respective capacities.

Kundu (2016), in Kisumu County carried out research on inclusive education implementation determinants. The study established that attitudes of the teachers play a key role in enrollment and retention of the learners with disabilities in early childhood centres. The study used social model theory advanced by Oliver (1983). Administrative support is needed to enhance successful implementation of inclusive education.

Similarly, research by Azuela and Kamenopoulou (2018) in Belize revealed that those schools funded by the government were all not in a position to accommodate all learners with disabilities. Most of the schools are in bad state and lack teachers who can teach students with certain impairments. The management of the schools are not willing to offer the support needed to parents with children who are impaired in one way or the other.

The study by Kundu (2016), used social model theory advanced by Oliver (1983) on establishing instructors' attitude towards the disabled. Social inclusion model advanced by David (1957) was used, which advocates for teachers being able to offer the guidance needed to disabled students. However, Azuela and Kamenopoulou (2018), in their study, used structured interviews, observation schedule and questionnaires in collecting data on sustainability of education that is inclusive in public primary schools. Also, Azuela and Kamenopoulou (2018), in their study, only used 8 in-service teachers, but the current study sampled 70 teachers, 10 headteachers and 405 learners to obtain information. A different and large population will mitigate on the level of bias and enhance generalizability. The current study will not only use Pearson' s correlation but, will also use means, percentage and frequency tables/charts to. No study has been done on administrative support on sustainability of education which was the focus of this study.

2.7 Summary

Reviewed literature shows that gaps on the subject matter exist. From the reviewed studies it is apparent that, for inclusion to be sustained, instructional resources, physical facilities and instructional methods adaptation or differentiation has been identified as a desirable practice for effective inclusion and participation of learners with disabilities. Most of the literature reviewed missed one on more variables adopted in this study. No literature as be done on administrative support. This study, therefore, intends to add and, consequently, bridge the gaps in the available body of literature by examining adapted teaching and learning strategies, determine whether instructional resources are adapted, investigate whether physical facilities are adapted and administrative support on sustainability of inclusive education. A few of the available studies reviewed applied either qualitative or quantitative methods of data collection. The current study will apply mixed method of data collection to elicit rich and in-depth information, which will give more insight and understanding on the problem being investigated.

2.8 Theoretical Framework

Social inclusion theory by Pocock (1957) was adopted. The proponents of the theory underpinned that the social setting should help socially excluded individuals overcome the inequalities they face and promote equality of opportunities and eliminating discrimination. The theory contends that each child is gifted differently and requires special resources for effective learning. It holds the view that educational system and programs should be designed with the aim of removing barriers of any kind. It opposes individual marginalization through exclusion in social setting and that children with disabilities should be provided with much needed support.

2.9 Conceptual framework

Teaching/learning strategies, instructional resources and physical facilities, and administrative support are the independent variables which determined the extent of sustainability of inclusive education. Sustainability of inclusive education is the dependent variable. The level of training of the teachers and government policy are intervening variables.

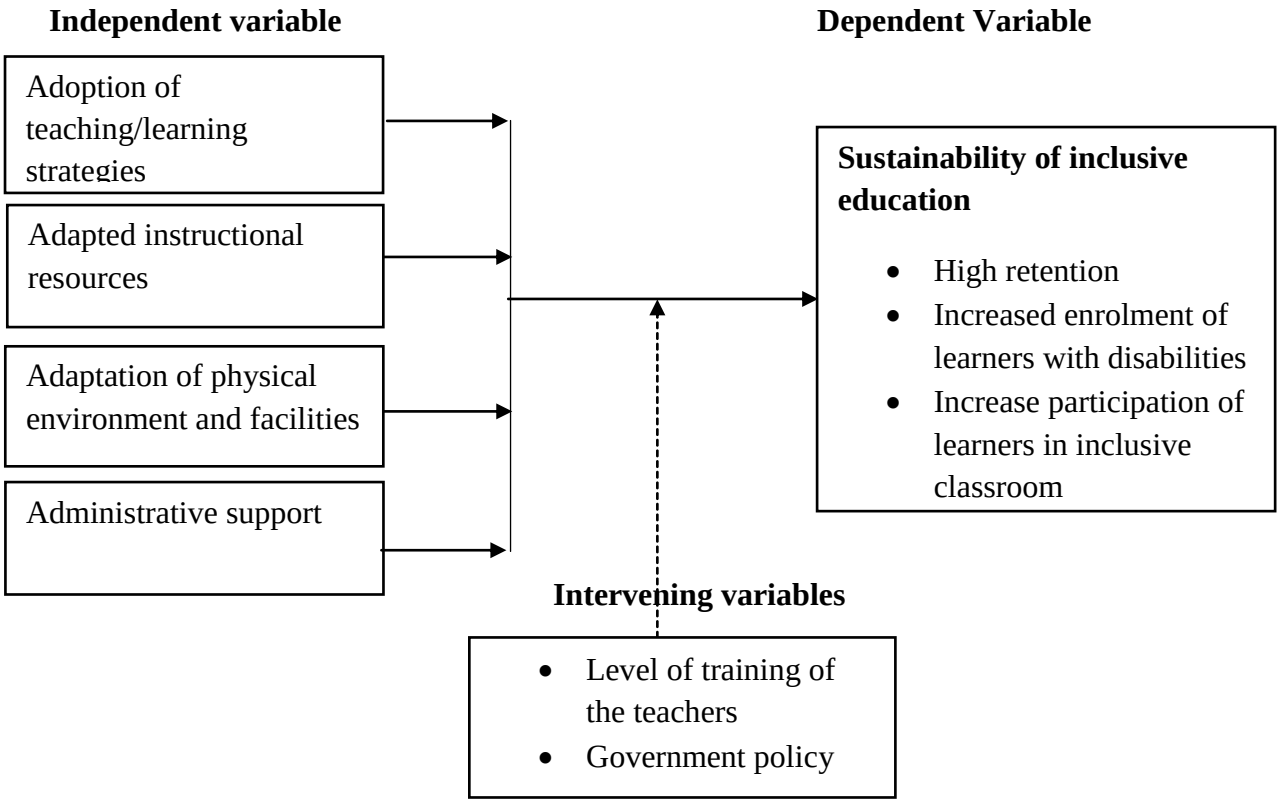


Figure 1. 1: Conceptual Framework

Conceptual framework showing relationship of variables of sustainability of inclusive education

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the items enlisted below.

3.2 Research Design

Descriptive survey design was used and it is a type of research design that is used to collect vast data from an audience that is heterogenous. It is used to gather data as well as describe the characteristics, behaviour and attitudes of a particular population (Gupta, & Gupta, 2022). It involves the use of surveys, questionnaires, interviews and/or observations for purposes of data collection which is then analyzed and summarized for purposes of drawing conclusions on a certain population (Pandey, & Pandey, 2021).

3.3 Target population

A total of 87 public primary schools in Nandi East Sub-County were targeted. Out of which, 87 headteachers, 720 teachers and 4054 learners were targeted. Learners in junior secondary classes domiciled in primary schools did not participate in the study.

3.4 Sample size and sampling procedure

As per Mugenda and Mugenda (2013), a 10-30% of the total population should be used in determining the sample size. The study used all the 87 schools, although one school was left out and it was where the pilot study was conducted. 12% of the schools and headteachers will be selected from the population. Stratified sampling was adopted for purposes of grouping schools per each division. The respondents from each school were then selected randomly. Selection of respondents randomly helped to increase the chances of respondent' s selection in the study. It also helped

to lower biasness level in who was selected to participate in the study. Any Learner with special needs were involved in the study.

Table 3. 1: Sample size framework

Target	Target population	Percentages	Sample size
Public primary schools	87	12%	10
Headteachers	87	12%	10
Teachers	720	12%	86
Learners	4054	12%	486
Totals	4948		592

3.5 Research instruments

Data for the study was gathered by use of interview schedule, questionnaires and observation guides. Headteachers are the one that the researcher interviewed while data from the students and teachers was gathered by used of interview schedules. The observation guide was used to counter check against available learning facilities in schools.

3.5.1 Interview Schedule for Headteachers

Headteachers were interviewed in the selected schools in Nandi East sub-county. The study used Interviews to gather data on demographic data of the school and school characteristic.

3.5.2 Questionnaire for Teachers and learners

The questionnaires were sub-divided into various sections guided by the objectives of the study. The different sections facilitated data gathering on the respective objectives

in the study. prompts and questions were designed in such a manner that data gathered helped in the achievement of the objectives of the study.

3.5.3 The observation Guide

Observation guided observations on various aspects in the schools that were needed for the objectives of this study to be realized.

3.6 Validity and Reliability of the Research Instruments

3.6.1 Validity of the Research Instruments

The study adopted content validity where experts' opinion was sought on the aspects included in the questionnaire. The researcher sought supervisors' opinion and other education experts on the contents of the questionnaire. Their opinions were used to refine the questionnaire in a manner that enhanced validity of the research instruments. To assess trustworthiness of qualitative data four primary criteria were adopted. The first one was credibility which was tested using participant validation and /or member checks (Pandey, & Pandey, 2021). Transferability was achieved through thick description of the findings adopted from the various sources (Davidavičienė, 2018). Dependability was tested by conducting an inquiry audit using an outside reviewer (Patel, & Patel, 2019). Confirmability was tested using triangulation and member checking of the data. Bracketing interview was done to confront potential personal bias (Gupta, & Gupta, 2022).

3.6.2 Reliability of the Instrument

The instrument should give the same results under the same conditions. In order to ensure high degree of reliability the study used test re-test reliability method. This is whereby the same instruments will be re-administered within one week after the first administration to the same respondents. Correlation was done using Pearson' s

Product Moment Correlation Formula to test the reliability of the instrument. If correlation coefficient is 0.7 and above is obtained, the instrument was appropriate for data collection (Kothari, 2008).

Table 3. 2: Reliability Test

Teachers Questionnaire	**Items**	**Cronbachs' Alpha**
Teaching/learning strategies	10	0.834
Instructional resource	7	0.723
Physical facilities	6	0.711
Administrative support	4	0.753
Composite Cronbach' s Alpha	**27**	**0.755**

The Cronbach' s alpha co-efficient was above 0.7 which implied that the research instruments was reliable and further analysis could be done.

3.7 Data Collection Procedure

All documents required were gotten before data collection process was commenced, that is, from Koitaleel Samoei University College (Constituent College of University of Nairobi) and National Commission for Science Technology and Innovation (NACOSTI). Upon receiving the permit, the study was carried out in sampled schools. Observation schedule was filled by the researcher in the sampled schools. Sampled headteachers were interviewed on face-face basis and findings were recorded on the interview schedules. The headteachers were asked questions and given an opportunity to respond on them. Once all the questions were asked and responded to by interviewee, the researcher ended the interview.

3.8 Data Analysis

Data gathered was analyzed descriptively and inferentially. The former included mean, frequencies, standard deviation and percentages. Inferential statistics adopted included correlation and regression analysis. The multiple regression model adopted in the study was as follows;

$Y= \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$

Where:

Y represents the dependent variable (sustainability of inclusive education).

α represents the intercept (regression constant). This implies that the value of Y when X_1, X_2, X_3 and X_4 are equal to zero.

β_1 represents the change in y for each increment change in X_1

β_2 represents change in y for each increment change in X_2

β_3 represents change in y for each increment change in X_3

β_4 represents change in y for each increment change in X_4

X_1 represents Teaching learning strategies

X_2 represents instructional resources

X_3 represents physical facilities

X_4 represents administrative support

ε represents the error term

Data gathered via interview was summarized into common themes and presented in narrative format. Statistical Package for Social Sciences (SPSS) version 20 aided in the analysis of data.

3.9 Ethical Consideration

These are set of principles that guide research design and practices (Marcelle, 2015). These include confidentiality, protection of the respondents from any repercussions of their comments reported, and informed consent. It was done in targeted sampled public primary schools once the permission was sort from the administration and respondents were informed on their role during the study. Respondents in the study were told prior that, data provided was used for this study alone, and was assessed by the person caring out the study only. Respondents were given opportunity to fill questionnaires on their own. Observation checklist to be filled and interview schedule were filled during the face-face encounter with the respondents and their response was confidential.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter covers data analysis, interpretation and discussion as provided below.

4.2 Response rate

Questionnaire for teachers and learners were used A total of 86 questionnaires for teachers were issued out which 77 questionnaires were returned, however 8 questionnaires were incomplete which implied that 69 questionnaires for teachers were completely filled. This represented a response rate of 80.2%. A total of 486 questionnaires were issued to learners, out of which 394 questionnaires were returned however, 38 questionnaires were incomplete which implies that 356 questionnaires were completely filled which represented a response rate of 73.3% as presented in Table 4.3.

Table 4. 1: Response rate

Category	Questionnaires issued	Questionnaires returned	Incomplete Questionnaires	Complete Questionnaires	Response rate
Teachers	86	77	8	69	80.2
Learners	486	435	12	423	87.0

The response rates were high which were essential for generation of valid, reliable as well as generalization of survey results. High response rate is attributed to survey length, content and mode of questionnaire administration.

4.3 Demographic characteristics

The demographic characteristics of the Teachers were gender, age group and years of service as a teacher in an inclusive education were as under;

Table 4. 2: Demographic characteristics of Teachers

n=69		Frequency	Percent
Gender	Male	56	81.2
	Female	13	18.8
Age group	25-34	5	7.2
	35-39	18	26.1
	40-44	25	36.2
	45-49	5	7.2
	50-54	12	17.4
	55 and above	4	5.8
Years in service	5 years and below	4	5.8
	6-10 years	16	23.2
	11-15 years	26	37.7
	16-20 years	16	23.2
	21 years and above	7	10.1

Gender had been operationalized using male and female and survey findings revealed that 56 teachers were male and 13 females. This was represented using 81.2% and 18.8%. This implies that both genders participated in the study and therefore it enhanced diversity of opinion provided in the study which enhanced the quality of the study. Age group had been operationalized as follows; between 25 to 34 years, 35 to 39, 40 to 44 years, 45 to 49 years, 50-54 years and 55 and above. Findings revealed that 5 respondents were aged between 25 and 34 years, 18 between 35 and 39 years, 25 respondents between 40 and 44 years, 5 between 45 and 49 years, 12 respondents between 50 and 54 years and 4 respondents 55 and above years. This implies that

respondents were of different age groups and therefore it enhanced diversity of opinions which helped to improve quality of the study.

In regards to years of service as a teacher in an inclusive education, 4(5.8%) had spent 5 years and below, 16(23.2%) between 6 and 10 years, 26(37.7%) 11 to 15 years, 16(23.2%) between 16 and 20 years and 7(10.1%) 21 years and above. This implies that all the respondents had been in service as a teacher in an inclusive education long enough to understand this study. Findings were as under;

Table 4. 3: Demographic characteristics of Learners

n=423		**Frequency**	**Percent**
Class the learner is in	Grade 1	5	1.2
	Grade 2	6	1.4
	Grade 3	19	12.1
	Grade 4	51	4.5
	Grade 5	74	17.5
	Grade 6	99	23.4
	Class 8	169	40.0
Gender	Boy	211	49.9
	Girl	212	50.1
No. of learners in class	25 and below	118	27.9
	25 and above	305	72.1

On the class the learners were in, findings revealed that 5(1.2%) respondents were in Grade 1, 6(1.4%) Grade 2, 19(12.1%) Grade 3, 51(4.5%) Grade 4, 74(17.5%) Grade 5, 99(23.4%) Grade 6, and 169(40.0%) class 8. This implies that the respondents were drawn from different levels of class and therefore there was diversity of opinions which enhanced the quality of the study. On gender of the learners, 211(49.9%) were boys while 212(50.1%) girls. Both genders were represented and therefore diversity of opinions were upheld which improved the quality of the study. The study had

sought to determine the number of learners in class, a total of 118(27.9%) revealed that the total number of learners per class were 25 and below while 305(72.1%) 25 and above. On whether the Learners had any form of disability in the schools, 171(40.4%) stated that they existed while 252(59.6%) revealed that there were no learners with any form of disability. Demographic characteristics of the headteachers interviewed were as follows;

Table 4. 4: Demographic characteristics of Headteachers

n=10		**Frequency**	**Percent**
Gender	Male	6	60.0
	Female	5	40.0
Period as a head teacher	1-5 years	2	20.0
	6-10 years	5	50.0
	11 and above	3	30.0
Age group	30-34	0	0.0
	35-39	2	20.0
	40-44	3	30.0
	45-49	2	20.0
	50-54	2	20.0
	55 and above	1	10.0
Type of school headed	Ordinary day with special class	6	60.0
	Ordinary day with an inclusive class	4	40.0
Learners with special needs in the school	P1 & P2	5	15.6
	1	0	0.0
	2	3	9.4
	3	0	0.0
	4	0	0.0
	5	8	25.0
	6	5	15.6
	8	11	34.4

A total of 10 headteachers were interviewed, out of which 6 were male while 5 females. This was represented by 60.0% and 40.0% respectively. On the period the respondents were head teachers, 2 had been headteachers for a period of 2 years, 5 between 6 to 10 years and 3 for a period of 11 years and above. This was represented by 20.0%, 50.0% and 30.0% respectively. The researcher wanted to understand the respondents age group, 2 were aged between 35 and 39 years, 3 between 40 and 44 years, 2 between 45 and 49 years and 2 between 50 and 54 years and 1 was aged 55 years. This was represented by 20.0%, 30.0%, 20.0%, 20.0% and 10.0% respectively. On the type of school headed by the respondents, 6 respondents headed ordinary day with special class while 4 headed ordinary day with an inclusive class. This was represented by 60.0% and 40.0% respectively. On the number of Learners with special needs in the schools, in P1 and P2 we had 5, grade 2 we had 3, grade 5, 8 learners, grade 6, 5 learners and in class 8 we had 11 learners with special needs. This was represented by 15.6%, 9.4%, 25.0%, 15.6% and 34.4%.

4.4 Teaching/Learning Strategies and Sustainability of Inclusive Education

On the first objective, the Teachers' responses on teaching/learning strategies were as enlisted in Table 4.5.

Table 4. 5: Adaptation of teaching/learning strategies

n=423		VLE	LE	SE	VSE	Mean	Std. deviation
My teaching sessions are interactive	F	28	24	7	10	1.9855	1.05011
	%	40.6	34.8	10.1	14.5		
I allow learners to work together in different groups	F	16	38	11	4	2.0435	.79400
	%	23.2	55.1	15.9	5.8		
I give extra support to Learners with special educational needs.	F	29	22	8	10	1.9855	1.06402
	%	42.0	31.9	11.6	14.5		
I give tasks given in class according to the level of performance and individual need of the learner.	F	27	22	10	10	2.0435	1.06322
	%	39.1	31.9	14.5	14.5		
Teaching methods are adapted according to different age groups.	F	22	27	11	9	2.1014	1.00213
	%	31.9	39.1	15.9	13.0		
I do a lot of writing on the chalkboard for the sake of learners with hearing impairment.	F	48	14	3	4	1.4638	.83278
	%	69.6	20.3	4.3	5.8		

The study sought to determine whether teaching sessions were interactive, 52 (75.4%) revealed to a large extent while 17(24.6%) small extent. Interactive teaching sessions was further established to affect sustainability of inclusive education with (mean=1.9855, std. Dev.=1.05011). The study is in agreement with that of Zhu, Li,

and Hsie (2019) that interactive teaching sessions affect sustainability. On whether learners were allowed to work together in groups that are different, 54(78.3%) to a large extent and 15(21.7%) to a small extent. The construct was further established to affect sustainability of inclusive education with (mean=2.0435, std. Dev.=.79400). The findings are in-tandem with those of Florian, and Black-Hawkins (2011) that allowing learners to work together in different groups affect sustainability of inclusive education.

On whether the respondents give extra support to Learners with special educational needs, 51(73.9%) large extent while 18(26.1%) small extent. The construct was further established to affect sustainability of inclusive education with (mean=1.9855, std. Dev.=1.06402). The study by Apiyo (2017) also revealed that giving extra support to Learners with special educational needs affect sustainability of inclusive education. In regards to whether tasks given in class are given according to the level of performance and individual need of the learner, 49(71.0%) large extent while 20(29.0%) small extent. The construct was further established to affect sustainability of inclusive education with (mean=2.0435, std. Dev.=1.06322). The study agrees with that of Motitswe (2012) who found similar results.

In relation to whether teaching methods are adapted according to different age groups, 49(71.0%) large extent while 20(29.0%) small extent. The construct was further established to affect sustainability of inclusive education with (mean=2.1014, std. Dev.=1.00213). The study agrees with that of Wanjiru (2017) who found similar results. In regards to whether a lot of writing is done on the chalkboard for the sake of learners with hearing impairment, 62(89.9%) large extent while 7(10.1%) small extent. The construct was further established to affect sustainability of inclusive education with (mean=1.4638, std. Dev.=0.83278). The study by Apiyo (2017) also

found similar results. Findings on the extent teaching/learning strategy was used was as under.

Table 4. 6: Teaching/learning strategy

n=69		VLE	LE	SE	VSE	Mean	Std. deviation
Individualized Education Program (teacher uses a written education plan designed to individual learner	F	25	28	6	10	2.0145	1.02172
	%	36.2	40.6	8.7	14.5		
Collaborative planning and teaching (teacher receives information from other school professional, parents and plan or lessons that cater for individual needs.	F	25	30	7	7	1.9420	.93752
	%	36.2	43.5	10.1	10.1		
Pull-out model (teachers pull students out of their general education classes and work with them in small, individualized groups)	F	20	35	8	6	2.0000	.87447
	%	29.0	50.7	11.6	8.7		
Co-teaching (two educators work together to plan, organize, instruct and make assessments on the same group of students, sharing the same classroom	F	24	26	9	10	2.0725	1.03354
	%	34.8	37.7	13.0	14.5		

The respondents were asked whether Individualized Education Program that is, the teacher uses a written education plan designed to individual learner, 53(76.8%) revealed to a large extent while 16(23.2%) small extent. Use of a written education plan designed to individual learner by the teacher was further established to affect sustainability of inclusive education with (mean=2.0145, std. Dev.=1.02172). Findings are in-tandem with that of Motitswe (2012) who found similar results. In

regards to whether collaborative planning and teaching that is, teacher receives information from other school professional, parents and plan or lessons that cater for individual needs, 55(79.7%) large extent while 14(20.3%) small extent. The construct further was established to affect sustainability of inclusive education with (mean= 1.9420, std. Dev.= .93752). The study is in agreement with that of Zhu, et al. (2019) who found similar results.

In regards to pull-out model (teachers pull students out of their general education classes and work with them in small, individualized groups), 55(79.7%) revealed to a large extent while 14(20.3%) to a small extent. The construct was further established to affect sustainability of inclusive education with (mean= 2.0000, std. Dev.= .87447). Findings resemble that of Wanjiru (2017) who found similar results. On co-teaching, 50(72.5%) revealed to large extent while 19(27.5%) small extent. The construct was further established to affect sustainability of inclusive education with (mean= 2.0725, std. Dev.= 1.03354). The study by Apiyo (2017) also revealed that co-teaching (two educators work together to plan, organize, instruct and make assessments on the same group of students, sharing the same classroom) affects sustainability of inclusive education. Learners' responses on teaching/learning strategies were presented in Table 4.7.

Table 4. 7: Learners responses on Teaching/Learning strategies

		Frequency	**Percent**
Class teachers assist everyone without discrimination	Agree	302	71.4
	Disagree	121	28.6
Total		**423**	**100.0**
Teachers' pay more attention to learners with special needs in the class/school	Yes	348	82.3
	No	75	17.7
Total		**423**	**100.0**

The respondents were asked to state whether class teachers assist everyone without discrimination, 302(71.4%) agreed while 121 (28.6%) disagreed. Learners were asked whether teachers' pay more attention to learners with special needs in the class/school. A total of 348(82.3%) respondents stated yes while 75(17.7%) No.

4.5 Instructional resources and Sustainability of Inclusive Education

Findings on the 2nd objective were as under;

Table 4. 8: Adapted Instructional Resource

n=69		VLE	LE	SE	VSE	Mean	Std. deviation
The school has enough instructional resources to cater for learners with special needs.	F	32	21	9	7	1.8696	.99872
	%	46.4	30.4	13.0	10.1		
Instructional resources have been adapted to suit learners with special needs.	F	32	7	19	11	3.0435	1.10393
	%	46.4	10.1	27.5	15.9		
Learners with low vision are provided with large print materials.	F	16	20	18	15	2.4638	1.07894
	%	23.2	29.0	26.1	21.7		
Instructional resources are varied and adapted.	F	24	38	4	3	1.7971	.73923
	%	34.8	55.1	5.8	4.3		
Learners with hearing impairment are provided with hearing devices	F	61	8	0	0	1.1159	.32250
	%	88.4	11.6	0.0	0.0		
Learners with low vision are provided with optical devices.	F	25	44	0	0	1.6377	.48419
	%	36.2	63.8	0.0	0.0		
Learners are provided with enough concrete resources for interaction, manipulation and exploration	F	42	19	4	4	1.5652	.84850
	%	60.9	27.5	5.8	5.8		

The study sought to determine whether the school has enough instructional resources to cater for learners with special needs, 53(76.8%) revealed to a large extent while 16(23.2%) small extent. The construct was further established to affect to affect sustainability of inclusive education with (mean= 1.8696, std. Dev.= .99872). The study by Okongo et al. (2015) also revealed that having enough instructional resources to cater for learners with special needs affect sustainability of inclusive education. In regards to whether instructional resources have been adapted to suit learners with special needs, 39(56.5%) revealed to a large extent while 30(43.5%) to a small extent. Adoption of instructional resources that suit learners with special needs was further established to affect to affect sustainability of inclusive education with (mean= 3.0435, std. Dev.= 1.10393). Findings resemble that of Okuta (2011) who found similar results.

In regards to Learners with low vision are provided with large print materials, 36(52.2%) revealed to a large extent while 33(47.8%) to a small extent. Providing Learners with low vision with large print materials was further established to affect to affect sustainability of inclusive education with (mean= 2.4638, std. Dev.= 1.07894). Findings resemble that of Kurumei (2012) that providing Learners with low vision with large print materials affect sustainability of inclusive education. In regards to instructional resources are varied and adapted, 62(89.9%) revealed to a large extent while 7(10.1%) to a small extent. Instructional resources are varied and adapted was further established to affect sustainability of inclusive education with (mean= 1.7971, std. Dev.= 0.73923). The study is in agreement with that of Okongo et al. (2015) that instructional resources are varied and adapted affects sustainability of inclusive education.

In relation to Learners with hearing impairment are provided with hearing devices, 69)100.0% revealed to a large extent while 0(0.0%) revealed none. Providing Learners with hearing impairment with hearing devices was further established to affect sustainability of inclusive education with (mean= 1.1159, std. Dev.= 0.32250). Okuta (2011) also established that providing Learners with hearing impairment with hearing devices affects sustainability of inclusive education. In regards to Learners with low vision are provided with optical devices, all the respondents 69(100.0%) revealed to a large extent. Providing Learners with low vision with optical devices was further established to affect sustainability of inclusive education with (mean= 1.6377, std. Dev.= 0.48419). Okongo et al. (2015) also established that providing Learners with low vision with optical devices affects sustainability of inclusive education. On whether Learners are provided with enough concrete resources for interaction, manipulation and exploration, 61(88.4%) revealed to large extent and 8(11.6%) small extent. Providing Learners with enough concrete resources for interaction, manipulation and exploration was further established to affect sustainability of inclusive education with (mean= 1.5652, std. Dev.= 0.84850). The study by Kurumei (2012) also established that providing Learners with enough concrete resources for interaction, manipulation and exploration affect**s** sustainability of inclusive education. On this construct, Nine out of ten respondents revealed that;

> *" Not all the instruction strategies used in regular schools when applied to children with special needs are effective as Learners with special needs need extra attention and instructional approaches adopted should be custom designed in a manner that will be suitable for the learners to understand what is being taught. For example, Learners with low vision should be provided with large print materials, those with hearing impairment should be provided with hearing devices and Learners with low vision should be provided with optical devices."*

Seven (7) out of ten (10) respondents opined that;

> *" To a very great extent Learners with low vision have been provided with large print materials, those with hearing impairment have been provided with hearing devices while Learners with low vision have been provided with optical devices."*

The study adopted an observation schedule to collect more information on adapted instructional resources. Findings were presented in Table 4.9.

Table 4. 9: Adapted instructional resources

Indicators	**Available**	**Not available**	**Adequate**	**inadequate**
Textbooks				√
Braille				√
Chalkboard	√			
Speech assistive device				√
Magnifying lens				√
Video/audio				√
Support services				
Itinerant teaching	√			
Speech therapists				√

The results of observation schedule were as shown in Table 4.9 and it was established that textbooks were inadequate, braille' s were inadequate, chalkboards were available, speech assistive device was inadequate, magnifying lens were inadequate, video/audio was inadequate, itinerant teaching was available in most schools and speech therapists were inadequate.

4.6 Physical Facilities and Sustainability of Inclusive Education

Teachers' responses on the 3rd objective were presented in Table 4.10. In regards to whether the physical facilities are well adapted to suit the needs of the learners, 62(89.9%) revealed adaptable while 7(10.1%) not adaptable. The construct was further established to affect sustainability of inclusive education with (mean= 1.5797, std. Dev.= 0.79346). The study is in agreement with that of Ackah and Danso (2019) who found similar results. In regards to whether doors to classrooms and toilets/latrines are wide enough to accommodate. The construct was further established to affect sustainability of inclusive education with (mean= 1.7246, std. Dev.= 1.04155). Findings are in-tandem with that of Kipkosgei (2013) who found same results.

Table 4. 10: Adapted physical facilities and environment

n=69		VA	A	FA	NA	Mean	Std. deviation
The physical facilities are well adapted to suit the needs of the learners.	F	39	23	4	3	1.5797	.79346
	%	56.5	33.3	5.8	4.3		
Doors to classrooms and toilets/latrines are wide enough to accommodate all learners including those with wheel chairs.	F	41	14	6	8	1.7246	1.04155
	%	59.4	20.3	8.7	11.6		
There are toilets/latrines specifically adapted for learners with physical disabilities.	F	38	25	3	3	1.5797	.77471
	%	55.1	36.2	4.3	4.3		
Tables, chairs and desks are adapted to cater for individual differences.	F	23	34	6	6	1.9275	.87982
	%	33.3	49.3	8.7	8.7		
Railings, slopes and stairs are suitable for learners using wheel chairs.	F	48	15	3	3	1.4348	.77608
	%	69.6	21.7	4.3	4.3		
Available adjustable board to the level that all learners are comfortable	F	22	39	4	4	1.8551	.77223

	%	31.9	56.5	5.8	5.8

On whether there are toilets/latrines specifically adapted for learners with physical disabilities, 63(91.3%) revealed adaptable while 6(8.7%) not adaptable. Toilets/latrines specifically adapted for learners with physical disabilities was further established to affect sustainability of inclusive education with (mean= 1.5797, std. Dev.= .77471). The study agrees with that of Chimwaza (2016) that Toilets/latrines specifically adapted for learners with physical disabilities affect sustainability of inclusive education. In regards to whether tables, chairs and desks are adapted to cater for individual differences, 57(82.6%) adaptable while 12(17.4%) not adaptable. Tables, chairs and desks adapted to cater for individual differences was further established to affect sustainability of inclusive education with (mean= 1.9275, std. Dev.= .87982). Findings are in agreement with that of Sahin, et al. (2011) that Tables, chairs and desks adapted to cater for individual differences affect sustainability of inclusive education.

On whether railings, slopes and stairs are suitable for learners using wheel chairs, 63(91.3%) stated adaptable while 6(8.7%) not adaptable. The construct was further established to affect sustainability of inclusive education with (mean= 1.4348, std. Dev.= .77608). The study is in agreement with that of Ackah, and Danso (2019) that railings, slopes and stairs that are suitable for learners using wheel chairs affect sustainability of inclusive education. In regards to whether adjustable board to the level that all learners are comfortable is available, 61(88.4%) adaptable while 8(11.6%) not adaptable. The construct was further established to affect sustainability of inclusive education with (mean= 1.8551, std. Dev.= .77223). Findings resemble that of Kipkosgei (2013) who found similar results. Eight (8) out of ten respondents interviewed revealed that;

" The physical facilities in the school(s) towards provision of sustainable inclusive education are not adequate and more facilities should be built to enhance sustainable inclusive education. The physical facilities that exist although not adequate, also need to be improved so that the learners have a conducive learning environment."

Table 4. 11: Observation schedule for adapted physical facilities/ environment

Indicators	Available	Not available	Adequate	inadequate
Spacious classroom				√
Doorways with ramps/stairs		√		
Assistive devices				√
Pavements/smooth floors				√
Adapted desks/chairs	√			
Adapted toilets/latrines				√
Level play ground	√			

The researchers observed from the schools whether spacious classrooms existed and realized that spacious classrooms were inadequate, doorways with ramps/stairs were not available in most of the schools, assistive devices were inadequate in most of the schools, pavement/smooth floors were inadequate, desks/chairs were available, toilets/latrines were inadequate while level play ground was available.

4.7 Administrative support on sustainability of Inclusive Education

Teachers' responses on the 4th objective were as shown below. Respondents were asked whether headteachers admit learners with special needs in school. Findings were presented in Figure 4.1.

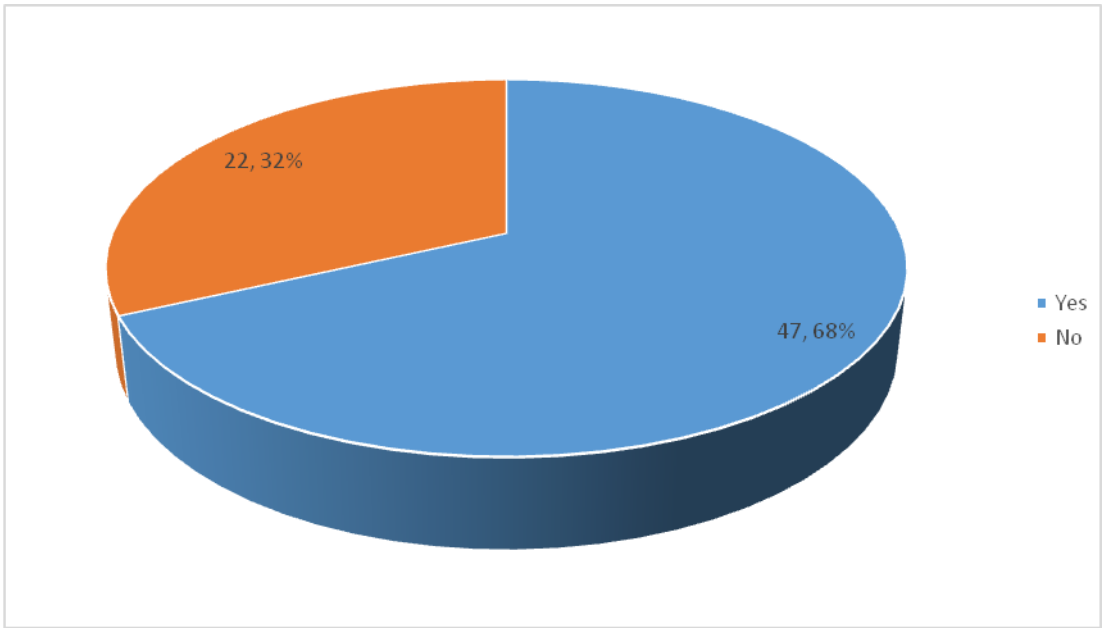


Figure 4. 1: Headteachers admission of learners with special needs in school

Out of the total respondents, 47(68.1%) revealed that headteachers admit learners with special needs in school while 22(31.9%) did not. Learners were asked whether their existed learners with any form of disability in the school, 145(40.7%) revealed that their existed learners with any form of disability while 211(59.3%) stated that there were learners with any form of disability in the schools as shown in Figure 4.2.

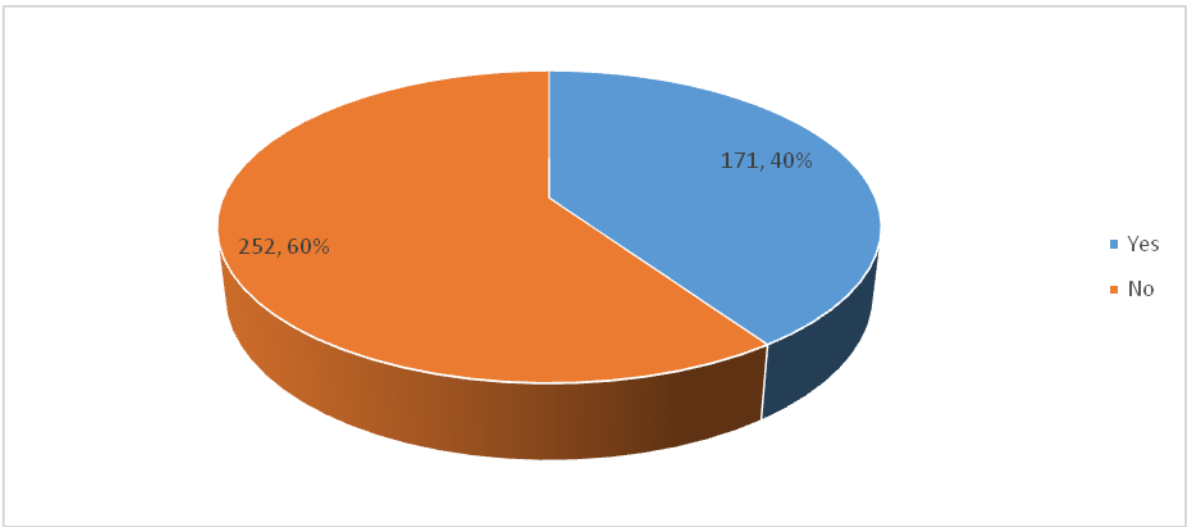


Figure 4. 2: Learners with any form of disability

On the extent of support provided by headteachers towards inclusion in school. Findings were presented in Figure 4.3.

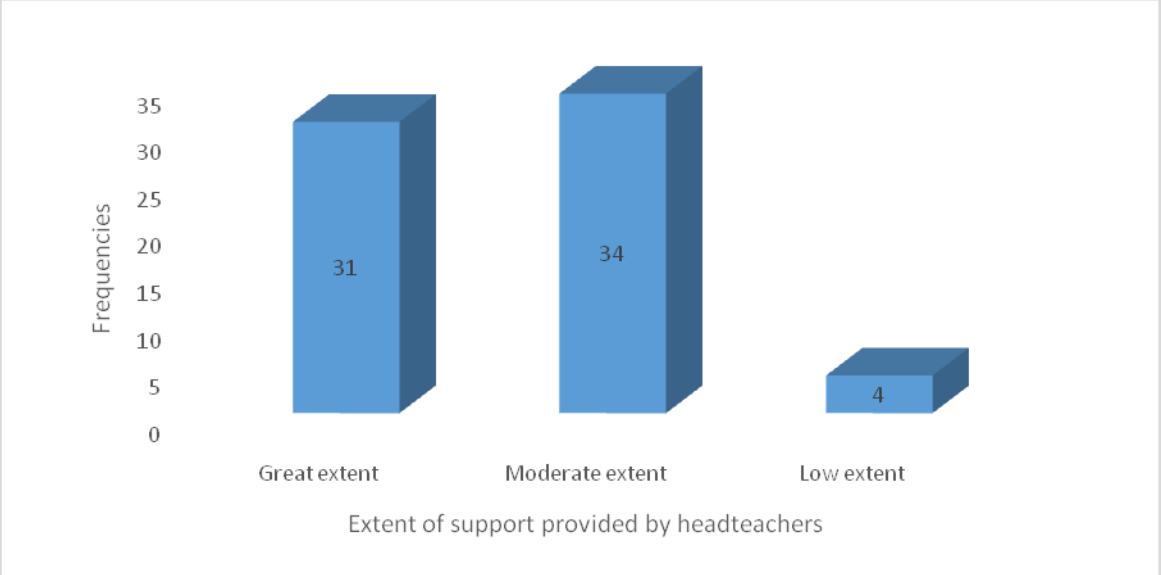


Figure 4. 3: Support provided by headteachers towards inclusion in school

Out of the total respondents, 31(44.9%) revealed that the extent of support provided by headteachers towards inclusion in school was to a great extent, 34(49.3%) moderate extent and 4(5.8%) to a low extent. On how often does the school administrator organize for an induction course on inclusive education for teachers. Findings were presented in Figure 4.4.

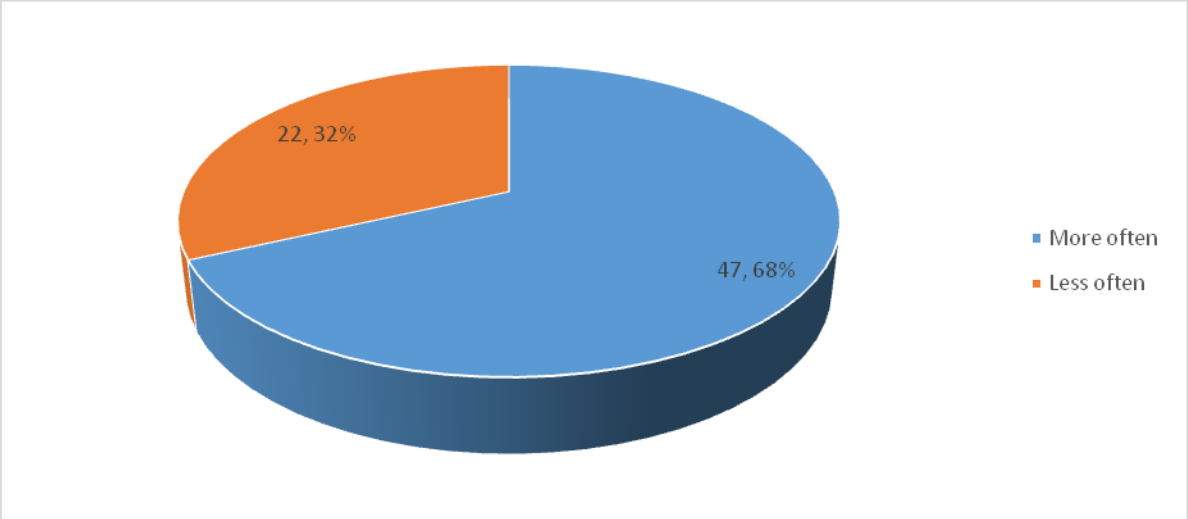


Figure 4. 4: Induction course on inclusive education for teachers

Out of the total respondents, 47(68.1%) revealed that the school administrator organizes for an induction course on inclusive education for teachers more often while 22(31.9%) less often. On headteacher attitude towards inclusive education in school. Findings were presented in Figure 4.5.

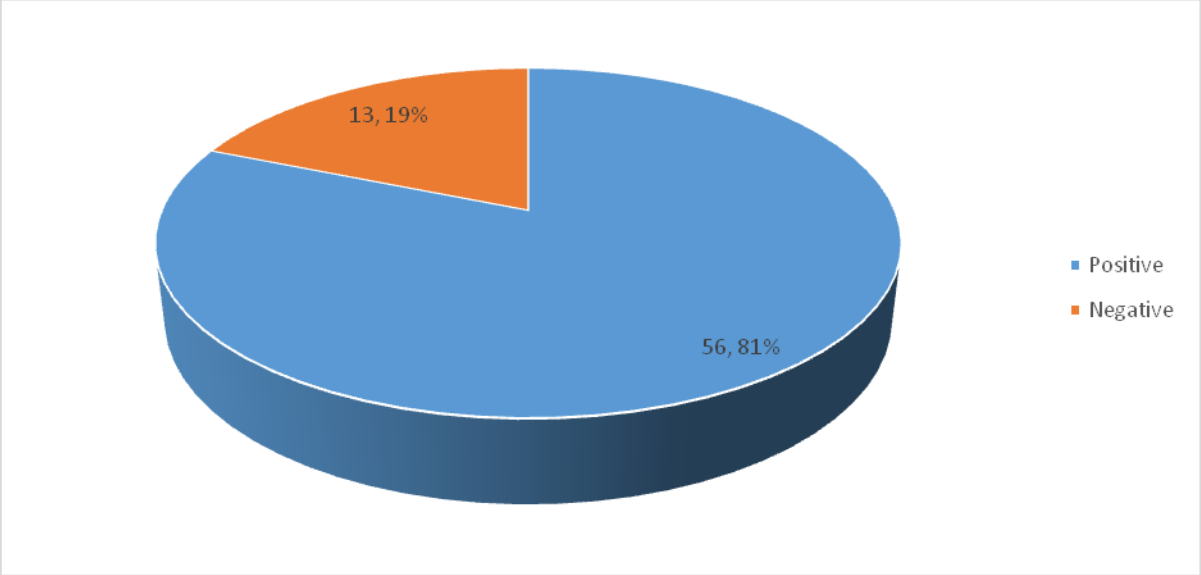


Figure 4. 5: Attitude of the headteacher towards inclusive education in school

Findings revealed that, 56(81.2%) stated that it was positive while 13(18.8%) negative.

4.8 Inferential statistics

4.8.1 Correlation analysis

Correlation analysis results were as under.

Table 4. 12: Correlations Analysis

		sustainability of inclusive education	Teaching learning strategies	Instructional resources	Physical facil ities	Administrative support
sustainability of inclusive education	Pearson Correlation					
	Sig. (2-tailed)	1				
Teaching learning strategies	Pearson Correlation					
	Sig. (2-tailed)	.751*	1			
Instructional resources	Pearson Correlation	.000				
	Sig. (2-tailed)	.720*	.485**	1		
Physical facilities	Pearson Correlation	.000	.016			
	Sig. (2-tailed)	.707*	.461**	.642**	1	
Administrative support	Pearson Correlation	.000	.000	.000		
	Sig. (2-tailed)	.710*	.434*	.686*	.551*	1
		.000	.000	.000	.000	

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Teaching learning strategies was found to have a significantly strong positive relationship with sustainability of inclusive education in public primary schools in Nandi East Sub-County of ($r = 0.751$, p-value < 0.05). This implies that Teaching learning strategies enhances sustainability of inclusive education. Instructional resources were found to have a significantly strong positive relationship with sustainability of inclusive education in public primary schools in Nandi East Sub-County of ($r = 0.720$, p-value < 0.05). This implies that instructional resources enhance sustainability of inclusive education. Findings resemble that Songony et al. (2021) that instructional resources enhance sustainability of inclusive education.

Physical facilities were found to have a significantly strong positive relationship with sustainability of inclusive education in public primary schools in Nandi East Sub-County of ($r = 0.707$, p-value < 0.05). This implies that physical facilities enhance sustainability of inclusive education. The study agrees with that of Ackah and Danso (2019) that physical facilities enhance sustainability of inclusive education. Administrative support was found to have a significantly strong positive relationship with sustainability of inclusive education in public primary schools in Nandi East Sub-County of ($r = 0.710$, p-value < 0.05). This implies that administrative support enhance sustainability of inclusive education. Findings resemble that of Salovita (2018) that there is a positive relationship between administrative support and sustainability of inclusive education.

4.8.2 Multiple Regression Analysis

Multiple regression analysis was adopted to predict sustainability of inclusive education in public primary schools in Nandi East Sub-County from Teaching

learning strategies, Instructional resources, physical facilities and administrative support. Regression model summary results were presented in Table 4.13.

Table 4. 13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.667[a]	.538	.480	1.50110

a. Predictors: (Constant), Teaching learning strategies, Instructional resources, physical facilities and administrative support

Adjusted R-square was 0.480 which implies that the model explained 48.0% of sustainability of inclusive education from the predictor variables (i.e., Teaching learning strategies, Instructional resources, physical facilities and administrative support). Analysis of variance (ANOVA) was adopted conduct goodness of fit test as shown below.

Table 4. 14: ANOVA

		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	576.512	4	44.128	39.800	.000[b]
	Residual	410.848	64	1.771		
	Total	1087.360	68			

a. Dependent Variable: Sustainability of inclusive education in public primary schools
b. Predictors: (Constant), Teaching learning strategies, Instructional resources, physical facilities and administrative support

F test value was F (4, 68) = 39.800, $p<0.05$. This implies that the model was reliable and could be used to predict sustainability of inclusive education. The study conducted regression coefficient analysis so as to determine the beta values which were used to determine the extent to which each independent variable influenced the dependent variable as shown below.

Table 4. 15: Regression Co-efficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.140	.703		.375	.405
	Teaching learning strategies	.710	.038	.571	7.757	.000
	Instructional resources	.785	.046	.791	7.750	.000
	Physical facilities	.511	.055	.510	2.761	.000
	Administrative support	.531	.043	.341	6.511	.000

a. Dependent Variable: Sustainability of inclusive education

Table 4.15 shows the regression coefficients results whereby teaching learning strategies had a positive and significant influence on sustainability of inclusive education of (β= 0.710, $p < 0.05$). This implies that an improvement in teaching learning strategies by one unit sustainability of inclusive education by 0.710 units. The first null hypothesis ($H0_1$) was rejected. Findings resemble that of Zhu, et al. (2019) that teaching learning strategies has a significant influence on sustainability of inclusive education.

Instructional resources had a positive and significant influence on sustainability of inclusive education of (β= 0.785, $p < 0.05$). This implies that an increase in Instructional resources by one unit sustainability of inclusive education by 0.785 units. The second null hypothesis ($H0_2$) was rejected. The study is in agreement with that of Kurumei (2022) that Instructional resources has a significant influence on sustainability of inclusive education. Physical facilities had a positive and significant influence on sustainability of inclusive education of (β=0.511, $p < 0.05$). This implies that an increase in Physical facilities enhances sustainability of inclusive education by 0.511 units. The third null hypothesis ($H0_s$) was rejected. The study agrees with that of Ackah and Danso (2019) that physical facilities have a significant influence on sustainability of inclusive education.

Administrative support had a positive and significant influence on sustainability of inclusive education in public primary schools in Nandi East Sub-County of (β=0.531, $p < 0.05$). This implies that an improvement in administrative support has significant influence on sustainability of inclusive education in public primary schools in Nandi East Sub-County. The fourth null hypothesis ($H0_4$) was rejected. The study is in

agreement with that of Azuela and Kamenopoulou (2018) that administrative support has a significant influence on sustainability of inclusive education.

$$\mathbf{Y = 8.140 + 0.710X_1 + 0.785X_2 + 0.511X_3 + 0.531X_4}$$

The constant value of 8.140 implies that at zero, Teaching learning strategies, Instructional resources, physical facilities and administrative support, sustainability of inclusive education is at 8.140 units.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

5.1 Introduction

This chapter covers summary of findings, conclusions and recommendations.

5.2 Summary of Findings

On first objective, the study established that interactive teaching sessions affect sustainability of inclusive education. Allowing learners to work together in different groups affect sustainability of inclusive education. Giving extra support to Learners with special educational needs affect sustainability of inclusive education. Teaching learning strategies have a significantly strong positive relationship with sustainability of inclusive education in public primary schools of ($r = 0.751$, p-value < 0.05). Regression results revealed that teaching learning strategies enhance sustainability of inclusive education of ($\beta = 0.710$, $p < 0.05$).

On the 2nd objective, the study established that adoption of instructional resources that suit learners with special needs affect to affect sustainability of inclusive education. Providing Learners with low vision with large print materials affect sustainability of inclusive education. Instructional resources are varied and adapted affect sustainability of inclusive education. Providing Learners with hearing impairment with hearing devices affect sustainability of inclusive education. Providing Learners with low vision with optical devices was established to affect sustainability of inclusive education. Providing Learners with enough concrete resources for interaction, manipulation and exploration affect sustainability of inclusive education.

On the 3rd objective, the study established that Toilets/latrines specifically adapted for learners with physical disabilities affect sustainability of inclusive education. Tables, chairs and desks adapted to cater for individual differences affect sustainability of inclusive education. Railings, slopes and stairs that are suitable for learners using wheel chairs affect sustainability of inclusive education. Availability of adjustable board to the level that all learners are comfortable affect sustainability of inclusive education. Physical facilities enhance sustainability of inclusive education of ($r = 0.707$, p-value < 0.05). Physical facilities improved sustainability of inclusive education of ($\beta=0.511$, $p < 0.05$).

On the 4th objective, findings revealed that their existed learners with any form of disability in the schools. Majority of the Learners revealed that support provided by headteachers towards inclusion in school was to a moderate extent. School administrators organize for an induction course on inclusive education for teachers more often. The attitude of majority of the headteachers toward inclusive education in school was positive. Administrative support was positively associated with sustainability of inclusive education of ($r = 0.710$, p-value < 0.05). Regression results revealed that administrative support enhances sustainability of inclusive education of ($\beta=0.531$, $p < 0.05$).

5.3 Conclusions

Teaching learning strategies adapted affects sustainability of inclusive education. Sustainability of inclusive education is enhanced when interactive teaching sessions are adapted, and when extra support is given to Learners with special educational needs. The study also concluded that sustainability of inclusive education is enhanced

when teachers write a lot on the chalkboard, and when teachers use education plan that is written in a manner that is of benefit to learners.

The study concluded that instructional resources affect sustainability of inclusive education. Sustainability of inclusive education improves when learning materials are available, and when Learners with low vision are given large print materials. Giving Learners with hearing impairment hearing devices and optical devices provided to learners enhances sustainability of inclusive education.

The study concluded that physical facilities adapted affects sustainability of inclusive education. Sustainability of inclusive education is enhanced when physical facilities adapted suit the needs of the learners. It also improves when tables, chairs and desks are adapted to cater for individual differences, railings, slopes and stairs that are suitable for learners using wheel chairs. The study also concluded that administrative support affects sustainability of inclusive education in public primary schools in Nandi East Sub-County. Sustainability of inclusive education in public primary schools is enhanced when support is provided by headteachers towards inclusion in schools, when the school administrators organize for an induction course on inclusive education for teachers more often and when the attitude of the headteachers toward inclusive education in schools is positive.

5.4 Recommendations

On teaching learning strategies, the study recommended that interactive teaching sessions should continue being adapted if sustainability of inclusive education is to be enhanced. Learners should continue being allowed to work together in different groups, and extra support should continue being given to Learners with special

educational needs. On instructional resources, the study recommended that instructional resources should be varied and adapted, Learners with hearing impairment should continue being provided with hearing devices while Learners with low vision should continue being provided with optical devices. Learners should continue being provided with enough concrete resources for interaction, manipulation and exploration.

On physical facilities adapted, the study recommended that the physical facilities adapted should suit the needs of the learners. Tables, chairs and desks should be adapted to cater for individual differences. Railings, slopes and stairs that are suitable for learners using wheel chairs should continue being adapted while adjustable board to the level that all learners are comfortable should continue being available. On administrative support, the study recommended that support should continue being provided by headteachers towards inclusion in schools. School administrators should continue to organize for induction course on inclusive education for teachers more often. The attitude of the headteachers toward inclusive education in schools should continue being positive.

5.5 Suggestions for further studies

The study was done on institutional factors influencing sustainability of inclusive education in Public Primary Schools in Nandi East Sub-County Kenya. Further studies should be done in other regions in Kenya. The study also targeted teachers, learners and headteachers, leaving out other stakeholders like parents and policy makers whose views could have contributed towards establishing institutional factors influencing sustainability of inclusive education. Institutional factors adopted in the study include; teaching learning strategies, instructional resources, physical facilities

and administrative support. The study recommends further studies to be conducted on institutional factors and sustainability of inclusive education in Public Primary Schools in other counties in Kenya. The study should adopt other institutional factors besides teaching learning strategies, instructional resources, physical facilities and administrative support.

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APPENDICES

APPENDIX I: INTRODUCTORY LETTER TO THE RESPONDENTS

Sawe K. Daniel,

P.O BOX 35,

NANDI HILLS.

The Director of Education,

Nandi East Sub-County,

P.O BOX

NANDI HILLS

Dear Sir/Madam,

RE: REQUEST FOR DATA COLLECTION

I am writing to request for your participation in a research that seeks to determine institutional factors influencing sustainability of inclusive education in public primary schools in Nandi East Sub County. I am a Master of Education (MED) student at Koitaleel Samoei University (Constituent College) of university of Nairobi in the field of curriculum studies. As part of the requirement for the award of the degree, it is expected that one undertakes a research study, hence the purpose of this letter. I would further request for the participation of haedteachers, teachers and learners in the study.

Your cooperation and assistance will be highly appreciated.

Yours faithfully

Daniel K. Sawe

APPENDIX II: QUESTIONNAIRES FOR TEACHERS

Please tick (√)

Demographic information

1. Indicate your gender Male ( ) Female ( )
2. Which is your age group?25-34( ) 35-39 ( ) 40-44 ( ) 45-49 ( )50-54 ( ) 55+ yrs ( )
3. Years of service as a teacher in an inclusive education: 5yrs and below ( ) 6-10 yrs ( )11-15yrs ( ) 16-20 yrs ( ) 21yrs and above ( )

SECTION A: Adaptation of teaching/learning strategies

Kindly tick (√) against the words that best describes your views after every statement

Statement	**Very large extent**	**Large extent**	**Small extent**	**Very small extent**
My teaching sessions are interactive				
I allow learners to work together in different groups				
I give extra support to Learners with special educational needs.				
I give tasks given in class according to the level of performance and individual need of the learner				
Teaching methods are adapted according to different age groups				
I do a lot of writing on the chalkboard for the sake of learners with hearing impairment				

Indicate to what extent to you use the following teaching/learning strategy in you class.

Teaching/learning strategy	**Very large extent**	**Large extent**	**Small extent**	**Very small extent**
Individualized Education Program (teacher uses a written education plan designed to individual learner				
Collaborative planning and teaching (teacher receives information from other school professional, parents and plan or lessons that cater for individual needs				
Pull-out model(teachers pull students out of their general education classes and work with them in small, individualized groups)				
Co-teaching (two educators work together to plan, organize, instruct and make assessments on the same group of students, sharing the same classroom				

SECTION B: **Adapted instructional resource**

How would you rate the Adaptation of instructional resources, rate by ticking (√)

Statement	**Very large extent**	**Large extent**	**Small extent**	**Very small Extent**
The school has enough instructional resources to cater for learners with special needs				
Instructional resources have been adapted to suit learners with special needs				
Learners with low vision are provided with large print materials				
Instructional resources are varied and adapted				
Learners with hearing impairment are provided with hearing devices				
Learners with low vision are provided with optical devices				
Learners are provided with enough concrete resources for interaction, manipulation and exploration				

SECTION C: Adapted physical facilities and environment

4. How would you rate the adaptation of the physical facilities in relation to inclusive education: tick(√)

School physical facilities	**Very adaptable**	**Adaptable**	**Fairly adaptable**	**Not adaptable**
The physical facilities are well adapted to suit the needs of the learners.				
Doors to classrooms and toilets/latrines are wide enough to accommodate all learners including those with wheel chairs				
There are toilets/latrines specifically adapted for learners with physical disabilities				
Tables, chairs and desks are adapted to cater for individual differences				
Railings, slopes and stairs are suitable for learners using wheel chairs				
Available adjustable board to the level that all learners are comfortable				

SECTION D: Administrative support

5. Do headteachers admit learners with special needs in school? Yes( ) No ( )
6. What is the extent of support provided by headteachers towards inclusion in school? Great extent ( ) moderate ( ) low extent ( ) none ( )
7. How often does the school administrator organize for an induction course on inclusive education for teachers?.....…….
8. What is the attitude of the headteacher towards inclusive education in school? Positive ( ) Negative ( )

Thank you very much for your cooperation

APPENDIX III: QUESTIONNAIRES FOR LEARNERS

(Class teachers from sampled schools to guide sampled learners from grade 1-3 in filling the questionnaires)

Please tick (√) in appropriate bracket or fill in the information as your response to all the following questions. Do not write your name or name of your school anywhere, the information will be completely confidential.

1. In which class are you?……
2. Are you a Boy ( ) or a Girl ( )?
3. How many are you in your class?.....
4. Are there learners with any form of disability in your class/school?

   Yes ( ) No ( )
5. Do you play and socialize with learners with disability in the school?

   Yes ( ) No ( )
6. My class/school environment is adapted/spacious to enable all learners including learners with special needs to move and play comfortably.

   Yes ( ) No ( )
7. In my school/class teachers assist everyone without discrimination.

   Agree ( ) Disagree ( )
8. Do teachers' pay more attention to learners with special needs in your class/school? Yes ( ) N ( )
9. Learners with special needs in my school take part in co-curricular activities. Agree ( ) Disagree ( )

Thank you for your participation

APPENDIX IV: INTERVIEW SCHEDULE FOR THE HEADTEACHER

Dear Sir/Madam, this interview schedule is intended to help the researcher gather information on the institutional factors influencing sustainability of inclusive education in public primary school in Nandi East sub-county, Kenya.

Section 1**: Background Information**

1. Male ( ) Female ( )
2. How long have you been a head teacher? 1 – 5 yrs ( ) 6 – 10 yrs ( ) 11 – above ( )
3. Age Group 30-34 ( ) 35-39 ( ) 40-44 ( ) 45-49 ( ) 50-54 ( )

   55+ yrs ( )

4. How many learners with special needs are in your school?

Class /Grade	P1 &P2	1	2	3	4	5	6	7ss	8
Number									

Section B: **Information on Inclusive education**

1.What is your opinion regarding introduction of inclusion learners with special needs in your school?

.....
.....

2. How adequate and adapted are the physical facilities in your school towards provision of sustainable inclusive education?

…….....……
……

3. Do you think the teaching of learners with special needs and disabilities in the same class with regular learners affects them and the class performance?
…….....……
……

4. How effective are the instruction strategies used in regular schools when applied to children with special needs?
…….....……
……

5. To what extent are the available instructional resources adapted to cater for learners with special needs

……..……
……

APPENDIX V: OBSERVATION SCHEDULE

This observation schedule will be filled during the study in the sampled schools. The researcher will have to spend some time in the school environment/classroom to observe the following indicators:

Indicators	**Available**	**Not available**	**Adequate**	**inadequate**
Adapted physical facilities/ environment				
Spacious classroom				
Doorways with ramps/stairs				
Assistive devices				
Pavements/smooth floors				
Adapted desks/chairs				
Adapted toilets/latrines				
Level play ground				
Adapted instructional resources				
Textbooks				
Braille				
Chalkboard				
Speech assistive device				
Magnifying lens				
Video/audio				
Support services				
Itinerant teaching				
Speech therapists				
Psychological assessment				

APPENDIX VI. RESEARCH PERMIT

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **650516**

Date of Issue: **17/July/2023**

RESEARCH LICENSE



This is to Certify that Mr.. Daniel Kipkoech Sawe of Koitaleel Samoei University College, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nandi on the topic: Institutional factors influencing sustainability of inclusive education for the period ending : 17/July/2024.

License No: **NACOSTI/P/23/27398**

650516

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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See overleaf for conditions

MINISTRY OF EDUCATION
STATE DEPARTMENT FOR EARLY LEARNING AND BASIC EDUCATION

Email:cdenandicounty@yahoo.com
Telephone:0773044624
When replying please quote

County Director of Education
NANDI COUNTY,
P.O.Box 36-30300,
KAPSABET,

Ref:NDI/CDE/RESEARCH/1/VOL.111/64

Date: 16th March, 2023

Daniel Kipkoech Sawe
Koitalel Samoei University College
P.O Box 5-30307
MOSORIOT.

RE:RESEARCH AUTHORIZATION.

Reference is made to the National Commission for Science, Technology and Innovation's letter Ref: No. NACOSTI/P/23/27398

The above named person has been granted permission by the County Director of Education to carry out research on **"Institutional Factors Influencing Sustainability of Inclusive Education in *Public Primary Schools in Nandi East*** the period ending **2nd** March, **2024.**

Kindly provide him all necessary support he requires.

For County Director of Education
NANDI COUNTY

Mathew Sum
For:County Director of Education,

NANDI COUNTY.

INSTITUTIONAL FACTORS INFLUENCING SUSTAINABILITY OF INCLUSIVE EDUCATION IN PUBLIC PRIMARY SCHOOLS IN NANDI EAST SUB-COUNTY NANDI COUNTY, KENYA

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