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An Analysis of Approaches Used to Train Learners with Autism Spectrum Disorders Human Occupation Skills in Selected Special units, Mombasa County, Kenya

By Daniel Mbirithi Mange; Macmbinji Vincent Otieno and Ndung'u Lewis Mjomba

Abstract

This study aimed at finding out the instructional strategies used to train learners with autism spectrum disorders (ASD) human occupation skills. It was intended to establish whether teachers of children with ASD have adequate knowledge and skills to determine the educational needs of learners with ASD. It also investigated the existing instructional methods used in educating children with ASD human occupation skills, and established the level of awareness among teachers on the characteristics of learners with ASD. The stud employed quantitative approach. The target population was 435 respondents, 90 teachers and 345 learners with special needs. The sample comprised of 15 teachers and 30 pupils. Questionnaires were used to collect data from teachers. The researcher used an observation checklist to check the approaches used by teachers in training human occupations and characteristics exhibited by learners with ASD. Content validity will be determined by experts in the field of special needs. The tools were piloted in special units in Kilifi County, Kenya to determine their reliability. Data collected was analyzed using descriptive and inferential statistics using Statistical Package for Social Sciences (SPSS). Data was presented in graphs and tables. The study also found out that majority of the teachers preferred using Individualized Education Plan to train learner in human occupation skills. Further, the study found out that there were inadequate teachers trained in human occupation skills as well as managing learners with autism. The study found out that majority of the learners with autism had echolalia and lack of control of emotion and throwing tantrums. The study recommends that Ministry of Education Science & Technology should employ more teachers trained in Special Needs Education in special schools, review curriculum for teacher training colleges to inculcate management for learners with specific conditions such as ASD and more in-service training on special needs teachers regarding approaches for training learners with ASD.

Key words: Autism Spectrum Disorders, Human Occupations, Instructional Strategies

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An Analysis of Approaches Used to Train Learners with Autism Spectrum Disorders Human Occupation Skills in Selected Special units, Mombasa County, Kenya

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Introduction

Autism is a neurodevelopmental disorder that affects a child's inability to make social interactions, engage in constructive communication as well as constructive play and self-help skills. It typically presents itself within the first three years of a child's life (Scott& Gillis, 2010). Autism is placed on a spectrum from mild to severe according to the variance in characteristics and degree of symptoms (Granker, 2007; Wall, 2004). The term Autism and Autism Spectrum Disorder (ASD) will be interchangeably in this study. Thus, the term Autism and Autism Spectrum Disorder will refer to a range of disorders within the spectrum when used in this document. Epidemiological research in the United States of America indicates that the number of children diagnosed with Autistic Spectrum Disorders (ASDs) is rising (Burton, 2002 & Rettner 2015). This increase in the number of children being diagnosed is causing concerns to parents, special needs educators and medics which may require integrated approach in identification.

According to Lord (2011), ASDs is differentiated from other developmental disorders by significant impairments in social interaction and communication, along with restrictive, repetitive, and stereotypical behaviours and activities. Social communication and social interaction features include deficits in social-emotional reciprocity (example deficits in joint attention, atypical social approach and response, conversational challenges, reduced sharing of interest, emotions, and affect); deficits in nonverbal communication (for instance atypical eye contact, reduced gesture use, limited use of facial expressions in social interactions, challenges understanding nonverbal communication); and deficits in forming and maintaining relationships (example diminished peer interest, challenges joining in play, difficulties adjusting behaviour to social context, Autism Speaks, 2014).

Autism Disorder has been diagnosed using the diagnostic Statistical Manual-IV Edition Text Revision, this is a manual with diagnosis categories approved by the American Psychological Association and International Statistical Classification of Diseases and Related Health Problem, tenth revision (ICD-10) published by the World Health Organization (WHO). In 1994, when the fourth edition of DSM was published, five categories appeared under the Pervasive Developmental Disorders (PDD) heading: Autism, PDD-NOS, Asperger's Syndrome, Retts Syndrome, and Childhood Disintegrative Disorders. PDD is an umbrella term for disorders that involve impairment in reciprocal social interaction skills and communication skills, and the presence of stereotypical behaviours, interests and activities. The term Autistic Spectrum Disorder is used to represent the facts that while these individuals share common characteristics, how these characteristics are manifested will differ with each individual. As a result, no two individuals are the same.

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Problem Statement

The term Human Occupation Skills (HOS) refer self-care activities that are performed at home, school, work and community settings. Adaptive functioning and personal ability to care for self must be the primary considerations when teaching learners with ASDs. Most of the children with ASDs lack the ability to function independently in as far as the human occupations are concerned. This calls for the need to have them been trained in human occupation skills. Lack of these skills may have negative effects on adult outcome and occupational achievement for learners with ASDs. Tendency' to insist on sameness can make acquisition of human occupation skills difficult. Toileting skills can be difficult to acquire for learners with ASDs because they struggle with bladder control due to deficit in perceiving the sensation. Training of basic human occupation skills is an essential part of teaching learners with ASDs. Unfortunately, most learners with ASDs fail to learn human occupation skills through typical developmental channels. Consequently, without long term, comprehensive and systematic training in HOS, most individuals with ASDs would not gain the independence of living full lives in the mainstream society. The current study therefore, attempted to establish the instructional strategies for teaching learners with ASDs the human occupation skills in selected special units in Mombasa County, Kenya.

Study Objectives

1. To establish the instructional strategies used by teachers to train learners with ASD in human occupation skills
2. To establish the level of awareness among teachers on the characteristics of learners with ASD.
3. To investigate whether parents are involved in training of human occupation to their children with ASD.

Literature Review

Training Strategies

Children with ASDs differ from one another therefore there is no single approach likely to be used for every child. Therefore, teachers may need to utilize a wide variety of teaching strategies for students with ASDs. Identified strategies are geared towards achieving the learner's individual's interests, strength and needs and also allow progress towards Individualized Education Program 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). Many learners with ASDs have a limited repertoire of interest. In this regard, teachers need to come up with more appropriate strategies which can boast the morale of students to learner human occupation skills. 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

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expected to access 8-4-4 curriculum because some required a specialist program meant to enable them gain their developmental milestones. It is not clear which kind of program do teachers in special units use to train learners with autism human occupation skills. The present study sought to fill this gap.

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 ASDs is best promoted by adding structures through physical arrangements, visual supports and low student-teacher ratios (Webber & Scheuermann 2002). Children with ASDs do perform well in a structured schedule and/or program. A schedule should be designed and kept consistent. The designed schedules provide great comfort to a child with ASDs. Teachers ought to teach this schedule clearly to the students. Task analysis can be introduced to make the activities successful. It is still not certain whether any routine has been established by teachers in special units in Mombasa County, Kenya. The present study sought to fill this gap.

A picture speaks a thousand words. Therefore, teacher can introduce Pictures Exchange Communication System (PECS) to the students for more emphasis of the skills. Children with ASDs learn more when visuals cues are used. Visual cues help in developing a child's focus as well interest in an activity being introduce to them. 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. People with ASDs 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.

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Training Human Occupation Skills (HOS)

It is of great essence to identify the skills to capitalize on when one wants to train children with ASDs human occupation skills. When choosing a human occupation skill 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) Human occupational skills are critical to success in any area of functioning as well as to overall independence. Individuals, including those with ASDs, 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.

First, appropriate human occupation skill 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 HOS in the same way that learners will perform them at home. Second, HOS 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 HOS are personal (for instance, 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 ASDs, due to their cognitive and language deficits, often do not show the signs of readiness for toilet.

Early Indicators of Individuals with Autism Spectrum Disorder

According to Wetherby et al (2004) children with ASD display a number of characteristics. Many a times parents fail to understand the reasons for unusual behaviours, inability to follow commands, which may lead to venting out stress and frustration on the child. Picking up early signs of children with autism may lead to intervening in early stages, thus yielding better outcomes. Ozonoff et al (2010) enumerates some of the observable features of autism. Further, they suggest that through daily interaction with children as a parent or teacher could identify the early signs in different age groups.

New born to 18 Months

Children suspected of having ASDs under this cohort tend to exhibit the following signs .May avoid people's gaze. They don't like people cuddling and will always prefers to be alone. In some instances, some delayed smile or does not smile and develop repetitive behaviour or

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actions with the body, like hand flapping or rocking. They may tend to avoid interaction. In addition, they are hyperactivity (excessive physical activities, restless, not sitting at one place) when there is a change in the routines and exhibit lack of non-verbal communication like gestures, poor facial express and no body language

One and half years (1½(to Four (4) years

The children in this age bracket exhibit the following characteristics. They may have impaired imitations (copying others' actions) and avoid people's gaze (not looking into person's eyes while interacting). Most have poor language comprehension (understanding meaning), lacking awareness of other people's existence and may have delayed language development. Echolalia is one of the common signs in this age. This makes them have unusual manner of talking example squeaky, or sing-song voice. Further, some of the children with ASD in the age handle objects strangely example spinning or turning them or arranging them in a line whereas others have unusual body movements example hand-flicking or hand twisting, spinning, head banging or whole body movements. Children with autism tend to have challenges with their socialization. However, some tend to be preoccupied with parts of objects example playing with only wheels of a toy car. They may have attachment to unusual objects example wires, threads, buttons. Most tend to have extreme fear.

Four Years and older

This is the age to which most of the children start to be diagnosed with ASDs with the characteristics depicting themselves vividly. Some of the characteristics exhibited include poor eye contact and lack of awareness of the existence or feelings of others. They may tend to have absence of pretend play example dressing up a doll, or pretending to be a teacher. There is a tendency of increase hyperactivity as well as lack or have unusual emotional response example crying or laughing without any reason. One of the common sign is indifferent towards or responds negatively to physical affection like hugging, patting as well as poor social interaction. Since communication is a challenge to most children with autism, they usually do not understanding conversations of social interaction, such as turn taking, making requests and thus have meaningless speech. This is because they have delayed language development which in turn makes them have inappropriate gestures example hugging strangers. Some tend to have a tendency of insistence on sameness as well as show marked distress over changes in trivial aspects of the environment example position of a bag in the room. Consequently some may show unreasonable insistence on following routines in a particular and rigid way.

Study site

The study was carried out in Coastal region of Kenya in special units of learning with children with disability in Mombasa County. Mombasa County has six Sub-counties namely Nyali, Kisauni, Changamwe, Likoni, Mvita, Jomvu with a total of 23 special learning units for children with disabilities. These special units have been reported to be accommodating only 2% of ASDs (Educational Assessment and Research Center, Mombasa, 2017). This is against the United

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Nations Conventional Right of children with the Disability (UNCRD) which states that each and every child has a right to education regardless of his or her condition. Mombasa County has a population of 939,370 (2009 population census). The County covers an area of 229.7Km excluding water mass of 65Km situated in the Southern Eastern part of the Coastal region.

Study Participants, sampling criteria and sample size

The target population of this study was teachers teaching in the 23special units in public primary schools in Mombasa County. The participants were teachers trained in special needs education and had taught in the selected special unit for a period of four years. There are 58 teachers in special units. The criteria for teachers' participation in the study included the following: at least a primary school teacher's diploma and/or an undergraduate degree in special needs education or related field of specialization, at least teaching experience of 4 years in a special unit class. Purposive sampling procedure was therefore applied in recruiting the teachers for the study.

Methodology

The research used descriptive survey design. White (2005) states that descriptive design is used to obtain pertinent and precise information concerning the current study and where possible draw valid conclusions from facts discovered. The study employed descriptive survey design to establish opinions and knowledge about training learners with ASDs in human occupations in special units. Teachers' strategies for training human occupation to children with ASDs constituted components of daily life that were the focus of the researcher's attention. In addition, the methodology was thought appropriate for the present study as the study examined real-life experiences brought about while teacher engaged learners with ASDs in human occupations skills in special units. Data was collected using a closed and open ended questionnaire.

Results

Table 1
Age

	n (15)	**Percentage**
31-40	1	6.7
41-50	7	46.7
51-60	7	46.7
Total	15	100.0

The age ranged from below 30 to 60. Almost equal numbers of teacher respondents were aged 41-50, 51-60, 7 (46.7%) and 31-40, 1 (6.7%) respectively. The findings were presented in table 1 above.

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Findings show that majority of the teacher respondents 13(86.7%) were female while 2 (13.3%) were male. The findings were presented in Figure 1

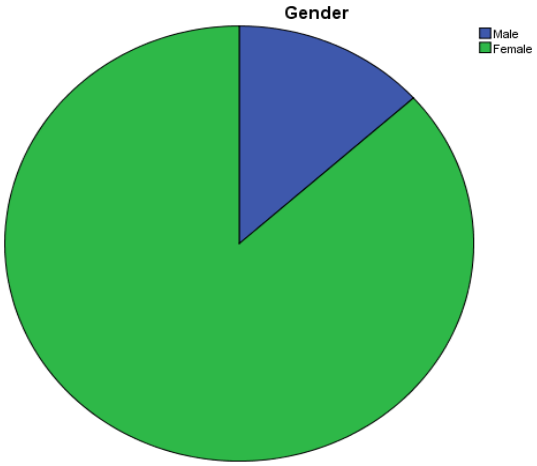

Figure 1: Gender

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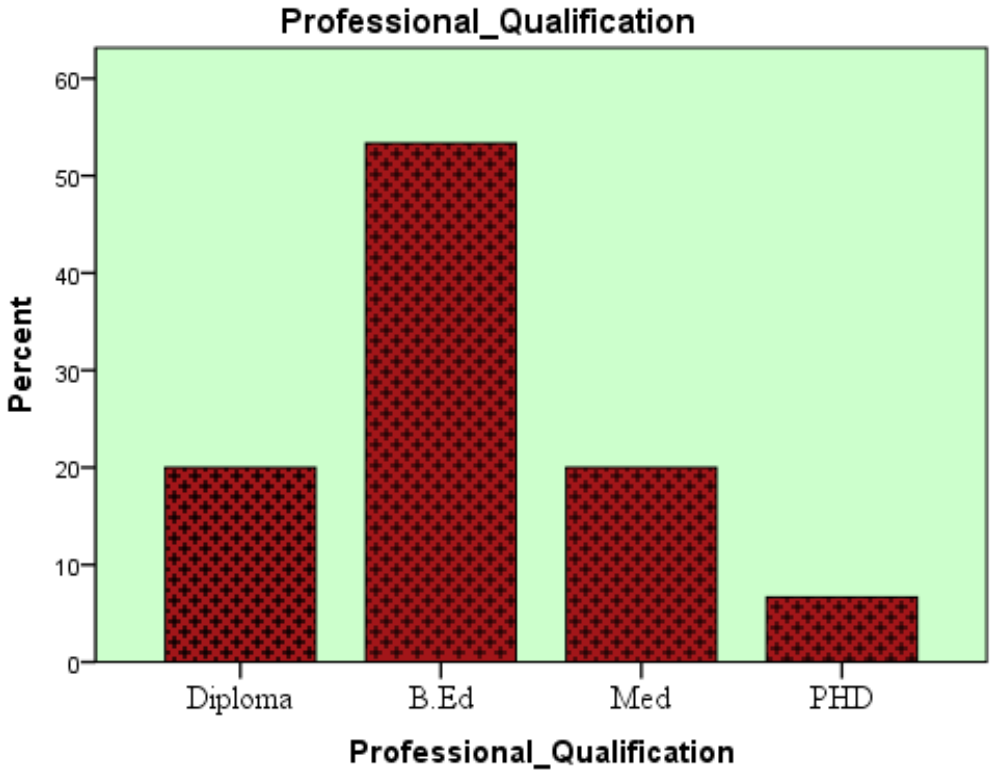

Figure 2: Professional qualifications

Half the teacher respondents 7 (53.8%) held bachelor degrees' qualifications, 3 (23.1%) had Masters and diploma qualifications respectively while 1 (6.7%) were continuing with PhD studies. A minority 1(6.7%) held other qualifications. This was presented in Figure 2

Table 2
Area of Specialization

	n (15)	**Percentage**
Autism	1	6.7
Intellectually Challenged (MH)	6	40.0%
EBD	1	6.7
Visual Impairment	1	6.7
Inclusive	6	40.0%
Total	15	100

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One significant finding from Table 2 show that majority of the respondents has specialized in Intellectually Challenges Children (6) 40% and Inclusive Education (6) 40% respectively. This implies that they had very minimal knowledge on management of children living with autism spectrum disorder.

Table 3
In-service Training on Autism Spectrum Disorder

	n (15)	**Percentage**
Not Attended	6	40.0%
General Disability Seminars	8	53.3%
Autism Spectrum Disorder Workshop	1	6.7%
Total	15	100

Findings from Table 3 show that majority of the respondents 8 (53.7%) had attended general training in on disabilities with one 1 (6.7%) having attended a seminar of approaches regarding Autism Spectrum Disorders. This finding is significant since it shows the gap present in as far as teaching learners with autism is concerned in special units since no adequate trainings have been conducted in the field of Autism Spectrum Disorders.

Behaviours Exhibited by Learners with Autism Spectrum Disorder

Behaviours exhibited by learners with Autism Spectrum Disorders were classified into Repetitive stereotypic behaviours and Social behaviours. Frequencies and percentages were calculated. The results were presented in Table 3. Findings from Table 4 show a very high prevalence of the two types of behaviours. Specifically, the repetitive stereotypic behaviours of Echolalia, Lack of control of emotions and throwing tantrums and Purposeless movement were ranked highest 14 (93.3%). The least cited was arranging objects in a specific way 8 (57.1%). This finding concurs with those of Mortimer et al (2005) who report that children with autism spectrum disorder exhibit echolalia, repeating phrases and talking what they find interesting.

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Table 4

Repetitive Stereotypic Behaviours	**n (15)**	**Percentage**
Repetitive Speech Patterns (Echolalia)	14	93.3%
Lack of control of emotions and throwing tantrums	14	93.3%
Difficult in following Directions	13	86.7%
Purposeless movement	14	93.3%
Self-Injury	11	73.3%
Repetitive Movement	11	73.3%
Social Behaviours		
Inappropriate facial expression	11	73.3%
Lack of Eye contact	13	86.7%
Arranging Objects in a Specific Way	8	57.1%

Table 5
Teaching Strategies for Human Occupation Skills

	n (15)	**Percentage**
Visual Cues	12	80.0%
Use of Individualized Education Plans	15	100%
Using meaningful Reinforcement	11	73.3%
Prompting	11	73.3%
Task Analysis	12	80.0%
Use of Age Appropriate Materials	14	93.3%
Provide Opportunity for Choice	11	73.3%
Using Peer Support	13	86.7%
Using Social Stories	6	40.0%
Teaching Key Social Rules	12	80.0%
Using Visual Daily Schedules	9	60.0%

According to the respondent, majority of the teachers, 15 (100%) were using Individualized Educational Programs. This finding is in line with those of Webber and Scheuermann (2002) who found out structured program was essential for training learners with autism spectrum

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disorders. One interesting finding indicated that 6 (40%) of the teachers preferred using social stories in training human occupations to learners with autism.

Teaching Strategies for Human Occupation Skills

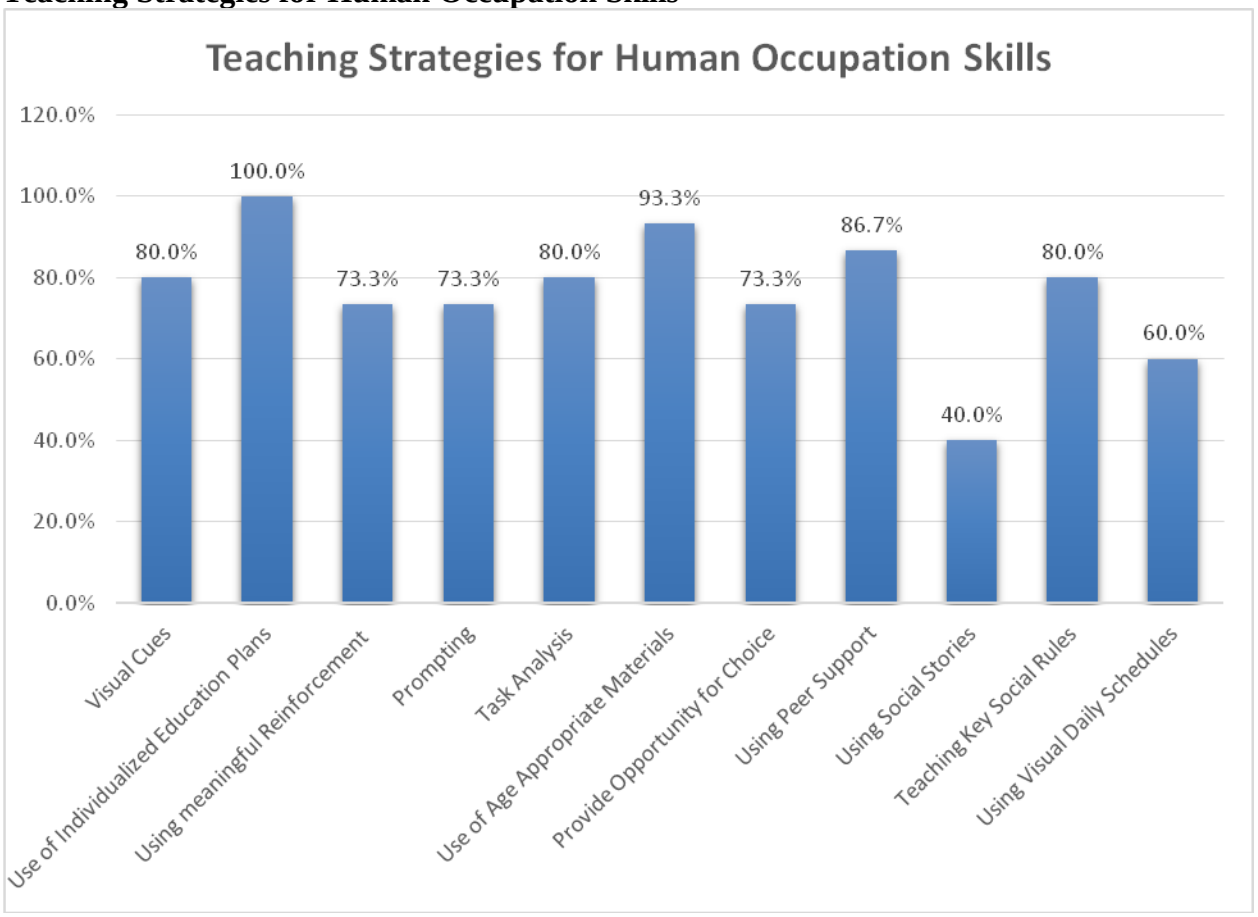

Figure 3: Teaching Strategies for Human Occupation Skills

Further, the researcher recorded the frequency of teaching strategies used. The researcher observed a teaching session for period of 35 minutes in a classroom. To find the average of each teaching strategy used, the means, standard deviations and skewness of the teaching strategy were computed as presented in Table 6.

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Table 6
Means, Standard Deviations and Skewness of Teaching Strategies used for Learners with Autism Spectrum disorders

	Means (M)	**Standard Deviation (SD)**	**Skewness**
Visual Cues	2.53	1.61	-1.27
Use of Individualized Education Plans	2.56	1.33	-.66
Using meaningful Reinforcement	2.55	1.63	-1.61
Prompting	2.44	1.37	-.615
Task Analysis	2.13	1.33	-.598
Use of Age Appropriate Materials	2.19	1.61	-1.69
Provide Opportunity for Choice	2.57	1.75	-1.59
Using Peer Support	2.17	1.67	-.86
Teaching Key Social Rules	2.83	1.57	-1.57
Using Visual Daily Schedules	2.73	1.63	-1.63

Findings from Table 5 show that teaching key social rules was the most common inappropriate behaviour (M = 2.83 SD = 1.57). Using Visual Daily Schedules (M = 2.73, SD = 1.63) and use of Individualized Education Plans (M = 2.56, SD = 1.33) as they also had higher means. The least reported teaching strategy was task analysis (M = 2.13, SD = 1.33). One significant finding was that all the teaching strategies were negatively skewed indicating that teachers were applying them in educating learners with Autism Spectrum Disorder.

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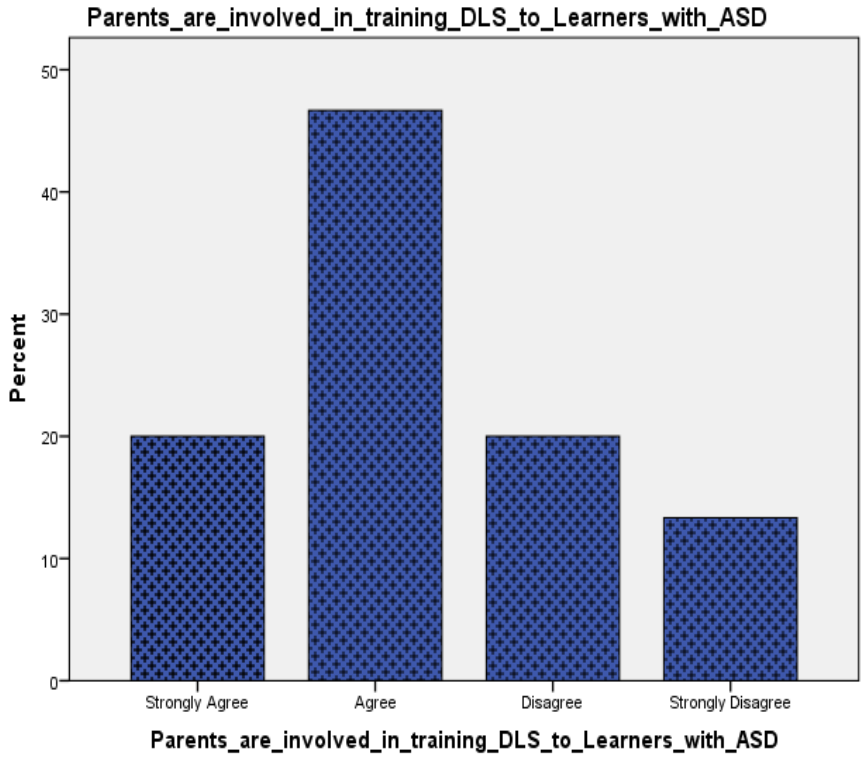

Figure 4: Parental Involvements in Training Human Occupation

The study also sought to find out whether parents are engaged in training their children with autism human occupation skills. The findings from Figure 4 indicate that majority of the respondents 45% agreed that parents are involved in straining their children in human occupation skills.

Conclusion

The study concludes that majority of the teachers had some awareness of the characteristics of learners with ASDD. The Instructional strategy preferred by majority of the teachers was Individualized Education Plans and/or programs. The study established that there was lack of adequate number of teachers trained in skills to manage learners with autism spectrum disorders. In addition, parents were engaged in the process of training their children with autism on their human occupation skills. Further, teachers lacked appropriate skills to facilitate proper. Strategies on training human occupation skills to learners with autism spectrum disorder

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Recommendations

Awareness

Given societies' historical and prevailing attitudes towards children with autism, a comprehensive campaign of public awareness, identifying the gifts and potential contribution of persons with autism spectrum disorder to the community is a good way to start. It is recommended that organizations support the concept of cooperation with various media outlets, developing an awareness program, media based, that can provide a base level understanding of Autism Spectrum Disorders (ASDs) and the challenges faced by persons living with autism spectrum disorder. In the beginning of inclusion in Canada, Peru and Russia, human interest stories were published in local newspapers weekly and media spots were given to interview individuals and organizations engaged in the development of appropriate inclusion

Advocacy Forums

Various Stakeholders dealing with disabilities may support parent forums throughout the country to provide information and awareness on ASDs since there is a challenge in being a parent, or family member of a child living with ASDs (Burden of Care Model). In addition, organizations can sponsor information meetings with advocacy groups to introduce Inclusion as an achievable goal. The use of the CBR model can be used as a rubric.

Training

Given the overwhelming challenge of providing training to both professionals and paraprofessionals, it is recommended that the Ministry of Education Science and Technology support the development of online training modules to support various aspects of implementation of appropriate inclusive practices in preschools and primary schools for children living with autism spectrum disorders. Building capacity of teachers to address specific needs of learners living with autism spectrum disorders requires a significant investment of time, resources and expertise.

Guidelines, Strategic Plan and Experimental Schools

The Ministry of Education jointly with other organizations develop guidelines and a strategic plan for implementation of Inclusionary Practice for children living with autism spectrum disorder. The guidelines may be co-sponsored and co-funded by Government and other like-minded organization. Within the guidelines and plan, some selected preschool / primary schools and special units would be fully supported as experimental schools demonstrating best practice for Inclusion and managing learners with autism spectrum disorders, within the context of the cultures, expertise and infrastructure of exemplary models of practice.

Sponsorship

It is recommended that organizations through the Ministry of Education Science and Technology and Ministry of Health sponsor six regional three-day conferences, on a cost recovery basis, exploring the practice of Inclusion for Persons Living with Autism. Locations, logistics and

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themes would be advertised with local presenters delineating promising practices in their schools or regions. Slots would be provided to Ministry representatives to address government mandate and contributions to Inclusive efforts for Persons Living with Autism Spectrum Disorder. It would be suggested that Universities be the ideal venue to reduce costs during school breaks.

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