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**ESTABLISHING INSTRUCTIONAL STRATEGIES ON
TRAINING LEARNERS WITH AUTISM DAILY LIVING SKILLS
IN SPECIAL UNITS AND SCHOOL, MAKUYU DIVISION,
MURANGA COUNTY, KENYA.**

BY

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**A RESEARCH THESIS SUBMITTED FOR THE DEGREE OF
MASTER OF EDUCATION (SPECIAL NEEDS EDUCATION) IN
THE SCHOOL OF EDUCATION OF KENYATTA UNIVERSITY.**

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION

I dedicate this thesis work to my husband, Peter and son Samuel, for their support, patience and understanding during my studies.

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I will forever be grateful to the Almighty God, who granted me special grace to cope with the demands of this thesis, despite many other responsibilities that competed for my precious time.

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ABBREVIATIONS AND ACRONYMS

ANPPCAN	African Network for the Prevention and Protection against Child Abuse and Neglect.
APQI	Autism Program Quality Indicators
ASD	Autism Spectrum Disorders.
ASK	Autism Society of Kenya
DLS	Daily Living Skills.
DVS	Daily Visual Schedule.
IDEA	Individuals with Disabilities Education Act.
IEP	Individualized Educational program.
NCST	National Council of Science and Technology
P.E	Physical Education
S.T	Structured Teaching.
TEACCH	Treatment and Education of Autistic and related communication handicapped children.
UNESCO	United Nations Education Scientific and Cultural Organization
SNE	Special Needs Education
V.S	Visual Schedule Education.

ABSTRACT

The study aimed at finding out the Instructional Strategies used to train learners with autism spectrum disorders (ASD) daily living skills. It intended to establish whether teachers of children with ASD have adequate knowledge and skills to determine the various educational needs of the learners with ASD. It also investigated the existing instructional methods and materials teachers used in teaching such learners. The research was conducted in Makuyu Division in Muranga County. The study employed mixed method design utilizing both qualitative and quantitative approaches. The sample consisted of (71) respondents; comprising 30 pupils, 11 teachers and 30 parents. The teachers were purposively selected while convenient sampling was used to select the pupils and parents. Questionnaires were used to collect data from the teachers. Interview schedule was used to collect data from parents while learners and teachers were observed by the researcher using observation checklist. The study used descriptive statistics where tables of frequencies and percentages were used to analyze data. Qualitative data from interview and content analysis was done for the observation schedule based on themes then reported in narrative form. Research findings showed that the instructional strategies used by teachers didn't give priority to training in DLS. Materials for training DLS were scarce. DLS didn't appear on class timetables. Parents were not involved in training DLS. The study recommended that in-service training for teachers handling learner with autism should be organized by the ministry of education to equip them with specialized skills needed to teach DLS. Sensitization program should be launched targeting parents of learners with ASD who still seem unaware of importance of teacher-parent collaboration.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter presented; the introduction to the section; background of the study; statement of the problem; purpose of the study; objectives, research questions, significance of the study; scope and limitation, assumptions, theoretical and conceptual framework and operational definition of terms.

1.1 Background of the study

Autism Spectrum Disorders (ASD) is an umbrella term used to describe a group of disorders with specific diagnoses. These include Autism, Aspergers Syndrome, Retts Syndrome, Childhood Disintegrative Disorder (CDD), Pervasive Developmental Disorders (Not Otherwise Specified) PDD-NOS (American Psychiatric Association, 2000). These diagnoses are grouped together because they share common qualitative impairment in communication, social interactions, restricted repetitive and stereotypic patterns of behaviour that are manifested on a continuum from mild to severe (Wing, 1996). Learners with ASD share the above characteristics however each individual presents unique learning needs and complex of issues to educators Robbins, (2010). Teachers, therefore, are expected to possess specialized skills in order to adequately meet these unique needs (Simpson, 2005).

The number of children diagnosed with autism spectrum disorders (ASD) has increased over the past several years. This increase is as a result of advanced detection and evaluation methods coupled with greater awareness of the disorder in the lay public (Gernsbacher, Dawson & Goldsmith, 2005).

Autism Spectrum Disorders (ASD) is a developmental disorder of neurobiological origin that can have lifelong effect on social interaction, ability to communicate ideas and feelings, imagination and establishment of relationship (Pierangelo & Giulani, 2008). According to Federal definition of the USA in IDEA autism is defined as developmental disability significantly affecting verbal and non-verbal communication and social interaction generally evident before age 3 years that adversely affect educational performance. Characteristics of autism include irregularities and impairment in communication, engagement in repetitive activities and stereotype movements, resistant to environmental changes or change in daily routines and unusual responses to sensory experiences (U.S Department of Education, 1991). Autism is a complex developmental disorder that is challenging to diagnose because of the heterogeneity of ability level and behaviors that exist among individuals whose characteristics can vary over time (Volkmark, Klin & Cohen, 1997).

According to the Diagnostic and Statistical Manual of Mental Disorders fourth edition, text revision (DSM-IV-TR; American Psychiatric Association, 2000), individuals with ASD must show qualitative impairments in social interaction, communication and restricted repetitive and stereotype patterns of behaviors, interest and activities. ASD varies in severity of symptoms, age of onset and associations with other disorders such as intellectual disability, language disability and epilepsy. In the US ASD affect approximately four times more boys than girls (National Research Council, 2001). Learners with ASD vary widely in ability, intelligence and behaviors. People with ASD can exhibit severe intellectual disability or be extremely gifted in their intellectual and academic accomplishment (Vaughn, Bos, & Schumm, 2003). Autism was identified as a separate category of disability in the (IDEA) beginning in

1990. In 1994 it was added as a specific disorder in the American Psychiatric Association (APA).

ASD occur as a result of an abnormality in the structure and function of the brain. There has been increasing evidence indicating that problems associated with ASD are the result of structural differences in the brain due to genetic factors that interfere with typical brain growth. Although there is no known biological marker for ASD, impressive advances have been made in documenting the biological basis of the disorder (Volkmar, Lord, Bailey, Schultz & Klin, 2004). Several brain abnormalities have been identified that are generally consistent with an early disturbance in neural development occurring prior to 30 weeks before birth (Gillberg, 1999; Minshew, Johnson & Luna, 2000).

There are no known patterns of ASD with regards to socio-economic status, race or ethnicity. In fact, ASD has been identified in every socio-economic status group and in nearly every race or ethnicity (Yeargin-Allsopp, Rice, Karapukar, Doernberg, Boyle, & Murphy, 2003). For example, in a study of prevalence of ASD in the city of Atlanta, Georgia, 3.4% of Caucasian children were found to meet criteria for ASD and 3.4% of African-American children met criteria for ASD (Yeargin-Allsopp et al, 2003). However, the most common co-morbid disorders that co-occur with ASD is intellectual disability with estimates as high as 75% (American Psychiatric Association, 2000). Their IQs usually fall in the moderate range of retardation with a common range of 35 to 50. Education provides opportunities for the acquisition of

knowledge and skills that support personal independence and social responsibility (Kavale & Fortness, 1999).

According to the Convention on the Rights of the Child (1989), children with disability have a right to education and training to help them achieve the greatest degree of self-reliance and social integration possible (art.23). At a meeting in Salamanca in Spain (UNESCO, 1994), proclaimed that;

- Every child has unique characteristics, interest, ability and learning needs.
- Educational system should be designed and educational programs implemented to take into account the wide diversity of these characteristics and needs.

The goals of education for individuals with ASD are the same as the goals for any other student that is to provide opportunities to acquire skills that increase personal independence and social responsibility (Kavale & Forness, 1999).

The African Network for the Prevention and Protection against Child Abuse and Neglect (ANPPCAN), Nigeria Chapter, in a World Bank sponsored program carried out a survey to determine the level of knowledge and awareness of ASD among healthcare workers and the general public in Enugu, south-eastern Nigeria. The findings showed that there was a very low level of knowledge and awareness among the general populace and a low to average level of awareness among various categories of healthcare workers, with the level being highest in healthcare workers in psychiatric facilities (ANPPCAN, 2007).

In South Africa, there are five schools for ASD. The first school for learners with autism was opened in 1970 in Cape Town (Audu & Egbochuku, 2010). In Nigeria

autistic learners are either not diagnosed or wrongly diagnosed. Due to lack of awareness individuals with autism are labelled as retarded, dumb or deaf and eventually end up in the streets as insane people in the rural areas of Nigeria (Okey-Martins, 2007).

According to Autism Society of Kenya (2005), the exact number of children with Autism in Kenya is unknown. However it is estimated that there are more than 300 learners with autism living in Nairobi. The Autism Society of Kenya (ASK) refers to autism as “an invisible disability.” ASK was formed by a group of parents who were experiencing problems finding information, help and services for their children due to lack of awareness of autism, even amongst health and education professionals. An article published in *The Standard* on April 22, 2011, writes, the only plausible explanation people think of autism is supernatural forces, which underscores the low level of awareness of autism in Kenya and Africa in general.

Kenya is a signatory to International Conventions and Agreements on education and has ratified and domesticated them through legislative and policies such as Children Act (2001), which committed the Government to the provide compulsory, free and continuous schooling to all Kenyan children; Persons with Disabilities Act (2003), provides for the education of learners with disabilities and Vision 2030 with specific focus on particular vulnerable groups. The Constitution of Kenya (2010) emphasizes the right to free and compulsory basic education for all citizens.

Education for learners with ASD is a new phenomenon in Kenya. Previously, these learners were educated together with learners with mental handicap in special institutions. Eventually their educational needs, especially DLS may have not been

considered thus denying them those needs as stipulated in the Salamanca World Conference on Special Needs of 1994. If the instructional methods, human resources, and training materials are not customized to their specific needs, those opportunities to attain some levels of independence will be foreclosed. In the long run it will be difficult for these learners to lead independent life in their homes and communities.

1.2 Statement of the Problem.

The term daily living skills (DLS) refers to wide range of personal self-care activities across home, school, work and community settings. Adaptive functioning and personal ability to care for self must be the primary considerations when teaching learners with ASD. (www.springerreference.com). Most learners with ASD have deficits in the ability to function independently thus need extensive instruction to master DLS.

Lack of these skills may have negative effects on adult outcome and occupational achievement for learners with ASD. Tendency to insist on sameness can make acquisition of DLS difficult. For instance, issues around eating and self feeding can be complicated by learner's acceptance of only a limited number of foods. Such preferences issues are connected to sensory deficit surrounding taste, texture and appearance. Social, motor and sensory issues collide. Toileting skills can be difficult to acquire for learners with ASD because they struggle with bladder control due to deficit in perceiving the sensation. Learners with ASD have inherent social deficit thus need assistance to understand the importance of self-care skills at home and school (Lantz, 2009).

Studies carried out by Shettle (2004), Task Force on Special Needs (2003) and Kenya Institute of Education (1987) revealed that there were learners with additional disabilities in schools for learners with single disability. However the studies did not inform on the teaching strategies for learners with ASD.

Training of basic DLS is an essential part of teaching students with ASD. Unfortunately most children with ASD do not learn DLS through typical developmental channels. Consequently, without long term, comprehensive and systematic training in DLS, most individuals with ASD would not gain the independence of living full lives in the mainstream society. Matasio (2011) looked at Inclusive Education for Children with Autism; her study looked at challenges facing teachers at City Primary school, in Nairobi. The current study therefore, attempted to establish the instructional strategies for teaching learners with ASD the daily living skills in special units and school at Makuyu Division Murang'a County.

1.2.1 Purpose of the study

The study aimed at establishing instructional strategies on training learners with autism spectrum disorders the daily living skills.

1.3 Objectives of the study

The study was guided by the following objectives:

1. To establish the instructional strategies used by teachers to train learners with ASD in daily living skills.
- 2 To establish the level of awareness among teachers on the characteristics of learners with ASD.

- 3 To establish the extent of parental involvement in training DLS to learners with ASD.
- 4 To establish teachers professional experience in training DLS to learners with ASD.

1.4 Research questions

The study attempted to answer the following questions.

1. What were the instructional strategies used by teachers to train DLS to learners with ASD?
2. To what extent were teachers aware of the characteristics of learners with ASD?
3. What was the level of parents' involvement in training DLS to learners with ASD in Makuyu Division?
4. What effect did teachers' professional qualifications had on the training of DLS to learners with ASD?

1.5 Assumptions of the study.

The study was conducted with the assumptions that:-

1. The instructional strategies might have significant effect on acquisition of DLS to learners with ASD.
2. Learners with ASD might have acquired some of the DLS.
3. Parents of learners with ASD might have been involved in training them DLS.

4. Teachers might have professional experience in training learners with ASD DLS.

1.6 Significance of the study

It is hoped that the findings of this study might be of great help to all teachers, parents and learners with ASD. It is hoped that the study could be useful to teachers willing to apply techniques that are effective to learners with ASD even though they may require a great deal of work. Every learner with ASD has unique characteristics, interests and learning needs. It is hoped that the study may enable parents to expose such children to environments and experiences that would eventually enhance acquisition of daily living skills. Further, it may act as a tool for sensitization of institutions to improve the effectiveness of their teaching strategies to children with ASD.

1.7 Scope and limitation of the study

The study was limited to Makuyu Division in Murang'a County only focusing on daily living skills in learners who have ASD. The study was also limited to parents, teachers, and learners with ASD. There are other skills in the category of DLS but the study was only focused on four skills. They included feeding, dressing, toileting and hygiene. For more conclusive results all DLS would have been studied. Due to financial constraints and time limit, it was not possible.

There was scarce literature based on studies focusing on instructional strategies for learners with ASD. It was, therefore, difficult to get most recent studies related to the topic of study.

1.8 Theoretical and conceptual framework

1.8.1 Theoretical Framework

The study was guided by Autism Program Quality Indicators Model (APQI model, 2001) and Skinner's theory of Operant Conditioning.

Autism Program Quality Indicators (APQI)

APQI model was developed by New York State Education Department (NYED) jointly with experts drawn from the fields of education, medicine and psychology. The APQI model was meant to guide educators and parents in educating learners with ASD. According to APQI model effective interventions for learners with ASD should emphasize the need for educational experience to include not only knowledge but also adaptive skills. The APQI model recommends that a successful program for learners with ASD should observe low teacher-learner ratio of one to two or one on one.

APQI model advocates that teachers for learners with ASD be knowledgeable in areas including developing IEPs, environmental adaptation and instructional methods. All professional development activities including DLS are provided by persons highly experienced in the education of learners with ASD. The APQI model states that instructional methods should reflect the unique needs of learners with ASD. Methods are to be adapted to the range of ages, abilities and learning styles of the learner with ASD. Teaching of DLS ought to focus on basic before more complex skills.

Collaboration between educational personnel and family members is essential to the success of learners with ASD (National Research Council, 2001) which enhance progress at home and school. The APQI model advocates for substantial effort to recognize, value and assist parents in the development and implementation of their

children's IEP. Generalization and maintenance of the acquired skills are important when educating learners with ASD. Consequently APQI model advocates that teaching programs should have a clear plan to systematically promote the generalization and maintenance of learned skills to variety of natural environments.

Skinner- Operant Conditioning Theory

Burrhus Frederic (B.F) Skinner (March 20, 1904-August 18, 1990) was an American psychologist, behaviourist, author, inventor and social philosopher. Skinner was born in Susquehanna, Pennsylvania to William and Grace Skinner.

Skinner is regarded as the father of Operant Conditioning but his work was based on Thorndike's law of effect. Skinner (1938) as cited by McLeod (2007) coined the term operant conditioning; it means roughly changing of behaviour by the use of reinforcement which is given after the desired response. The theory rests on the assumption that any behaviour that is positively reinforced or rewarded will repeat itself. The repetition leads to desired behaviour becoming a habit.

Skinner showed how positive reinforcement worked by placing a hungry rat in a box. The box contained a lever in the side and as the rat moved about it would accidentally knock the lever. Immediately the rat knocked the lever a food pellet would drop into a container. The consequence of receiving food ensured that the action would be repeated. Punishment is defined as the opposite of reinforcement since a response is either weakened or eliminated.

Skinner believed that targeted behaviours for instance toileting and feeding skills should be reinforced with tokens. Tokens can be in form of fake money, buttons,

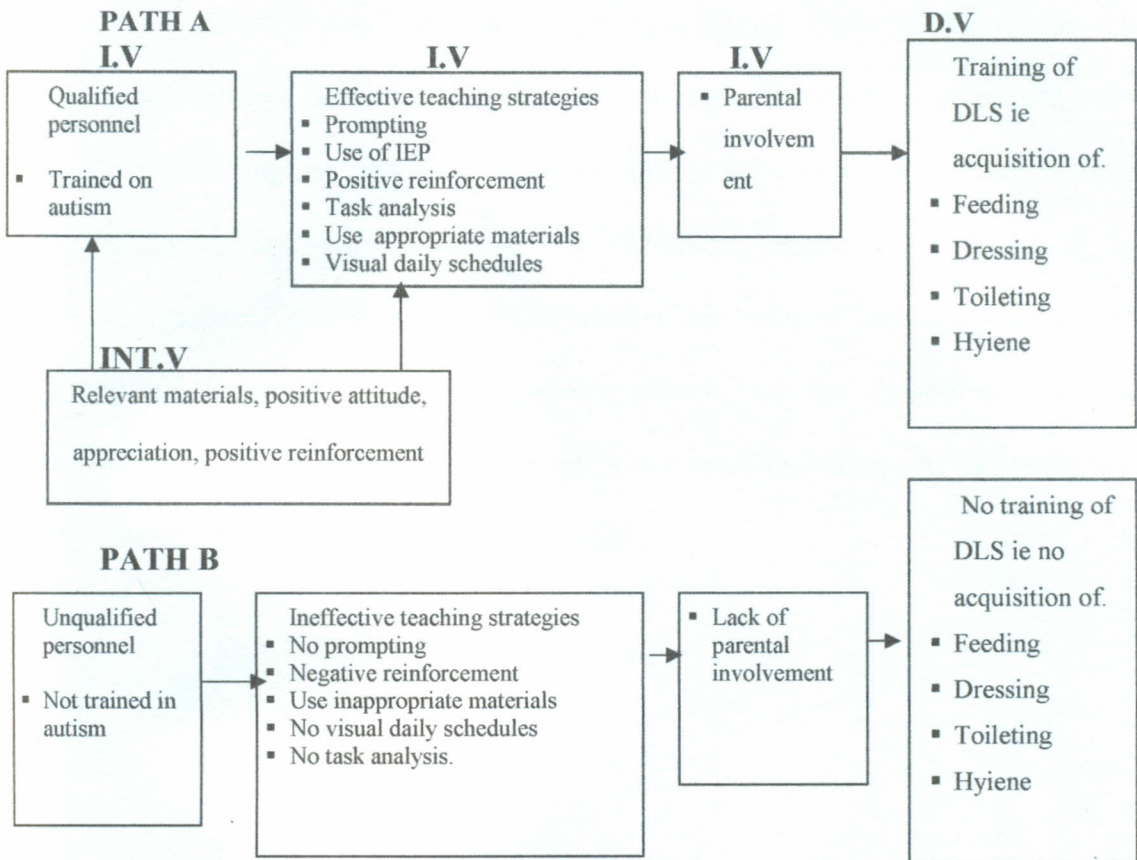
poker chips and stickers. Skinner maintained that all behaviours are motivated by rewards which reinforce learning.

Skinner's behaviour modification therapy mostly used in clinical and educational psychology could be relevant to shaping DLS acquisition. A simple way of giving positive reinforcement in behaviour modification may be providing compliments, approval, encouragement and affirmation. The emphasis of behavioural psychology is on how people learn to behave in certain ways also modifying the existing behaviour.

Teachers for learners with ASD ought to combine ideas of APQI model and Skinner's Operant Conditioning theory to achieve positive adult outcomes including residential independence, social interaction with peers and community participation. Learners with ASD are likely to have better adult outcomes if they are able to master a variety of functional DLS. However, if these skills are to be maintained and generalized, they need to be taught repeatedly by different individuals and in different settings.

1.8.2 A conceptual framework

Fig 1.1 A Diagrammatic Representation of the Conceptual Framework



Source: Researcher's own creation 2012

Key

I.V.-Independent variables

INT.V.- Intervening Variables

D.V.-Dependent variable

The diagram above shows two paths, positive and negative results in training of DLS. Path A illustrates that qualified personnel who are trained in autism understood the diverse characteristics of learners with ASD. The teachers applied effective teaching strategies while involving parents in training learners with ASD the DLS. If teachers interacted with intervening variables which include using relevant materials, positive

attitude and reinforcement acquisition of DLS like feeding, dressing, toileting and hygiene by learners with ASD would have been realised. Path B illustrates that failing to use effective teaching strategies by unqualified personnel the results would be negative hence no acquisition of DLS. Failure by teachers to interact with intervening variables implied that many learners with ASD would fail to obtain meaningful schooling and reap minimum benefits from education in terms of personal development and independence. Teachers for learners with ASD should combine ideas of APQI model and skinner's theory (see the theoretical framework) of reinforcement to achieve positive adult outcomes including self independence, peers interactions and community participation.

1.9 Operational definition of terms

Autism: A developmental disability significantly impairing verbal and non-verbal communication, social interaction and adversely affects a child's educational performance

Autism Spectrum Disorders: A range of disorders namely, Autism, Asperger Syndrome, Pervasive Development Disorders (Not Otherwise Specified) PDD-NOS and Retts syndrome which share common characteristics that are manifested on a continuum from mild to severe (American Psychiatric Association, 2000).

Daily Living Skills: Range of personal self-care activities across home, school, work and community settings that enable learners with ASD deal with demands of daily life (www.springerreference.com).

Generalization: Ability to demonstrate learned behavior or skill in a new setting, environment, time, date, or among different individuals and materials.

Maintenance: Ability to demonstrate learned skill overtime.

Special Units: Classes set aside either in a regular school or special schools to cater for educational needs of learners with disability.

Structured Teaching: These are the personalized instructional approaches that cater for the individual needs of learners with ASD.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, relevant literature to the study is reviewed. The areas of concern include; instructional strategies for training DLS, teachers awareness of the characteristics of learners with autism spectrum disorders, parental involvement and teachers' professional qualifications.

2.1 Instructional Strategies for Learners with Autism

Definitely no single approach is likely to be right for every child. Therefore teachers may need to utilize a wide variety of teaching strategies for students with ASD. Ways of building on the knowledge of teachers as they acquire experience with learners with ASD and keeping skilled personnel within the field are critical (National Research Council, 2001). The strategies should meet the learner's individual's interests, strength and needs and also allow progress towards IEP goals (Pierangelo & Giuliani, 2008). These goals, which must be objective and measurable, state what specific skills the child is expected to learn in each area that is affected by the disability (Fein & Dunn, 2007). For effective educational programs for learners with ASD, motivational strategies are utilized. They are introduced in a highly structured method in a one-to-one or small group format. Such settings should focus on minimal distraction, attention to specific details of the skills as well as on consistency, repetition and predictability.

Many learners with ASD have a limited repertoire of interest. Teachers should, therefore, identify and use teaching strategies that help motivate the student to learn.

A variety of teaching methods, such as discrete trials, pivotal response and training, shaping, and promoting may be employed to encourage students to learn new skills. A discrete trail consists of four components: the instructions, child's response, a consequence and a brief pause. It is a structured teaching strategy used to teach tasks that have been broken into the simplest teachable components.

The Task Force on Special Needs Education, (2003), established that the 8-4-4 curriculum does not take care of all learners with special needs. The curriculum was noted to be rather rigid, demanding and with the same expectation for all learners. The task force noted that the arrangement disadvantaged learners with special needs. It also noted that all learners with special needs could not be expected to access 8-4-4 curriculum because some required a specialist curriculum. The primary concern of the specialist curriculum is to remediate fundamental problems in learners with special needs which include; communication, speech, mobility and daily living skills among others.

Due to limited funding by the Ministry of Education in Kenya, most of the school administration may be unable to procure enough teaching and learning materials to enhance teaching of DLS in the special schools and units (National Action on Education for All 2003-2015).

2.1.1 Structured Teaching

Structure is an intervention philosophy developed by the University of North Carolina, Division of Treatment and Education of Autistic and related communication-handicapped children (TEACCH). Structured teaching has been found to increase the child's independent functioning throughout their life. Physical

structure is an important component in structured teaching. This comprised of how the student's physical environment is set and organized. For instance, how the furniture and materials in various environment are placed, including classroom, playground, work area, bedroom, hall-ways, lockers among others. Each area of the environment should be clearly as well as visually defined to establish clear visual and physical boundaries, through the arrangement of furniture. Learning of students with ASD is best promoted by adding structures through physical arrangements, visual supports and low student-teacher ratios (Webber & Scheuermann 2002).

In ST, visual and auditory distractions should be minimized, particularly, painting the entire environment with a muted colour helps. Also limiting the amount of visual decorations in classroom and covering other visually distracting equipment. Use of carpet, lowered ceilings, acoustical tiles may be considered in reducing auditory distractions (Bogdashina, 2003). Another critical component in a structured environment is a daily visual schedule (DVS). DVS tells the student with ASD the occurrence of activities and in what sequence.

2.1.2 Training Strategies

According to kendrik2.wordpress.com/2007/10/10/12 the following are some training strategies of DLS to learners with ASD.

Structured Environment

Children with ASD thrive in a structured environment. A routine should be established and kept as consistent as possible. Routine and structure provide great comfort to a child with ASD. Teachers ought to define routines clearly. For example,

every morning; enter the classroom, greet the teacher and friend next to you, unpack your school bag, put lunch box in cupboard and sit down.

Activities are successful when they are broken into small steps.

Using Visuals

A picture speaks a thousand words. Learners with ASD learn faster and with great ease when visuals are used. Visual support maintains a child's focus and interest. For example, when teaching hygiene, show pictures of children brushing their teeth or combing their hair. When teaching feeding show pictures of children sitting still on a table, with food on a plate, using a spoon to scoop food and putting it in the mouth. Remember to keep explanations simple and short about each picture to avoid concentration wane.

Schedules

People with ASD like order and detail. They feel in control and secure when they know what to expect. Picture schedules help the learners visualize the actions. A schedule helps the learner visualize the actions. Schedules can be broad or detailed. For example, a whole day broad picture schedule will comprise of pictures of unpacking school bag, floor time, lunch, saying goodbye etc.

Teachers should make sure this schedule is in a visible place in the classroom. Direct the learners' attention to it frequently, particularly a few minutes before next activity begin. Written schedules are effective for good readers. The child can "check off" each item as it's completed, which is often motivating for a student. Webber & Scheuermann (2002) suggested that, toileting may always precede lunch and snack

time. After each instance of toileting the student will learn to wash his hands and make preparations for either snack or lunch. By following such routine every time the student is able to predict the next activity and perform independently.

Using Concrete Language

Language should always be kept simple and concrete and get the point across in few words as possible. When teachers ask a question or give an instruction and are greeted with a blank stare, they should reword the sentence. Avoid using sarcasm. Instead choices should be given clearly and not to leave choices open ended. For example, it is advisable to ask, "Do you want to read or draw?" instead of asking "What do you want to do now?"

Establishing Independence.

Teaching learners with ASD how to be independent is vital to their well being. It is tempting to help a child struggling to close a zipper; however, it's a much greater service to calmly teach how to do it themselves. It can be slow for learners with ASD learning a new skill until they become proficient. Self help skills or daily living skills are essential to learn. Some of these include dressing, hygiene and toileting. Fade all prompts as soon as a skill has been acquired. Allow ample time before abandoning an activity if there are no results within a few days. Remember that consistency is a key component of success. The teaching plan used by the teachers should be implemented in all settings both in school and at home.

Reinforcement

Rewards and positive reinforcements are powerful ways to increase frequency of desired behaviors. Reinforcement involves delivering a specific consequence when

the student demonstrates target behaviour to increase the likelihood that the behaviour will occur again when requested (Henry & Myles, 2007).

Students with ASD should be helped to clearly understand which behaviors lead to rewards. Focusing on negative aspects can lead to poor results and demotivate the student. When used correctly, rewards are powerful and irresistible. Rewards have to be something a student desires and indicate that a great job has been attempted or done. Often learners with ASD have specific interests. These interests should be used as motivators. Reinforcement involves delivering a specific consequence when the student demonstrates target behaviour to increase the likelihood that the behaviour will occur again.

Teaching independence skills the right way bolsters self-esteem, confidence, and the willingness to try new things. Studies have shown that the most effective praise specifically identifies what the child did to achieve the goal, not the possession of an inherent talent or ability (Bronson & Merryman, 2007).

2.1.3 Training of the Daily Living Skills

The first step in any training process involves selecting the skills to be taught. When choosing daily living skills for instruction, the goal should be to increase the independence of the students (Snell & Farlow, 1993). Other factors to be considered are the skill the student currently performs, the demands of the environment in which the student participates, the student's chronological age, the manner in which peers perform the task and the typical environment in which the task will be performed (Berkell, 1992; Snell & Farlow, 1993).

DLS are critical to success in any area of functioning as well as to overall independence. Individuals, including those with ASD, are likely to gain acceptance if

they are properly groomed, toilet trained and can take care of basic personal hygiene needs in a socially acceptable way. According to Snell (1993), toileting, eating, dressing and personal hygiene are the most critical self-care areas. Toileting-related skills may need to be adapted depending on environmental demands for instance potty seats on toilets, a small child's potty chair (Webber & Scheuermann 2002). Westling and Fox (1995) state three general considerations to guide instruction in DLS.

First, appropriate DLS tasks should be the result of close collaboration between school personnel and parents. Parents should be informed and involved in selecting target skills, they also can provide information about family practices that may shape how skills are taught. The teacher should teach DLS in the same way that learners will perform them at home. Second, DLS should be taught in both natural contexts and befitting times whenever possible. For example, eating skills are best taught at breakfast, snack and lunch times. Toilet skills are taught during toilet breaks. Dressing skills could be taught before and after changing clothes for P.E. Third, teachers must remember that many DLS are personal (e.g. dressing and undressing, toileting) and should be taught with respect for the student's privacy, regardless of the age of the learner. The person doing the instruction should be of the same gender as the learner. Personal grooming and hygiene are essential self-care category, based on research that demonstrates children who are unkempt in appearance are more likely to be rejected by their peers (Coie, Rabiner, & Lochman, 1992).

Webber & Scheuermann (2002), indicate that, children with ASD, due to their cognitive and language deficits, often do not show the signs of readiness for toilet

exhibited by non-disabled children. It is, therefore, critical that children with ASD learn toileting skills and the closer this occurs to the developmentally appropriate window of time, the better. They further state that, having some degree of proficiency in DLS is important for independence, dignity, and social acceptance. One of the goals of teaching DLS is for students not only to do the tasks without assistance, but also to do them with no reminders as well. Finally, according to them, teachers and parents should work collaboratively to plan instruction in DLS. Communication about what is to be taught, and how, regarding tasks learners will perform at home tend to facilitate acquisition and generalization of target skills.

2.2 Characteristics of Individuals with Autism Spectrum Disorders

From an early age and typically continuing throughout the life span, learners with ASD have difficulty relating appropriately to others. Usually, they suffer from a wide range of language and communication disorders. According to American Psychiatric Association (2000) many individuals with ASD have an obsessive insistence on environmental sameness and atypical behaviors that include stereotype, repetitive, and self-stimulatory responses. Each student with ASD however, may have a unique combination of strengths and needs. Familiarity with these characteristics forms an important base of understanding their impact on educational programming. Webber & Scheuermann (2002), state that the requirements for personnel teaching these challenging students with ASD and discussion of facilitating characteristics seem helpful. It is extremely important that teachers be well trained, possess essential attributes and implement the most effective program possible. Without this, most students with ASD will not only fail to progress but may actually regress (Webber &

Scheuermann, 2002). It is important to note that, characteristics associated with ASD are not exclusive to ASD but could also appear in individuals diagnosed with other disabilities. Researchers believe that individuals with ASD characteristics were living well before the 20th century (Webber & Scheuermann, 2002).

2.2.1 Cognitive and Academic Characteristics.

Children with ASD have irregular patterns of cognitive and educational strengths and deficits, majority with some level of intellectual disability (Barnhill, Hagiwara, Myles & Simpson, 2000). The two types of cognitive limitations associated with ASD are: specific cognitive deficits in processing social-emotional information and more general cognitive deficits in information processing, planning and attention. The social and communication deficits of children with ASD include processing social-emotional information, for instance emotional expressions, voice and facial cues and internal mental states. Children with ASD display deficits in mental states in themselves and others usually referred to as metallization or theory of mind (Baron – Cohen, Tager-Flusberg & Cohen, 2000). The presence of a general deficit in executive functioning is illustrated by difficulties in cognitive functions such as planning and organizing, changing to a new cognitive set, disengaging from salient stimuli, processing information in novel and unpredictable environments and generalizing previously learned information to new situations (Sanders, Johnson, Garavan, Gill & Gallagher, 2008).

2.2.2 Intellectual Deficits and Strengths

Children with ASD vary widely in intelligence. According to Fombonne (2003), approximately 40% of children with ASD have severe to profound impairments with

IQs less than 50, 30% have mild to moderate impairments with IQs between 50 and 70 while the remaining 30% have average intelligence or above.

Low intellectual ability in children with ASD especially low verbal IQ is generally associated with more severe symptoms and poorer long-term outcomes (Bolton, MacDonald, Pickles, Rios, Goode & Crowson, 1994). Only those children with average intelligence or above have the potential of acquiring independent living status as adults (Mash, & Wolfe, 2010). IQ scores of children with ASD, are often stable for a period of time, and are important predictors of their level of educational attainment.

Despite, intellectual deficits, a small number of children with ASD, show a unique aspect of autistic disorder that has been referred to as autistic savant. Children identified as autistic savant are not only diagnosed with ASD, but also show a unique set of skills that are often beyond imagination (McMahon, 2002; Rim land, 2003). Some of these skills include the ability to perform complex mathematical problems quickly and with perfect accuracy, being able to identify the day of the week that a particular date landed on within the past 200 years, being able to count objects within a rapid amount of time or being able to recreate a musical composition after only hearing the music once (McMahon, 2002; Rimland, 2003). Although there has been a great fascination with individuals who are autistic savant, they represent only about 5% of all individuals diagnosed with ASD (Klin & Volkmar, 1997).

Superior performance by children with ASD however, has been estimated as a side effect of abnormal brain functioning, rather than effects of genuine intelligence. One idea is that such children tend to segment information into parts rather than looking at the whole, which leads to exception performance, in certain domains (Pring,

Hermelin, & Heavey, 1995). Unfortunately, despite the fascination and appeal of the skills, in most cases they are not used constructively to enhance everyday living mostly in Makuyu Division schools.

2.2.3 Sensory and Perceptual Impairments

Children with ASD experience a myriad of sensory processing difficulty particularly in tactile (touch), vestibular (balance), proprioception (body awareness), visual (sight), and auditory (hearing), gustatory (taste), and olfactory (smell). For instance an individual with ASD may hear sounds that are not discernible to other people. Also may find the feeling of a tag inside a shirt painful. The visual perception area tends to be the strength for students with ASD; therefore, visual supporters are often used to assist in learning (Myles, & Savner, 2000). The fact that sensory difficulties affect all areas of learning, all professionals who work with children with ASD, should be aware of the impact of sensory issues on behavior and achievement (Myles, Cook, Miller, Rinner, & Robbins, 2000).

The sensory abnormalities include over-sensitivities or under sensitivities to certain stimuli, over selective and impaired shifting of attention to sensory input. For example, inability to simultaneously see the movement and hear the sound of a person's clapping (Reynolds, & Lane, 2008; Rogers & Ozonoff, 2005). A selective focus on one narrow part of the environment, while ignoring other important features gives children with ASD the appearance of having tunnel vision or tunnel hearing, and makes it very difficult for them to learn about their world (Klinger, Dawson, & Renner, 2003).

2.2.4 Social Impairments.

Socially, individuals diagnosed with ASD demonstrate behaviors ranging from complete withdrawal to active social engagement with significant limitations (Simpson & Myles, 1998). Social impairments are the major problems in all individuals with ASD. Children with ASD experience profound difficulties in relating to other people, even when they have average or above-average intelligence (Klin, Jones, Schiltz, Volkmar, & Cohen, 2002). From an early age, such children show deficits in many skills that are crucial for social development. Such deficits include lack of social and emotional reciprocity, unusual non verbal behaviors, lack of interests or difficulty relating to others and failure to share enjoyment and interests with others.

Poor quality of eye contact and smiling during parent-infant interactions in the first year of life may be related to deficits in joint attentions in the second year of life in children later diagnosed with ASD (Cliford, & Dissnayake, 2008). In turn, deficits in joint attention have been found to impede language development in infants with ASD at 20 months, and to predict greater problems in language, communication, and social behavior at age 42 months (Chairman 2003: Luyster, Kadlec, & Tager-Flusberg, in press). In addition to difficulties in understanding emotion information, their own bodily expressions of emotion are different, often characterized by limited, spontaneous use of expressive gesture, and bizarre, rigid, or mechanical facial expressions (Love land, Tunali-Kotoski, Pearson, Brelsford, Ortegon & Chen, 1994). Therefore, children with ASD process and express emotional information in unusual ways as compared to other children.

2.2.5 Communication Impairments.

Children with ASD may exhibit a range of deficits, including qualitative impairment in social interaction and communication (American Psychiatric Association, 2000). Within the communication domain, individual deficits can range from a total lack of verbal communication to fluent speech with pragmatic deficits. Language and communication common to children with ASD include challenges with processing input and generating output (American Psychiatric Association, 2000). Initiation and expansion of a conversational topic, taking turns in a conversation, and maintaining that exchange are difficult for children with ASD (Janzen, 2003).

About 40% of children with ASD do not talk at all; 20%-30% have some words at 12-18 months of age and then lose them while others may speak, but not until later in childhood (Pierangelo, & Giuliani, 2007). The first sign of language impairment is indicated by the inconsistent use of preverbal communications. Children with ASD with no speech or only limited speech do not use gestures to communicate, as motor skills underlie both spoken and non-verbal communication (Gernbacher, Sauer, Geye, Schweighert & Goldsmith, 2008). Consequently, they rely on primitive form of communication for instance they may pull their mothers hand in a desired direction or bringing a box to her to open. Children with ASD often experience difficulty understanding non literal statements or adjusting their language to fit the situation (Dawason, 1996; Tager-Flusberg, 1993).

2.2.6 Repetitive Behaviors and Interest

Like their neurotypical counterparts, most people with ASD develop an interest in intimacy, relationships and sexuality (Lawson, 2005; Shore, 2003). One natural means

for satisfying some of this interest could be masturbation or exploration of their own bodies for sexual gratification (Realmuto & Ruble, 1999). Masturbation is reported in several studies to be a common occurrence among children, adolescents, and adults with ASD (Koller, 2000; Haracopos & Pederson, 1999; Realmuto & Ruble, 1999; & Reichle & Palmer, 1997). Children with ASD often display repetitive and stereotyped behaviors and narrow patterns of interests such as fascination with arithmetic (Honey, McConachie, Randle, Shearer & Le Counteur, in press). Some of the stereotyped body movements include, rocking, flapping hands, pencil spinning which are self-stimulatory behaviors. Stereotyped behaviors occur in unpredictable or demanding situations, and may provide the child with a sense of control over the environment and a way to cope with changes that are not understood (Klinger, et al., 2003). Particular self-stimulating behaviors such as moving the fingers in front of the eyes may persist from childhood to adulthood.

These behaviors commonly with children with ASD unfortunately, tend to stigmatize them. Such behaviors also, interfere with social acceptance and integration, more so with learning. Other behavioral challenges that pose serious issues include hyperactivity, short attention span, impulsivity, aggressiveness, self-injurious and temper tantrums. Children with ASD may also have odd sleeping and abnormal eating habits. (Pierangelo & Giuliani, 2008). These learners characteristically do not learn DLS independently. This means that unless DLS are taught, learners with ASD will be relegated to more restrictive environment thus unable to function as part of the main society.

2.3 Parental Involvement in training of DLS to learners with ASD.

Historically, mothers of children with ASD were held responsible for the abnormal social and emotional functioning of their children including poor attachment and lack of reciprocity in social interactions (Burkhardt, 2001). Only as recently as (2001) did the American Academy of Psychiatric release a report that provides substantial reassurance that parents' practices are not the cause of ASD and that care should be taken to support, rather than indict, regarding their children's difficulties.

According to Gray (2002), parents concerns and anxiety lessen somewhat once the child has been placed in appropriate treatment and educational programs. This stage of the child's life however remains stressful, since parents have to negotiate and interact with a large number of professionals to obtain appropriate educational and financial resources to meet the child's needs. In the treatment of children with ASD, parenting behavior plays an important role. These include adapting the environment of the learner with ASD both at home and school. For example, the work place of the child is kept as distraction free as possible and the child makes use of timetables which indicate the activities for the day and the order in which they occur (Tutt, Powell, & Thornton, 2006).

Skills delay has been identified as the most consistent predictors of parenting stress for both mothers and fathers of children with ASD (Davis & Carter, 2008). No parent is ever prepared to hear that a child is anything other than happy and healthy. A diagnosis of ASD, however, can be particularly frightening. As the parent of a child with Autism, the best thing to do is to seek help as soon as possible. Rather than focusing on how the child with ASD is different from other children parents should

practice acceptance. It is important for schools to recognize that parents need both initial training and on-going support for trouble shooting if they are to sustain their effort at home teaching (Harris, 1986). Intervention of parents learning techniques for teaching adaptive skills maximizes the child's learning and improves the quality of family life (National Research Council 2001).

Parents should find out what teachers are doing and continue with the same techniques at home. Learners with ASD tend to do best when they have a highly structured schedule or routines. There should be set up schedule for the child, with regular time for meals, toileting and bed time. Positive reinforcement can go a long way for learners with ASD. Parents usually know best about which things might be effective reinforcers and are able to pinpoint essential skills and set long-term goals. School personnel would do well to determine what parents can contribute to a child's educational program and do whatever is necessary to facilitate that contribution (Webber & Scheuermann, 2002). Parents of children with autism need to be more closely involved in the educational process than do parents of children with many other childhood disorders (National Research Council, 2001).

In essence, a good autism support plan involves building on the child's interests, offering predictable schedule, teaching tasks in simple steps and actively engaging the learner's attention in highly structured activities. Finally, providing regular reinforcement of attempted behaviour or already acquired skills. (www.helpguide.org)

Crosby (2009) conducted a study on parent perceptions and observations of their children with autism ages 14 to 26 concerning generalization of daily living skills at home and in the community. The study used sequential mixed method. The purpose

of the study was to determine if students with autism from 14 to 26 years of age who receive instruction in DLS class sustain, improve, or decline their ability to generalize DLS at home and in the community. Parents with students from 14 to 18 years of age (n=34) and those with students from 19 to 26 years of age (n=25) completed the Vineland 11 Adaptive Behavior Scale. A second data collection process involved two focus group (5 parents each of the same age groups) to obtain qualitative data. The two research questions addressed parents' perceptions of the ability of their child with autism to apply DLS in their home and community. Quantitative findings of the study provided support that parents who perceive their children with autism were applying skills learned in DLS classes at home and in community. Focus group responses were analyzed using content analysis to examine the similarities and differences between the two groups of parents. Results of this analysis supported the findings that 19 to 26 year olds were applying DLS better than students from 14 to 18 years of age. Continuing public education services through 26 years of age prepares young adults with autism to apply DLS at home and in the community. Continuing education through 26 years of age prepares students with autism for adult living and can enhance their quality of life.

The results of research by (Hall & Graff, 2011) suggest that parents expect professionals to have up- to- date knowledge on available sources of support and to be able to direct the family so as to save it from being overloaded with unnecessary and unneeded activities. However, the results of studies on professionals show that, they are uncertain about the etiology of ASD, diagnosis and the best type of intervention for the affected children (Mavropoulou & Padeliaou, 2001). Additionally professionals lack qualifications when it comes to working with children with ASD

(Casella & Colella, 2004). The importance of family involvement in the educational program is paramount. Family involvement allows for generalization (i.e carry over) of learning activities, experiences and approaches to and from school, home and community (Bergeson, Davidson & Harmon 2008).

2.4 Professional Qualification of Teachers for Learners with Autism Spectrum Disorders.

The National Research Council (2001), states that the preparation of teachers needed to serve learners with ASD is the most significant challenge facing the autism field. In particular they need to have in their passion a foundation of basic education combined with specialty skills in the area of autism. IDEA (2004) recommends that teachers for learners with ASD should acquire additional curricula content and relevant skill such as effective collaboration and consultation skills. Teachers of learners with ASD need to have basic knowledge of the disability and how it affects learning. Every learner with ASD is a unique individual. Therefore lack of sound understanding and outward manifestations of the ASD disability may result to inappropriate teaching methods. Most importantly teachers must be patient and able to motivate learners with ASD to work in the classroom despite the challenges.

Many qualified teachers even having received solid training in special education may have had little or no instruction about strategies for teaching ASD like applied behaviour analysis or use of picture systems (National Research Council, 2001). According to Koech Report (1999), a large number of teachers in special schools need to be retrained to cope up with knowledge evolution and teaching techniques in

special education. It was clear that most SNE teachers at Makuyu were neither retrained nor updated to cope with new knowledge nor teaching strategies in specific disabilities such as ASD.

2.5 Summary

From the literature review it was evident that there are few empirical studies concerning learners with ASD, in Kenya and the study therefore purposed to fill this gap. There was also the belief that children with ASD are mentally retarded and have limited educable capacity especially on DLS.

Children with ASD represent a heterogeneous group requiring individualized and highly structured programs. Familiarity with the characteristics of learners with ASD is important as a basis of understanding their impact on educational programs. Collaboration between educational personnel and family members is essential to the success of learners with ASD (National Research Council, 2001) which enhance progress at home and school. According to APQI model (2001), all instructional activities including DLS must be provided by persons highly experienced in the education of learners with ASD. Teachers are responsible for so much of the learners' lives, but are often given little or no preparation for having a child with ASD in their classroom (Fein & Dunn, 2007).

The classroom environment must be well structured to enable the educational programs to be consistent and predictable for children with ASD. Daily living skills must be taught to enable learners with ASD become less reliant on others and more integrated into society. In conclusion, open communication between school personnel

and the child's parents is essential to ensure continuity and success from one environment to another. It was therefore important to find out whether children with ASD were being trained the skills of daily living in school and at home.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the methods that were employed in the study. It covers research design, variables, study locale, target population, sampling techniques and sample size, research instruments, pilot study, validity, reliability, data collection techniques, data analysis and ethical considerations.

3.1 Research Design

The study used descriptive research design which was found appropriate in establishing instructional strategies that teachers of learners with ASD use to teach DLS to enhance life independence. Both qualitative and quantitative approaches were used so as to adequately investigate the subject of study. In addition weakness of one method is supplemented by the other. According to Kombo and Tromp (2006) descriptive survey can be used to collect information about the nature of the existing condition, and be compared as well as determining the relationship between various variables.

3.2 Study Variables

In this study, independent variables were instructional strategies, teachers' professional experiences, and parental involvement. The dependent variable is training of daily living skills to learners with ASD, such as feeding, dressing, hygiene and toilet training.

3.3 Study Locale

This study was carried out in Makuyu Division, Muranga County. It is about 80 kilometers, North East of the Kenya's capital city, Nairobi. Makuyu was considered because of several factors: it is a semi arid area with high poverty level due to low rainfall and poor roads hence teachers are likely not to be effectively supervised. The special units and school in this division were established less than five years ago. The life activities of the people are mainly low small scale farming experiencing draught spell often.

3.4 Target population

The target population of this study compromised of already identified 60 learners with ASD, 22 teachers handling the learners and 60 parents, making a total of 142. The learners were selected from six special units and one special school. Each learner was to be represented by one parent. Teachers were chosen because they are in direct contact with the learners.

3.5 Sampling Techniques and Sample Size.

3.5.1 Sampling Techniques

The study used combination of purposive and convenient sampling techniques. Teachers were sampled purposively because they handle learners with ASD directly. Learners and parents were conveniently sampled because the researcher selected a required number from the cases that were conveniently available. Parental participation in implementation of specific interventions plays an important role in improving the outcomes (Drew, Baird & Baron-Cohen, 2002; Ingersoll & Dvortcsak, 2006).

3.5.2 Sample Size

Sample size comprised of 30 learners, 11 teachers and 30 parents a total of 71 respondents. The learners together with their teachers were selected from six special units and different classes in a special school used for the study. Each parent was picked to represent one learner with ASD. According to Gay (1992), descriptive studies should at least have samples of 20% of the target population. This study used 50% of the targeted population as shown below in the table.

Table 3.1 Sample size

	Learners with ASD.	Teachers	Parents	Total
Population Targeted	60	22	60	142
Sample Size	30	11	30	71

3.6 Research Instruments

The researcher designed questionnaire for teachers, interview schedule for parents and observation checklist for learners as tools to collect data. Orodho, (2009) points that questionnaire has the ability to collect a large amount of information in a reasonable quick space of time. Likert scale questionnaires were used (Appendix A). The interview schedule was used to collect information from the parents (Appendix B). The researcher observed learners and teachers during lessons using the observation checklist (Appendix C).

3.7 Pilot Study

Piloting was conducted to help in testing on the instruments' validity and reliability. Pilot was done at Kirunguru Special School in Kandara Division that borders Makuyu

Division. Kirunguru special school was selected because it has same characteristics as schools in Makuyu division and was not used in main study. The teachers and parents instruments were pre-tested using a sample of 2 teachers and 4 parents respectively. Observation for learners consisted of 2 learners. That made the pilot sampling population to be 8 which was (11.3%) of the sample size of the study.

3.7.1 Validity

Content related validity was used. This refers to the degree to which the sample of the test represents the content the test is designed to measure. In this study the researcher discussed the content of the instrument with the supervisors who are well versed in the area. They reviewed relevance and clarity of the instruments and provided feedback. Their recommendations and advice were adhered to and changes made accordingly.

3.7.2 Reliability

To establish reliability of the instruments, test-retest method was used at an interval of two weeks using the same respondents. These were 2 teachers 4 parents and 2 learners. The scores of both tests were correlated using Pearson's product formula to establish the extent to which content of questionnaires elicited the same responses. A correlation coefficient of 0.8 was considered enough to judge the instruments as reliable for the study.

3.8 Data Collection Techniques.

Likert scale questionnaires for the teachers, interview schedule for the parents and observation checklist for learners and teachers were used to collect data. The

researcher used observation checklist to ascertain teaching methods by the teachers, teaching materials available, training of dairy living skills e.g. feeding, dressing, toileting and hygiene.

3.9 Data analysis.

Questionnaires from the respondents were checked then coded. The questionnaires were numbered accordingly and edited for clarification regarding specific meanings of the sentences used by the respondents. The quantitative data from the Likert scale questionnaires were analyzed descriptively using tables of frequencies and percentages. The qualitative data that was generated from the interview and observation schedule were analyzed descriptively based on themes then reported in narrative form.

3.10 Logistical and Ethical consideration.

The researcher obtained a research permit from the National Council of Science and Technology (NCST), through the Dean, Graduate School Kenyatta University. The permit was then presented to the Education Officer, Makuyu Division. In addition to making courtesy calls, other ethical considerations for the study included consents from the school administrators and teachers where respondents were stationed. All respondents in the study were treated with respect and confidentially. Information was be obtained voluntarily from the participants without coercion.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSIONS

4.0 Introduction

This chapter presents the data findings of the study. The purpose of the study was to establish the instructional strategies on the training of learners with autism spectrum disorder the daily living skills. Data is presented based on the demographic characteristics of teachers and the four objectives of the study.

- (i) To establish the instructional strategies used by teachers to train daily living skills to learners with ASD.
- (ii) To establish teachers awareness of the characteristics of learners with ASD.
- (iii) To establish parental involvement in teaching of DLS to learners with ASD.
- (iv) To establish teachers professional experience in training DLS to learners with ASD

4.1 Demographic Characteristics of Teachers

The study had 11 teachers drawn from seven schools. The demographic characteristics of the teachers in respect of ages and gender are shown in the table 4.1 and 4.2 below.

Table 4.1 Age of teachers.

Age bracket	Frequency	Percent
20-30 years	0	0
31-40 years	3	27.3
41-50 years	6	54.5
51-60 years	2	18.2
Total	11	100

Table 4.1 indicates that teachers between 31-40 years age bracket were 3 (27.3%). Majority of the teachers were between 41-50 years. Only a few teachers were above 50 years.

Table 4.2 Gender of Teachers.

Gender	Frequency	Percent
Female	7	63.6
Male	4	36.4
Total	11	100

According to table 4.2 more than half of the teachers were female.

4.2 Establishing Instructional Strategies

The first objective was to establish instructional strategies used by teachers to train daily living skills to learners with ASD.

Table 4.3 Teachers Response on the Teaching Strategies used in their Schools.

TEACHING STRATEGIES	Frequency	Percent
Prompting	11	100
Using meaningful reinforcement	10	90.9
Teaching key social rules	9	81.8
Use of IEP	8	72.7
Provide opportunities for choice	7	63.3
Task Analysis	6	54.5
Use of age appropriate materials	5	45.5
Using peer support	5	45.5
Use visual daily schedules	5	45.5
Use visual cues	2	18.2
Using social stories	0	0

The findings indicate that some strategies were more practiced than others. For instance all eleven (100 %) teachers agreed to have used prompting while only two (18.2 %) used visual cues. However none of the teachers used social stories. Most teachers indicated that they also use meaningful reinforcement; teaching key social rules; use IEP and provide opportunities for free choice as strategies for teaching learners with ASD. Very few teachers used visual cues to train learners with ASD. According to Pierangelo & Giuliani (2008), teaching strategies should meet the learner's individual interests and needs. The results were supported by Simpson (2004), who believes that there is no single approach for learners with ASD but the most effective programs are those which incorporate variety of instructional strategies according to individual needs.

4.3 Teachers awareness about the Characteristics of Learners with ASD.

The second objective was to find out teachers awareness on the characteristics of learners with ASD.

Table 4.4 Teachers Responses on Identifying Characteristics of ASD.

Characteristics	Frequency	percent
Lack of expressive language skills	11	100
Purposeless movement (hand flapping, head rolling, rocking)	11	100
Lack of eye contact	9	81.8
Arranging objects on specific way (straight line)	9	81.8
Inappropriate facial expressions	8	72.7
Lack of control of emotions and often throw tantrums	8	72.7
Self injury like biting oneself, head banging	7	63.3
Unable to use imagination during play	7	63.3
Difficult in following directions	6	54.5
Insistence on sameness and resistance to change	6	54.5
Repetitive speech patterns (repeat words or phrases)	5	45.5
Repetitive movements like waving a hand in front of face	3	27.3

The above findings indicate that every learner with ASD is a unique individual. The learners depicted various characteristics associated with ASD. Some characteristics were more pronounced than others. For instance, lack of expressive language skills and purposeless movement were noticed in all (100%) the learners while only 3 (27%) portrayed repetitive movements like waving hand in front of face. Other pronounced characteristics among the learners with ASD were: lack of eye contact;

arranging object on specific way; inappropriate facial expressions; lack control of emotions and often throw tantrums; self injury like biting oneself, head banging and being unable to use imagination during play. The findings were supported by Happe, Firth (2006) and Simpson (2005) who stated that each learner with ASD is so unique that it is hard to generalise. These behaviours commonly with learners with ASD interfere with social acceptance and integration more so with learning. Therefore, teachers should identify and use teaching strategies that motivate learners to learn DLS.

4.4 Parental Involvement in Training of Daily Living Skills.

The third objective was to find out whether parents were being involved in training of DLS to learners with ASD.

Table 4.5 Teachers Responses on Parental Involvement in Training of DLS

Responses	Parental involvement	
	Frequency	Percentage
Disagree	5	45.5
Strongly disagree	3	27.3
Undecided	2	18.2
Agree	1	9
Total	11	100

As the above table shows almost half of the teachers disagreed slightly above quarter strongly disagreed while very few agreed that parents were involved in planning and training of DLS. The findings indicated that most parents were never involved in training of DLS.

Table 4.5.1 Responses from Parents on their Involvement in Training DLS.

NAME OF SCHOOL	NO PARENTS INTERVIEWED
Percy Davis	11
Peter Kariuki	4
Maganjo	3
Pundamilia	3
Kagaa	2
Karung'ang'i	1
Thaara	1
Total	25

School A was mixed boarding while all others were mixed day.

The researcher visited seven schools to meet with parents of children with ASD. The purpose of the interview was to find out whether parents were being involved in the training of DLS to learners with ASD. The researcher visited each school at a time where parents were individually interviewed. A total of twenty five parents were interviewed from the seven schools. The researcher invited parents to schools through headteachers and class teachers. Parents of school A were interviewed from a school hall. Interviews at schools B, C, D, E, F and G were conducted inside the classrooms. It took about ten to fifteen minutes for literate parents to answer questions while for those who could not read and write was about thirty minutes. Each parent represented one learner. Among the learners, fourteen were boys with age ranging between nine to seventeen years. Girls were eleven with ages between six to twenty five years. The

findings were supported by National Research Council (2001), which stated that studies had consistently identified more boys with autism than girls.

The researcher interviewed parents to find out how often they meet with class teachers to discuss about their children. Most parents indicated they meet with teachers once a year, several twice a year, a number meet once a term and a few said they never meet the teachers at all. The above findings indicated that majority of the parents did not understand the importance of teacher-parent collaboration. According to National Research Council (2001), parents of learners with autism need to be more closely involved in the educational process than parents of learners with many other childhood disorders.

The researcher asked parents to indicate what they expected their children to achieve while at school. Majority of the parents expected their children to acquire feeding and toileting skills. Several parents desired their children to acquire bathing and dressing skills. Very few parents expected their children to learn how to write and washing clothes. Most of the parents also felt that their children were bothersome and uncontrollable thus not able to acquire skills like bathing, dressing and washing clothes. The findings indicate that parents expect teachers of learners with ASD to have acquired additional curricula content and relevant skills such as effective collaboration and consultation (IDEA, 2004). Learners with ASD are likely to gain acceptance if they are adequately groomed, toilet trained and can take care of basic personal hygiene needs in a socially acceptable way. According to Snell (1993), toileting, eating dressing and personal hygiene are the most critical self-care areas.

Parents should find out what teachers are doing and continue with the same techniques at home. The researcher also interviewed parents to find out the types of DLS they train their children while at home. Majority of the parents confessed that they did not train any of the DLS while at home. More than half of the parents said, they were very busy and had no time to be at home with their children. About quarter of them declared that their children stayed at home with house helps. A few of them said they attempted training their children feeding and dressing skills however they confessed that knowledge of DLS training was lacking. Only one respondent said that she tried to involve her granddaughter in washing clothes. This was what she said in kikuyu, “ndimuiraga ahure nguo ciake ciathiini riria nanii ndirahura ciakwa.” It means in English, “I tell her to wash her underwears when I am also washing clothes.” The findings clearly showed that most parents did not train their children the DLS at home. It came out clearly that they neither knew how to go about it nor created time for training their children the DLS. According to Harris (1986) it is important for schools to recognize that parents need both initial training and on-going support for trouble shooting if they are to sustain their effort at home teaching. Intervention of parents learning techniques for teaching adaptive skills maximizes the child’s learning and improves the quality of family life (National Research Council 2001).

The researcher attempted to find out whether parent of learners with ASD appreciated their children with tokens after trial of some DLS. Majority of the parents confessed that they did not give tokens because learners with ASD might not understand the meaning of gifts. Several respondents did not give tokens because they did not realise

the importance of positive reinforcement. A few replied that they either clap or buy sweets for their children. The findings showed that most parents were not aware of the impact of tokens as a positive reinforcement in training DLS. Rewards and positive reinforcements are powerful ways to increase frequency of desired behaviors. Reinforcement involves delivering a specific consequence when the learner demonstrates target behavior to increase the likelihood that the behavior will occur again when requested (Henry & Myles, 2007). Skinner as cited by McLead (2007) believes that target behaviours for instance toileting and feeding skills should be reinforced with tokens. He further maintained that all behaviours are motivated by rewards which reinforce learning.

The researcher sought parents' opinions concerning learners becoming more independent in DLS like feeding, toileting, dressing and hygiene. Majority of the parents were of the view that teachers had the responsibility to teach the learners all the DLS. Several parents did not realise their role in making learners gain some independence in DLS. A number of the parents had no idea. Just a few parents understood the importance of parent-teacher collaboration in training learners with ASD the DLS.

The findings from all the seven schools generally indicated that majority of parents did not take part in training of DLS in school or at home. Parental involvement was quite minimal if any. Lack of proper awareness and sensitization to parents about autism was a hindrance to teacher-parent co-operation. According to Bergeson, Davidson & Harmon (2008) family involvement allows for generalization (i.e carry over) of learning activities, experiences and approaches to and from school, home and

community. The APQI model (2001) advocates for substantial effort to recognize, value and assist parents in the development and implementation of their children's IEP.

4.5 Teachers Professional Qualification

The fourth objective was to establish teachers' professional qualifications.

Table 4.6 Professional Qualification of Teachers

Professional qualification	Frequency	Percent
Diploma	6	54.5
B.ED	5	45.5
Total	11	100

Professionally more than half teachers had acquired Diploma while the rest had B.Ed in special needs education (SNE). The results are supported by Webber & Scheuermann 2002 who stated that, it is extremely important that teachers be well trained, possess essential attributes and implement the most effective program possible. Without this, most learners with ASD will not only fail to progress but may actually regress.

Table 4.7 Years of Teaching Experience in Special School/Unit

Years of experience	Frequency	Percent
0 to 5	5	45.5
6 to 10	4	36.4
11 to 15	2	18.1
Total	11	100

Almost half of the teachers had taught for 5 years and below. Very few had taught for over ten years. The findings demonstrated that many teachers did not have enough

experience in teaching learners with special needs. According to APQI model (2001) all professional development activities including DLS are provided by persons highly experienced in the education of learners with ASD.

These National Research Council (2001) states that, ways of building on the knowledge of teachers as they acquire experience with learners with ASD and keeping skilled personnel within the field are critical.

4.5.1 Teachers Training on Autism

Table 4.8 Teachers Responses about Training in Autism.

Responses on Training	Duration of Training in months	Frequency	Percent
Not Trained	0	8	72.7
Trained	3	3	27.3
Total	3	11	100

The findings above indicate that majority of the teachers 8 (72.7%) had no training on autism; however all of them were trained on special needs education. Only 3 (27.3%) teachers had training of three (3) months on autism. The results were supported by the National Research Council (2001) who states that many qualified teachers even having received solid training in special education may have had little or no instruction about strategies for teaching ASD like applied behaviour analysis or use of picture systems. The National Research Council (2001) further states that the preparation of teachers needed to serve learners with ASD is the most significant challenge facing the autism field. The findings were further supported by Cascella and Colella (2004) who stated that teachers often lack qualifications when it comes to working with learners who have ASD.

4.6 Findings from Observation Check List

The researcher carried out some observation in the classrooms of the seven schools during teaching sessions using a checklist (see appendix C). The intention was to find out the availability and proper use of instructional materials. Observation was done during different class sessions with duration of 30 minutes each. The findings indicated that majority of the schools had not timetabled DLS. Only a few schools (2) had put DLS in their timetables.

Less than half of the schools had instructional materials for oral care training like toothbrush and paste. The rest had none. This was a clear indication that teachers did not train learners with ASD oral care skills. School A had modified a toilet to accommodate learners with ASD who could not support themselves. Majority of the schools (6) had not made any adaptation either in class or compound. There was only one school that had modified a toilet to accommodate learners with ASD who could not support themselves. According to Fein & Dunn (2007) due to problems with motor and thinking speed, organization may require modification to accommodate learners with ASD. The APQI model (2001) advocates that teachers for learners with ASD be knowledgeable in areas including developing IEPs, environmental adaptation and instructional methods

Table 4.9 Findings from Observation Concerning Teaching Strategies.

Responses of teaching strategies	Frequency	Percent
<i>Not used</i>	4	57.1
Minimally used	2	28.6
Fairly used	1	14.3
Extensively used	0	0
Total	7	100

The findings indicate that more than half of the schools did not use any of the teaching strategies; very few used teaching strategies. Poor ratings on instructional strategies such as use of visual cues, social stories and task analysis reflect lack of competence and skills among teachers to teach learners with ASD which adversely affect the acquisition of DLS. Consequently Webber and Scheuermann (2002) state that learners may be compelled to remain in segregated settings because they cannot display appropriate behaviour under integrated conditions.

4.7 Chapter summary

This chapter presented data analysis interpretation and discussions of the results. Data was collected from teachers and parents of special units and school in Makuyu Division. The collected data was categorized, coded and tabulated according to themes developed from the objectives of the study. Data was analyzed through use of tables of frequency and percentages (%). The results indicated that most teachers were able to identify and describe learners with ASD through main characteristics. Many of the instructional strategies were not properly practiced. Poor ratings on instructional strategies such as use of visual cues, social stories and task analysis reflect lack of competence and skills among teachers to teach learners with ASD which adversely affect the acquisition of DLS. Training of DLS was found necessary in enhancing independence although some learners had acquired certain level of skills. Parental involvement was very minimal. Lack of proper awareness of ASD and parental sensitization was a hindrance to teacher-parent co-operation. Teachers had high training in area of special needs education. The preparation of teachers needed to serve learners with ASD is the most significant challenge facing the autism field. Many qualified teachers even having received solid training in special education may

have had little or no instruction about strategies for teaching ASD like applied behaviour analysis or use of picture systems (National Research Council 2001).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents summary, conclusions and recommendations of the research findings. It also contains suggestions for further research in the area covered by the study.

5.1.1 Instructional strategies used by teachers to train learners with ASD the daily living skills.

Teachers didn't use various instructional strategies needed to teach learners with ASD. Some strategies like prompting and reinforcement were more practiced by all eleven schools while social stories were never used. For instance all eleven teachers agreed to have used prompting while only two used visual cues. However none of the teachers used social stories. According to Pierangelo & Giuliani (2008) teaching strategies should meet the learner's individual interests and needs.

5.1.2 Characteristics of learners with ASD.

It was found out that majority of the teachers were well aware of the characteristics of learners with ASD. Learners with ASD had difficulty relating appropriately with their peers. Social impairments were the major problems in all learners with ASD. Teachers reported that their learners with ASD displayed repetitive and stereotyped behavior and narrow patterns of interests. The teachers also confirmed that learners with ASD do not learn DLS on their own. Training of basic DLS, therefore, becomes an essential part of teaching students with ASD.

5.1.3 Parental involvement in teaching DLS to learners with ASD

The findings showed that 5 teachers disagreed, 3 strongly disagreed, and 2 were undecided while only 1 agreed that parents were involved in training DLS. The findings indicated that most parents were never involved in training of DLS. 18 parents confessed that they rarely or had never visited schools. The remaining 7 teachers visited the school once or twice a year. Majority of parents, 18 of them said it was teachers' responsibility 3 had no idea while only 4 reported little attempt to initiate some training DLS. Lack of proper awareness and sensitization to parents about autism was a hindrance to teacher-parent co-operation.

5.1.4 Teachers' professional experience in training learners with ASD the DLS..

Majority of the teachers (6) had Diploma qualification while the rest (5) had B.Ed in special needs education (SNE). Almost half of the teachers had taught for (5) years and below. Very few had taught for over ten years. Majority of the teachers (8) had no training on autism; however all of them were trained on special needs education. Only (3) teachers had training on autism.

5.2 Conclusions

Majority of the teachers had some awareness of the characteristics of learners with ASD as social impairments, language difficulties, repetitive behaviours and learning deficits. The instructional strategies practiced by teachers for learners with ASD in Makuyu Division didn't give priority to training of DLS. Training of DLS was not timetabled in majority of schools. Lack of training materials made it difficult for learners with ASD to acquire the most needed independence meaningfully. The study established there was lack of adequate number of teachers trained in skills to handle

learners with ASD. Westling and Fox 1995 state that DLS should be taught in both natural contexts and times whenever possible. A big number of parents left entirely the responsibility of training DLS to teachers because they were not aware of training skills. The findings established that majority of the teachers had no training on autism; however all of them were trained on special needs education. It was evident that teachers lacked appropriate skills to implement the proper instructional strategies in training of DLS.

5.3 Recommendations

Based on the findings of the study the following recommendations were made.

- The few teachers who were not aware of the characteristics of learners with ASD should work out to understand learners with autism.
- Teachers should adopt instructional strategies that address each learner's needs to enable those with ASD to achieve holistic growth and development especially in timetabling DLS and environmental modification
- The ministry of education should also provide additional financial support to facilitate acquisition of specialized teaching and learning resources required for successful training DLS to learners with ASD especially for oral skills.
- Sensitization program should be launched targeting parents of learners with ASD who are unaware of the importance of teacher-parent collaboration.

- In-service training for teachers should be organized by the ministry of education to equip special education teachers with specialized skills to handle learners with autism.

5.4 Suggestions for further research.

The researcher suggests further studies on the following topics;

- (i) An extensive research on training of DLS in all counties.
- (ii) A study should be done on the assessment of learners with ASD.
- (iii) A study on how to alleviate the low parental involvement on training of DLS.
- (iv) Find out the teachers' preparedness and attitude towards training of DLS
- (v) A study on learners with Autism and their sexuality

REFERENCES

- Africa Network for the Prevention and Protection against Child Abuse and Neglect. Nigeria Chapter. (2007). Communique on a Project to Increase the Level of Awareness on Autism and Develop a Mechanism for Care and Support of Children with Autism in Enugu State, South –Eastern Nigeria.
- American Psychiatric Association. (2000). Diagnostic and statistical manual of mental disorders. (4th. tex revision). Washington, DC: Author.
- Audu, E. I. V & Egbochuku, O. E. (2010). Autism among Primary School Pupils in Benin Metropolis-: Implications for Counselling. *Edo Journal of Counselling* (vol. 3, No.2, pp 258-261).
- Autism Society of Kenya, Autism Society of Kenya, accessed March 12, 2012, <http://www.autismsocietyofkenya.org>
- Barnhill, G., Hagiwara, T., Myles, B. S., & Simpson, R. L. (2000). Asperger Syndrome. A study of the cognitive profiles of thirty-seven children and adolescents. *Focus on Autism and other Developmental Disabilities*, 15, 146-153.
- Baron- Cohen, S., Tagerr-Fluesberg., H & Cohen, D. (2000). *Understanding other minds: Perspectives from Developmental Cognitive Neuroscience*. Oxford, England: Oxford Univerrrsity press.
- Bergeson, T, Davidson, C., & Harmon, B. (2008). *The Educational Aspects of Autism Spectrum Disorders* [www.k12.wa.us/ Autism%20manual.pdf](http://www.k12.wa.us/Autism%20manual.pdf)
- Berkell, D. E. (1992). Instructional Planing: Goals and Practice. In D. E. Berkell (Ed.), *Autism. Identification, Education and Treatmant* (pp.89-106). Hillsdale, NJ: Erlbaum.
- Bodgashina, O. (2003). *Sensory perceptual issues in Autism and Aspergers syndrome*. London: Jessica Kingsley Publishers.
- Bolton, P., MacDonald, H., Pickles, A., Rios, P., Goode, S. & Crowson, M. (1994). A case-control family history study of autism. *Journal of Child Psychology and Psychiatry*, 35, 877-900
- Bronson, P. & Merryman, A. (2009). *Nurtureshock: New Thinking about Children*. New York: Twelve
- Burkhardt, S. (2001). Counselling issues for parents of children with autistic spectrum disorders. In T. Wahlberg, F. Obiakor, S. Burkhardt, & A. F. Rotatori (Eds.) *Autistic spectrum disorders: Educational and clinic interventions* (pp.211-233). Amsterdam: Elsevier Science Ltd.

- Cascella, P.W., Colella, C.S. (2004). Knowledge of autism spectrum disorders among Connecticut school speech-language pathologists. *Focus on Autism and other Developmental Disabilities*, 19, 4, 245-252.
- Charmin, T. (2003). Why is joint attention a pivotal skill in autism? *Philosophical Transactions of the Royal Society: Biological sciences*, 358, 315-324.
- Clifford, S. M., & Dissanayeke, C. (2008). The Early Developmental of Joint Attention in Infants with Autism Disorder using home video Observations and Parental Interview. *Journal of Autism and Developmental Disorders*, 38, 791-805.
- Coie, J. D., Rabiner, D. L., & Lochman, J. F. (1992). Promoting peer relations in a school setting. In L. A. Bond, B. E. Compas, & C. Swift (Eds.), *Prevention in the schools*. Newbury Park, CA: Sage.
- Crosby, P. H. (2009). Parent perceptions and observations of their children with autism age 14-26 concerning generalization of daily living skills at home and in the community. ProQuest, Umi Dissertations Publishing.
- Davis, N. O., & Carter, A. S. (2008). Parenting stress in mothers and fathers of toddlers with autism spectrum disorders: Associations with child characteristics. *Journal of Autism and Developmental Disorders*, 38, 1278-1291.
- Dawson, G. (1996). Neuropsychology of autism: A Report on the state of the Science. *Journal of Autism and Developmental Disorders*, 2, 179-181.
- Drew, A. Baird, G & Baron-Cohen. (2002). A pilot randomised control trial of a parent training intervention for pre-school children with autism. *European Child Adolescent Psychiatry*, 11, 266-272.
- Fein, D & M. A. Dunn, (2007). *Autism in your classroom: A general educator's guide to students with autism spectrum disorders*. Woodbine House, Inc
- Fombonne, E. (2003). Epidemiological surveys of autism and other pervasive developmental disorders: An Update *Journal of Autism and other Developmental Disorders*, 23, 365-382.
- Gay, L. R. (1992). *Educational research, competencies for analysis and application*. (4th Ed.) Columbus. Merrill.
- Gernbache, M. A., Saner, E., Geye, H. M., Schweigert, E. K., & Goldsmith, H. H. (2008). Infant and Toddler Oral and Manual-Motor Skills Predict later Speech Fluency in Autism. *Journal of Child Psychology and Psychiatry*, 49, 43-50.
- Gersbacher, M. A., Dawson, M., & Goldsmith, H. H. (2005). Three reasons not to believe in an Autism Epidemic. *Current Directions in Psychological Science*, 14, 55-58.

- Gillberg, C. (1999). Neurodevelopmental Process and Psychological functioning in autism. *Development and Psychopathology*, 11,567-587.
- Gray, D. E. (2002). Ten years on: A longitudinal study of families of children with autism. *Journal of Intellectual & Developmental Disability*, 27 (3), 215-222.
- Hall, H. R., Graff, J. C. (2011). The relationships among adaptive behaviours of children with autism, family support, parenting stress, and coping. *Issues in Comprehensive Pediatric Nursing*, 34, 1, 4-25.
- Haracopos, D., & Pederson, L. (1999). The Danish report. Kettering: Autism Independent UK. Identification, education and treatment (pp. 89-106). Hillsdale, NJ: Erlbaum.
- Harris, S. L. (1986). Parents as teachers: A four to seven year follow-up of parents of children with autism. *Child and Family Behaviour Therapy* 8:39-47.
- Henry, S. & Myles, S. B. (2007). The Comprehensive Autism Planning System (CAPS) for Individuals with Asperger Syndrome, Autism and Related Disabilities: Integrating Best Practices throughout the Student's Day. Shawnee Mission, Kansas: Autism Aspergers Publishing Co.
- Honey, E., McConachie, H., Randle, V., Shearer, H., & Le Couteur, A.S. (in Press). One-year change in repetitive behaviours in young children with communication disorders including autism: *Journal of Autism and Developmental Disorders*.
- Ingersoll, B & Dvortcsak, A. (2006). Including parent training to the early childhood special education curriculum for children with autism spectrum disorders. *Journal of Positive Behaviour Interventions*, 8(2),79-87.
- Janzen, J. E. (2003). *Understanding the Nature of Autism: A Guide to the Autism Spectrum Disorders* (2nd Ed.) San Antonio, TX: Therapy Skill Builders.
- Kavale, K. A., & Forness, S. R. (1999). *Efficacy of special education and related services*. Washington, DC: American Association on Mental Retardation.
- Klin, A., & Volkmar, F. R. (1997). The pervasive developmental disorders: Nosology and profiles of development. In S. S Luthar, J. A. Burack, D. Cicchetti, & J. Weisz (Eds.), *Developmental Psychology: perspectives on adjustment, risk, and disorder* (pp. 208-226). New York: Cambridge University Press.
- Klin, A., Jones, S., Schultz, R., Volkmar, F., & Cohen, D. (2002). Defining and quantifying the social phenotype in autism. *American Journal of Psychiatry*, 159, 895-908.
- Klinger, L. G., Dawson, G., & Renner, P. (2003). Autistic disorders. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (2nd ed., pp. 409-454). New York: Guilford Press.

- Koller, R. (2000). Sexuality and adolescent with autism. *Sexuality and Disability*, 18 (2), 125-135.
- Lantz, K. H. (2009). Increasing Independence in Autism Spectrum Disorders. *Journal of Autism Developmental Disorders*, 1329-1338.
- Lawson, W. (2005). *Sex, sexuality and the autism spectrum*. London: Jessica Kingsley Publishers.
- Loveland, K. A., Tunali = Kotaski, B. Pearson, D. A. Brelsford, K. A. Ortegon, J., Chen, R. (1994). Imitation and Expression of Facial affect in Autism, *Development and Psychopathology*, 6, 433 – 444.
- Luyster, R. J., Kadlec, M. B., Carter, A., & Targer-Flusberg, H. (in press). Language assessment and development in toddlers with autism spectrum disorders. *Journal of Autism and Developmental Disorders*.
- Mash, E. J. & Wolfe, D. A. (2010). *Abnormal child psychology*, (4th Ed.). USA; Wadsworth.
- Matasio, C. M. (2011). M.Ed Thesis (Not published) Inclusive Education for Children with Autism: Challenges facing teachers at city primary. Kenyatta University: Nairobi, Kenya.
- Mavrovoulou, S, & Padeliadu, S. (2001). Greek teachers' perceptions of autism and implications for educational practice: A preliminary analysis. *Autism*, 4, 2, 173-183.
- McLeod, S. A. (2007). Skinner-Operant Conditioning. Retrieved from <http://www.simplypsychology.org/operant-conditioning.html>
- McMahon, J. A. (2002). An explanation for normal and anomalous drawing ability and some implication for research on perception and imagery. *Visual Arts Research*, 28, 38-52.
- Minshew, N. J., Johnson, C. & Luna, B. (2001). The cognitive and neural basis of autism: A disorder of complex information processing and dysfunction of neocortical system. In L. M. Glidden (Ed.), *International review of research in mental retardation* (vol.23, pp.111-138). San Diego, CA: Academic.
- Myles, B. S., & Savner, J. L. (2000). *Making visual supports work in the home and community. Strategies for individuals with autism and asperger syndrome*. Shawnee Mission, KS: Autism Asperger Publishing.
- Myles, B. S., Cook, K. T., Miller, N. E., Rinner, L., & Robbins, L (2000). *Asperger Syndrome and Sensory Issues: Practical Solutions for making sense of the world*. Shawnee Mission, KS: Autism Asperger Publishing.

- National Action Plan on Education for All 2003-2015. (Not dated). From Commitment to Action: Expanding Opportunities for Quality Education to all Kenyans, Nairobi: Ministry of Education Science and Technology.
- National Research Council. (2001). Educating children with autism (Committee on Educational Interventions for children with Autism, Division of Behavioral and social science and Education). Washington, DC: National Academy Press.
- New York State Education Department. (2001). Autism Programme Quality Indicators. A self-review and quality improvement guide for serving young students with autism spectrum disorders. Albany, NY: The University of the state of New York.
- Okey-Martins, N. (2007). Autism in Nigeria: A brief on current situation. Lagos.
- Orodho A. J. (2003). Essential of Educational and Social Science Research Methods. Masola Publisher.
- Orodho, A. J. (2009). Elements of education and social science research methods (2nd Ed.) Maseno. Kanezja Publishers.
- Pierangelo, R. & Giuliani, G. (2008). Teaching Students with Autism Spectrum Disorders: a step-by-step Guide for Educators. California, Corwin Press.
- Pierangelo, R., & Giulani, G. (2007). EDM: The educator's diagnostic manual of disabilities and disorders San Francisco: Jossey Bass.
- Pring, L. Hermelin – B., & Heavy, L., (1995). Savants, segments, art and autism. Journal of Child Psychology and Psychiatry, 36, 1065-1076.
- Realmuto, G. M., & Ruble, L. A. (1999). Sexual behaviours in autism: Problems of definition and management. Journal of Autism and other Developmental Disabilities, 29(2), 121-127.
- Reichle, N. C. & Palmar, A. (1997). Sexual behaviour in adults with autism. Journal of Autism and other Developmental Disabilities, 27(2), 113-125.
- Republic of Kenya. (2003). *A report of the task force on Special Needs Education*.
- Republic of Kenya. (2010). *Constitution of Kenya*. Nairobi. Government printer.
- Republic of Kenya. (2007). *Kenya Vision 2030: The popular version*. Nairobi. Government printer.
- Republic of Kenya. (2002). *The Children Act, 2001*. Nairobi. Government printer.
- Reynolds, S., & Lane, S. J. (2008). Diagnostic Validity of Sensory Over-responsivity: A review of the Literature and case Reports. Journal of Autism and Developmental Disorders, 38, 515-529.

- Rimland, B. A. (2003). Commentary: Autism-related language, personality and cognition in people with absolute pitch: Results of the preliminary study. *Journal of Autism and Developmental Disorders*, 33, 169.
- Robbins, L. A. (2010). Which is more effective in educating teachers to work with children with autism (Doctoral dissertation). Retrieved from kuscholarworks.ku.edu/pdf
- Rogers, S. J., & Ozonoff, S. (2005). Annotation: What do we know about sensory dysfunction in autism? A critical review of empirical evidence. *Journal of Child Psychology and Psychiatry*, 46, 1255-1268.
- Sanders, J., Johnson, K. A Garavan, H., Gill., & Gallagher, L. (2008). A Review of neuropsychological and neuro imaging research in autistic spectrum disorders: Attention, inhibition and cognitive flexibility, *Research in Autism Spectrum Disorder*, 2, 1-16.
- Shore, S. (2003). *Beyond the wall: Personal perspectives with autism and Asperger syndrome*. Shawnee Mission, KS: Autism Asperger Publishing Company.
- Simpson, R. L., & Myles, B. S. (1998). Understanding and responding to the needs of students with Autism. In R. L. Simpson & B. A. Myles (Eds). *Educating children with youth with autism* (Pp. 1-23). Autism, TX: PRO-ED.
- Simpson, R. L. (2004). Evidence-based practices and students with autism spectrum disorders. *Focus autism and other developmental disorders*, 20(3)140-149
- Snell, M. E., & Farlow, L. J. (1993). Self care skills. In M.E Snell (Ed.), *Instruction of students with severe disabilities* (4th ed., pp. 380-441). New York: Merrill.
- Snell, M. E. (1993). *Instruction of students with severe disabilities* (4th ed.). New York: Merrill.
- Tager – Flusberg, (1993). What language reveals about the understanding of minds in children with autism. In S. Baron – Cohen, H. Tager – Flusberg & D. J. Cohen (Eds.) *Understanding other minds: Perspectives from Autism* (pp. 138-157). Oxford, England: Oxford University Press.
- Tutt, R., Powell, S., & Thornton, M. (2006). Educational approaches in autism: What we know about what we do. *Educational Psychology in Practice*, 22, 69-81.
- U.S. Department of Education. (1991, August 19). Notice of proposed rulemaking. *Federal Register*, 56 (160), 41271).
- UNESCO, (1994). *The Salamanca Statement and Framework for Action*. Paris, UNESCO.

- Vaughn, S., Bos, C., & Schumm, J. S. (2003). *Teaching exceptional and diverse at-risk students in the general education classroom* (3rd ed.). Boston: Allyn & Bacon.
- Volkmar, F. R., Klin, A., Cohen, D. J. (1997). Diagnosis and classification of autism and related conditions: consensus and issues. In D. J. Cohen & F. R. Volkmar eds. *Handbook of autism and pervasive developmental disorders* (pp5-39), New York: John Wiley.
- Volkmar, F. R., Lord, C., Bailey, Schultz, R. T., & Klin, A. (2004). Autism and pervasive Developmental Disorders. *Journal of Child Psychology and Psychiatry*, 45-135-170.
- Webber, J. & Scheuermann, B. (2002). *Autism: Teaching Does Make a Difference*. Canada. Wadsworth, Thomas Learning.
- Wing, L. (1996). *The autistic spectrum: A guide for parents and professionals*. London: Constable.
- Yeargin-Allsopp, M. R., Karapukar, C. T., Doernberg, N., Boyle, C., & Murphy, C. (2003). Prevalence of autism in a US metropolitan area. *American Medical Association*, 289, 49-55.

www.helpguide.org/mental/autism_help.htm

kendrik2.wordpress.com/2007/10/10/12_tips_to_setting_up_an_autism_classroom
link.springer.com/referenceworkentry/10.1007%2f978-1-4419-1698-3_1417

APPENDIX A: Questionnaires for Teachers

SECTION A: Directory Information.

Please provide the following information by filling in as requested

1. Your age bracket in years. 20-30 () 31-40 () 41-50 () 51-60 ()
2. Gender: Male () Female ()
3. Name of your school or unit.....
4. Your professional qualifications. P1 () Diploma () ATS IV ()
B.Ed () Med () Others.....
5. Area of specialization in the Special Needs Education.....
6. Indicate years of teaching experience in a special school/ unit.....
7. Indicate number of learners in your class with autism spectrum disorders.....
8. Do you have any background training in handling learners with autism? Yes ()
No ()
9. If yes how long was the course? Please more details.....

SECTION B: Information about learners with Autism Spectrum Disorders. Tick appropriately.

10. The following are some characteristics associated with ASD. Put a tick where applicable.

Does the learner exhibit the following characteristics	YES	NO
Inappropriate facial expressions		
Lack eye contact		
Lack of expressive language skills		
Repetitive speech patterns (repeating words or phrases after others)		
Insistence on sameness and resistance to change		
Lack control of emotions and often throw tantrums		
Difficult in following directions		
Purposeless movement (hand flapping, head rolling, body rocking)		
Arranging objects like toys on a specific way (on a straight line)		
Self injury like biting oneself, head banging		
Repetitive movements such as weaving a hand in front of their face		
Unable to use imagination during play		

11. The following is a list of some teaching strategies for learners with ASD. Indicate with a tick those that teachers in your school use.

Teaching strategies	Tick as appropriate
Visual cues	
Use of IEP	
Using meaningful reinforcement	
Prompting	
Task Analysis	
Use of age appropriate materials	
Provide opportunities for choice	
Using peer support	
Using social stories	
Teaching key social rules	
Use visual daily schedules	

12. Indicate any two relevant materials used for the above strategies.

(i).....

(ii).....

13. Indicate some of the DLS acquired by your learners.

(a).....(b).....

(c).....(d).....

SA-Strongly Agree**D-Disagree****A-Agree****SD-Strongly Disagree****U-Undecided****Use the above words to answer the following questions****SA A U D SD**

14. Learners with ASD have acquired some of DLS.					
15. Parents are involved in training DLS to learners with ASD.					
16. Parents need training on how to handle learners with ASD.					
17. There are arranged toilet schedules for learners with ASD.					

APPENDIX B: Interview schedule for parents.

This interview is meant for parents of learners with Autism Spectrum Disorders.

The information will be treated with confidentiality.

Section A: Background Information.

1. What is the sex of your child?.....
2. What is the age of your child?.....
3. How long have your child been to school?.....

Section B: Teachers and parents involvement.

4. How often do you meet with the teacher to discuss about your child?.....
5. Which DLS would you like learnt by your child?.....
6. Do you find your child bothersome and uncontrollable?.....
7. How often do you co-operate with teachers to improve acquisition of daily living skills?.....
8. What are some of the daily living skills you train your child at home?.....
9. How often do you give tokens to your child after attempting certain skill or activity?.....
10. How do you treat your child when unable to do what you require him/her to do?.....
11. In your opinion what do you think should be done for the child to become more independent in feeding, dressing, toileting and hygiene?

APPENDIX C: Observation guide.

The researcher used checklists to observe the teaching strategies used by teachers handling learners with ASD during lessons.

School name.....Division.....County.....

V.E.U-VERY EXTENSIVELY USED, E.U- EXTENSIVELY USED, F.U-FAIRLY USED M.U-MINIMUMLY USED, N.U-NOT USED					
TEACHING STRATEGIES	V.E.U	E.U	F.U	M.U	NU
1) Visual cues					
2) Use of IEP					
3)Using meaningful reinforcement					
4) Prompting					
5) Task Analysis					
6)Use of age appropriate materials					
7) Provide opportunities for choice					
8) Using peer support					
9) Using social stories					
10) Teaching key social rules					
11) Use visual daily schedules					

12. If daily living skills have been timetabled.....

13. Whether materials needed to train oral care available.....

14. Adaptation of environment to accommodate learners with ASD.....

APPENDIX D: Schools visited at Makuyu Division

Names of schools	Number of parents interviewed
(A) Percy Davis	11
(B) Peter Kariuki	4
(C) Maganjo	3
(D) Pundamilia	3
(E) Kagaa	2
(F) Karung'ang'i	1
(G) Thaara	1
	<hr/>
	25
	<hr/>



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Our Ref: **NCST/RCD/14/013/611**

6th May 2013

Rosemary Wanjiru
Kenyatta University
P.O Box 43844-00100
Nairobi

RE: RESEARCH AUTHORIZATION

Following your application dated **25th April, 2013** for authority to carry out research on *“Establishing Instructional Strategies on Training Learners with Autism Daily Living Skills in Special Units and School, Makuyu Division, Murang’a County, Kenya.”* I am pleased to inform you that you have been authorized to undertake research in *Murang’a District* for a period ending **30th November**,

You are advised to report to the **District Commissioner and District Education Officer, Murang’a District** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


DR. M. K. RUGUTT, PH.D, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:
The District Commissioner
The District Education Officer
Murang’a District

Research Permit No. NCST/RCD/14/013/611

Date of issue 6th May, 2013

Fee received KSH 1,000

THIS IS TO CERTIFY THAT

Prof./Dr./Mr./Mrs./Miss/Institution

Rosemary Wanjiru

of (Address) Kenyatta University

P.O. Box 43844-00100, Nairobi

has been permitted to conduct research in

Location

Murang'a

District

Central

Province

on the topic Establishing Instructional

Strategies on Training Learners with

Autism Daily Living Skills in Special

Units and School, Makuyu Division

Murang'a County, Kenya

for a period ending 30th November, 2013



[Handwritten Signature]

Applicant's Signature

[Handwritten Signature]
Secretary
National Council for
Science & Technology