INSTITUTIONAL FACTORS INFLUENCING HOLISTIC DEVELOPMENT OF AUTISTIC LEARNERS: A CASE OF TWO PUBLIC PRIMARY SCHOOLS IN UASIN GISHU COUNTY, KENYA

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DECLARATION

I declare that this thesis is my original work and has never been presented to any institution of higher learning for any award.

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14J06CMED008

This research was conducted under our supervision and is submitted with our approval as university supervisors.

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DEDICATION

This work is dedicated to all the autistic pupils in Sosiani and Central primary schools in Uasin Gishu County. It's also dedicated to my husband Mr. Andrew Chepkonga and my children Boaz Kipkemei, Audrey Jerotich, Thelma Jelagat and Noel Jemutai for their unwavering support, encouragement and love.

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TABLE OF CONTENT

DECLARATION ..... **ii**

DEDICATION ..... **iii**

ACKNOWLEDGEMENT ..... **iv**

TABLE OF CONTENT ..... **v**

LIST OF FIGURES ..... **ix**

ABSTRACT ..... **xi**

LIST OF ABBREVIATIONS AND ACRONYMS ..... **xii**

DEFINITION OF TERMS ..... **xiii**

CHAPTER ONE **1**

INTRODUCTION AND BACKGROUND OF THE STUDY **1**

1.1 Introduction 1

1.2 Background of the Study 1

1.3 Statement of the Problem 5

1.4 Purpose of the Study 6

1.5 Objectives of the Study 6

1.6 Research Hypotheses 7

1.7 Significance of the Study 7

1.8 Scope of the Study 8

1.9 Delimitations of the Study 8

1.10 Limitations of the Study 8

1.11 Assumptions of the Study 9

1.12 Theoretical Framework 10

1.13 Conceptual Framework 11

CHAPTER TWO **14**

LITERATURE REVIEW 14

2.1 Introduction 14

2.2 Holistic Development of Autistic Learners 14

2.3 Teacher's Perceptions Influence on Development of Autistic Learners 16

2.4 Learning Resources Influence on Development of Autistic Learners 19

2.5 Learning Activities Influence on Development of Autistic Learners 22

2.6 Teaching Methods Influence on Development of Autistic Learners 25

2.7 Summary of Literature Reviewed 28

2.8 Research Gap 29

CHAPTER THREE 30

RESEARCH DESIGN AND METHODOLOGY 30

3.1 Introduction 30

3.2 Research Design 30

3.3 Research Site 30

3.4 Target Population 31

3.5 Sample Size and Sampling Techniques 31

3.6 Description of Research Instruments 32

3.6.1 Questionnaire for the Teachers 32

3.6.2 Interview Schedule for Head teachers and Deputy Head teachers 32

3.6.3 Observation for Resources Availability 33

3.8 Validity and Reliability of the Research Instruments 34

3.8.1 Instruments Validity 34

3.8.2 Instrument Reliability 34

3.9 Data Processing and Analysis 35

3.10 Legal and Ethical Considerations 35

CHAPTER FOUR 37

RESULTS AND ANALYSIS 37

4.1 Introduction 37
4.2 Background Information 37
4.2.1 Gender 37
4.2.3 Age of Teachers 38
4.2.3 Teacher Academic Qualification 39
4.2.4 Period in Current School 40
4.2.5 Training in Special Need Education 40
4.2.6 Experience in Special Need Education 41
4.3 Holistic Development of Autistic Learners 42
4.4 Teacher Perception and Holistic Development of Autistic Learners 43
4.5 Learning Resources and Holistic Development of Autistic Learners 44
4.6 Learning Activities and Holistic Development of Autistic Learners 46
4.7 Teaching Method and Holistic Development of Autistic Learners 47
4.8 Results from the Observation schedule 49
4.9 Results on Interview Schedule from Head Teachers and Deputy Head Teachers 50
4.10 Multiple Regression Analysis 52
4.11 Multiple Regression Coefficients 53
CHAPTER FIVE 56
DISCUSSION, SUMMARY, CONCLUSION AND RECOMMENDATIONS 56
5.1 Introduction 56
5.2 Discussion of Findings 56
5.2.1 Background Information of Respondents 56
5.2.2 Teachers Perception and Holistic Development of Autistic Learners 59
5.2.3 Learning Resources and Holistic Development of Autistic Learners 61
5.2.4 Learning Activities and Holistic Development of Autistic Learners 64
5.2.5 Teaching Methods and Holistic Development of Autistic Learners 65
5.3 Conclusions 68
5.4 Recommendations 69

5.5 Suggestions for Further studies..... 70

REFERENCES..... 71

APPENDICES..... 80

APPENDIX I: LETTER OF INTRODUCTION..... 80

APPENDIX II: TEACHERS' QUESTIONNAIRE..... 81

APPENDIX III: INTERVIEW SCHEDULE FOR THE HEAD TEACHERS..... 87

APPENDIX IV: OBSERVATION SCHEDULE FOR RESOURCES..... 89

APPENDIX V: ANU RESEARCH AUTHORIZATION LETTER..... 90

APPENDIX VI: RESEARCH PERMIT FROM NACOSTI..... 91

APPENDIX VII: MAP OF KENYA SHOWING UASIN GISHU COUNTY..... 92

APPENDIX VIII: MAP OF UASIN GISHU COUNTY..... 93

LIST OF FIGURES

Figure 1.1 Conceptual Framework ……..……12

Figure 4.1 Teaching Method……...52

LIST OF TABLES

Table 3.1 Target Population……..……..……31

Table 4.1 Gender…….……...38

Table 4.2 Age of Teachers…….……38

Table 4.3 Teachers Academic Qualification…….…….39

Table 4.4 Period in Current School……..……..40

Table 4.5 Training in Special Needs Education…….41

Table 4.6 Experience in Special Need Education……..41

Table 4.7 Holistic Development of Autistic Learners…….……..42

Table 4.8 Teachers Perception on Holistic Development of Autistic Learners…….43

Table 4.9 Learning Resources on Holistic Development of Autistic Learners.……45

Table 4.10 Learning Activities on Holistic Development of Autistic Learners…..….46

Table 4.11 Teaching Methods on Holistic Development of Autistic Learners……...48

Table 4.12 Availability of Teaching and Learning Resources…….……49

Table 4.13 Multiple Regression Model Summary…….……..52

Table 4.14 Significant Test Results for Overall Model…….……..53

ABSTRACT

Children have varying challenges in public primary schools. Majority of autistic children attend public schools and it is important to ensure they receive adequate services. Several institutional factors have been established which affects holistic development of autistic children in Kenyan primary schools especially in rural areas. The purpose of the study was to determine the institutional factors influencing holistic development of autistic learners in public primary schools, Uasin Gishu County. The following were the study objectives: to establish how teacher's perceptions influence holistic development of autistic learners; to investigate how learning resources influence on holistic development of autistic learners; to establish how learning activities influence holistic development of autistic learners and to identify how teaching methods influence holistic development of autistic learners. The study was anchored on the social learning theory and was guided by the conceptual framework. This study design was descriptive survey and employed qualitative and quantitative approach, where interview schedule, questionnaire and observation were used in data collection. The study targeted 36 respondents from both Sosiani and Central public primary schools in Uasin Gishu County. Hence census method was adopted, where all the head teachers, deputy head teachers and teachers were involved. Piloting to test for reliability and validity of the research instrument was conducted in Nakuru Hills Special School in Nakuru County. Data was analyzed using descriptive statistics which involve frequencies, means, and percentages while inferential statistics involved multiple regression analysis after which data was presented in form of charts, graphs and tables. The study found out that teachers' perception (β = 0.293, t =3.810, $p < 0.05$), learning resources (β = 0.309, t = 4.045; p< 0.05), learning activities (β = 0.325, t = 4.055; $p < 0.05$) and teaching methods (β = 0.367 t = 4.823; $p < 0.05$) had significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya. The study recommended the need to review the teaching methods used in teaching autistic learners in public primary schools. The government should also provide the necessary ICT facilities to public primary school to enhance learning of autistic learners.

LIST OF ABBREVIATIONS AND ACRONYMS

AL	Autistic Learners
APHRC	Africa Population and Health Research Center
ASC	Autistic Spectrum Conditions
ASD	Autistic Spectrum Disorders
ABA	Applied Behavior Analysis
ASK	Autism Society of Kenya
CDC	Center for Disease Control and Prevention
KNCHR	Kenya National Commission of Human Right
NACOSTI	National Council of Science Technology and Innovation
PECS	Picture Exchange Communication System
RDI	Relationship Development Intervention
SPELL	Structure, Positive approaches and expectations, Empathy, Low arousal, Links.
TEACCH	Treatment and Education of Autistic and Related Communication-Handicapped Children
TLR	Teaching and Learning Resources
UNESCO	United Nation Educational Scientific and Cultural Organization

DEFINITION OF TERMS

Autistic learners (AL) Refers to learners with a neurodevelopmental condition that is manifested by challenges in the activities of the brain that involve social interaction and communication (Kern, Geier, Sykes & Geier, 2013).

Holistic development of Autistic learners It refers to a process that brings a progressive, positive change which results from transition from one level to another, literacy level and talent nurturing of autistic learners (Pruitt, 2011).

Learning activities These are activities adopted and used by the teacher to enhance effectiveness in learning within the learning environment. The objective is to ensure the learning outcomes are achieved (Siemens & Tittenberger, 2009).

Learning resources Refers to the availability of learning materials such as books, teaching aids, ICT resources that aids in holistic development of autistic pupils (Gaire & Mahon, 2010).

Teachers' perception Refer to the teachers' attitude towards an autistic pupil which is as a resultant of cultural background, experience, age and training (Park, Chitiyo & Choi, 2010).

Teaching methods It refers to approaches, design and procedures in teaching and the evaluation criteria of pupils (Pruitt, 2011).

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 Introduction

This chapter presents the background of the study, the statement of the problem which indicas development of autistic learners as an issue of concern. Additionally, it outlines the objectives and research hypotheses of the study. It also includes the significance, the scope, delimitation and the limitations of the study. Finally, it presents the theoretical and conceptual framework of the study.

1.2 Background of the Study

Autism commonly referred to as Autistic Spectrum Disorders (ASD) or Autistic Spectrum Conditions (ASC). It describes a neurodevelopmental conditions that is demonstrated by challenges in the activities of the brain in the areas of communication and social interaction (Omar & Bidin, 2015). It affects quite several families and children globally and current research has established a recent increase in autistic cases globally (Center for Disease Control and Prevention, 2011; Kopetz & Endowed, 2012). This condition is usually apparent in the early years of a child specifically it appears before the age of three years. However, it varies in the severity of symptoms, age of onset, and the presence of various features, such as specific language delay (Center for Disease Control and Prevention, 2012). To date the exact cure has not been well established however, researchers are working to establish its cure and intervention. Nonetheless, early recognition, behavioral education and therapies may reduce symptoms and support development and learning (Renee & Alli, 2018).

Since most of autistic children attend public schools there is need to come up with supportive solutions. Through designing and adopting educational practices that will help them maximize their potential (Chan, 2009; Gordon, 2013). In an inclusive setting, autistic children learn together with their 'normal peers' this is aimed at reducing stigmatization. Therefore understanding this population is important to ensure they receive the required services (Smith, 2011). Autistic children require specialized equipment's and services to enhance learning. However provision of adequate services and equipment's are hindered by inadequate funding in several countries, considering that some of the equipment they need are expensive (Omar & Bidin, 2015).

In the United States Autistic Spectrum Disorders (ASD) has been established to be among the fast-growing childhood disorders. There has been an upward increasing trend reported over the past decade (Moores-Abdool, 2010). Statistics indicates that one out of 88 children between the age of 6 to 17 is autistic (Center for Disease Control, 2013). Majority of this population are in public schools and are assigned to regular classrooms (Moores-Abdool, 2010; Obiakor, Harris, Mutua, Rotatori, & Algozzine, 2012). China has legislation to protect and safeguard the rights of individuals with special needs and the right for education is one of the areas addressed. In practice, autistic students are placed in general class and undergo similar curriculum though it has a different evaluation technique (Sun, Allison & Brayne, 2019). This has affected the documentation and proper assessment of behavior and the way children progress in China.

Education is a right and crucial development of every child. However in England one among the developed countries, autistic children are not provided with the proper education and related support that they require. Although they have quite several

specialist schools in England, a large proportion (71%) of children are in regular schooling (Priory Education and Children's Services, 2017). The major challenge in England education system facing autistic pupils is regulation issues. There is gap to guarantees that teachers in regular classes have the required qualification and skills to deal handle autistic learners.

In the recent past the United Kingdom government legislature has focused on inclusive education. This is primarily through an emphasis on inclusive mainstream schools where all pupils with special needs and disabilities are welcomed and taken care of (Wilkinson & Twist, 2010). Every mainstream school is mandated to designate a SENCO (Specialist Education Needs Coordinator) who informs relevant staff about the autistic student's needs (Priory Education and Children's Services, 2017). In Australia the high prevalence rate of autism has seen majority of autistic learners enrolled in both special and mainstream schools. This has therefore created the need for adequacy in provision of access to educational services to the learners (Wray, 2011).

In Africa, especially Nigeria, poor understanding of autism has created confusion and sometimes viewed as schizophrenic or mentally retarded. For instance in rural areas, autistic and disabled individuals are thought to be possessed and evil. Sometimes autistic children have been taken for cleansing rituals (Bakare, Ebigbo & Ubochi, 2012; Igwe, Ahanotu, Bakare, Achor & Igwe, 2011). The low level of awareness about the condition has led to many children either not diagnosed or misdiagnosed. The children end up being hidden at home if schools reject them or are put in the same class with other special needs children especially, mentally retarded children (Preece, Odunsi & Garner, 2017). The rich population place their autistic children in mainstream schools and ask teachers

to promote them from level to level, which is frustrating for the teachers and the children (Okey-Martins, 2007). The limited support from the government of Nigeria to the autistic and other special needs condition has placed a heavy responsibility on the parents while seeking for support services (Oshodi, Olagunju & Adeyemi, 2017).

The right for education is a key agenda in developing countries globally. The constitution of Kenya, in Article 53(1) (b) states that every child has a right to free and compulsory basic education (Ministry of Education, 2016). Kenya like other developing countries faces a myriad of challenges in developing inclusivity in education. These include inability to fully enforce policies, limited funding, poorly trained teachers as well as inappropriate use of assistive technologies (Wanjohi, 2013). Children with special needs still face a lot of discrimination such as social stigma, negative parental beliefs and accessing the required services (Africa Population & Health Research Centre, 2016). In Kenya, there is no current prevalence rate of ASD; however an increase has been observed overtime (Elliot, 2019). It is common to find parents hiding their children and ends up infringing on their right to receive quality education and medical services. This results to stigma and the engrained social attitudes (Kamau, 2017).

The national education system has been characterized by inadequate systems and facilities to respond to the challenges faced by learners with special needs and disabilities. The low level of awareness about the autism is a concern that requires attention (Elliot, 2019). There are no specific legislations addressing autistic children specifically in Kenya. The national special needs education policy launched in March 2010 aims to address education provision through regular schools and not special units. It was critical in ensuring education for all is attained including autistic children (Ministry

of Education [MoE], 2016). Although there are a few public primary schools that cater for autistic learners. The available public primary schools face challenges such as few trained teachers, inadequate infrastructure, ineffective curriculum and policy. Uasin Gishu County is one among the 47 counties in Kenya. Through devolution the county government seeks to address challenges facing autistic learners by formulating policies and developing the existing infrastructure (Ronoh, 2019).

1.3 Statement of the Problem

The National Special Needs Education Survey (NSNES) conducted in 2014 pointed out that 1 in every 10 Kenyan below the age of 21 has some form of disability (Ouma, 2016). In Kenya, there is no current prevalence rate of ASD; however an increase has been observed overtime (Elliot, 2019). There are few schools with dedicated units for autistic learners. It is estimated that the teacher pupil ratio for special needs categories such as specific learning disabilities and emotional and learning disorder stand at (105:1) and (3:1) respectively (Elliott, 2019). In most cases children with autism are less likely to be enrolled in school due to poverty, stigma, poor quality services, and inadequate of services to cater for their needs (Kamau, 2017). This has led to high illiteracy level among school age disable children (KNCHR, 2014). For instance, in Kenya the education sector as observed in Africa Population for Health Research Centre (APHRC) study in 2013 found that 59% of teachers in six major towns in Kenya were not competent in basic academic subjects, let alone handling special needs pupils (Asego & Abuya, 2016).

Kenya like other developing countries faces a myriad of challenges in developing an inclusive education. Currently, Kenyan primary schools are yet to fully take care of autistic children. This is indicated with the few schools for the autistic children in spite of

the government declaring free education for all children including the disabled (Otina & Thinguri, 2016). In Uasin Gishu County, Sosiani and Central primary schools have been established to cater for autistic learners (Ronoh, 2019). Few primary schools with units for autistic learners, few trained teachers, poor infrastructure, ineffective curriculum and training of teacher have been established as major challenges facing autistic learners (Kamau, 2017). The poor preparations to handle autistic learners in Kenyan public primary schools formed the basis of investigating the institutional factors that influence the holistic development of autistic learners in public primary schools in Uasin Gishu County, Kenya.

1.4 Purpose of the Study

The purpose of the study was to determine the institutional factors influencing holistic development of autistic learners.

1.5 Objectives of the Study

The following objectives guided the study:

(i) To establish how teachers' perception influence the holistic development of autistic learners in the two public primary schools in Uasin Gishu County;

(ii) To investigate how learning resources influence the holistic development of autistic learners in the two public primary schools in Uasin Gishu County;

(iii) To establish how learning activities influence the holistic development of autistic learners in the two public primary schools in Uasin Gishu County;

(iv) To identify how teaching methods influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County;

1.6 Research Hypotheses

The study sought to test the following research hypotheses:

$H0_1$: Teachers' perception has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya

$H0_2$: Learning resources has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya

$H0_3$: Learning activities has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya

$H0_4$: Teaching methods has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya

1.7 Significance of the Study

Significance of a study shows how the research benefits or impacts others in part or whole (Simon & Goes, 2013). The findings of this study are intended to raise awareness among parents, teachers and peers were they will be able to understand the autistic population. It will also lead to improving training programs for the teachers to enhance their effectiveness while teaching autistic learners. The policy makers in the national and the county government can use the findings in formulating policies. That will aid in empowering autistic children especially on provision of conducive environment for learning. The outcomes of this study formed the basis for more research on autism in schools in Kenya to allow for comparative purposes and generalization. Furthermore it will also enable academicians to gain insights into these factors in Kenya. Finally it is of great importance to autistic learners since their plight will be publicized, thus they will be in a position to get the required assistance from the relevant institutions.

1.8 Scope of the Study

Marylin and Goes (2013) proffer that the scope of the study delineates the geographical and methodology boundaries. This research study focused on institutional factors influencing development of autistic learners and specifically on the four factors: teachers' perception, learning resources, learning activities and teaching methods. The study limited itself to two public primary schools in Uasin Gishu County, specifically Sosiani and Central primary schools both located in Eldoret which have units for autistic pupils. The study design was descriptive and targeted 36 teachers from the two public primary schools where census approach was employed. The study was guided by the social learning theory.

1.9 Delimitations of the Study

Simon and Goes (2013) point out that study delimitations are those features which arise from limitations of the study as well as the sensible exclusionary and inclusionary choices made during the development of the research plan. Delimitations are within the researcher's control. Although it has been observed that there are several institutional factors that influence holistic development of autistic learners. This study was delimited to institutional factors the four factors which include: teachers' perception, learning resources, learning activities and teaching methods. Since from literature the four factors have been established have a significant influence.

1.10 Limitations of the Study

Limitations describe issues and incidents that may crop up in an investigation that are beyond investigator's control. They restrict extensity of an inquiry and may influence the final findings and conclusions (Simon, 2011). Several challenges occurred during the

process of collecting data. Some respondents were not willing to give the required information. The researcher endeavored to win their confidence by clarifying the reasons for conducting the research and assuring confidentiality. Limited time also pose a challenge to complete the investigations as well as limited financial resources. Time was managed by properly mapping the target public primary schools and proper itinerary developed to ensure the entire respondent were accessed within the time frame.

1.11 Assumptions of the Study

Simon (2011) explicates that assumptions are underlying ideologies that the researcher trusts or admits but that are difficult to attest in any actual way. In other words, assumptions are realistic expectations believed to be true facts necessary for the relevance of the study as they provide the basis of the development and implementation of the research. Similarly, Merriam (2014) regards assumptions in research as truthful observations acknowledged to be true but not actually confirmed. It was assumed that all the teachers regardless of the training specialty in the sampled schools had interacted with autistic learners both in class and outside. Having interacted with autistic learners, it was possible to give credible information in regard to availability of learning resources, learning activities, teaching methods and their perception towards autistic learners. The study also assumed that all teachers occasionally attended capacity building seminars and workshops on special needs education in general. Finally, the study had an assumption that the respondents would give accurate responses to the questions raised through the questionnaire and interview.

1.12 Theoretical Framework

Kombo and Tromp (2006) assert that theoretical framework is a collection of interrelated ideas based on theories. It accounts for or explains phenomena. The study was situated within the social learning theory, developed by Bandura 1977. The theory asserts human beings learn from each other through modeling, observation and imitation. It further notes that observational learning involves a cognitive process. Mental factors act as mediators in the learning process and determine how an individual acquires a new response. The mediational process includes attention, retention, reproduction and motivation. Thus imitation isn't directly adopted from model, but mediational process is usually involved (Bandura, 1977).

Studies have established that the rate at which autistic children develop is different compared to the others. In most cases; they do not develop skills in the same order (Pruitt, 2011). Therefore this study seeks to establish how well autistic learner's holistic development can be enhanced amid their differences with the other learners. When dealing with autistic pupils the program being used should be effective. It should capture the interest of the student and therefore using the right model is significant. To ensure the routine of the activities are maintained and predictability; teaching methods should involve simple steps for ease of observation and to capture the learner attention. Ultimately teachers should learn to reinforce an activity to bring out or suppress a given behavior (American Federation of Teachers, 2017). Therefore, as noted by Bandura; modeling, observation and imitation are critical techniques which should be included in the learning process of autistic learners to ensure they develop the requisite skills. Institutional factors which include teacher's perception, learning resources, learning activities and teaching method are factors of concern. However, the social learning

theory has faced criticism due to its emphasis on the environmental factors as the sole influence of behaviors. The theory cannot also be used to fully explain all behaviors for instance in cases where a person don't have a model to imitate a given behavior (Mcleod, 2016).

1.13 Conceptual Framework

A conceptual frame**w**ork is a diagrammatic representation of concepts in a study that are placed within a logical and sequential design, showing inter-relationship between concepts, derived from empirical observation (Kush, 2015). In this study, the conceptual framework was drawn directly from the research topic and connects dependent (holistic development of autistic learners) and independent variables. Figure 1.1 shows the conceptual framework.

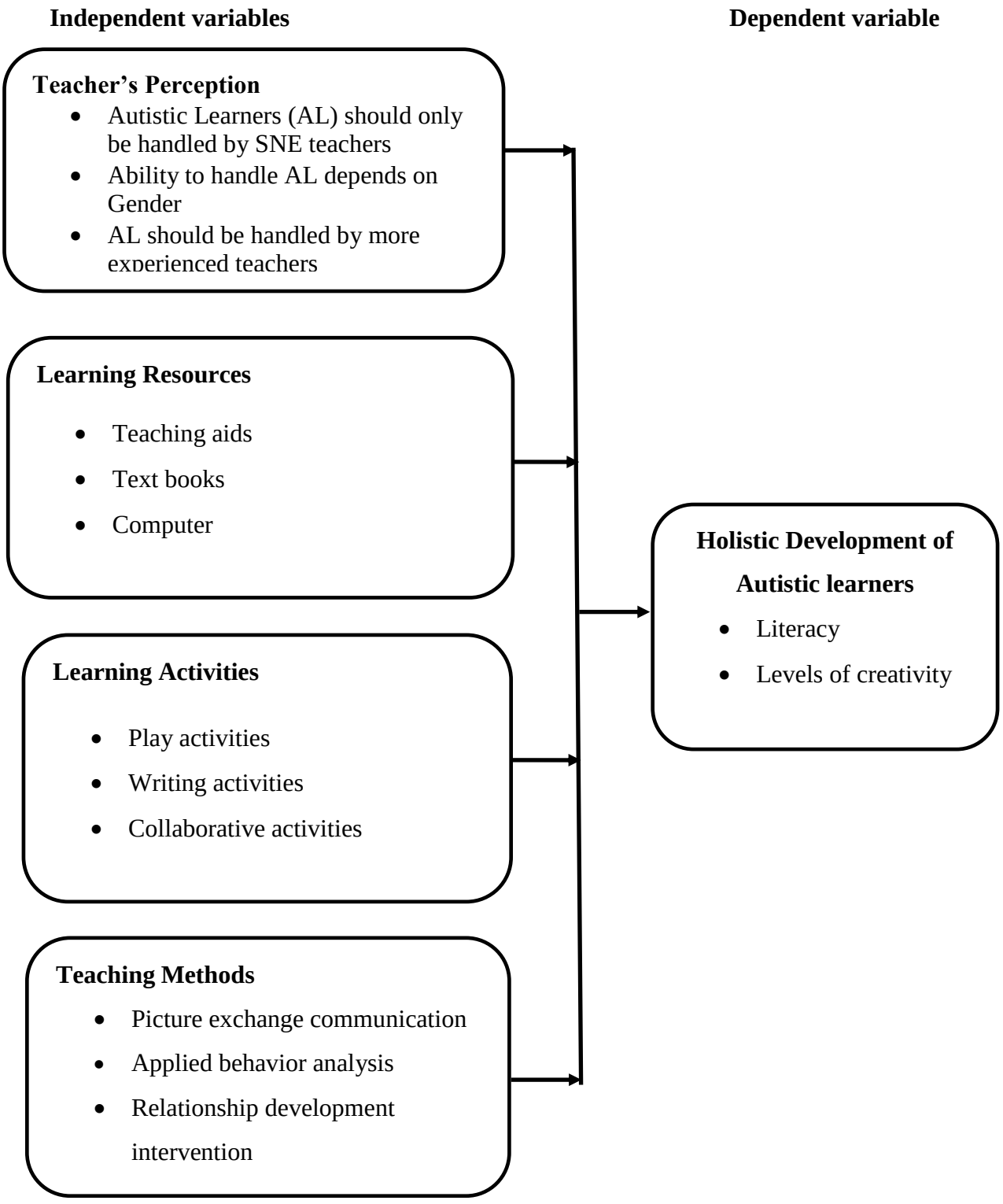


Figure 1.1: Conceptual Framework

Figure 1.1 shows that the attainment of holistic development of Autistic Learners was envisaged to be dependent on teachers' perception, learning resources, learning activities and the teaching methods applied. The conceptual framework also includes some of indicators that enabled the measurement of the corresponding variables. The arrows show the direction of the presumed relationship among the independent and dependent variables.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section consisted of the literature review of the variables organized into subtitles i.e. teachers' perception, learning resource, school facilities, teaching method and the development of autistic learners in public primary schools, then the summary of literature reviewed and the knowledge gap.

2.2 Holistic Development of Autistic Learners

Kajilwa (2017) points out that the new curriculum in Kenya (2-6-3-3-3) that has replaced the existing 8-4-4 curriculum, is skills oriented. The Competent Based Curriculum (CBC) also ensures that education is accessed by all children. Specifically, for the autistic children they can be enrolled in a special school, special units, regular schools or a home-based program. Whereas those with severe cases they can be enrolled in programmes that will enable them develop life skills and utilize their talents. Currently, a number of autistic pupils are enrolled in special schools or schools with autistic units and are subjected to mainstream assessment. In addition, the new curriculum is tailor made for the special need pupils and also incorporates intervention programmes.

One advantage of the CBC is the fact that it emphasizes on developing a learners talent and creativity. Studies have pointed out that autistic learners are exemplary creative. Thus the room for talent identification and development which enable autistic learners create opportunities for themselves. Unlike the previous curriculum where transition was solemnly determined by ranking, the CBC transition is determined by a learner demonstrating he has met the learning outcomes (Kenya Institute of Curriculum

Development, 2017). Studies have established that the rate at which autistic children develop is different from the others and in most cases they do not develop skills in the same order. For example, the ability to learn the pronunciation of words may delay, in other cases an autistic child may identify their body parts but not in a picture or identify colors without being able to sort them out (Pruitt, 2011). Autistic children find it difficult to interpret their environment. Their inability to understand the behavior of people in their environment affects their social life (Anneke, 2016).

In order for a teacher to be successful in teaching an autistic child, knowledge and training on how to handle autistic children is paramount. This could be through the identification of strategies and programs to help autistic learners academically and socially (Yang & Rusli, 2012). Continuous training is equally important to ensure teachers get updated with new techniques to handle autistic children. These new instructional interventions might help improve students' performance (Guskey, 2010). Research have establish that majority of teachers are ill-equipped to guide autistic children in the area of literacy, since most of them aren't exposed to such cases only until presented with such a learner in a classroom (Pruitt, 2011). The fundamental of education is to fight illiteracy and for purposes of equality every learner should have access to education. The constitution of Kenya, in Article 53(1) (b) states that every child has a right to free and compulsory basic education (Ministry of Education, 2016).

Several studies have recommended including autistic children in general classrooms in order to improve their social skills (Carmargo *et al.*, 2014; Ferraioli, & Harris, 2011). The inclusion should not only learners include learners with mild cases but also severe cases provided effective strategies and enough support are put in place (Carmargo *et al.*, 2014).

Although, Foster and Pearson (2012) argues that inclusivity might not have future effects such as reduction in the drop-out rate, class attendance for a given period of time, development of cognitive functions, sensory, or motor skills necessary for normal functioning.

Findings in Coffey (2013) study indicated transition from one class to the next requires ecological changes that places demand on the social, intellectual and organizational abilities of the child. This period is one of the most challenging in an autistic child's education process. The success of learners in a classroom is dependent on teacher's ability to understand the learners' strengths and weakness and how he will help them participate in a meaningful way. The need of multiple strategies that works best for a learner need to be adopted (Hart & Whalon, 2011). There are several and different techniques that can be used to assist autistic pupils develop their social communication skills and language, and to help them understand the environment around them. Individuals in school and at home need to understand autistic children and their unique view of the environment (Haringey Council Services, 2018). Although majority of studies have address development of autistic learners in respect to their ability to communicate and socialize. The issues of transition from one level to the next needs to be investigate especially in Kenya.

2.3 Teacher's Perceptions Influence on Development of Autistic Learners

Nicole (2015) study observed that teacher's knowledge about autism is not accurate. Additionally the level of training and exposure of the teacher to a larger extend doesn't influence his knowledge about autism. However, knowledge about autism among the special need teachers was more accurate compared to the general teachers. But majority

still they need further awareness to fully understand the condition and how well to deal with autistic learners. Furthermore, a teacher exposure to autistic children both at home and at school doesn't affect their view on the causes and belief about autism. However, teachers strongly believe that autism is a disorder caused by both genetics and environment.

Studies have revealed that some teachers consider autistic learners as lazy, disrespectful, susceptible, aggressive and arrogant based on their behavior (Engelhardt, 2014). However, a teacher might not be aware of the entire characteristic portrayed by such children and his perception might influence the teaching/learning process (Gettinger & Stoiber, 2009). Research studies have established that teacher's knowledge regarding autism might not always be accurate, a factor which might negatively affect the learning process (Williams, Schroeder, Carvalho & Cervantes, 2011). For instance, Geraldina (2015) study established low level of awareness of autism among primary school teachers in Tanzania. The study further established inadequate training and in-servicing of teachers affected teaching of children with autism in regular classes. It is therefore paramount to establish the perception of teachers toward autistic learners in Kenya. Considering that in Kenya statistics in autism is still inadequate, addressing the issues affecting autistic learners is quite a challenge.

In most regular schools teachers are required to teach all the pupils in one classroom, regardless of whether they have been trained to handle special needs cases or not (Kopetz & Endowed, 2012). However, most of the teachers feel inadequately prepared to perform as expected. They may be challenged in understanding the special education jargon and terminologies (Bruce, 2010). Therefore, Kopetz and Endowed (2012) recommended the

need for teachers to be trained to handle all the cases that might be presented in a general classroom especially, those with autism, this should include planning and presentations in such a class (McLaughlin, 2017). Continuous training is important to ensure teachers get updated with new techniques to handle autistic children and such new instructional interventions might help improve students' performance (Guskey, 2010).

Numerous studies have established that a well-trained teacher is in a better position to handle autistic pupils, this makes them more confident and their overall attitude to autistic children tends to be positive (Glashan, Mackay & Grieve, 2004). For instance, a study by Sansosti and Sansosti (2012) established that teachers with inadequate knowledge of autistic children due to limited training and exposure were bias to such population. Which concurs with Park, Chitiyo, and Choi (2010) study which reported a positive attitude towards autistic children in teachers who had been trained to handle special need students, furthermore, female teachers and the more experienced teachers held a more positive view.

A survey conducted in the United Kingdom in 2012 by The NASUWT (National Association of Schoolmasters Union of Women Teachers), revealed more than 70% of the teachers hold the opinion that training is insufficient to handle a range of special needs student in the same classroom (Priory Education and Children's Services, 2017). Subsequently, a survey conducted by Palumbo (2011) points out to a positive attitude among more than half of the head teachers they interviewed to support teacher handling autistic students. However, it is not clear to what extend does age and gender of a teacher influences his perception towards autism.

2.4 Learning Resources Influence on Development of Autistic Learners

Research conducted by Okongo, Ngao, Rop and Nyongesa (2015) revealed that availability of adequate learning resources such as textbooks, teaching charts, stationary, audiovisual and electronic instructional materials affect the development of children. It is important that teaching and learning materials be made available for autistic learners in public primary schools for their active participation (Moodley, 2012). The materials should be in a format that meets their needs, although in an inclusive setup learner might require additional resources (Randiki, 2008). Etsey (2005) further points out the benefits that accrue when an institution has acquired the teaching and learning materials include stimulation of ideas, active learner participation and lesson enjoyment.

A study conducted by Rumba (2012) in Kenya to identify institutional factors affecting pupils' performance in national examination established unavailability or inadequate of learning resources negatively affected pupils' performance in national examinations. Similarly, Wanjiku, Karugu and Karangwa (2014) study in Kenya to ascertain strategies used by teachers on autistic learners. From the investigation it was noted that teaching resources were inadequate and adversely affected autistic students learning. Therefore, recommended adequate funds should be provided for acquiring teaching and learning resources. However in Kenya misappropriation of funds has been observed, thus it's important to ascertain how it has affected the acquisition of learning resources.

A study conducted by Momoh (2010) to ascertain the effects of instructional resources on the performance of learners in West Africa School Certificate Examinations (WASCE). The study established a positive relationship between performance and availability of teaching resources. Furthermore it concluded that learning resources

contribute significantly to the learning of abstract concepts and ideas. It was further noted that inadequacy of learning resources negatively affected the learners' performance, increased dropout rates, low motivation among the teachers and to a larger extent affected the attainment of the education goal.

In Rwanda Bizimana and Orodho (2014) examined the influence of learning resources on content delivery and management of classroom. It was reported that TLR was inadequate in most schools in Rwanda, which led to ineffectiveness of classroom management and content delivery by the teachers. This concurs with Moodley (2012) who established that adequately-equipped school with adequate teaching/learning resources will enhances teachers' effectiveness and efficiency towards an improved outcome of the learner. Therefore, as recommended in Otina and Thinguri (2016) study to find out how primary schools in Kenya were prepared to manage autistic learners. Every primary school in Kenya needs to have adequate learning and teaching resources to cater for the autistic learners. This will ensure the learners get quality education when in an inclusive set up.

Gaire and Mahon (2010) noted that special needs learners require specialized equipment to aid them in adaptations to the school environment for them to perform better. In some instance support from professionals outside the school will be beneficial. However, it is not always practically possible for all schools to have all the required resources. For instance, learning environment that learners are exposed to a larger extent influence their ability for either success or failure. Although, even in the best learning environment autistic students can still experience challenges, which can negatively affect their development (Pratt, 2015). Udoba (2015) further argues that through reorganizing the classroom and the play fields to address requirements of special needs learners improves

the retention rate and improves their performance. Therefore it's important to establish how reorganizing the classroom set up will influence development of autistic learners.

Autistic learners need tailored instructional methods to meet their needs and thus it's important for the general trained teachers to adapt their instructional strategies to cater for their needs. With the increasing number of autistic population, public schools must come up with strategies to address the challenges they face through proper coordination, planning and allocation of resources (Kopetz & Endowed, 2012). Studies have found out that autistic children when faced with changes and or environmental stressors become emotionally uncontrollable and easily stressed (Myles, 2005). Therefore, an environmental accommodation in the learning environment is paramount to calm their nervous systems by eliminating unnecessary noise and visual disturbance (Murray *et al.*, 2009).

Udoba (2014) studied to identify the challenges facing teachers when teaching special need learners. The study established that in Tanzania poor classroom environment significantly affected the performance of learners with developmental disability. In Kenya the situation is similar, for instance Kiamah (2012) study undertaken in Nairobi Kenya to establish what affected autistic children in inclusive education. Reported about half of physical resources and learning equipment in several schools were inappropriate for autistic learners. Similarly, restructuring of classroom to meet the need of the autistic learners was required. Although this is a challenge due to inadequate funding that public primary school receives from government.

Broom (2004) supports the creative use of a variety of technology for learning, since it increases the probability for the learner to learn more, better retention and improve skill

performance. Subsequently, Omar and Bidin (2015) study where ICT such as computer device, mobile device Apps and computer-based program were investigated. Established a significant improvement in autistic learners' results than when graphic and text were used. While computer base program intervention significantly increased autistic learner's ability. The use of colors effects significantly captured the attention of autistic learners. However, majority of public schools are inadequately prepared to address the needs of autistic students and it's quite alarming since many autistic students attend these schools, which may deprive them the quality education they deserve (Priory Education and Children's Services, 2017). This is because some resources and expensive and require expertise to use. It's important to assess whether in Kenya resources for the autistic are available and how adequate they are.

2.5 Learning Activities Influence on Development of Autistic Learners

Reynolds, Bendixen, Lawrence and Lane (2011) study recommended the need to critically evaluate the activities available for the autistic children. Evaluation will make it possible to identify activities which motivate autistic children. Since activities that undertaken by autistic children might not be the same as those undertaken by other children. It also noted that an activity that motivates one autistic child may elicit a different reaction from other autistic children. Furthermore McLaughlin (2017) argues that although it's recommended that autistic children should have a range of activities that they can undertake while alone. Its paramount to ensure that most of these activities increases there level of physical interaction with other kids to enable them develop social and communication skills.

Research by LeVesser and Berg (2011) established that autistic pupils engage infrequently in activities compared to the typically developing pupils. It also established art and craft activities have a positive influence on the autistic children development. It improves learning and development of these children; specifically it improves the pupil concentration, communication and reduces anxiety. Consequently, physical activities such as sports have been established to reduce autistic learner's aggressiveness and anxiety while at the same time increasing motor skills as well as the social skills. However, as observed by LeVesser and Berg (2011) in some instances it might be difficult for autistic children to engage in sports. It's therefore paramount to have a number of activities that autistic learners can engage in.

Studies have established that when dealing with autistic pupils the program being used should be effective. Where by the activity should capture the interest of the student. Ensuring the routine of the activities are maintained to a larger extent will ensure there is predictability which is critical. Likewise activities being taught should involve simple steps, should also capture attention of the learner and should be ready to reinforce a given behavior (American Federation of Teachers, 2017). Repeating an activity that is undertaken by autistic pupils has been established to influence their ability to create and enhance a behavior. Therefore, teachers need to assist them by finding ways to stopping this of being obsessed with repeating a behavior and give room to learn new activities (Elliot, 2019).

A number of activities that can be adopted and utilized within and outside the classroom have been identified with the aim to promote active learning. For instance, McLaughlin (2017) research to investigate autism programs in public schools. The study established

that for learning activities adopted to be successful, it should be conducted in a conducive environment and not in a chaotic classroom environment. It should also ensure the teacher can offer one on one attention and activities should be tailored to learners needs. For example the activities should ensure it minimizes injurious behavior or making eye contact. The activities that autistic children can engage in include but not limited to swinging, rolling on safe grounds and listening to music or watching videos. The goal of these activities should be to develop and enhance communication skills such as reading, writing, sign language and to be able to point at objects.

As noted by Goodman and Williams (2017) several learning strategies have been established that can be employed to autistic students. The strategies aims to improve academic and social skills while reducing self-stimulatory behaviors. However, it has been observed that autistic children often play with toys inappropriately as viewed by their peers in an inclusive classroom, a factor which leads to segregation. Therefore, it's important for the teacher to provide them with pictures and premade objects and show them how to use the objects during leisure time. Since majority of autistic children have challenges in creating original ideas, provision of visual objects gives them something to copy from. The activities within the classroom should enhance student focus. Therefore providing them with boards with only vital information on it is critical to ensure they remain engaged in the classroom. Reading from a distance is also a good way to help autistic student develop communication skills and improve their attention (Vicker, 2010). Although from literature several learning activities have been identified. It's vital to establish which learning activities have been adopted in Kenya. At the same time reviewing the effectiveness of the learning activities adopted is equally important.

2.6 Teaching Methods Influence on Development of Autistic Learners

Teaching method refers to the principles and methods used by teachers to enable student learning. For a teaching method to be effective it must relate with the learners characteristics and meet the objective of both the learner and the teacher (Westwood, 2008). Teaching methods depend on the understanding of language and social behaviors within the classroom and this leaves autistic pupils at a significant disadvantage. Teachers and parents sometimes assume that when ASD learners are academically able, they should be able to cope with mainstream schooling which is usually not the case (Moore, 2010). When teaching autistic children a number of teaching methods can be employed that have been proven to yield positive results. One should always know that the need of one autistic learner is different from another (McLaughlin, 2017). Kopetz and Endowed (2012) noted that policies and strategies to improve the curriculum pose a major challenge in developing quality education and enhancing access to education for students with special needs.

Hughes, Combes, and Metha (2012) survey titled *"Areas of need regarding educating students with an ASD",* identified the need to have professional development for all the staff serving autistic children. It further pointed out that increasing access to the core curriculum for autistic students is critical in their development. Busby *et al.*, (2012) study while interviewing staff supporting autistic children. pointed out the need for specialized skills, collaboration among professionals and parents and the attitude towards autistic children are the key factors that need to be considered in order to enhance development of autistic children. It's clear therefore that development of autistic learner is not only a teacher's role but all the actors need to be involved.

In order to increase student achievement, the need to develop proper strategies is paramount. For example seating arrangement in class in critical. Autistic children should be allowed to seat among their peer helpers this will minimize challenging behaviors, they should also be provided with visual pictures to help them express themselves (Carmargo *et al.*, 2014). The teaching methods for autistic children need to be tailor made in consideration of the condition of an autistic learner. The technique used should include a therapeutic support to help them engage with learning, minimal changes within their environments with routine activities and mechanism to enhance social learning and interaction (Priory Education and Children's Services, 2017).

Although inclusivity is gaining acceptance in many schools, the curriculum to some extend exclude autistic learners from gainful literacy experience such as reading and story writing, drama and performing in such environment. From observation a scenario has been observed where autistic learners are exposed to different curriculum experiences from their classmates. A teacher might assign a different task to the autistic learners such as memorization while others are reading/writing poetry (Carmargo *et al.*, 2014). This concurs with UNESCO (2013) observation that curriculum is one of the major obstacles in facilitating the development of inclusion in schools. Special need learners face several challenges in education as compared to their counterparts. Thus, the curriculum must be structured and implemented in such a manner that all the learners benefit. Furthermore, Otina and Thinguri (2016) study that targeted primary schools in Kenya. The aim was to establish how well the schools were prepared to handle autistic student. The study recommended curriculum review for the benefit of not only autistic learners but also non-disabled student. The ministry of education also needs to formulate policies to address the needs of autistic children.

Mwololo (2016) opined that the evaluation methods for autistic learners need to be tailored to incorporate their challenges. Mostly the commonly used criteria tend to discriminate them and make them viewed as less intelligent compared to their peers. Therefore, curriculum which is inclusive will increase their ability to learn and develop required skills to adapt and contribute to their communities. Autistic learners like their peers are equally intelligent, creative, and productive (National Educational Association of Disabled Students [NEADS], 2015).

There are several ways to teach autistic students, but the most commonly used techniques include: The Picture Exchange Communication System (PECS) where the learners are able to communicate using cards with pictures on them (Vicker, 2010). Applied Behavior Analysis (ABA) which involves rewarding the learner for repeat behavior then the reinforcement is slowly withdrawn (Walsh, 2011). Relationship Development Intervention (RDI) is a method used to address social problems that is mostly depicted by autistic learners (Haringey Council Services, 2018). Treatment and Education of Autistic and Related Communication-Handicapped Children (TEACCH) method which involves structuring the class into separate areas for each activity, then the children are asked to make a schedule to help them move smoothly between the activities (Engelhardt, 2014).

Another technique that has been established is the SPELL (Structure, Positive approaches and expectations, Empathy, Low arousal, Links). It is a technique that can be used. This technique involves the recognition the unique needs of each autistic child and thus helps in planning and coming up with an interventions (Vicker, 2010). The techniques discuses are not the only method available but are the most commonly adopted. In some instances combination of these approaches should be developed along the special characteristics of

the learner. The approach should also be positive and enhance the learner's strength. It should also enable them discover their potential, increase their motivation and create opportunities to enable holistic development towards improving their quality of life (Haringey Council Services, 2018). Since several teaching methods for autistic children have been established, it is important to establish which teaching methods are commonly used in Kenya and their effectiveness.

2.7 Summary of Literature Reviewed

Literature reviewed establishes the attitudes of a teacher to a larger extend influence his motivation to teach an autistic child. This could be improved by raising awareness among the teachers. Teachers need to be trained either in college or in-service on how to teach special needs pupils through curriculum review especially in an inclusive classroom. The majority of autistic children have reported being bullied by peers in school or discriminated against by school management or teachers. Most institution and especially public institutions do not have sufficient resources to ensure autistic children get quality education, despite of countries globally aiming to achieve quality and accessible education to all the children. However even the effectiveness in utilizing the available resources is still a concern. Government should finance public institutions to ensure students get the required resources to support learning. Teaching methods for autistic pupils need to be tailored to address their needs. Since several teaching methods for autistic children have been established, it is important to establish which teaching methods are used in Kenya and their effectiveness. This could be through identification of evaluation criteria, use of technology and identifying their talents early enough and nurturing it. The need have holistic development of autistic learners have also been raised

to ensure their talents and abilities are unearth and utilized to change the societal view of autism and education.

2.8 Research Gap

From literature reviewed a number of studies undertaken have addressed inclusivity in public schools where regular schools as opposed to special schools are advocated (Carmargo *et al.,* 2014; Ferraioli, & Harris, 2011). Studies have been conducted to raise awareness with the intent to ensure the right for education to all children is actualized. However, it is not clear to what extend does age and gender of a teacher influences his perception towards autism. In Kenya misappropriation of funds has been observed in public primary schools, thus it's important to ascertain how it has affected the acquisition of learning resources. Although from literature several learning activities have been identified. It's vital to establish which learning activities have been adopted in Kenya. While reviewing the effectiveness of the learning activities adopted. Subsequently since several teaching methods for autistic children have been established, it is important to establish which teaching methods are used in Kenya and their effectiveness. Furthermore, a few studies relating to autism have been conducted in the Kenyan counties apart from Nairobi and Kiambu. In most of this studies few public schools have been selected for study since majority of public schools do not have dedicated autistic units in Kenya (Mutua, 2001; Asego & Abuya, 2016; Ariano, 2011).

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

In this chapter the researcher presented the methodology that was used to carry out the study. The chapter consists of the research design, target population, sampling procedures and sample size, research instruments, reliability and validity of the instruments, data collection procedures, data analysis and ethical considerations.

3.2 Research Design

Saunders, Lewis and Thornhill (2012) a research design is a plan, structure and strategy of investigation used to obtain answers to research questions and control variance. This study was descriptive survey, where survey involves the data collection from the study population to establish the status of that population with respect to the study variables (Creswell, Klassen, Plano & Smith 2011). Survey was adopted since it accommodates various approaches to data collection. The study employed quantitative and qualitative approach (McNeill, 2018). Interviewswere administered to the head teachers, questionnaires to the teachers and observation of autistic learners' resources both in and outside the classroom was undertaken. The aim was to collect information on opinions and habitual patterns and how the variables under study influence on holistic development of autistic learners in Sosiani and Central public primary schools, Uasin Gishu County, Kenya.

3.3 Research Site

A research site is the place where the study will be conducted (Johnson, Kenworthy, Beck, *et at.*, 2018). Geographically, the study was conducted in Uasin Gishu County

which is one among the 47 Counties in Kenya. Specifically, Sosiani and Central primary schools were selected for the study since they are the only schools in the county with special units for autistic pupils.

3.4 Target Population

Target population is the entire group of people, events or things that have similar characteristics that can be observed that the researcher wishes to investigate (Lavrakas, 2008). Sosiani and Central primary schools in Uasin Gishu County were selected for study since there are the only public primary schools with units for autistic pupils. The target population for the study includes 2 head teachers, 2 deputy head teachers and 32 teachers in both schools. Table 3.1 presents the target population of the study.

Table 3.1: Target Population

Public primary school	**Number of Head teachers and deputies**	**Number of teachers**
Central	2	17
Sosiani	2	15
Total	**4**	**32**

Source: County Director of Education, 2017

3.5 Sample Size and Sampling Techniques

The 2 public primary schools in Uasin Gishu County (Central and Sosiani primary schools) were selected for study since there are the only public primary schools with units for autistic pupils (County Director of Education, 2017). Subsequently, 2 head teachers, 2

deputy head teachers and the 32 teachers in these public primary schools were automatically selected hence a census method will be adopted.

3.6 Description of Research Instruments

The study used questionnaire, interview schedules, and observation to collect relevant data for the study.

3.6.1 Questionnaire for the Teachers

Questionnaire is a research instrument with series of questions used to collect data from the respondent (Burns & Bush, 2010). Standardized questionnaires were administered to all the 32 teachers. Both open and closed ended questions will be used to address all areas of interest. The self-reporting questionnaires were administered to all the teachers in the two schools. Questionnaires are useful in gathering information about a population since they are less time consuming, were less expensive and permits allows collection of data from a wider population (Mugenda, 2003). Each response item in the questionnaire was developed to address a specific research objective as depicted in appendix 2. Where section A had questions to capture the background information while section B-F captures data relating to each specific objective.

3.6.2 Interview Schedule for Head teachers and Deputy Head teachers

Interview schedule is a guide used by an interviewer when undertaking a structure interview and was used when collecting data from the 4 head teachers and their deputies. It is a suitable instrument for data collection since verbal and non-verbal information can be captured (Cohen *et al.,* 2007). Subsequently, an interview may be controlled while at the same time give space for freedom and the interviewer can probe more to deeply understand complex issues. The researcher used unstructured interview which involve a

series of structured questions and open-ended questions to obtain additional insights from the head teachers and the deputy head teacher (Gall *et al.,* 1996). The interview schedule had two sections; section one brings out the background information and the second section prompt information on association between institutional based factors and development of autistic learners in public primary schools.

3.6.3 Observation for Resources Availability

Observation method involves viewing and recording action of the study population in order to understand their behaviors and activities (Gay *et al.,* 2009). Observation method is advantageous in that there is a direct contact with the study population (Zechmeister, Shauhnessy, & Zechmeister, 2009). It was used to collaborate the responses in questionnaires and from the interview. The researcher was guided by an observation guide to observe the institutional factors under study. These includes: presence of a suitable playground, learning resources, buildings, teachers support, teaching methods and literacy ability (read and write) of autistic learners, if they support the needs of autistic learners. The researcher observed a lesson in progress and learning resources in the two public primary schools within the research site.

3.7 Pilot Study

Pilot study involves a preliminary study before the actual research to test the data collection instruments (Zailinawati, Schattner & Mazza, 2006). Research instrument of this study was pre-tested in Nakuru Hill Special Public Primary School in Nakuru County. It is suitable for piloting for provided similar environment with the targeted schools that is, it also has unit for autistic learners (County Government of Nakuru, 2018). The researcher visited the school and explained to them the purpose of the

exercise. Then administered the tools to the respondents and collect them ones they are done. This enabled the researcher to identify weakness in the data collecting tool and rectify them. It also provided an opportunity to identify if the techniques that were used for data analysis were appropriate (Cooper & Schindler, 2008). Thereafter, necessary modifications were made before the actual study is conducted.

3.8 Validity and Reliability of the Research Instruments

3.8.1 Instruments Validity

Mugenda and Mugenda (2003) describe validity as the accuracy and meaningfulness of conclusions, based on a research design. It is the level of accuracy with which results are representative of the variables under study. The questionnaire was given to professionals including supervisors to verify it and suggest areas of improvement to achieve content validity. Then a final copy of the questionnaire that was improved was piloted to ensure that it remains focus, accurate and consistent with the study objectives.

3.8.2 Instrument Reliability

Russell (2013) defined reliability as an indicator of consistency of results in a test. An instrument is said to be reliable it measures a variable accurately, consistently and obtains similar results over repeated trials. To test reliability of the instrument test- retest technique will be used, which involves giving out the instrument to the same group at different time intervals. The second administration was done after a period of one week and the scores from both tests were correlated to determine their reliability. Which was tested using Cronbach’s alpha, the values ranges between 0 and 1, and a higher value more than 0.7 is considered acceptable but if less the 0.7 instruments reliability is questionable.

3.9 Data Processing and Analysis

Information from the instruments will be collated and verified for accuracy, consistency and completeness. Coding and grouping were done according to attributes analyzed using Statistical Package for Social Sciences (SPSS). Data analysis was done using descriptive statistics which included: frequencies, means, percentages and variance. While inferential statistics involved regression analysis to ascertain the relationship among the variables. The regression model is as indicated in Equation 3. Thereafter data was presented using frequency tables and charts.

$$\mathbf{Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\varepsilon}\text{……..……}\mathbf{\text{Equation 3.1}}$$

Where:

β represents the coefficients

Y represents the dependent variable (holistic development of autistic learners)

$\mathbf{X_1}$ represents teachers' perception

$\mathbf{X_2}$ represents learning resources

$\mathbf{X_3}$ represents learning activities

$\mathbf{X_4}$ represents teaching methods

ε represents the error term

3.10 Legal and Ethical Considerations

Prior to data collection the researcher obtained all the required documentation that is the university introduction letter and National Council of Science Technology and Innovation (NACOSTI) permit. The researcher explained the purpose of the research and clarify that

participation is on one's free accord. At any time, the participants were free to withdraw from the study. Respondents are free from coercion and their identity was not to be revealed. This ensured confidentiality and anonymity of the participants. The finding of the study was to be presented in a manner that does not reveal the identity of those that participated. Children were to be protected during the observation and this will be done in a non-obtrusive manner. Participants were not required to fill in their names in the questionnaire and each questionnaire was assigned unique codes.

CHAPTER FOUR

RESULTS AND ANALYSIS

4.1 Introduction

Presented in this chapter are the results and analysis of data that was collected from the study population using questionnaires, interviews and observation. Data was analyzed using both descriptive and inferential statistics; descriptive statistic involved the use of frequency and percentages, whereas inferential statistics involved the use of multiple regression models to test the study hypotheses. Thereafter, data presentation was done in line with the study objectives.

4.2 Background Information

Response rate refers to the number of individual who answered and return the questionnaire divided by the number of the respondents (Fincham, 2008). The response rate was at 94.4% translating to 34 respondents whom data was collected from, Kothari (2010) points out that a response rate of more than 75% is sufficient for the study to proceed. It necessary to collect background information of the respondents to clearly understand the characteristics of the respondents: this included their gender, age, academic qualification, period in current school, training on special needs education and teaching experience.

4.2.1 Gender

To study deemed it important to establish the gender of the respondents this aimed to ascertain the number of male and female involved in the implementation of NG-CDF projects and the results is as presented in Table 4.1

Table 4.1: Gender

Gender	Frequency	Percent
Male	12	40.0
Female	18	60.0
Total	**30**	**100.0**

From Table 4.1 majority of the respondents were female 18 (60.0%) compared to 12 (40.0%) male. This indicates that majority of teachers who teach autistic children are female in public primary schools. However the difference in number between male and female in public primary school is very small.

4.2.3 Age of Teachers

The respondents were asked to indicate their age group in order to establish which age group majority of them belonged to. The results are as indicated in Table 4.2.

Table 4.2: Age of Teachers

Age Bracket	Frequency	Percent
Below 25 years	3	10.0
26-34 years	6	20.0
35-44 years	15	50.0
35-44 years	6	20.0
Total	**30**	**100.0**

As presented in Table 4.2, majority of teachers fall in the age brackets of 35-44 years 15 (50.0%), while 26-34 and 35-44 years constituted 6 (20.0%) on each group. Age bracket below 25 years had few teachers 3 (10.0%). These points out that most of the teachers in public primary schools are over 35 years.

4.2.3 Teacher Academic Qualification

Since it's expected that a teacher must have undergone some form of training the study wanted to establish their highest level of qualification. The result was presented in Table 4.3.

Table 4.3: Teachers Academic Qualification

Highest Qualification	Frequency	Percent
Diploma	11	36.7
Degree	14	46.7
Masters	5	16.7
Total	**30**	**100.0**

As presented in Table 4.3 majority of teachers are degree holders 14 (46.7%), whereas Diploma and Master Degree holders account for 11 (36.7%) and 5 (16.7%) respectively. This indicates that the number of teachers with diploma is still high. However the number of teachers in public primary school with degree qualifications is increasing.

4.2.4 Period in Current School

The study sought to establish how long teachers teach in one primary school before being transferred. Table 4.4 presents the results.

Table 4.4: Period in Current School

Period in current school	Frequency	Percent
less than 1 year	4	13.3
1-5 years	14	46.7
6-10 years	9	30.0
over 10 years	3	10.0
Total	**30**	**100.0**

Table 4.4 indicates the period which a teacher as taught in his current school. Majority have taught in the current school for 1-5 years, followed by 6-10 years, less than 1 year and more than 10 years at 14 (46.7%), 7(30.0%), 4(13.3%) and 1 (10.0%) respectively. Thus, pointing out that teachers in public primary school are transferred when they teach for more than 5 years in one school.

4.2.5 Training in Special Need Education

To be able for teacher to teach autistic leaners it's expected that one is trained in special need education, Table 4.5 shows whether a teacher has been trained in SNE or not.

Table 4.5 Training in Special Needs Education

Trained in SNE	Frequency	Percent
Yes	16	53.3
No	8	26.7
Currently training	6	20.0
Total	**30**	**100.0**

Table 4.5 indicates that 16 (53.3%) have been trained in teaching autistic learners, 8(26.7%) have not been trained whereas 6 (20.0%) are currently undertraining. Therefore, among the teachers who teach special need learner's majority have been trained in to teach autistic learners.

4.2.6 Experience in Special Need Education

From literature reviewed a teachers experience is important when handling autistic learners. Thus this study sought to establish the teachers experience and the results is as presented in Table 4.6.

Table 4.6 Experience in Special Need Education

Experience in SNE	Frequency	Percent
Less than 5 years	4	13.3
6-10 years	9	30.0
More than 10 years	3	10.0
Total	**16**	**53.3**

The study further sought to establish from the 16 teachers who had been trained in special need education and were teaching autistic learners the number of years they have

interacted with the learners. The results is as presented in Table 4.6 which indicates that 4 (13.3%), 9(30.0%) and 3(10.0%) have experience of less than 5 years, 6-10 years and more than 10 years respectively. Therefore majority have an experience of 6-10 years.

4.3 Holistic Development of Autistic Learners

To understand the dependent variable the respondent were required to rate a 5 point Likert scale to whether they agreed or disagreed with the statements provided. The results were summarized using percentages and frequencies and presented in Table 4.7.

Table 4.7 Holistic Development of Autistic Learners

Statement on holistic development		SA	A	U	D	SD
Autistic learners can comfortably read like their peers	F	0	0	0	9	21
	%	0.0	0.0	0.0	30.0	70.0
Autistic learners can comfortably write like their peers	F	0	0	0	8	22
	%	0.0	0.0	0.0	26.7	73.3
Autistic learners can comfortably work out basic arithmetic	F	0	0	0	4	26
	%	0.0	0.0	0.0	13.3	86.7
Autistic pupils have different levels of creativity	F	22	8	0	0	0
	%	73.3	26.7	0.0	0.0	0.0
Autistic learners talents are nurtured in public primary schools	F	12	18	0	0	0
	%	40.0	60.0	0.0	0.0	0.0
Autistic learners are promoted from one level to another	F	9	21	0	0	0
	%	30.0	70.0	0.0	0.0	0.0

Table 4.7 presents the aspects relating to holistic development of autistic learners. It indicates that majority of the respondents 21 (70.0%), 22(73.3%) and 26(86.7%) of the respondents strongly disagree whereas 9(30.0%), 8(26.7%) and 4(13.3%) strongly agree that autistic learners can comfortably read, write and do basic arithmetic respectively.

However, 22(73.3%) strongly agreed and 8 (26.7%) agree that in public primary schools that autistic learners are creative while 12(40%) strongly agreed and 18(60%) agree that talents among autistic learners is nurtured. Therefore, autistic children are creative and highly talented just like their peers. When it comes to promotion to the next level 9(30%) strongly agreed and 21(70%) agree that this is usually the case. This therefore gives them an opportunity to develop academically like their peers.

4.4 Teacher Perception and Holistic Development of Autistic Learners

The first objective for this study was to establish teachers' perception influence on the holistic development of autistic learners in two public primary schools in Uasin Gishu County, Kenya. The respondent were required to rate a 5 point Likert scale to whether they agreed or disagreed with the statements provided. The results were summarized using percentages and frequencies and presented in Table 4.8.

Table 4.8 Teachers Perception on Holistic Development of Autistic Learners

Statement on teachers perception		SA	A	U	D	SD
Teachers trained to teach AL perform better	F	7	23	0	0	0
than their generally trained colleagues	%	23.3	76.7	0.0	0.0	0.0
Older teachers handle autistic learners better	F	0	0	0	24	6
than their young colleagues	%	0.0	0.0	0.0	80.0	20.0
Gender influence teachers ability to handle	F	4	24	0	2	0
AL	%	13.3	80.0	0.0	6.7	0.0
Experienced SNE teachers teach autistic	F	23	7	0	0	0
learners better that the less experienced	%	76.7	23.3	0.0	0.0	0.0
Teachers with higher level of education tend	F	5	23	0	2	0
to handle autistic learners better	%	16.7	76.7	0.0	6.7	0.0
Teachers in school with dedicated units for	F	7	20	0	3	0
AL have a positive attitude towards autism	%	23.3	66.7	0.0	10.0	0.0

The perception of teachers on holistic development of autistic learners is as indicated in Table 4.8. From data analyzed 7(23.3%) strongly agreed and 23(76.7%) agree that teachers trained to handle autistic termers perform better compared to general trained teachers. However in relation to age 24(80.0%) strongly disagree and 6(20.0%) disagree that it influence teachers perception on autism. Subsequently 28(93.3%) agree while 2 (6.7%) disagree that gender has an effect on ones perception on autistic learners. Teachers experience handling autistic learners tend to influence his perception on autism for indicated that 23(76.7%) strongly agree while 7 (23.3%) agree with this statement. 5(16.7%), 23(76.7%) and 2(6.7%) strongly disagree, disagree and agree respectively that teachers level of education influence his perception towards autistic learners. Furthermore in primary public schools where there are dedicated units for autistic learners the perception of autism is different compared to schools with no dedicated units and majority 7(23.3%) strongly agreed and 20(68.8%) agreed to this statement.

4.5 Learning Resources and Holistic Development of Autistic Learners

The second objective for this study was to investigate learning resources influence on the holistic development of autistic learners in two public primary schools in Uasin Gishu County, Kenya. The respondent were required to rate a 5 point Likert scale to whether they agreed or disagreed with the statements provided. The results were summarized using percentages and frequencies and presented in Table 4.9.

Table 4.9 Learning Resources on Holistic Development of Autistic Learners

Statements on learning resources		SA	A	U	D	SD
Teaching aids are available for teaching autistic learners	F	0	2	0	20	8
	%	0.0%	6.7%	0.0%	66.7%	26.7%
Picture books, charts are available for teaching autistic learners	F	4	26	0	0	0
	%	13.3%	86.7%	0.0%	0.0%	0.0%
Stationary (pencils, drawing books) are available for teaching autistic learners	F	17	13	0	0	0
	%	56.7%	43.3%	0.0%	0.0%	0.0%
Communication boards (white boards /Black boards, PEG boards) are available	F	7	23	0	0	0
	%	23.3%	76.7%	0.0%	0.0%	0.0%
Equipped classrooms are available for teaching autistic learners	F	0	3	0	19	8
	%	0.0%	10.0%	0.0%	63.3%	26.7%
Computers, television, tablets are available for teaching autistic learners	F	0	3	0	20	7
	%	0.0%	10.0%	0.0%	66.7%	23.3%

From Table 4.9 indicated that majority of the respondent 20(66.7%) disagree and 8(26.7%) strongly disagree pointed out that there are no enough teaching aids while only 2(6.7%) agree on the availability of teaching aids in autistic units. On the contrary 4(13.5%) strongly agree and 26(86.7%) agree that picture books were available, 17(56.7%) strongly agree and 13(43.3%) agree that stationary were also available. Similarly 7(23.3%) strongly agree, 23(76.7%) agree that communication boards were available. In relation to equipping of autistic classrooms majority 19(63.3%) disagree, 8(26.7%) strongly disagree while a few 3(10.0%) agreed, that classroom in their schools are well equipped. Similarly the situation is the same in respect to ICT where 25(66.7%) disagree, 7(23.3%) strongly disagree on availability of ICT devices while only 3(10.0%)

agree on the availability of ICT devices. Therefore how classroom is equipped or how available ICT devices are in school various from school to school.

4.6 Learning Activities and Holistic Development of Autistic Learners

The third objective for this study was to establish learning activities influence on the holistic development of autistic learners in two public primary schools in Uasin Gishu County, Kenya. The respondent were required to rate a 5 point Likert scale to whether they agreed or disagreed with the statements provided. The results were summarized using percentages and frequencies and presented in Table 4.10.

Table 4.10 Learning Activities on Holistic Development of Autistic Learners

Statement on learning activities		SA	A	U	D	SD
Games/play activities (Board and card games) are used when teaching autistic learners	F	6	20	0	4	0
	%	20.0	66.7	0.0	13.3	0.0
Writing activities are used when teaching autistic learners	F	0	5	0	19	6
	%	0.0	16.7	0.0	63.3	20.0
Collaborative activities are used when teaching autistic learners	F	0	18	5	7	0
	%	0.0	60.0	16.7	23.3	0.0
Communication activities are used when teaching autistic learners	F	9	21	0	0	0
	%	30.0	70.0	0.0	0.0	0.0
Adopting several learning activities improves learning effectiveness for autistic learners	F	9	19	2	0	0
	%	30.0	63.3	6.7	0.0	0.0
Public primary school have adequate materials to undertake learning activities	F	0	3	0	19	8
	%	0.0	10.0	0.0	63.3	26.7

From Table 4.10, majority of the respondents 6(20.0%) strongly agree and 20(66.7%) agree that games activities are used when teaching autistic learners. On the contrary, 19(63.3%) disagree, 6(20.0%) strongly disagree that writing activities are used when teaching autistic learners. This is commonly not used since autistic learners have difficulty in writing. The results whether collaborative activities are used is varied where 18(60.0%) agree, 5(10.7%) undecided and 7(23.3%) disagree. In respect to communication activities majority 9(30.0%) strongly agree and 21(70.0%) agree pointed out to adopting this technique, this is commonly utilized to enhance social development of the learners. Adopting several activities is also a common techniques utilized where 9(30.0%) strongly disagree and 19(63.3%) agree that it enhances effectiveness while teaching autistic learners. However, the respondent 19(63.3%) disagree and 8(26.7%) strongly disagree that most public primary schools have the requisite material to enhance learning activities for the autistic learners.

4.7 Teaching Method and Holistic Development of Autistic Learners

In respect to the fourth objective of this study; the respondent were required to rate a 5 point Likert scale to whether they agreed or disagreed with the statements provided. The results were summarized using percentages and frequencies and presented in Table 4.11.

Table 4.11 Teaching Methods on Holistic Development of Autistic Learners

Statement on teaching method		SA	A	U	D	SD
Picture exchange communication method is used in teaching autistic learners	F	13	17	0	0	0
	%	43.3	56.7	0.0	0.0	0.0
Applied behavior analysis method is used in teaching autistic learners	F	5	21	0	4	0
	%	16.7	70.0	0.0	13.3	0.0
Relationship development intervention method is a used teaching method	F	3	24	0	3	0
	%	10.0	80.0	0.0	10.0	0.0
TEACCH is used in teaching autistic learners	F	9	18	0	3	0
	%	30.0	60.0	0.0	10.0	0.0
Using varied teaching method promotes creativity among learners with autism	F	22	7	0	0	0
	%	73.3	23.3	0.0	0.0	0.0
Evaluation criteria used isn't discriminative to the autistic pupils	F	7	21	0	2	0
	%	23.3	70.0	0.0	6.7	0.0
Time allocated for each subject is enough and doesn't disadvantage autistic learners	F	0	3	0	6	21
	%	0.0	10.0	0.0	20.0	70.

As per Table 4.11, majority of the respondents 13(43.7%) strongly agree and 17(56.7%) agree indicates picture exchange communication is commonly used to teach autistic learners this is because autistic learners have challenges writing. Similarly 5(16.7%) strongly agree and 21(70.0%) agree that applied behavioral analysis method is also used to teach autistic learners. In respect to relationship development intervention method 3(10.0%) strongly agree and 24(80.0%) agree that it is also a common method adopted in public primary schools to help the learners improve how they relate with their peers. Furthermore treatment and evaluation of autistic and related communication-handicapped children was also used method since 9(30.0%) strongly agree and 18(60.0%) agree on its

adoption in public primary schools. Adopting varied teaching method promotes creativity among autistic learners a fact that 22(73.3%) strongly agree and 7(23.3%) agree to it. The respondent 7(33.3%) strongly agree and 21(70.0%) agree that evaluation method used is not discriminative to the autistic learners disagree for instance they are not evaluated like their peers in general set up. However in the event they are in an inclusive set up time 6(20.0%) disagree and 21(70.0%) strongly disagree that time allocated is enough and does not disadvantage autistic learners when undertaking some learning activities.

4.8 Results from the Observation schedule

Observation schedule were used to establish whether resources for autistic learners in public primary schools were available and adequate. The research himself did the observation in both schools (Sosiani and Central primary school). The results were summarized using percentages and frequencies and presented in Table 4.12.

Table 4.12 Availability of Teaching and Learning Resources

Item		Available and Adequate	Available and Not adequate	Not available
Reading books	F	2	3	0
	%	40.0%	60.0%	0.0%
Teaching aids (Flash cards, maps	F	4	1	0
and charts)	%	80.0%	20.0%	0.0%
Tables, chairs and desks	F	3	2	0
	%	60.0%	40.0%	0.0%
Playing tools (Toys and balls)	F	2	3	0
	%	40.0%	60.0%	0.0%
ICT devices (TV's, computers,	F	0	1	4
tablets, radio)	%	0.0%	20.0%	80.0%

From Table 4.12 reading books and playing tools were available and but were not adequate as pointed out by 60% of the respondents. Therefore the school management needs to find out ways on how to increase these resources. 80% of the respondent pointed out that there were adequate teaching aids for autistic learners in their schools. Hence it is a positive indicator in developing autistic learners. Surprisingly majority of the respondents 80% noted that ICT devices were not available and also not adequate. The government needs to increase such devices to enhance learning of the autistic learners especially in this technological driven era.

4.9 Results on Interview Schedule from Head Teachers and Deputy Head Teachers

Data was collected using interviews schedules from the four head teachers and their deputies from the two schools. For purposes of anonymity in respect to ethical consideration the respondents were identified as H1and H2 for the head teachers, DH1 and DH2 for the deputy head teachers. The interviews were conducted by the researcher and all the four respondents were available for the interview.

The first question on the interview schedule was to establish teachers' perceptions towards teaching learners with autism in public primary schools? Majority 4 (75%) of the respondent indicated that perception of teachers varied from one teacher to another. However they pointed out that teacher trained in SNE had a positive perception about autism compared to the general trained teachers. They noted that teacher's perception was dependent with the teachers experienced with the autistic learners. However one respondent pointed out that teacher's perceived autism as mental case. Therefore it points that awareness level among some of the teachers is still low despite public primary

schools setting up units for autistic learners. Surprisingly the respondents pointed out that majority of teachers in the autistic units were female.

The second question sought to establish what challenges in terms of learning resources do teachers in your school encounter while teaching autistic learners?. The entire respondent pointed out that most public primary schools were ill equipped to fully cater for the needs of autistic learner as compared to private special schools. However 50% further noted that there was some effort from the national government. This was in respect to providing funds to building classroom for autistic leaners and equipping the classrooms with the basic necessities such as furniture. The respondents further pointed out that they were comfortable with the furniture. Although they lamented that bespoke ICT devices need to be provided to enhance the learning process especially with the introduction of the digital learning program. ICT devices would enhance communication between the teacher and the learner.

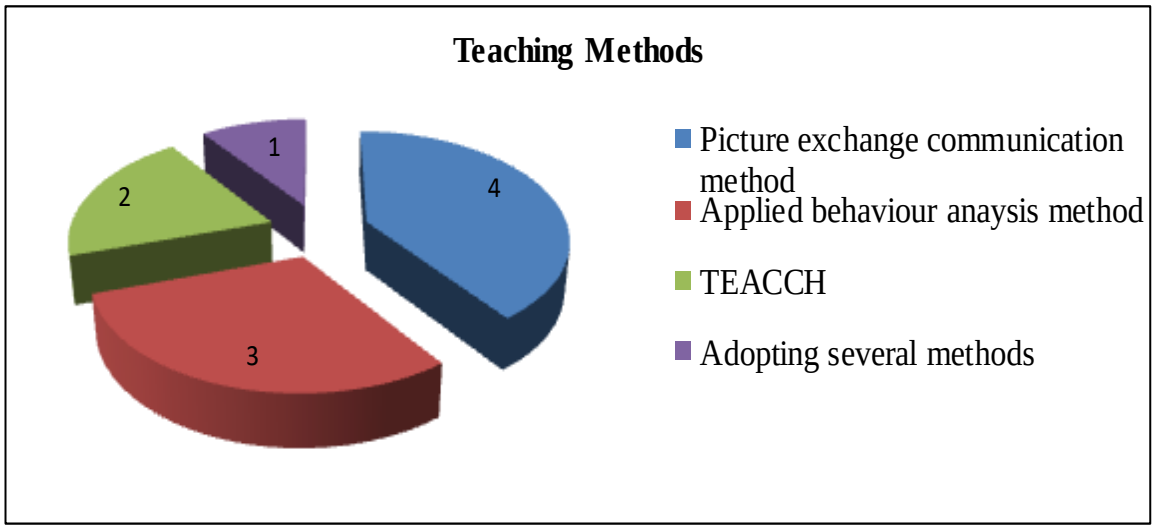
The third question sought to establish the available learning activities and how they affect the development of autistic learners in primary schools? Playing activities, arts and crafts were the most emerging theme from the respondent. Although 50% pointed that these activities should be tailored to improve the social aspect of autistic learners. Therefore more techniques need to be incorporated in public primary school. H1 commented

Although it's good to ensure that autistic children play and interact with the other pupils. Their peers need to be educated about autism. This will greatly improve their interaction and their perception towards autistic learners.

The fourth question sought to establish the teaching methods used to teach autistic learners in your school? Four commonly used teaching methods were pointed out as

presented in Figure 4.1. The figure indicates the most preferred teaching method in public primary school is the picture exchange communication method. Applied behavior analysis method and Treatment and Education of Autistic and Related Communication-Handicapped Children (TEACCH) were also used. Adopting several methods was the least used method since autistic learners prefer routine activities.

Figure 4.1 Teaching Method



4.10 Multiple Regression Analysis

The research examined the combined effect of teachers' perception, learning resources, learning activities and teaching methods on holistic development of autistic learners. The results is as presented in Table 4.13

Table 4.13: Multiple Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.661[a]	.438	.414	.32846

a Predictor (Constant), teachers' perception, learning resources, learning activities and teaching methods.

Dependent Variable: Holistic development of autistic learners.

From the results presented in Table 4.13, the relationship between institutional factors and holistic development of autistic learners was positive (R=.661). R^2=.438 indicates that 43.8% of the variation in holistic development of autistic learners is accounted for by the predictors. 56.2% is accounted for by other factors not included in the study.

4.11 Multiple Regression Coefficients

The study conducted also the statistical significance of each variable, the regression coefficient and the result is as indicated in Table 4.14.

Table 4.14: Significant Test Results for Overall Model

Model		Unstandardized coefficients		Standardized coefficients		
		Beta	**Std. Error**	**Beta**	**T**	**Sig.**
1	(constant)	.836	.345		2.410	.018
	Teachers perception	.157	.042	.293	3.810	.000
	Learning resources	.162	.041	.309	4.045	.000
	Learning activities	.175	.044	.325	4.055	.000
	Teaching methods	.287	.058	.367	4.823	.000

a Dependent Variable: Holistic Development of autistic learners

Table 4.14 indicates that teachers perception is a significant predictor of holistic development of autistic learners (t=3.810; p< 0.05), therefore **$H0_1$:** Teachers' perception has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya was rejected at 5% significance level. Learning resources is a significant predictor of holistic development of autistic

learners (t= 4.045; p< 0.05), thus **$H0_2$:** Learning resources has no significant influence on the holistic development of autistic learner in the two public primary schools in Uasin Gishu County, Kenya was rejected at 5% significance level. Learning resources is a significant predictor of holistic development of autistic learners (t= 4.055; p< 0.05), thus **$H0_3$:** Learning activities has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya was rejected at 5% significance level. Teaching method is a significant predictor of holistic development of autistic learners (t= 4.823; p< 0.05), thus **$H0_4$:** Teaching methods has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya was rejected at 5% significance level. The individual regression coefficients results from Table 4.14 of all the independent variables is as presented in Equation 4.1.

$Y=0.836+0.157X_1+0.162X_2+0.175X_3+0.287X_4+\varepsilon$…….……Equation 4.1

Y represents the dependent variable (holistic development of autistic learners)

X_1 represents teachers perception

X_2 represents learning resources

X_3 represents learning activities

X_4 represents teaching methods

ε represents the error term

From the results a unit increase in teachers perception enhances holistic development of autistic learners by 0.158, while a unit increase in learning resources enhances holistic development of autistic learners by 0.162, also a unit increase in learning activities enhances holistic development of autistic learners by 0.175 and a unit increase in teaching method enhances holistic development of autistic learners by 0.287. The results

further indicate that in the absence of institutional factors, holistic development of autistic learners will be 0.839 units. Among all the four factors, a unit change teaching method had the greatest influence on holistic development of autistic learners. Therefore public schools should enhance the effectiveness of teaching methods for autistic learners.

CHAPTER FIVE

DISCUSSION, SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presented the discussions, summary of the findings, conclusions and recommendations that aims to enhance holistic development of autistic learners. Finally it suggests areas for further studies. The study objective was to establish institutional factors influencing holistic development of autistic learners: A case of two public primary schools in Uasin Gishu County, Kenya. Whereas the specific objectives were: to establish how teacher's perceptions influence holistic development of autistic learners, to investigate how learning resources influence on holistic development of autistic learners, to establish how learning activities influence holistic development of autistic learners and to identify how teaching methods influence holistic development of autistic learners.

5.2 Discussion of Findings

The analysis and results from chapter four are discussed in this section and are arranged as per the five sections in the questionnaire. That is the background information and the four objectives.

5.2.1 Background Information of Respondents

The researcher sought to establish the background information of teachers who formed the main source of information in this study. The major areas included gender, age of teachers, teachers' academic qualification, period in current school, training is special need education and experience in special need education. 60% of teachers who teach autistic children in public primary schools are female. This points out that there exists gender imparity among teachers teaching autistic children. This concurs with Park,

Chitiyo, and Choi (2010) study which reported there is a positive attitude towards autistic children in teachers who had been trained to handle special need students, furthermore, female teachers and the more experienced teachers held a more positive view compared to the male. This could be the reason for the high number of female teachers teaching autistic learners in public primary schools in Uasin Gishu County and a pointer to some gender inequality which is closely similar to studies by Andiema and Kemboi (2013) and Otto (2014) who establish female and male ratio of 4:1. Therefore there is need to ensure that male teachers are encouraged to take up the role of teaching autistic children. Since autism affects both gender.

Half of the teachers in public primary school are between the ages of 35-44 years. This implies that the teachers have acquired experience in handling autistic learners and therefore they can better handle autistic learners. Therefore they are likely to apply effective teaching techniques that they have tried and have seen working. Murungi (2003) study pointed out that in Kenya about 60% of teachers were over 30 years of age. However Otto (2014) argues that age of a teacher doesn't have a significant influence on the teacher's performance rather the teachers experience and level of training. This is clearly pointed out in the study were 30% of the teachers are below 35 years.

Majority of teachers 82.7% are degree and Diploma holders and among this 46.7% are degree holders. This indicates that the number of teachers in public primary school with degree qualifications is increasing. The finding is in agreement with Glashan, Mackay and Grieve (2004) who in their study have established that a well-trained teacher is in a better position to handle autistic pupils, since it makes the teacher more confident and their overall attitude to autistic children tend to be positive. Furthermore Sansosti and

Sansosti (2012) established that teachers with inadequate knowledge of autistic children due to limited training and exposure were bias to such population. Therefore teachers need to be encourage to study and gain more knowledge to enhance their performance. However education alone cannot improve the performance of a teacher rather experience is equally important.

In respect to a period a teacher as taught in current school. 76.7% of the teachers have taught in the current school for 1-10 years. 33.3% pointed out to have taught the current school for more than ten years or less than one year. This implies that majority of teachers have got enough time to interact and understand better the learner and a particular school. This tend to support Priory Education and Children's Services (2017) research that revealed more than 70% of the teachers hold the opinion that training is insufficient to handle a range of special needs student in the same classroom. However interacting with the learner on a day to day basis is important to improve the teachers' performance. Therefore teachers who teach autistic learners should not be frequently transferred to enable them build a strong bond with the learners. It is critical that teachers aren't frequently transferred since autistic learners do not easily adopt to sudden change or frequent changes. Development of autistic children will be enhanced is they are given an opportunity to engage in routine activity then slowly new activities are introduced.

About half of the teachers teaching autistic learners pointed out to have been trained on handling special need learners. This implies that they have the prerequisite theoretical knowledge on autism. The study further establishes that only 40% had experience of over 6 years. This indicates that there is high number of trained teachers compared to experienced teachers. The imbalance might affect the learning process as pointed out by

Williams, Schroeder, Carvalho and Cervantes (2011) studies which established that teacher's knowledge regarding autism might not always be accurate, a factor which might negatively affect the learning process and to avoid this exposure is critical. For instance research Pruitt, (2011) found out that majority of teachers are ill-equipped to guide autistic children in the area of literacy, since most of them aren't exposed to such cases only until presented with such a learner in a classroom. Therefore much need to be done to ensure the number of trained teachers in the area of SNE and specifically on autism is increased.

5.2.2 Teachers Perception and Holistic Development of Autistic Learners

This section presented the discussion on the first objective for this study; to establish teachers' perception influence on the holistic development of autistic learners in two public primary schools in Uasin Gishu County, Kenya. From data analyzed 7(23.3%) strongly agreed and 23(76.7%) agree that teachers trained to handle autistic learners perform better compared to general trained teachers. This implies that there is a positive perception about autism from trained teachers compared to the general teachers. Nicole (2015) study observed teacher's knowledge about autism is not always accurate. However, the level of training and exposure of the teacher to a larger extend influence his knowledge about autism. Similarly in relation to age 24(80.0%) strongly disagree and 6(20.0%) disagree that it influence teachers perception on autism. Therefore when recruiting teachers to teach autistic learners age should be key factor of concern. However gender in some instance should be considered since 28(93.3%) agree that gender has an effect on ones perception on autistic learners. The finding on gender concurs with Park, Chitiyo, and Choi (2010) study which reported a positive attitude towards autistic children in teachers who had been trained to handle special need

students. Furthermore, female teachers and the more experienced teachers held a more positive view.

Teachers experience handling autistic learners tend to influence his perception on autism, 23(76.7%) strongly agree and 7 (23.3%) agree with this statement. Hence an experienced teacher will tend to handle autistic children better. For instance, a study by Sansosti and Sansosti (2012) established that teachers with inadequate experience due to limited training and exposure were bias to the autistic population. 5(16.7%) and 23(76.7%) strongly disagree respectively that teachers level of education influence his perception towards autistic learners. This implies that perception is not majorly influenced by ones level education. The finding on level of education contradicts Glashan, Mackay and Grieve (2004) study that established a well-trained teacher is in a better position to handle autistic pupils, since it makes them more confident and their overall attitude to autistic children tend to be positive. Therefore, education alone does not affect one perception on autism as was opined a few years ago.

Furthermore, in primary public schools where there are dedicated units for autistic learners 7(23.3%) strongly agreed and 20(68.8%) agreed that the perception of autism is different compared to schools with no dedicated units. Although a study by Ferraioli, and Harris (2011) recommended including autistic children in general classrooms. Whereas Carmargo *et al.,* (2014) opined that not only learners with mild cases should be included in mainstream classrooms but also the ones with severe cases provided effective strategies and enough support are put in place. Foster and Pearson (2012) argues that inclusivity might not have future effects such as reduction in the drop-out rate, class attendance for a given period of time, development of cognitive functions, sensory, or

motor skills necessary for normal functioning. Therefore to its important that schools build dedicated units to handle autistic learners.

Significant test results for overall model, indicates that teachers perception is a significant predictor of holistic development of autistic learners ($t=3.810$; $p< 0.05$), therefore $H0_1$: Teachers' perception has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya was rejected at 5% significance level. Hence to enhance holistic development of autistic children, it's vital that teachers have a positive perception towards autistic children. However, Stidham (2015) study indicated there was no significant relationship between a teacher's perceptions and the teacher's training or education on autism. In addition it established that general education teachers had fairly favorable perceptions in educating autistic learners in an inclusive classroom. From this study it's quite evident that holistic development cannot be attained when teachers' perception on autism is negative.

5.2.3 Learning Resources and Holistic Development of Autistic Learners

This section presented the discussions on the second objective. The objective was to investigate learning resources influence on the holistic development of autistic learners in two public primary schools in Uasin Gishu County, Kenya. Majority of the respondent 20(66.7%) disagree and 8(26.7%) strongly disagree that there are no enough teaching aids teaching aids in autistic units. This contradicts the finding of a study undertaken by Wanjiku, Karugu and Karangwa (2014) in Kenya to ascertain the strategies used by teachers while teaching autistic learners. It established that teaching resources were inadequate and adversely affected autistic students learning. Although this might have

been the case a few years back, currently teaching aids are available although might not be adequate.

Similarly 4(13.5%) strongly agree and 26(86.7%) agree that picture books were available. 17(56.7%) strongly agree and 13(43.3%) agree that stationary were also available. While 7(23.3%) strongly agree, 23(76.7%) agree that communication boards were available. Therefore there is an improvement in availability of learning resources. Thus it's expected that performance of autistic learners will be greatly improved. There is also a positive relationship between learners' performance and availability of teaching resources, since learning resources contribute significantly to the learning of abstract concepts and ideas (Momoh, 2010). For instance a research conducted by Okongo, Ngao, Rop and Nyongesa (2015) revealed that availability of adequate learning resources such as textbooks, teaching charts, stationary, audiovisual and electronic instructional materials affect the development of autistic children.

In relation to equipping of autistic classrooms majority 19(63.3%) disagree, 8(26.7%) strongly disagree while a few 3(10.0%) agreed, that classroom in their schools are well equipped and affects development of autistic learners. This is in agreement with Udoba (2014) study that established in Tanzania poor classroom environment significantly affected the performance of learners with developmental disability. Another study in Kenya by Kiamah (2012) undertaken in Nairobi Kenya. Reported about half of physical resources and learning equipment in several public schools were inappropriate for autistic learners. The study finally recommended the need of restructuring the classroom to meet the need of autistic learners though noted could be hindered by the inadequate funding

public schools receives from government. To enhance development of autistic learners Ogot (2005) pointed out the need of organizing the classroom and the play fields to address requirements of autistic learners; thus improving the retention rate and their performance.

Although, Broom (2014) supports the creative use of a variety of technology for learning; since it increases the probability of the learner to learn more, betters the retention ability of the learner and improve the learner skill performance. In respect to ICT this study established that 25(66.7%) disagree and 7(23.3%) strongly disagree on availability of ICT devices in public primary schools. The finding concurs Priory Education and Children's Services (2017) research that pointed out majority of public schools had inadequate ICT devices to address the needs of autistic students and it's quite alarming since many autistic students attend these schools, which may deprive them the quality education they deserve. While Bray, Brown and Green (2014) and Lyons (2005) studies noted that some ICT resources and expensive and require expertise for maximum utilization. Thus it's important that schools are provided with adequate and relevant ICT devices to enhance learning of autistic learners.

The significant test results for overall model, indicates that Learning resources is a significant predictor of holistic development of autistic learners ($t= 4.045$; $p< 0.05$), thus $H0_2$: Learning resources has no significant influence on the holistic development of autistic learner in the two public primary schools in Uasin Gishu County, Kenya was rejected at 5% significance level. This finding is in agreement with Njoroge (2015) research where Pearson's product moment of correlation analysis indicated that learning resources had a significant influence on performance of learners with special needs in

public primary schools with ($r = 0.338$, $\alpha = 0.05$). However the relationship was moderate since $r = 0.338$. Thus is important that public primary school provide adequate learning resources for the autistic learners.

5.2.4 Learning Activities and Holistic Development of Autistic Learners

The third objective for this study was to establish learning activities influence on the holistic development of autistic learners in two public primary schools in Uasin Gishu County, Kenya. From Table 4.10, majority of the respondents 6(20.0%) strongly agree and 20(66.7%) agree that games activities are used when teaching autistic learners. This is commonly used since it helps the learner build communication and social skills. On the contrary, 19(63.3%) disagree, 6(20.0%) strongly disagree that writing activities are used when teaching autistic learners. This is commonly not used since autistic learners have difficulty in writing. For instance Sykes and Geier (2013) observed that children diagnosed with autism often struggle in reading and writing skills and therefore the teacher should always strive to adopt simple activities that can slowly help them develop this skills especially activities that utilizes a lot of visual image.

18(60.0%) agree, that collaborative activities are used and aims at improving their social skills. This concurs with McLaughlin (2017) who argued that although it's recommended that autistic children should have a range of activities that they can undertake while alone. Its paramount to ensure that most of these activities increases there level of physical interaction with other kids to enable them develop social and communication skills. Surprisingly, all the 30(100.0%) agreed that communication activities is commonly utilized to enhance social development of the learners. McLaughlin (2017) research that established the goal of these activities should be to develop and enhance communication

skills of autistic children such as reading, writing, sign language and to be able to point at objects. Thus communication and collaborative activities are critical learning activities for the autistic learners.

Adopting several activities is also a common techniques utilized where 9(30.0%) strongly disagree and 19(63.3%) agree that it enhances effectiveness while teaching autistic learners. For instance, Mwololo (2016) opined that the learning activities for autistic learners need to be tailored to incorporate their challenges. However, the respondent 19(63.3%) disagree and 8(26.7%) strongly disagree that most public primary schools do not have the requisite material to enhance learning activities for the autistic learners. However, according to (Priory Education and Children's Services (2017) majority of public schools are inadequately prepared to address the needs of autistic students and it's quite alarming since many autistic students attend these schools, which may deprive them the quality education they deserve. Teachers who teach autistic learners need to be creative enough come up with tailor made activities for the autistic learners.

Significant test results for overall model, indicates that. learning activities is a significant predictor of holistic development of autistic learners ($t= 4.055$; $p< 0.05$), thus $H0_3$: Learning activities has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya was rejected at 5% significance level. It is clear from this study finding that to attain holistic development of autistic learners then role of learning activities cannot be underscored.

5.2.5 Teaching Methods and Holistic Development of Autistic Learners

The fourth objective for this study was to identify the teaching methods influence on the holistic development of autistic learners in two public primary schools in Uasin Gishu

County, Kenya. Majority of the respondents 13(43.7%) strongly agree and 17(56.7%) agree that picture exchange communication is commonly used to teach autistic learners since autistic learners have challenges in writing. Vicker (2010) pointed out that The Picture Exchange Communication System (PECS) where the learners communicate using cards with pictures on them is one of the most commonly used teaching methods. Its effectiveness results from the fact majority of autistic learners may have challenges in speech. Therefore, this technique can be used to assist autistic pupils develop their social communication skills and language, and to help them understand the environment around them.

Similarly 5(16.7%) strongly agree and 21(70.0%) agree that applied behavioral analysis method is also used to teach autistic learners. Walsh (2011) notes that Applied Behavior Analysis (ABA) involves rewarding the learner when is able to repeat a behavior. Thereafter the reinforcement is slowly withdrawn when the learner has learnt to perform the action or activity. In respect to relationship development intervention method 3(10.0%) strongly agree and 24(80.0%) agree that it is also a common method adopted in public primary schools to help the learners improve how they relate with their peers. Gustein, Burgess and Montfort (2007) study indicated that that Relationship Development Intervention (RDI) is a method used to address social problems which are usually portrayed by autistic children. Furthermore treatment and evaluation of autistic and related communication-handicapped children was also a commonly used method where 9(30.0%) strongly agree and 18(60.0%) agree on its adoption in public primary schools. The findings is in agreement with Mesibov, Shea and Schopler (2014) study that pointed out the Treatment and Education of Autistic and Related Communication-Handicapped Children (TEACCH) method is an effective method. This method involves

structuring the class into separate areas for each activity then the children are asked to make a schedule to help them move smoothly between the activities. The study established that the four commonly used teaching methods in public primary schools in Kenya are TEACCH, PECS, ABA and RDI.

Haringey Council Services (2018) indicates that combination of several approaches should be adopted and encouraged. It enhances the child strength, enables the children discover their potential, increase their motivation and create opportunities to enable holistic development towards improving their quality of life. This is evident in this study were 22(73.3%) strongly agree and 7(23.3%) agree that adopting varied teaching method promotes creativity among autistic learners. The respondent 7(33.3%) strongly agree and 21(70.0%) agree that evaluation method used is not discriminative to the autistic learners disagree for instance they are not evaluated like their peers in general set up. However in the event they are in an inclusive set up 6(20.0%) disagree and 21(70.0%) strongly disagree that time allocated is enough and doesn't disadvantage autistic learners when undertaking some learning activities.

Significant test results for overall model, indicates that. Teaching method is a significant predictor of holistic development of autistic learners ($t= 4.823$; $p< 0.05$), thus $H0_4$: Teaching methods has no significant influence on the holistic development of autistic learners in the two public primary schools in Uasin Gishu County, Kenya was rejected at 5% significance level. Therefore the finding points out the need to ensure effectiveness in teaching methods adopted in teaching autistic learners in public primary schools to ensure it meets the learning objective.

5.3 Conclusions

The study concluded that most of the teachers in public primary schools are over 35 years and have hold degree qualification. Whereas among the teachers who teach special need learner's majority have been trained in to teach autistic learners and have an experience of 6-10 years. Although majority of public primary schools have SNE units the study conclude that teacher do not have enough knowledge on handling autistic learners since few public schools have dedicated units for autistic learners. Just like other learners autistic learners are creative and highly talented, it is the responsibility of the school to provide them with experienced well trained teachers and the requisite items to enable them exploit their talents. Teachers trained to handle autistic termers perform better compared to general trained teachers. However, more sensitization and trainings need to be done as autism is concerned. Surprisingly the study concluded that age and gender does not significantly influence ones perception on autistic learners.

Teaching aids were available in public primary schools prepared by the teacher. Picture books, stationary and communication boards were also available since they were provided by the national government. However, classrooms were ill-equipping lacked the required ICT devices, thus the government needs to increase such devices to enhance learning of the autistic learners. The study conclude that since autistic children have challenges in writing and reading then public primary schools need to provide enough space to facilitate games activities for autistic learners. In most schools teachers adopted varied techniques to enhance learning and more emphasis were placed in activities that enhance collaboration among the learners. In respect to teaching method the study concluded that picture exchange communication, applied behavioral analysis, relationship

development intervention method is the commonly used to teach autistic learners, treatment and evaluation of autistic and related communication-handicapped children was also used method. Furthermore, adopting varied teaching method promoted creativity among autistic learners. From the four factors studied, the study concluded that teaching method had the greatest influence on holistic development of autistic learners. Therefore there is need to enhance the effectiveness of teaching methods for autistic learners.

5.4 Recommendations

The study recommended that public primary schools when recruiting teachers to teach autistic learners, should consider not only academic qualification but greater consideration should be placed on experience and exposure of the teacher. This will positively influence the teacher's perception towards autistic learners and therefore increase the teachers' performance. The study further established that public primary school have inadequate ICT devices to facilitate learning in autistic units to the require standards. The study recommended that the national government should facilitate the acquisition of such devices to the schools. The government should also increase the number of well-equipped autistic units in the county to ensure autistic learners have access to quality education.

Although autistic teachers adopted several teaching methods and activities while teaching autistic learners. The study recommended that adoption of tailored teaching methods and techniques for effectiveness. To ensure the need of each and every autistic learner was catered for. However emphasis should be placed in activities and methods that enhance communication, creativity and talent development and social development. Other scholars have argued the need to have autistic learner in the same classroom with other

students. This study recommended the need to have separate units for autistic learners but they provided with sufficient time to interact with their peers in other activities like games.

5.5 Suggestions for Further studies

Further research should be undertaken in respect to:

1. This study should be replicated in other areas to establish if this study findings represent a national view for purpose of generalizability.
2. A study should be undertaken to ascertain the influence of digital learning program on development of autistic learners.
3. A study to assess the influence of the Competence Based Curriculum (CBC) on holistic development of autistic learners.

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APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

Africa Nazarene University,
Department of Education,
P.O Box 53067-00200,
Nairobi.

Dear respondent,

I am a student at the Africa Nazarene University, pursuing a Master of Education in Special Needs. I am conducting a study on **Institutional factors influencing holistic development of autistic learners: A case of two public primary schools in Uasin Gishu County.**

Attached please, find a questionnaire meant for gathering information for this study. Kindly fill the questionnaire honestly and to the best of your knowledge. All responses will be handled with absolute confidence and will be used solely for the purpose of this study.

Thank you,

Yours Faithfully,

GLADYS CHEBET
Cell Phone: 0726140431
Email:gladyschebet522@gmail.com

APPENDIX II: TEACHERS' QUESTIONNAIRE

Thank you for finding time to participate in this study. Do not write your name anywhere on this paper and fill in your responses in the SPACES PROVIDED for each question or TICK INSIDE the appropriate box.

Section A: Background Information

1. What is your gender? Male [ ] Female [ ]

2. What is your age bracket?

   Below 25 yrs. [ ] 26-34yrs [ ] 35-44yrs [ ] above 45 [ ]

3. What is your highest academic qualification?

   P1 Diploma [ ] Degree [ ] Masters [ ] other specify _____

4. How long have you been a teacher in your current primary school?

   Less than a year [ ] 1-5yrs [ ] 6-10yrs [ ]

   11-15yrs [ ] 16-20yrs [ ] over 20yrs [ ]

5 Have you been trained in special needs education?

   Yes [ ] No [ ] currently being trained [ ]

6. If trained, what is your teaching experience in years as a special education trained teacher?

   1- 5 years [ ] 6 -10 years [ ] 10 -15 years [ ] Over 15 years [ ]

Section B: Holistic Development of Autistic Learners

Please indicate whether you SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, or SD-Strongly Disagree, with the following statements

No	Statement on holistic development	SA	A	U	D	SD
1	Autistic pupils can comfortably read like their peers					
2	Autistic pupils can comfortably write like their peers					
3	Autistic learners can comfortably work out basic arithmetic like their peers					
4	Autistic pupils have different levels of creativity					
5	Autistic pupils talents are nurtured in public primary schools					
6	Autistic learners are promoted from one level to another in public primary school					

Section C: Teachers Perception and Development of Autistic Learners

Please indicate whether you SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, or SD-Strongly Disagree, with the following statements

No	Statement on teachers perception	SA	A	U	D	SD
1	Teachers specifically trained to teach autistic pupils perform better than the general trained colleagues					
2	More experienced teachers handle autistic pupils better than their less experienced colleagues					
3	Gender influence teacher's ability to handle autistic pupils					
4	Experienced special needs teachers teach autistic pupils better than the less experienced					
5	Teachers with higher level of education tend to handle autistic learners better					
6	Teachers in schools with dedicated units for autistic learners have positive attitude towards autism					

Section D: Learning Resources and Development of Autistic Learners

Please indicate whether you SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, or SD-Strongly Disagree, with the following statements

	Statements on learning resources	**SA**	**A**	**U**	**D**	**SD**
1	Teaching aids (Activities of Daily Living materials, letter and number boards, shape boards) are available for teaching autistic learners					
2	Picture books, charts are available for teaching autistic learners					
3	Stationary (crayons, pencils, drawing books) are available for teaching autistic learners					
4	Communication boards (white boards/ Blackboards, PEG boards)					
5	Equipped classrooms are available for teaching autistic learners					
6	Computers, Television, Tablets, are available for teaching autistic learners					

Section E: Learning Activities and Development of Autistic Learners

Please indicate whether you SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, or SD-Strongly Disagree, with the following statements

	Statement on learning activities	**SA**	**A**	**U**	**D**	**SD**
1	Games / play activities (Board and card games) are used when teaching autistic learners					
2	Writing activities are used when teaching autistic learners					
3	Collaborative activities are used when teaching autistic learners					
4	Communication activities are used when teaching autistic learners					
5	Adopting several learning activities improves learning effectiveness for autistic learners					
6	Public primary schools have adequate materials to undertake the requisite learning activities					

Section F: Teaching Method and Development of Autistic Learners

Please indicate whether you SA-Strongly Agree, A-Agree, U-Undecided, D-Disagree, or SD-Strongly Disagree, with the following statements

No	**Statements on teaching method**	**SA**	**A**	**U**	**D**	**SD**
1	Picture exchange communication method is used in teaching autistic learners					

2	Applied behavior analysis method is used in teaching autistic learners					
3	Relationship development intervention method is used in teaching autistic learners					
4	Treatment and Education of Autistic and Related Communication-Handicapped Children (TEACCH) method is used in teaching autistic learners					
5	Using varied teaching methods promotes creativity among learners with autism					
6	Evaluation criteria used is non-discriminative to the autistic pupils?					
7	Time allocated for each subject is enough and doesn't disadvantage the autistic pupils?					

The end

Thank you

APPENDIX III: INTERVIEW SCHEDULE FOR THE HEAD TEACHERS

Fill in responses in the SPACES PROVIDED for each question or TICK INSIDE the appropriate box. (**SA**-Strongly Agree, **A**-Agree, **U**-Undecided, **D**-Disagree, or **SD**-Strongly Disagree)

Section A: Background Information

1. What is your gender? Male [ ] Female [ ]

2. What is your age bracket?

   Below 25 yrs. [ ] 26-34yrs [ ] 35-44yrs [ ] above 45 [ ]

3. What is your highest academic qualification?

   P1 Diploma [ ] Degree [ ] Masters [ ] other specify _____

4. How long have you been a head teacher in your current primary school?

   Less than a year [ ] 1-5yrs [ ] 6-10yrs [ ]

   11-15yrs [ ] 16-20yrs [ ] over 20yrs [ ]

5 Have you been trained in special needs education?

   Yes [ ] No [ ] currently being trained [ ]

6. If trained, what is your teaching experience in years as a special education trained teacher?

   1- 5 years [ ] 6 -10 years [ ] 10 -15 years [ ] Over 15 years [ ]

Section B: Institutional Factors and Development of Autistic Learners

1. What are the teachers' perceptions towards teaching learners with autism in public primary schools?

……

……

……..

2. What challenges in terms of learning resources do teachers in your school encounter while teaching autistic learners?

.....……..…

……

……..……

3. What are some of the learning activities that affect holistic development of autistic learners in primary schools?

.....

.....

4. Which teaching methods would you prefer to be used to teach autistic learners in your school?

……

……

……..……

The end

APPENDIX IV: OBSERVATION SCHEDULE FOR RESOURCES

The researcher will have to spend some time in the classroom and the play fields to observe the following indicators.

No	**Item**	**Available and adequate**	**Available not adequate**	**Not available**
1	Reading books			
2	Teaching aids (Flash cards, communication boards, maps, charts)			
3	Tables, chairs and desks			
4	Playing tools (Toys, balls)			
5	ICT devices (TV's, computers, tablets, calculators, radio)			

APPENDIX V: ANU RESEARCH AUTHORIZATION LETTER

AFRICA NAZARENE
UNIVERSITY

8th July, 2019

RE: TO WHOM IT MAY CONCERN

Chebet Gladys (14J06CMED008) is a bonafide student at Africa Nazarene University. She has finished her course work and has defended her thesis proposal entitled: - "*Institutional Factors Influencing Holistic Development of Autistic Learners: a case of two Public Primary Schools in Uasin Gishu County, Kenya*".

Any assistance accorded to her to facilitate data collection and finish her thesis is highly welcomed.

D. V. C. ACADEMIC
AFRICA NAZARENE UNIVERSITY
P. O. Box 53067
Nairobi Kenya

Prof. Orpha Ongiti
Ag. DVC Academic Affairs.

APPENDIX VI: RESEARCH PERMIT FROM NACOSTI

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **562855**

Date of Issue: **14/August/2019**

RESEARCH LICENSE



This is to Certify that Ms.. Gladys Chebet of Africa Nazarene University, has been licensed to conduct research in Uasin-Gishu on the topic: Institutional factors influencing holistic development of autistic learners: A case of two public primary schools in Uasin Gishu County. for the period ending : 14/August/2020.

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562855

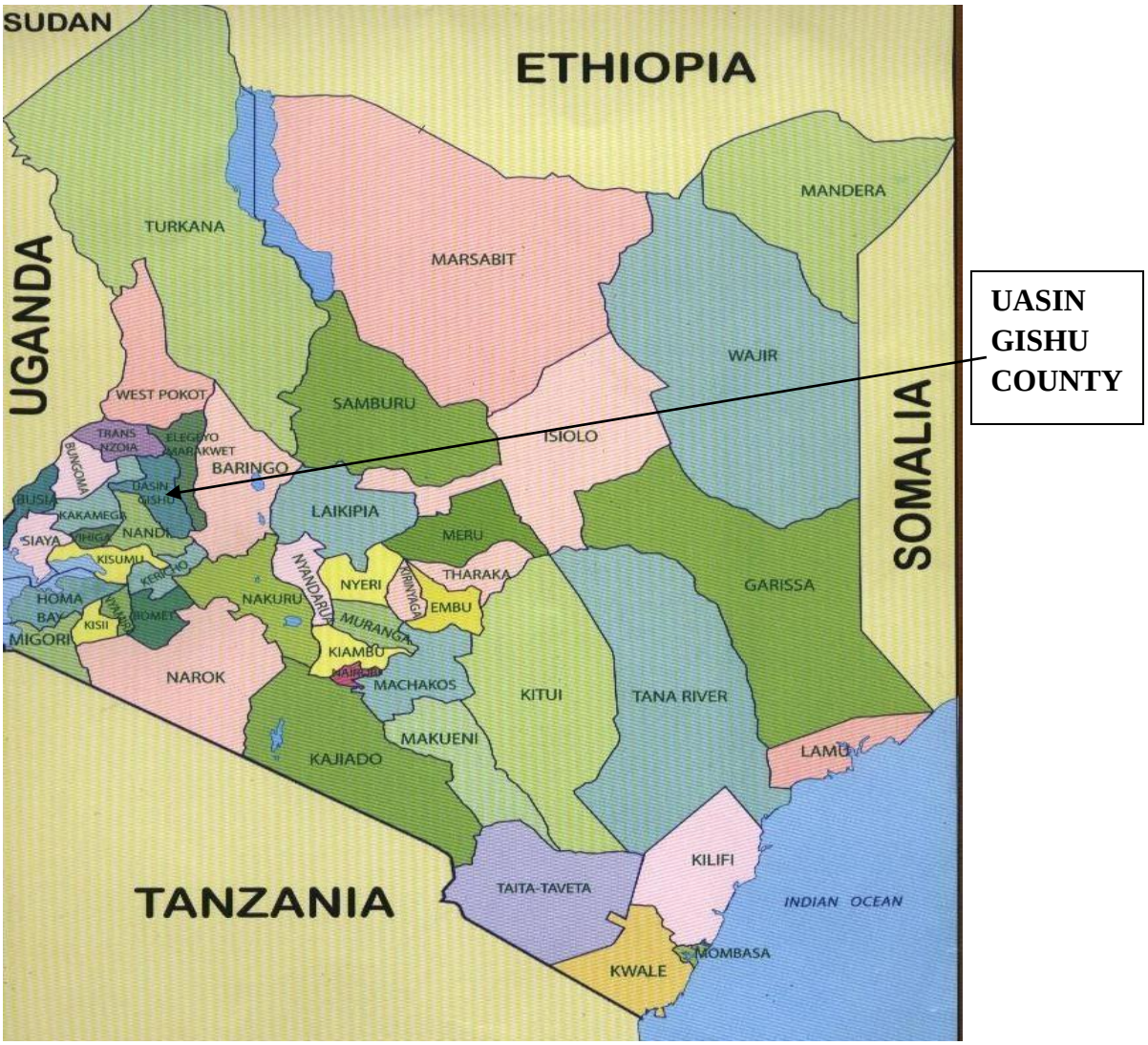
Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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APPENDIX VII: MAP OF KENYA SHOWING UASIN GISHU COUNTY



APPENDIX VIII: MAP OF UASIN GISHU COUNTY

