EFFECTIVENESS OF CLASSROOM STRATEGIES FOR CHILDREN WITH AUTISM IN MAINSTREAM CLASSROOM

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CHENNAI

CERTIFICATE

This is to certify that the research work entitled **"EFFECTIVENESS OF CLASSROOM STRATEGIES FOR CHILDREN WITH AUTISM IN MAINSTREAM CLASSROOM"** was carried out by Reg. No. 411413003, KMCH College of Occupational Therapy, towards partial fulfillment of the requirements of Master of Occupational Therapy (Advanced OT in Paediatrics) of the Tamil Nadu Dr. M.G.R. Medical University, Chennai.

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CONTENT

ABSTRACT

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AIM

To assess out the effectiveness of classroom strategies for children with autism in mainstream classroom

METHOD

20 children with autism and 24 teachers were included in the control group(N=10,12) and experimental group(N=10,12). Canadian Occupational Performance Scale, Teachers Attitude Towards Inclusion Scale, and Behaviour Rating Scale were used before and after the use of classroom strategies. Post test after the intervention was done to measure the Occupational Performance, Teachers Attitude towards Inclusion and change in behaviour.

RESULTS

In the experimental group, COPM, there was a significant difference in the pretest and post test of the performance (p=0.005) and satisfaction (p=0.013) component of COPM. When goals addressed in the control and experiment groups were compared between groups, it showed significant difference in the post tests of both the groups in performance (u=0.005) and satisfaction (u=0.005) component of COPM. The pre test and post test of the POS (attitude towards student with disability in inclusive setting) and total component showed significant difference (p= 0.003 and 0.004) where as there is no significant difference in the control group. On comparing the change in the behaviour, the children in the experimental group showed a greater difference compared to the control group.

CONCLUSION

The classroom strategies have a positive effect on the occupational performance for children with autism in mainstream classroom. It is effective in bringing positive attitude among teachers towards inclusion. It also improve the classroom behaviours of the children.

INTRODUCTION

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Occupational performance is the ability to perform those tasks that make it possible to carryout occupational roles in a satisfying manner that are appropriate to the individuals developmental stage, culture and environment(Llorens, 1991) for children occupational performance includes sleep, education and play.

Education is identified as one of the key performance areas in the occupational therapy practice framework; Domain and Process (Framework-II)(2008) and refers to the 'activities needed for being a student and participating in the learning environment'. The occupation of education includes academic (math, reading , writing), non-academic (recess, lunch, self-help skills), extracurricular (sports, band, cheerleading, clubs), and prevocational and vocational activities. Consequently, in addressing a student, education, attention to a broad range of occupational performance areas is often required to help children succeed in their student role including play, leisure, social participation, activities of daily living and work.

Typically developing children benefit from early social interaction with peers and play is foundational for many school-aged skills, including social-communication. For children with disabilities, participation in early childhood programs that feature education among typically developing peers may provide unique access to these benefits. Despite the continued debate about the potential impact of inclusive settings on child outcomes, the early childhood experience has changed for children with disabilities with an increasing trend for young children with disabilities to be educated alongside typically developing peers whenever possible.

School based occupational therapy practice is influenced by and educational versus medical model requiring a set of knowledge and skills unique to both occupational therapy and school setting. School-based therapists must combine a sound understanding of occupational therapy's domain of practice with a current understanding of the school context, which is guided by federal laws and regulation.

However without effective planning and systematic intervention, children with autism may be at increased risk for social isolation and may miss opportunities to develop meaningful relationship with peers. Children with autism may benefit from increased

opportunities to observe, initiate social interaction, and respond to the social and play bids of typically developing peer

WHO puts the global prevalence of autism at 1 in 500. Boys are four times more likely to have autism than girls. From one in 10,000 children ten years ago in India, the prevalence is 3-4 per 1,000 live births now. The incidence rate is approximately 1 in 90,666 or 11,914 people in India. According to estimates, over 2 million people are living with autism in India. Every year, the National Institute for the Mentally Handicapped, Secunderabad, registers approximately 100-125 new cases, which is much higher than compared to five years ago(School Education of Children with Special Needs in India With a Perspective on the Initiatives for Children with Autism, Dr. Alka Bhargava).

Many educational professionals feel that because autistic students have poor social behavior they are not capable of participating in an inclusion classroom (Strain, Wilson, & Dunlap, 2011). An article on “THE HINDU” news paper, (Mangalore august24, 2014), about a survey done among 326 teachers has concluded that teachers have poor knowledge of ASD.

The Right of Children to Free and Compulsory Education Act, 2009 states free and compulsory elementary education a Fundamental Right, for all the children in the age group of 6-14 years.

Though the government has given a lot of importance in inclusion but various surveys shows that there is lack of awareness about autism among teachers. There are no studies done in India regarding children with autism in mainstream classroom. The education system and the curriculum of Indian school are different from the western countries it is important to see the effectiveness of classroom strategies in mainstream schools in India.

Research question

Does classroom strategy have any effect on children with autism in mainstream classroom?

OPERATIONAL DEFINITION

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Occupational performance

It is a meaningful sequence of actions in which the person enacts and completes a specified task that is relevant to his or her culture and daily life roles.

Occupational performance areas

They are categories of routines, tasks and sub-tasks performed by people to fulfil the requirements of occupational performance roles. These categories include self-maintenance occupations, productivity/school occupations, leisure/play occupations and rest occupations.

Occupational performance roles

They are patterns of occupational behaviour composed of configurations of self-maintenance, productivity, leisure and rest occupations. Roles are determined by individual person-environment-performance relationships. They are established through need and/or choice and are modified with age, ability, experience, circumstance and time

Inclusive Education

Inclusive education is about how to develop and design the schools, classrooms, programs and activities so that all students, including children with disability, learn and participate together.

Classroom strategies

The modifications done in the classroom environment and teaching pattern for children with disability

AIMS AND OBJECTIVES

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Aims

To find out the effectiveness of classroom strategies to improve occupational performance of children with autism in mainstream schools.

Objectives

- Improve occupational performance of children with autism in schools.
- To explore the change in the attitude of teachers towards autism.
- To explore the change in classroom behaviour.

HYPOTHESIS

HYPOTHESIS

Alternative hypothesis

- Classroom strategies has a significant effect in improving occupational performance of children
- Classroom strategies has a significant effect in changing the attitude of teachers towards inclusion

Null hypothesis

- Classroom strategies does not have a significant effect in improving occupational performance of children
- Classroom strategies does not have a significant effect in changing the attitude of teachers towards inclusion.

RELATED LITERATURE

RELATED LITERATURE

In 1943, Leo Kanner first documented autism as a disorder through his observation of 11 children with similar characteristics including impairments in social interaction, deficits in communication, and restricted and repetitive patterns of behavior, which has been expanded to include autism spectrum disorders (ASD), Asperger's syndrome, and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS; American Psychiatric Association, 2000).

Autism Spectrum Disorders range from mild to severe and are marked by impairments in social interactions, communication, and restricted interests and/or activities (DSM IV, 1994). Because autism is a spectrum disorder, it encompasses a wide continuum of behavior and symptoms range from mild to severe.

Impairments in social interactions and communication can include inability to sustain conversations, difficulty making friends in age appropriate peers, lack of empathy, reduced eye contact, and language that develops slowly or not at all (Dunlap & Bunton-Pierce, 1999). As a result of deficits in communication and language development, students with autism may rely predominantly on visual input as a way to acquire new knowledge.

Today a growing number of parents and educators realize that students with autism are best educated in the general education classroom. The general education curriculum is central to educational programming as communicated by the No Child Left Behind (NCLB) Act (2001) and the Individuals with Disabilities Education Act (IDEA; 2004). The question of where programming will take place has shifted from more restrictive settings (e.g., resource room, self-contained classroom) to inclusive environments. The inclusive environment is appropriate when the student can "participate in academic activities at increasingly independent levels with or without modifications, demonstrates acquisition of new skills, demonstrates generalization of acquired skills and attends to group instructions" (Simpson, de Boer-Ott, & Smith-Myles, 2003, p. 127). Although students with autism are afforded equal opportunity, they face increased challenges in the general education classroom that are a result of increased academic requirements and their unique learning style.

For many students with disabilities, particularly those with an autism spectrum disorder, few studies address their involvement with the general education curriculum.

During the last few decades, there has been an increase in education-related publications that focus on best educational practices for students with autism spectrum disorders. Some of these publications include packaged curricula that mainly address social needs (Bellini, 2008; Gutstein & Sheely, 2002; Schmidt & Heybyrne, 2004; Wagner, 2002), while others address therapeutic approaches (Dunlap, Kern, & Worcester, 2001). To date, no single curriculum has been identified that meets the unique learning styles of individuals with autism in the general education classroom (Arick, Krug, Fullerton, Loos, & Falco, 2005).

Educating children with autism

The educational progress of children with ASD can be affected by their limited capacity to self-regulate their emotional and behavioral responses and remain on task (Eaves & Ho, 1997). Maladaptive responses to classroom sensory environments have been assumed to underlie some of this behavior (Anderson, 1998; Myles, Cook, Miller, Rinner, & Robbins, 2000).

However, the relationship between the atypical sensory responses of children withASD and their classroom emotional, behavioral, and education outcomes has not been explored.

A theoretical model of sensory modulation developed by Dunn (1999) proposes an interaction between neurological sensory thresholds and behavioral responses. The sensoryprocessing patterns proposed in Dunn's (1999) model have been linked to arousal, attention, affect, and activity by Williamson and Anzalone (2001).

People with ASD have been found to be atypically slow in reorienting their attention between visual and auditory stimuli (Courchesne et al., 1994) and between visual stimuli in different spatial locations (Belmonte & Yurgelun- Todd, 2003; Landry & Bryson, 2004; Townsend, Courchesne, & Egaas, 1996; Wainwright & Bryson, 1996). Atypical slowness in reorienting attention is thought to contribute to

(1) a preference for static, predictable, repetitive sensory stimuli (such as objects) over changing and unpredictable stimuli (such as social partners and social settings; Courchesne et al., 1994) and

(2) narrow, overfocused attention on particular sensory stimuli (Gomot et al., 2006; Townsend et al., 1996). Liss, Saulnier, Fein, and Kinsbourne (2006) found significant associations between overfocused attention and sensory hypersensitivity in people with ASD.

Inclusion of children with autism

Autism has become the fastest growing category of special education since it was added to the Individuals with Education Act (IDEA) in 1990. In the decade following its addition to IDEA, the number of students identified as having autism increased from 5,000 to over 118,000 (OSEP, 2004). Since that statistic was reported, the numbers have continued to grow almost exponentially. This has occurred as the result of several factors. First, the definition and diagnostic criteria for identifying autism has been expanded to include a range of abilities and presentations, and is now considered to be a spectrum of disorders. Essentially, three primary characteristics are recognized as defining autistic spectrum disorder (ASD):

1. deficits in social interaction

2. deficits in communication

3. restricted repertoire of interests and behaviors

Second, the Committee on Educational Interventions for Children with Autism, National

Research Council (2001) recommended that all children with a diagnosis of ASD should be eligible for special education services under the category of autism, regardless of their level of impairment. Third, it has been proposed that investigation should take place to determine if the dramatic increase in the numbers of children served with autism has been offset by commensurate decreases in other categories into which

children with ASD might have once been placed such as other health impairment, social and emotional disability, and developmentally delayed (OBrien & Daggert, 2006).

The increase in the number of children with ASD and the range of abilities among those children has brought with it a host of questions and concerns on how to provide a free appropriate public education in the least restrictive environment to children on the spectrum. Over the years, a number of teaching methodologies have been proposed, including interventions that target specific areas such as relationship development, individual skill building, cognitive development and physiological processes. Often these approaches are therapeutic in nature and focus on the acquisition of core social, communication and play or academic skills and take place in segregated settings. As children with ASD progress through the school years, those with more significant learning needs may experience a decline in the amount of time that they spend with same-aged peers participating in the general education curriculum.

With the implementation of the No Child Left Behind Act of 2001 and the reauthorization of IDEA in 1997 and 2004, the emphasis on educating students with ASD in the general education setting has increased dramatically (Yell, 2003). As a result, some school districts have begun to look at structured models for inclusive education for students with ASD as an alternative to more therapeutically driven methodologies. The benefits of applying a structured framework for teaching students with ASD in inclusive settings include consistency across people providing support; organized instructional settings; smoother transitions between school-age programs (elementary to middle to secondary); a shared knowledge base among team members; improved family-school partnerships; and enriched social experiences for all students.

Legal aspect in Inclusion

It is only in recent years that the problems related to ASD have gained acceptance. Yet, this condition in children is not new. Parents and teachers know that these children struggle to cope with the demands of their homes, school, and society. What is new is that finally the problems are being acknowledged. Today, ASD is accepted as a condition, one that professionals can distinguish from other childhood disorders. India has set for itself the goal of Education for All. Therefore, educational interests of children with ASD cannot be overlooked. The various organisations, both Government and civil society are working on development of new pedagogical strategies and related

support, through which it would be possible to educate these children and turn them into productive citizens.

SCHOOL EDUCATION OF AUTISTIC CHILDREN IN INDIA

Currently, the number of schools providing education to children with autism is severely limited as compared to the need. However, the range of services is extremely varied and diverse ranging from autism specific services to mainstream schools. Starting with the first school in 1994, there are now around 15 autism-specific schools in India. These special schools have a student enrollment ranging from 15 to 70. The majority of children with autism who attend school do so at the nearest special needs facility accessible. This could be a school for children with intellectual delay, hearing impairment, cerebral palsy, or of mixed disability. Some attend special needs classroom in a mainstream school. The efforts to increase early diagnosis coupled with the rise in number of qualified special teachers, professionals and setting up of more special / appropriately equipped regular schools is paving the way for early educational and behavioural interventions, enabling the child to make significant gains – steps which are particularly required in rural parts of the country. An appropriate educational program would be one which incorporates both the general needs of children with autism with the particular needs of the child in question.

INITIATIVES OF GOVERNMENT OF INDIA TO PROMOTE INCLUSIVE SCHOOL EDUCATION OF DISABLED CHILDREN

1. Sarva Shiksha Abhiyan (SSA)

The key objective of SSA is Universalization of Elementary Education (UEE), three important aspects of which are access, enrolment and retention of all children in 6-14 years of age. SSA ensures that every child with special needs, irrespective of the kind, category and degree of disability, is provided meaningful and quality education. Hence, SSA has adopted a zero rejection policy. The goal of UEE, has further been strengthened by the enactment of the Right of Children to Free and Compulsory Education Act, 2009 making free and compulsory elementary education a Fundamental

Right for all the children in the age group of 6-14 years. This Amendment has given a new thrust to the education of Children With Special Needs (CWSN), including autism, as without their inclusion, the objective of UEE cannot be achieved.

2. **Inclusive Education for Disabled at Secondary Stage (IEDSS)**

The Scheme of Integrated Education for Disabled Children (IEDC) was launched in 1974 by the Department of Social Welfare and was later transferred to the Department of Education in

1982-83. The scheme was revised in 1992 and provided educational opportunities for disabled children in common schools to facilitate their integration and ultimate retention in the general school system. This has now been replaced by IEDSS, launched in April 2009. It provides assistance for the inclusive education of disabled children of Classes IX – XII having blindness, low vision, leprosy cured, hearing impairment, locomotor disabilities, mental retardation, mental illness, autism and cerebral palsy. Funds are provided for activities such as identification and assessment, assistive devices, allowance for transport, escorts, readers, uniforms, books and stationary, stipend for girls, etc. Besides, there is provision for engagement of special teachers, creation of barrier free environment, teachers' training,orientation of communities, parents, educational administrators, etc.

3. **Making Schools Barrier Free**

All States have been directed to ensure that all primary and secondary schools are made disabled friendly, in a prescribed time bound manner, taking into account the needs of different categories of disabled children. Each district will also have a model inclusive school.

4. **The Right of Children to Free and Compulsory Education Act, 2009**

It makes free and compulsory elementary education a Fundamental Right, for all the children in the age group of 6-14 years.

5. **Rehabilitation Council of India Act, 1992,**

The Rehabilitation Council of India was set up under this 1992 Act of Parliament. This Council regulates and monitors the training of rehabilitation professionals and

personnel, and promotes research in rehabilitation and special education. Its functions include determining minimum standards of education, making recommendations to the Ministry regarding recognition of qualifications granted by Universities, etc., in India for rehabilitation professionals, making recommendations to the Ministry regarding recognition of qualification by institutions outside India and inspection in examinations.

6. **Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995**

The Act provides for education, rehabilitation, employment, non-discrimination and social security for persons with disabilities. The amendment of the Act currently underway includes among others, inclusion of autism as a disability and various enforceable provisions for ensuring education for the disabled children.

FACTORS INFLUENCING TEACHERS' ATTITUDES

Research has suggested that teachers' attitudes might be influenced by a number of factors which are, in many ways, interrelated.The nature of the disabilities and/or educational problems presented have been noted to influence teachers' attitudes. Following the typology developed by Salvia and Munson (1986), these factors could be termed as 'child-related' variables. Moreover, demographic and other personality factors and their influence on teachers' attitudes have been examined and this group of variables could be classifed under the heading 'teacher-related' variables. Finally, the specifc context/environment has also been found to influence attitudes and these variables can be termed 'educational environment-related'.

Teachers' concepts of children with special educational need (SEN) normally consist of types of disabilities, their prevalence and the educational needs they exhibit (Clough and Lindsay, 1991). Generally, teachers' perceptions could be differentiated on the basis of three dimensions: physical and sensory, cognitive and behavioural emotional.

Forlin (1995) found that educators were cautiously accepting of including a child with cognitive disability and were more accepting of children with physical disabilities. The degree of acceptance for part-time integration was high for children considered to have mild or moderate SEN. The majority of educators (95 per cent) believed that mild physically disabled children should be integrated part-time into mainstream classes, and only a small number of educators (6 per cent) considered full-time placement of

children with severe physical disability as acceptable. Similarly, the majority of educators (86 per cent) believed that only children with mild intellectual disability should be integrated part-time into mainstream classes. A very small number of educators (1 per cent) considered full-time placement of children with intellectual disabilities viable because of their belief that it would be more stressful to cope with children with SEN full-time than part-time. Forlin's findings indicated that the degree of acceptance by educators for the placement of children with SEN in mainstream classes declined rapidly with a converse increase in the severity of the disability across both physical and cognitive categories, and placement should be part-time rather than full-time.

Assessment tool incorporated

The Canadian occupational performance measure is a criterion measure developed in consultation with the department of national health and welfare and the Canadian Association of occupational performance. It is client-centered and incorporates roles and role expectation within the client's own environment. It considers the importance of the skills or activity to the client own environment. The COPM encompasses the areas of self care, productivity and leisure as the primary outcomes being measured, but can also include in the process, an assessment of performance components in order to gain an understanding of why the client the client may have difficulty. The COPM is designed to help occupational therapist clearly establish occupational performance goals based on client perceptions of needs and so measure change objectively in defined problem areas.

The COPM was developed to detect change in self perception of occupational performance and satisfaction over time in persons with a variety of disabilities and at different developmental stages *(Law 2005).* In a systematic review, Carswell states that the COPM is a valid, reliable and clinically useful tool to measure change in occupational performance and client/caregiver satisfaction with the outcome of therapy *(Carswell 2004)*. Since administration requires a structured interview with the client, the developers assert that the caregiver can serve as a proxy for children under eight years of age or for individuals with significant cognitive deficits *(Canadian Association of Occupational Therapy Website)*. The COPM also assists the therapist with the development of a focused treatment plan by exploring family concerns, prioritizing

caregiver goals and identifying the priorities for intervention *(Carswell 2004)*. The body of evidence for the use of the COPM with adults who have various diagnoses is high. McKinnon studied 107 adults, focusing on client values and satisfaction with therapy. Results demonstrated the COPM to be useful for measuring change in occupational performance and client satisfaction *(McKinnon 2000)*. The body of evidence for use of the COPM with children is low. However, the COPM helps the caregiver identify and prioritize the client problems in areas of occupational performance and helps the therapist measure changes associated with therapy. Watling proposes that progress during therapy for individuals with ASD is demonstrated, in part, by improved occupational performance and client satisfaction *(Watling 2005)*, which supports the use of the COPM with individuals with ASD and assists therapists with identifying caregiver goals.

The TATIS (Teachers Attitude Towards Inclusion Scale) was developed in response to the following two observation

- The success of effort to create inclusive learning communities depends heavily upon the effectiveness of method foe engendering positive teacher attitudes and believes toward the inclusion.
- Due to shift in educational policies there have been dramatic changes in special education concepts and terminologies.

TATIS contains question pertaining to teacher's beliefs about professional roles, attitude towards collegiality, and perception of the efficacy of inclusion.

The sample for the TATIS consists of 252 respondents with s gender composition of 64% female and 36% male. With regard to teaching, 82% reported having 0-3 years teaching experience, while 18% reported working in the field for four years or more.

The reliability of the TATIS was confirmed through Chrinbach' alpha correlation procedure. The results revealed that along with the strong factor loadings indicating good content validity, the reliability of the instrument was assessed and found to have an overall correlation coefficient of 0.821.the reliability coefficient confirms that the

TATIS is a reliable instrument for measuring teachers attitude towards inclusion of students with disability.

One simple tool for collecting data is the *Behavior Rating Scale (BRS) (cf.,* Kohler & Strain, 1992). The *BRS is a team-developed measure to assist in collecting data* on the student's targeted behaviors.

Developing the *Behavior Rating Scale (BRS)*

There are three key areas to be addressed when developing the *BRS. These* include:

(1) clearly defining the target behavior(s),

(2) determining the best method (i.e., scale) for measuring the target behavior(s), and

(3) establishing appropriate anchor points for recording behavioral occurrence.

All these elements are essential for accurately measuring behavior change.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Sarah G. Hansen & Allison W. Blakely & Jill K. Dolata & Tracy Raulston & Wendy Machalicek *has done a study on* ***Children with Autism in the Inclusive Preschool Classroom: A Systematic Review of Single-Subject Design Interventions on Social Communication Skills*** published on may 2014, which says that range of effective interventions which includes *visual interventions, video modelling, use of script, peer mediated, and packaged intervention* to improve the social communication skills for children with autism spectrum disorder in inclusive preschool classrooms. Requirements for inclusion were (a) publication in an English language peer reviewed journal between the years 2005 and 2012, (b) *utilized a single subject research design, and (c) included at least one participant diagnosed with an ASD between the ages of 3–6 years. Because these studies were all completed before the publication of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5),* inclusion of an ASD diagnosis/ educational classification was based on the diagnostic criterion outlined in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). It concludes by saying that a diverse body of interventions working to support social success for children with ASD in inclusive preschool classrooms.

The result shows that across the 16 included articles, there were 44 preschool age (i.e., 3–6 years of age) participants with ASD diagnoses. Diagnoses of ASD included autism 67 %, autistic disorder 18 %, PDD-NOS 11 %, and Asperger syndrome 4 %. Only five of the 16 included studies directly reported standardized scores for language or cognitive level of participants. Eight of the 16 studies reported verbal level observationally (i.e., “had basic verbal skills”) and three of the 16 studies did not give any information about the verbal or cognitive level of the participants. Classrooms ranged from general education or childcare to intensive behavioral settings. For all participants, 7% of their classrooms were special education classrooms, 7 % were autism-specific classrooms, 25% were inclusive classrooms, 41 % were general education public classrooms, 5% were Head Start classrooms, 7% were community child care centers, 2% were summer camps, and 4 % were university-based lab schools.

Alexandra Akemi Rovira, Dominican University of California, May 2014 did a study on "***Enhancing Social Behavior of Children with Autism in an Inclusive Classroom***" which examines the social needs of children with autism and in an inclusive classroom. Children with autism are often placed in separate classrooms in the elementary school. This study examines the positive social behaviors that come from having children with autism in an inclusive elementary classroom. In this study the section is divided into the following topics: Prevent-Teach-Reinforce (PTR) Strategy, Approach #2 of Assessment, Strategies, and Growth of Autistic Students, LISTEN Strategy, and FBA and NCA Strategy. Results indicated that there are many useful methods that teachers can use to enhance the social behaviors of autistic students in an inclusion classroom. Additionally, having autistic students in an inclusive classroom is beneficial for the autistic student and the general education students.

A study on "**Autism in the inclusive classroom: Implications for the public school practice**" done by ***Jennifer L. Chaney*** in the year ***june 2010*** says that children with Autism Spectrum Disorders tend to experience difficulties in understanding what to do and how to react in many social situations. In the public school setting, this can become a problem, especially as more and more classroom teachers move to using group work as the main model of instruction. ***In this research children between the age group of 3-18 years where considered.*** It was remembered that a strategy that is effective for an 18 year old will not necessarily be effective for a 3 year old. Research findings suggest that certain tools are needed for success, such as social scripts, and explanations about others' thoughts and motives must be used to build understanding. Peer support is also necessary. Educators must recognize each child's distinct challenges and strengths, and individualize instruction accordingly.

A study done on ***"Teaching social skills to students with autism to increase peer interactions in an integrated first-grade classroom"*** (2013) by Debra M. Kamps, Betsy R. Leonard, Sue Vernon, Erin P. Dugan, Joseph C. Delquadri, Beth Gershon, Linda Wade and Louise Folk shows that the use of social skills groups to facilitate increased social interactions for students with autism and their nonhandicapped peers in an integrated first-grade classroom. Social skills groups consisted of training students and

peers in initiating, responding, and keeping interactions going; greeting others and conversing on a variety of topics; giving and accepting compliments; taking turns and sharing; asking for help and helping others; and including others in activities. ***Training occurred during the first 10 min of 20-min play groups, four times per week***. Using a multiple baseline across subjects design, results demonstrated increases in the frequency of, time engaged in, and duration of social interactions, as well as the responsivity of students and peers to each other.

A study done by ***Jill Ashburner, Jenny Ziviani, Sylvia Rodger,*** on ***Sensory Processing and Classroom Emotional, Behavioral, and Educational Outcomes in Children With Autism Spectrum Disorder(2008),*** with an objective to explore the associations between sensory processing and classroom emotional, behavioral, and educational outcomes of children with autism spectrum disorder (ASD). In this study a twenty-eight children with ASD (with average-range IQ) were compared with 51 age- and gendermatched typically developing peers on sensory processing and educational outcomes. It was concluded that Children who have difficulty processing verbal instructions in noisy environments and who often focus on sensory-seeking behaviors appear more likely to underachieve academically.

Using Script-Fading Procedures to Teach Children with Autism to Initiate During Free Play done by **Major Professor: Dr. Thomas S. Higbee, Department: Special Education and Rehabilitation** did a study on four preschool children diagnosed with autism who did not initiate play participated in the study. The use of scripts and script-fading procedures with manual guidance was examined using a nonconcurrrent multiple-baseline design across participants. After the ***introduction and fading of scripts, participants' initiations increased, generalized across games and peers, and maintained during follow-up probes***.

Shelley Mulligan conducted a study on ***Classroom Strategies Used by Teachers of Students with Attention Deficit Hyperactivity Disorder (2001).*** This study surveyed general education teachers in northern New England to determine the classroom

strategies teachers commonly use and perceive as being effective for improving the performance of children with ADHD. ***The strategies receiving the highest frequency and effectiveness ratings were enforcing routine and structure, frequent contact, preferential seating, use of motor breaks, and teaching self-monitoring of behaviors.*** The strategies receiving the lowest effectiveness ratings were peer tutoring, timeout, and giving assistance during transitions. Qualitative analysis of teacher responses to open-ended questions provided recommendations for improving the education of children with ADHD, including: increasing special education support in the classroom, smaller class sizes, frequent parent-teacher collaboration, and more hands-on learning experiences. The results of this study highlight characteristics of educational programs that teachers perceive as enhancing the learning of children with ADHD.

Teachers' attitudes towards integration/inclusion: a review of the literature a study done by **Elias Avramidis and Brahm Norwich*, Eur. J. of Special Needs Education, Vol. 17, No. 2 (2002), pp. 129–147*** on the assumption that the successful implementation of any inclusive policy is largely dependent on educators being positive about it, a great deal of research has sought to examine teachers' attitudes towards the integration and, more recently, the inclusion of children with special educational needs in the mainstream school. This paper reviews this large body of research and, in so doing, explores a host of factors that might impact upon teacher acceptance of the inclusion principle. Teachers' attitudes were found to be strongly influenced by the nature and severity of the disabling condition presented to them (child-related variables) and less by teacher-related variables. Further, educational environment-related variables, such as the availability of physical and human support, were consistently found to be associated with attitudes to inclusion.

A study done on ***Autism Spectrum Disorder: Regular Education Teachers' Perceptions of Inclusion*** done ***Lauren Byrne*** say teachers need to have positive attitudes towards the inclusion of students with ASD in order for their inclusion to be successful. This study examined regular education teachers' attitudes towards inclusion relative to their training on ASD. The results shows that there was an overall significant difference in regular education teachers' attitudes towards the inclusion of students with

ASD based on their training [F (3, 89) =3.11, p=.03]. Post hoc, pairwise comparisons indicated regular education teachers with no training on ASD (M=45.42) scored lower on the TATIS scale than did teachers in the groups with low (M=48.44), p=.035, medium (M=48.58), p=.044, and high (M=49.70), p=.005, amounts of training. Additional findings says that regular teachers reported the following were barrier for including students with ASD into their classroom

- 47%- uncontrollable behavioural outburst that lead to classroom disruption
- 11%-required additional planning time
- 10%- lack of support staff in their classroom

Regular education teachers reported the following benefits to including student with ASD into their regular education classroom

- 40% inclusion teachers tolerance to regular education student
- 1%- inclusion brings a unique perspective/diversity to the classroom
- 17%- inclusion allows for the peer interaction for students with ASD

CONCEPTUAL FRAMEWORK

CONCEPTUAL FRAMEWORK

Occupational Frame of Reference

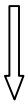
Optimal occupational performance is achieved when the fit between the child, environment and occupation is maximized. The child's occupational performance is enhanced by intervention that promotes change in the environment, and/or the occupation, thereby maximizing their fit. Within this frame of reference change occurs through engagement in occupation. The occupational therapist, in collaboration with the child's parents, teachers, or other adults responsible for the child, design an occupation form that has meaning for and elicits purpose in the child and/or the significant adults in the child's life and facilitate occupational performance resulting in adaptation and impact (Nelson, 1996, 1997). Change occurs through the action of the occupational dynamics of adaptation and impact on the person and the occupational form (environment and occupation).

Level of Occupational Performance

Occupational performance is conceptualized as a heirarchy of level of behaviour that are nested within each other (Christiansen & Baum, 1997, Nelson, and 1988, Trombly, 1995). The complexity of occupational performance varies along a continuum with simpler level of perfomance nested within more complex levels. There are four levels of occupational performance in the occupational frame of reference for children. They are listed order of descending complexity participation, complex task performance, activity performance, and component processes (Coster, 1998).

Participation

The child's participation in the occupation and opportunities typically expected of pr available to a child of this age and culture (context of home, school, and community). For example child’s participation at school include participation in occupations in the classroom, lunchroom and playground



Complex Task Performance

The child's performance of important complex tasks expected of his or her same-age peer in this culture and context (occupations of play, personal care,education, organized activities, unpaid and paid work, socialization, and functional mobility). Example completing school work, working with peer in group

⇩

Activity Performance

The child's performance of specific activities required to acomplish the major task expected of or desired by him or her (motor, process,and social interaction skills). Example completing school work which includes manipulating paper and pencils, organized aspects of the work

⇩

Component Processes

The child's basic processes or components necessary for the performance of daily tasks and activities (performance component). This includes fine coordination, dexterity and visual-motor interaction.

Occupations of the Child

The occupational frame of reference of children identifies three contexts (i.e., home, school, and community) in which children participate in the occupations to create, home, school, and community) in which children participate in occupations to create their own unique patterns of occupational performance. Within these contexts, children engage in the occupations of play, personal care, education, organized activities, unpaid and paid work, socialization, and functional mobility.

Strategies to Maximize the Child-Environment- Occupation Fit

There are five strategies in the occupational frame of reference for the children that can maximize the fit between the child, environment, and occupation. Through the process of occupational synthesis, the therapist uses these strategies to design occupational forms that will lead to adaptation and/or impact. These strategies are:

Establish/Restore

Establish and restore is aimed at promoting change within the person. The occupational therapist identifies the child's strengths and limitations and how they facilitate or limit is his or her occupational performance. As a remedial approach, the focus of this strategy is on establishing or restoring age-appropriate skills that will facilitate the child's ability to engage in occupations (Dunn et al, 1994). In this study the age appropriate skills such as sitting in the class room for a given time in considered.

Alter

Alter targets the environment as the locus for change. environments that are compatable with the child's skills and abilities are identified by the therapists (Dunn et al,1994) the child's current skills are accepted as they are, and the environment that maximise those skill is selected. For example altering the sitting arrangement of the child.

Adapt

Adaptation promotes change in the environment and/or the occupation. features of the environment occupation are adjusted to support the childs occupation performance, (Dunn et al 1994). Using adaptive or compensatory approaches, the occupational therapists changes aspects of the environment and/or the occupation that the child's occupational performance is enhanced. Example adapting the chair and table in such a way that the child doesn’t move from his place.

Prevent

The person, environment, and/or occupation are targeted to prevent the development of occupational performance problems(Dunn et al,1994) often the occupational therapists anticipates that a child may experience difficulties in his or her occupational

performance unless intervention is provided to prevent their occurance. The likely course of events can be circumvented by promoting change in the child, the environment and/or the occupation. For example, make the child ask for toilet before the child gets the urge to go.

Create

The environment and/or the occupation are created to be areas of change. the occupational therapists creates environmental and/or occupational circumstances that promotes optimal occupational performance (Dunn et al 1994) . Unlike the previous strategies, this strategy does not assume that dysfunction in the child's occupational performance exist or is likely to develop. It is aimed at the creation of an environment and opportunities for engagement in occupations that will enrich the child's experience and facilitate his and her optimal occupational performance. Example the child is allowed to select his own activity during free play time.

An Acquisitional Frame of Reference

In the occupational therapy profession, the acquisitional frame of reference is a conglomeration of learning theory concepts. For the most part, learning theories are based on the hypotheses and experimental research of prominent scientists in three areas: behaviorism, cognitive science, and neuroscience.

Learning (skill acquisition) in an acquisitional frame of reference is influenced by interaction between the environment and a person’s behavior. Emphasis is placed on (1) the context of the environment, (2) functional behaviors, and (3) learned skills.

Context of the Environment

The *context of the environment* is the primary determinant of behavior in an acquisitional frame of reference. The environmental context encompasses everything that is external to the individual (including human and nonhuman elements) and provides reinforcement for behavior. If the environmental context does not afford or elicit certain behaviors, the behaviors will not emerge. Initially, the environment helps with acquisition of a skill. Across time, repetition and practice help reinforce the skill,

allowing the child to generalize that skill to new contexts. Over time, the reinforcer from the environment changes.

Functional Behaviors

The term ‘‘functional behaviors’’ refers to specific behaviors a child needs to attain to succeed in the environment. To become a more permanent part of the child’s repertoire, these behaviors need reinforcement. From an occupational therapy perspective, the therapist looks at the components or steps that will lead to the specific behaviors the child needs to acquire. The therapist shapes or provides reinforcement for any behaviors that contribute to skill acquisition: the goal of the intervention. A set of behaviors is acquired, which ultimately assists the child in achieving the skill.

Learned Skills

Learned skills focus on the skills that need to be acquired for performance in the specific environment. Integrating the context of the environment and functional behaviors results in learned skills. Behaviours have been shaped to the specific skills that are needed as well as the environment focuses on that need. To identify learned skills that are essential for the child, the therapist must consider the environmental context, the functional behaviors that are present, and new skills that must be acquired and generalized through strategies such as reinforcement and shaping.

Reinforcement refers to the environmental stimulus that rewards or does not reward behavior. Reinforcement takes place through the environment, which includes the social and cultural context. Skill development and its subsequent adaptive responses to environmental stimuli are contingent or dependent on positive (rewards) and negative (does not reward) reinforcement. In an acquisitional frame of reference, higher level skill development begins with the simple and progresses to the complex. Additionally, the environment is structured in such a way as to provide the learner with the greatest likelihood for success (Skinner, 1953). Reinforcement is used to encourage the acquisition of behaviors and skills and the more frequent occurrence of behaviors and skills.

As stated earlier, positive reinforcement strengthens behavior by rewarding the desired behavioral response. Skill development is thus contingent on positive reinforcement.

Reinforcement can be intrinsic or extrinsic. Intrinsic reinforcement includes feeling pride for a job well done and knowing something has been completed to high quality level. Extrinsic reinforcement can be tangible (e.g., food, money, stickers, tokens, small toys, earning time, or special events) or nontangible (e.g., words of encouragement, praise, and hugs).

Negative reinforcement is used to extinguish nonadaptive behaviors. Punishment is the use of physical or verbal acts to extinguish behaviors that are perceived as not being valuable or appropriate. It is important not to categorize punishment solely as a negative reinforcement.

Vicarious reinforcement is used to describe learning that occurs through observation. Vicarious reinforcement occurs when a child has observed the positive or negative reinforcement of behavior in other children (Bandura, 1965). Bandura proposed that learning takes place not only through direct experience; children can learn or acquire new behaviors simply by observing the reinforced or nonreinforced behaviors of others, hence the term ‘‘modeling’’ (Bandura, 1965, 1977). Children learn and develop skills by observing children and other models such as teachers, parents, or therapists who are performing the desired skill.

Shaping is rewarding close approximations of a desired skill. For occupational therapists, shaping draws heavily on the understanding of activity analysis and synthesis. The therapist can analyze the activity and understand the component steps. From that understanding, the therapist can shape a desired skill by building on each component of the task. In this situation, it is important to understand the components of the task in addition to the whole activity. Shaping of skills is accomplished in small increments with close approximations of the desired behavior rewarded. Schedules of reinforcement are the ways, time intervals, and methods of organizing reinforcement to promote the acquisition (i.e., increasing or decreasing) of particular behaviors or skills. There are three main types of reinforcement schedules: (1) continuous, (2) partial, and (3) intermittent. With a continuous reinforcement schedule,

sometimes referred to as a ‘‘contingency reinforcement’’ or ‘‘management schedule,’’ the reward is given every time the behavior occurs.

A continuous reinforcement schedule is thought to lead to a rapid acquisition of the behavior (Kaplan & Saddock, 1998), though this may not be the most effective reinforcement schedule for permanency of acquisition. In a partial reinforcement schedule, reinforcement is only given some of the time that the behavior occurs, and there is no discernible pattern regarding when the reinforcement will take place. Partial reinforcement is thought to be the strongest form of reinforcement in shaping behaviors (Hergenhahn, 1988). With this form of reinforcement, the individual does not know when the reward will occur and, therefore, tends to exhibit the desired behaviors more frequently. Behaviors shaped in this manner are also the hardest to extinguish. An intermittent reinforcement schedule refers to reinforcement that is based on intervals either fixed or variable. In a fixed ratio intermittent schedule, reinforcement occurs at regular intervals, such as every fifth response. Generalization occurs when a skill or behavior learned in one environment can be applied in a similar, yet different situation or in another environment.

METHODOLOGY

METHODOLOGY

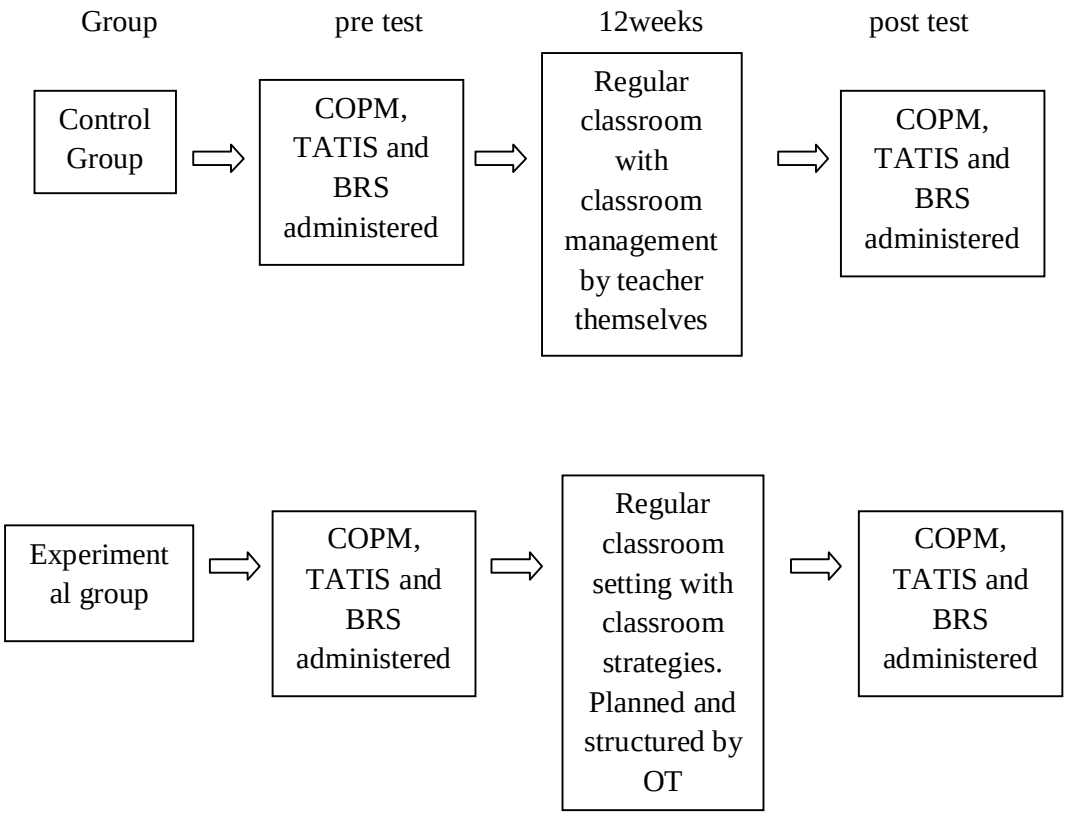
Place of study

In and around Coimbatore, 2 branches of Eurokids, 3 branches of kidzee and GS nursery school

Research design

Quantitative, two group pre-test post-test Quasi experimental study design.

Schematic Representation



Population:

Children with autism going to mainstream school.

Sample size

- 10 children and 12 teachers in experimental group and
- 10 children and 12 teachers in control group

Sampling method

Convenient sampling

SELECTION CRITERIA

Inclusion criteria

- Children within the age group 3-7 years.
- Children with autism diagnosed based on DSM V criteria who are currently being educated in mainstream schools.
- Children who receive occupational therapy or speech therapy.
- Both girls and boys included.

Exclusion criteria

- Children with physical dysfunctions are excluded.
- Long absentees are excluded
- Children who have medical complications such as seizures

VARIABLES

Independent variable:

Classroom strategies for children with autism in mainstream classroom.

Dependent variables:

- Occupational performance of the children in a classroom setting
- Adaptive behaviour of children
- Attitude of teachers towards inclusion

Extraneous variable

- Children regularity to school, severity of illness, co-morbidities.
- Other therapy program like occupational therapy and speech therapy.

- Other responsibilities of teacher and school policies (eg, may not be able to give individual attention to the child always).

Outcome Measure

- Occupational performance of the children
- Teachers attitude towards inclusion
- Change in the behaviour of the child

TOOLS

- **Canadian Occupational Performance Measure**

  The COPM is a criterion-based measure of occupational performance in which clients rate the level of importance of, performance of, and satisfaction with goals in self-care, productivity, and leisure on a 10-point scale. The result of the performance and satisfaction is calculated my multiplying the performance and the satisfaction score with its importance score. Than the mean of each component is calculated. A change of 2 or more points in the mean score on the COPM has been reported to indicate clinically significant change. Goals are identified as being of concern during a semi structured interview.

  In this study, the teachers rate their level of performance of their children on the three areas namely self care, productivity and leisure that are relevant to the classroom setting.

- **Teachers Attitude Towards Inclusion Scale**

  TATIS contains question pertaining to

  - teacher's beliefs about professional roles, PRF,
  - attitude towards collegiality, POS, and
  - perception of the efficacy of inclusion, BEI.

It is a 7-point score where 1 is very strongly agree whereas 7 is very strongly disagree. More the score lesser is their attitude towards inclusion. BEI consists of negative questions which means more the score more is their attitude towards inclusion. The total is calculated using POS+(32-BEI)+PRF.

- **Behavioral Rating Scale**

  The *BRS is a team-developed measure to assist in collecting data* on the student's targeted behaviours.

  Developing the *Behavior Rating Scale (BRS)*

  There are three key areas to be addressed when developing the *BRS. These* include:

  - clearly defining the target behavior(s),
  - determining the best method (i.e., scale) for measuring the target behavior(s), and
  - establishing appropriate anchor points for recording behavioral occurrence.

  The behaviour is rated depending number of occurance. It is a 5- point scale where 5 is rated when the behaviour occurs more than 10 times a day and 1 is rated when the behaviour occurs rarely or never. The teacher rates depending on the child's classroom behaviour

PROCEDURE

- To obtain approval for the ethical committee and obtained consent from the schools.
- The children were divided into experimental group and control group.
- Assess the performance and satisfaction of the children with autism, classroom behaviours and teachers attitude towards inclusion before and after the intervention.
- Use of classroom strategies in the experimental group
- Problem based classroom strategies were used.

STRATEGIES USED

To improve social skills

- "A circle of friends" is a group created specifically to assist a child in developing appropriate social relationships. Creating and maintaining such circles does not require a major commitment of time from the teacher because the true work is done by the peers themselves (Kathi Wilhite, Marsha Craft Tripp, Lora Lee Smith Canter, & Kim Floyd).
- Skillstreaming (McGinnis & Goldstein, 1997) focuses on teaching desirable skills. Skillstreaming begins with observation of the child's skills and the

completion of a skill checklist, followed by direct instruction including prompting, encouragement, and reinforcement.

- Instructional strategies include modeling, coaching, rehearsal, transfer training, and evaluation.
- Some activities, such as puzzles and games, lend themselves to shared attention or interaction, such as taking turns. These activities give the child the opportunity to share common vocabulary and concepts.
- Sharing of objects and snacks with other peer
- Story telling in front of the class

To improve classroom based activity of Daily Living

- Peer modelling for developing toilet indication and independent eating.
- Use of positive reinforcement after every positive behaviour.
- Use of social reward for children with better cognitive functioning.

To reduce sensory behaviours

- Use of movement break every one hour
- Use of sensory play like sand play and water play in group
- Including the child in dance class.
- Use of behavioural techniques like prompting, cueing.

DATA ANALYSIS AND RESULTS

DATA ANALYSIS

With an aim of measuring the effectiveness of classroom strategies for children with autism in mainstream classroom, the study was conducted among 20 students with autism between the age group of 3-7. The participants were divided into two groups- 10 in the experimental group and 10 in the control group. Classroom strategies were used for the children in the experimental group, and the outcomes were measured comparing their performance and teachers satisfaction using COPM, and change in the behaviour using BRS and the change in the attitude of the teachers towards inclusion using TATIS.

The scores of the experimental and the control group were subjected to statistical analysis which was done using IBM SPSS version 20

Distribution table of grades, age, gender, mean and SD of classroom of children with autism (Table 1-5)

WITHIN GROUP COMPARISON

The measurement for the change in the occupational performance of the children, and attitude towards inclusion was done using Wilcoxon signed rank test SPSS version 20. (Table 6, 7)

BETWEEN THE COMPARISON GROUP

The measurement was plotted using Mann Whitney SPSS version(Table 8,9)

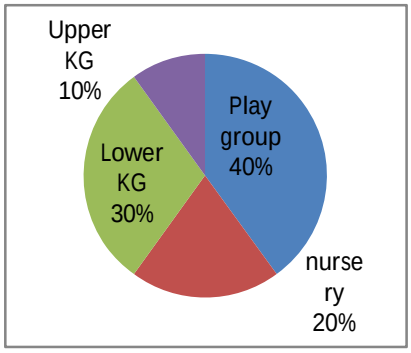
BEHAVIOURAL COMPARISON WITHIN AND BETWEEN GROUPS

The measurement is plotted using line graph using Windows excel 2007 (Graph 7,8)

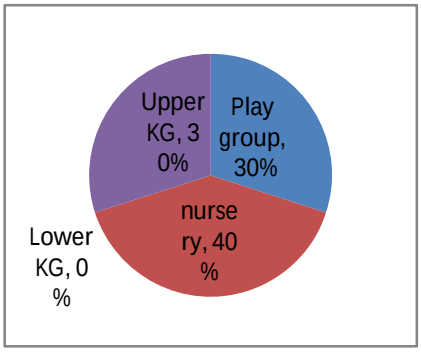
TABLE 1: Distribution in the grades of children in class

	Number of children	
	experimental	**control**
Play group	4	3
Nursery	2	4
Lower KG	3	0
Upper KG	1	3

GRAPH 1: Graphical representation of the distribution of grades of class of thechildren



Experimental group

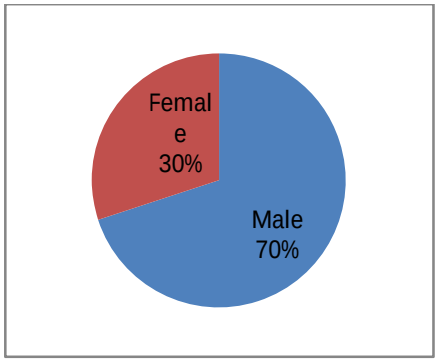


Control group

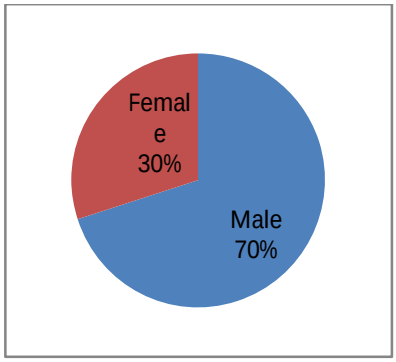
TABLE 2: Descriptive analysis of the gender of the children

Gender	Experimental group	Control group
Male	7	7
Female	3	3

GRAPH 2: Graphical representation of gender distribution



Experimental group



Control group

TABLE 3: Descriptive analysis of the age group of the children

Age group	**Experimental group**	**Control group**
3-4	2	1
4-5	3	5
5-6	4	4
6-7	1	0
mean	4.4	4.3

TABLE 4: Descriptive statistic of Canadian Occupational Performance Measure: Performance and satisfaction Component

	Group	**Test**	**Mean**	**Std dev**	**Mean difference**	**min**	**Max**
Performance	exp	Pre	23.98	7.04	25.9	12.20	35.60
		Post	49.89	13.07		19.60	62.00
	Con	pre	23.4	5.81	11.06	13.2	34.6
		post	34.46	8.71		17.2	46
Satisfaction	exp	Pre	29.54	9.55	18.14	9.40	47.40
		Post	47.68	18.23		12.00	64.60
	Con	pre	30.24	7.18	11.22	18.40	41.40
		post	41.46	7.95		28.60	53.00

TABLE 5: Descriptive statistic of Teachers Attitude Towards Inclusion Scale(TATIS)

TATIS	Group	Test	N	Mean	Std dev	Mean difference	min	Max
POS	experimental	pre	12	24.58	3.52	4.42	18.00	28.00
		post	12	20.16	4.04		15.00	28.00
	control	pre	12	21.83	1.46	0.92	20.00	24.00
		post	12	20.91	2.27		18.00	26.00
BEI	experimental	pre	12	16.16	3.24	-1.17	10.00	20.00
		post	12	17.33	2.60		11.00	20.00
	control	pre	12	17.25	1.86	0.34	14.00	19.00
		post	12	16.91	1.92		13.00	19.00
PRF	experimental	Pre	12	12.66	4.31	1	4.00	17.00
		Post	12	11.66	1.30		9.00	14.00
	control	pre	12	15.00	1.59	0.67	13.00	18.00
		post	12	14.33	1.30		13.00	18.00
Total	experimental	pre	12	52.83	5.42	6.33	44.00	60.00
		post	12	46.50	5.26		39.00	58.00
	control	pre	12	51.50	3.37	1.09	47.00	57.00
		post	12	50.41	4.18		45.00	60.00

POS: student with disabilities in inclusion setting; BEI: Belief about efficacy of inclusion; PRF: Belief about professional roles and responsibilities

TABLE 6

Comparison of pre test and post test score of performance and satisfaction component of COPM

COPM	Group	test	Positive rank	Negative rank	ties	Z score	Sig. (2-tailed)
Performance	Exp group	Post-Pre	10	0	0	-2.803	**0.005**
	Control group	Post-Pre	10	0	0	-2.803	**0.005**
Satisfaction	Exp group	Post-Pre	9	1	0	-2.497	**0.013**
	Control group	Post-Pre	10	0	0	-2.803	**0.005**

There is a significant difference in the performance component of COPM in both experimental and control group where p is 0.005(<0.05). The performance component also shows significant difference on both experimental and control group where p is 0.013(<0.05) respectively.

Increase in score indicates increase in child's performance in targeted goals and increase in satisfaction indicates teachers satisfaction on the child's performance

GRAPH 3: Mean score of pre test and post test of both groups to measure the performance and the satisfaction level according to COPM

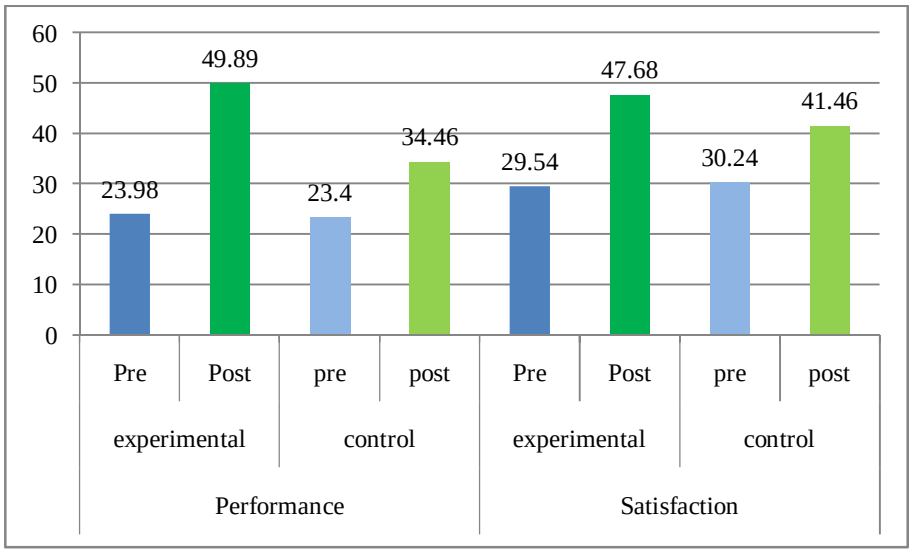


TABLE 7:

Comparison of pre test and post test scores of TATIS

TATIS	Group	test	Positive rank	Negative rank	ties	Z score	Sig. (2-tailed)
POS	Experimental group	Post – Pre	0	11	1	-2.995	**0.003**
	Control group	Post-Pre	3	7	2	-1.189	0.235
BEI	Experimental group	Post-Pre	6	4	2	-0.984	0.325
	Control group	Post-Pre	5	6	1	-0.449	0.653
PRF	Experimental group	Post-Pre	2	10	0	-1.301	0.193
	Control group	Post-Pre	2	5	5	-1.190	0.234
TOTAL	Experimental group	Post-Pre	1	10	1	-2.848	**0.004**
	Control group	Post-Pre	2	7	3	-0.837	0.402

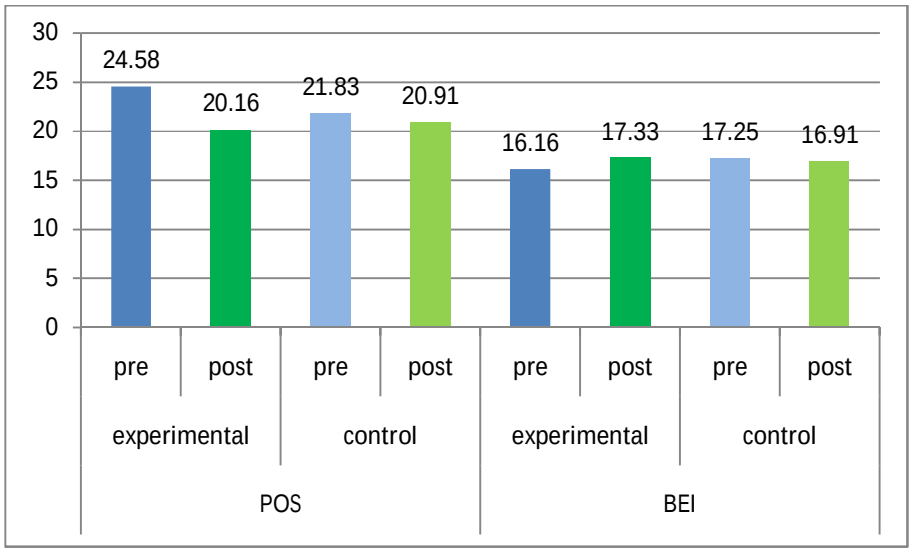
POS: attitude towards student with disabilities in inclusion setting; BEI: Belief about efficacy of inclusion; PRF: Belief about professional roles and responsibilities

The result shows that there is a significant difference in the experimental group of the POS component, P is 0.003(<0.05) and the experimental group of the total component.

Reduction in the scores indicates increase in positive attitude towards inclusion among teachers

GRAPH 4: Graphical representations of the mean score of pre test and post test of both groups to measure score the change in the attitude of the teachers towards inclusion according to TATIS

(a) attitude towards student with disabilities in inclusion setting component and Belief about efficacy of inclusion component



(b) Belief about professional roles and responsibilities component and total components

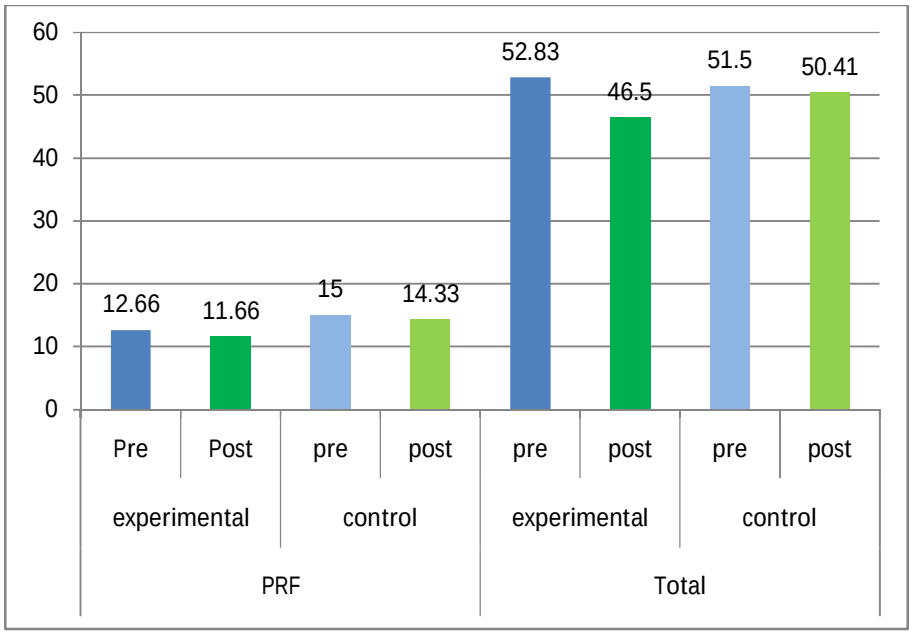


TABLE 8:

Comparison between scores of experimental and control group

Test	COPM	Group	Mean rank	Sum of ranks	U score	Sig (2-tailed)
Pre test	Performance	Exp	10.80	108.00	47.00	0.820
		Con	10.20	102.00		
	Satisfaction	Exp	9.95	99.50	44.500	0.677
		Con	11.05	110.50		
Post test	Performance	Exp	14.15	141.50	13.50	**0.006**
		Con	6.85	68.50		
	Satisfaction	Exp	13.10	131.50	24.000	**0.049**
		Con	7.90	79.00		

The result shows no significant difference in the pre test of the performance and the satisfaction components; P is 0.820 (>0.05) and 0.677 (>0.05) respectively. This indicates that there is homogeneity of the group and thus post test scores can be compared.

Graph 5: Graphical representation of the mean of the experimental and control group

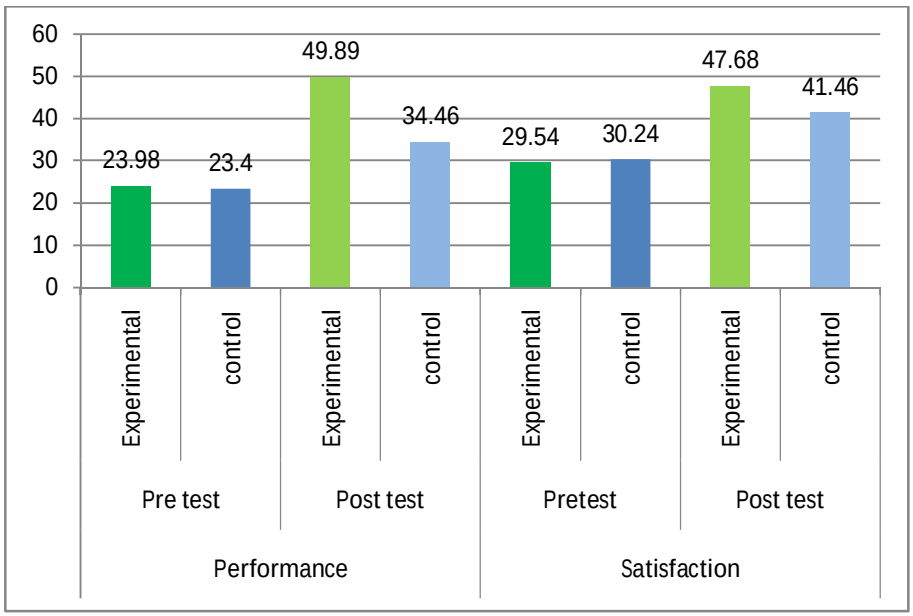


TABLE 9

Comparison of Experimental group and control group score of TATIS

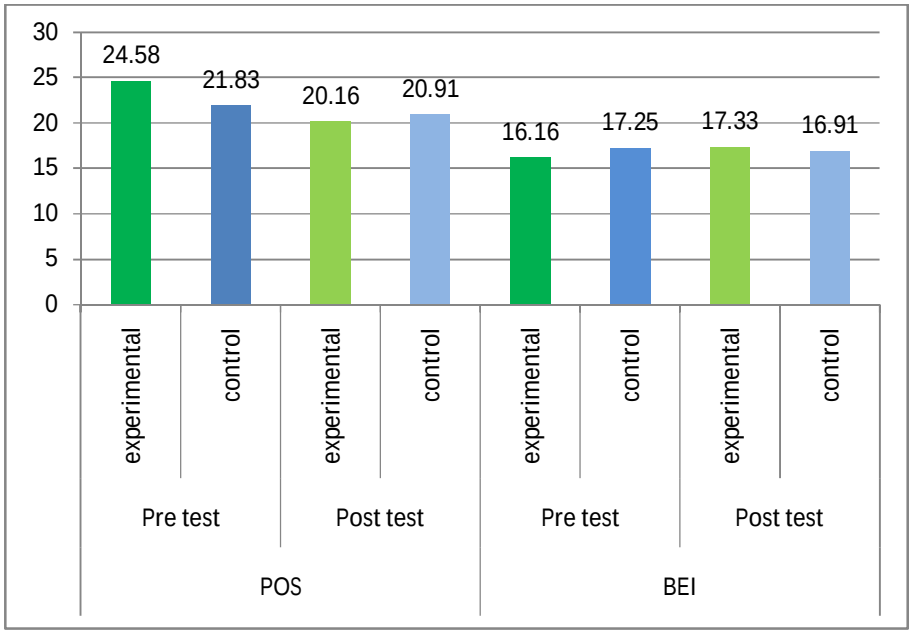
Test	Component	Test	Mean rank	Sum of ranks	U score	Sig (2-tailed)
Pre test	POS	exp	15.42	185.00	37.00	0.41
		control	9.58	115.00		
	BEI	exp	11.21	134.50	66.50	0.35
		control	13.79	165.50		
	PRF	exp	10.67	128.00	50.00	0.198
		control	14.33	172.00		
	TOTAL	exp	13.63	163.50	58.50	0.43
		control	11.38	136.50		
Post test	POS	exp	11.50	138.00	60.00	0.48
		control	13.50	162.00		
	BEI	Exp	13.67	164.00	58.00	0.40
		control	11.33	136.00		
	PRF	Exp	7.04	84.50	6.50	**0.00**
		control	17.96	215.50		
	TOTAL	exp	9.46	113.50	35.50	**0.03**
		control	15.54	186.50		

POS: attitude towards student with disabilities in inclusion setting; BEI: Belief about efficacy of inclusion; PRF: Belief about professional roles and responsibilities

The results shows that there is a significant difference in the post test of PRF component and the total component where P is 0.00(<0.05) and 0.03(<0.05) respectively.

GRAPH 6: Graphical representation of mean scores of TATIS

(a) attitude towards student with disabilities in inclusion setting and Belief about efficacy of inclusion



(b) Belief about professional roles and responsibilities and Total component

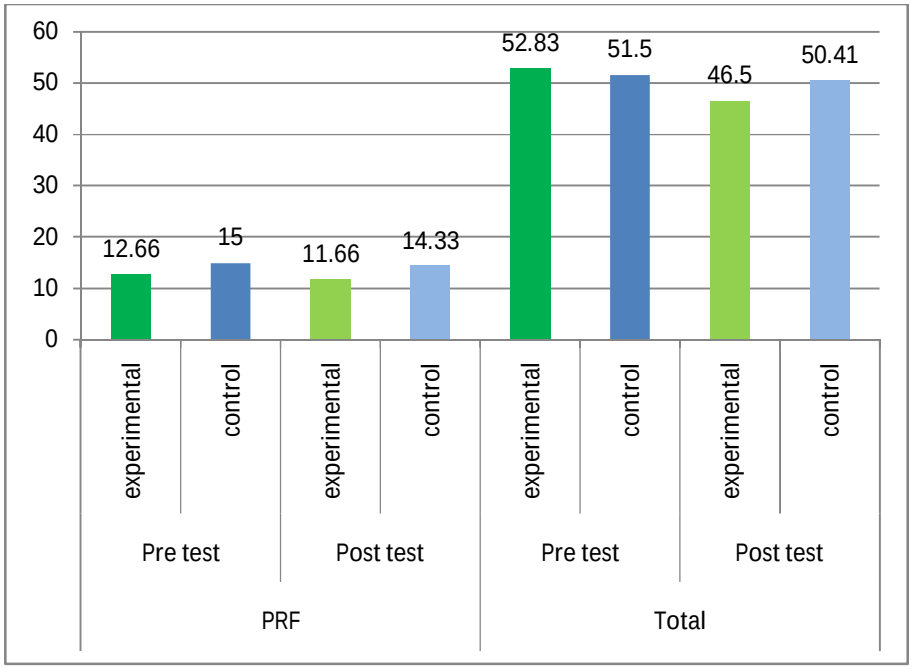
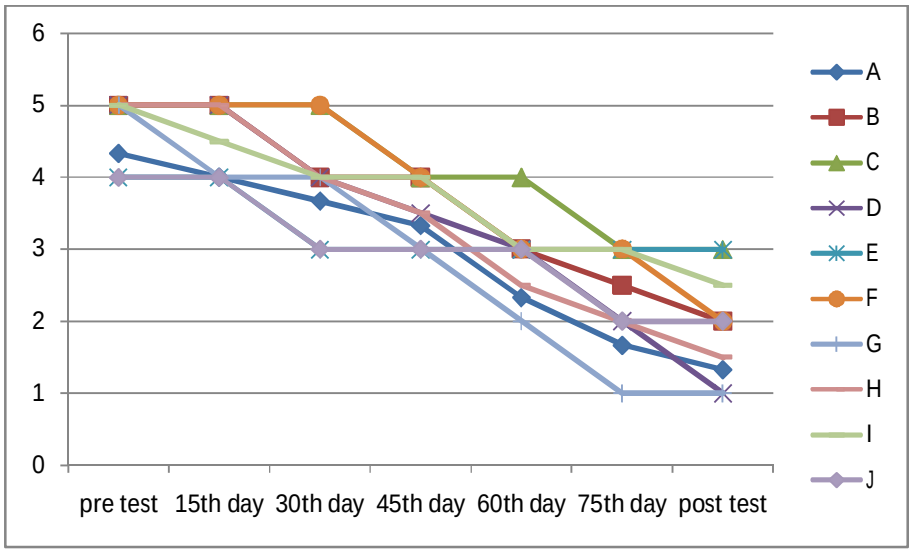


TABLE 10: Behavioural Rating Scale: Experimental group

	pre test	15th day	30th day	45th day	60th day	75th day	post test
A	4.33	4	3.67	3.33	2.33	1.67	1.33
B	5	5	4	4	3	2.5	2
C	5	5	5	4	4	3	3
D	5	5	4	3.5	3	2	1
E	4	4	3	3	3	3	3
F	5	5	5	4	3	3	2
G	5	4	4	3	2	1	1
H	5	5	4	3.5	2.5	2	1.5
I	5	4.5	4	4	3	3	2.5
J	4	4	3	3	3	2	2

GRAPH 7: Graphical representation of the mean scores of the behaviour behavioural change according to BRS in the experimental group



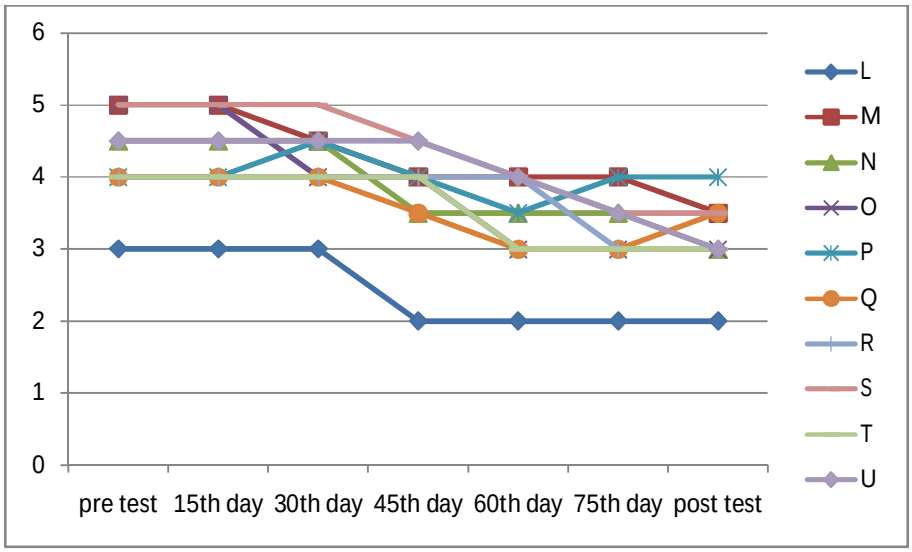
Mean score of problematic behaviour of each child was measure and the graph is plotted.

TABLE 11: Behavioural Rating Scale- control group

Mean score of the behaviours of each child

Name	pre test	15th day	30th day	45th day	60th day	75th day	post test
L	3	3	3	2	2	2	2
M	5	5	4.5	4	4	4	3.5
N	4.5	4.5	4.5	3.5	3.5	3.5	3
O	5	5	4	4	3	3	3
P	4	4	4.5	4	3.5	4	4
Q	4	4	4	3.5	3	3	3.5
R	4	4	4	4	4	3	3
S	5	5	5	4.5	4	3.5	3.5
T	4	4	4	4	3	3	3
U	4.5	4.5	4.5	4.5	4	3.5	3

GRAPH 8: Graphical representation of the mean scores of the change in behaviour of each child in control group using BRS



DISCUSSION

DISCUSSION

The study was conducted in the schools of Coimbatore which includes saravanampatti, and kovai pudur branch of Euro kids, sivananda colony branch and saravanampatti branch of Kidzee and GS Nursery school with the aim being effectiveness of classroom strategies for children with autism in a mainstream classroom.

The study was conducted among 20 children with autism where 10 were included in the experimental group and 10 in the control group. The mean age of children in experimental group was 4.40 and the mean age of children in control group was 4.30. 8 boys and 2 girls were included in both experimental and control group. The teachers from both the experimental and the control group were included to measure their attitude toward inclusion. The children in the control group underwent the regular mainstream classroom and regular behavioural strategies used by the teachers. The children in the experimental group underwent in the regular mainstream classrooms along with various classroom strategies. Some of the class room strategies include proper positioning of the child in the classroom, giving movement breaks, sharing of thing, peer interaction, use of various activities where turns are taken among peer, etc.

Since the experimental group and the control group were divided according to convenience, statistical analysis of groups for pretest was done and found to be non-significant. It indicates the homogeneity of the groups thus the groups were comparable after intervention period.

Occupational Performance

The occupational performance of the child was measured using COPM, where the 4-5 goals were addressed by the teachers. Majority of the of the teachers addressed the goal of improving their toilet behavior, and feeding self in the ADL component; following group instruction and writing under productivity component; and peer interaction and asking for needs under leisure component. The strategies were taught to the teachers and were demonstrated on the children by the researchers. The teachers practiced the strategies under the researchers monitoring. Teachers administered these strategies on the children regularly.

Statistical analysis of pre test and post test scores (table no 6) shows significant difference between the values, expressing the positive effect of classroom strategies on

children with autism. Within group analysis of control group also shows significant difference (table no 6), indicating that the controlled children also showed improvement in the occupational performance. This may be due to their behavioural strategies.

However the mean difference between per test and post test values of performance (25.9 and11.06) and satisfaction (18.14 and 11.22) for experimental and control group respectively, shows that experimental group has improved more than the control group. The increased improvement noted in experimental group can be attributed to the classroom strategies structured and implemented by the investigator and the teacher. Thus it can be assumed that classroom strategies were effective for children with autism. This result is supported by Sarah and her colleague who explains the diverse body of intervention, working to support social success for children with ASD in inclusive preschool classroom". This is also supported by the study done by Debra M Kamp and colleague with the aim being improving peer interaction in an integrated first grade classroom", and the result demonstrated increase in the frequency of, time engaged in and duration of social interaction as well as the responsivity of student and peers with each other.

When the COPM measures were compared between the experimental and the control group using Mann Whitney test, post test the scores analysis showed a significant difference in the post test in the performance component and the satisfaction component. It infers that the children performance and the teachers satisfaction has improved significantly in the experimental group after the use of classroom strategies and not in the control group for the given goal.

Teachers Attitude Towards Inclusion

The attitude of teachers towards inclusion was measured using 'teachers attitude towards inclusion scale(TATIS)'. It is essential for teachers to have positive attitudes toward the inclusion of students with diverse needs, in order for inclusion to be successful (Finke, McNaughton, & Drager, 2009). The more severe the disability is the more negative the teachers' perception of inclusion (Smith, 2000).

The teachers are not prepared to teach children with autism in their class because they did not know the characteristics of children with autism and did not understand the importance of inclusive education (Nornadia Mohamad Razali, Hasnah Toran, Sazlina

Kamaralzaman, Norshidah Mohamad Salleh & Mohd. Hanafi Mohd. Yasin,2013. A .major barrier for the inclusion of students with ASD into the regular education classroom is lack of teacher training and understanding of ASD (Finke, McNaughton, & Drager, 2009; Scheuermann, Webber, Boutot, & Goodwin, 2003).

Some of the barriers for inclusion addressed by the teachers include, the educational curriculum because of which the teacher cannot give individual attention to the child, the maladaptive behaviours of the child which may distract other children in the classroom, the inappropriate social behaviours which isolates the child in the classroom etc.

The teachers were explained basic information about autism and their unique features. Various strategies were explained to the teachers to overcome the barriers. As the teachers started using the strategies they were urged to ask doubts about autistic children's behaviour and classroom strategies. As the teachers learned to handle the children through therapist demonstration and practice, the teachers accepted inclusion and showed interest in handling autistic children.

These changes in attitude were calculated while administering the TATIS that was administered on the teachers to measure their change in the attitude towards inclusion. The pre and the post test was measured using wilcoxon sign ranked test, where the result shows that there is a no significant difference in the experimental group of the Belief about efficacy of inclusion (BEI) and belief about professional roles and responsibilities (PRF) component whereas there is a significant difference in the attitude towards student with disabilities in inclusion setting (POS) component and total component (Table no 7). It infers that there is a change in the attitude towards student with disability in inclusion setting. And with time the teachers may show more positive attitude towards belief about efficacy of inclusion (BEI) and belief about professional roles and responsibilities (PRF). When post test scores of the experimental and control group were compared the belief towards professional roles and responsibilities as weel as overall scores were higher for experimental group(table 9) indicating effectiveness of classroom strategies in these areas.

When the mean differences in the entire components were measured, there is more change in the attitude of the teachers towards inclusion in experimental group. (mean difference in the experimental and control group of the POS component were 4.42 and

0.92 respectively; BEI component -1.17 and 0.34 respectively; PRF component 1 and 0.67 respectively and total component 6.33 and 1.09 respectively). These mean difference shows that there is more positive attitude of the teachers towards inclusion in the experimental group compared to that in the control group which is supported by the study done by ***Elias Avramidis and Brahm Norwich*** which say "Teachers' attitudes are found to be strongly influenced by the nature and severity of the disabling condition presented to them (child-related variables) and less by teacher-related variables.

Behavioural measure

The targeted behavior (maladaptive behaviours) of the child was measured using the behavioral Rating Scale(BRS) and it was graded based on the range of behavior from 1-5, where 1 is for 0-1 times/day and % is for 10+ times/day.

The mean of scores of the behavior score of each individual was taken on every 15th day. The line graph (Graph 7,8) of the experimental and control group showed that there is more decrease in the behavioral issues in the experimental group compared to the control group.

This is supported by the statement given by Alexandra Akemi Rovina, which says that there are useful methods that the teacher can use to enhance the social behaviour of the autistic student in an inclusive classroom.

This is also supported by the study done on Sensory Processing and Classroom Emotional, Behavioral,and Educational Outcomes in Children With Autism Spectrum Disorder, done by Jill Ashburner says that children with ASD who have difficulty in tuning into verbal instruction in the presence of background noise and who often focus on the sensory seeking behaviour appear more likely to underachieve academically.

Comparing all the scores, it shows that the classroom strategies are affective to improve the occupational performance of the children with autism in mainstream classroom and reduces classroom related problematic behaviours and develops more positive attitude towards inclusion.

CONCLUSION

CONCLUSION

- The classroom strategies have a positive effect on the occupational performance for children with autism in mainstream classroom.
- It is effective in bringing positive attitude among teachers towards inclusion
- It also improve the classroom behaviours of the children.

LIMITATIONS AND RECOMMENDATIONS

LIMITATION AND RECOMMENDATION

- As the researcher was primarily involved in the intervention program, the study was not blinded to the researcher.
- The study results cannot be generalized due to small sample size of the groups. Further randomized control studies with more subjects can be done to analyze the intervention with uniformity.
- Longitudinal studies are recommended where the study is conducted on a long term
- Regularity of the teachers also affects the performance of the child with autism, further researches should concentrate on the regularity of the teachers.
- The perspective of each child will be different for each teacher. And as the children were handled by more than two teachers the behaviours were rated by one teacher hence the behaviour of the child should be rated by a single teacher for a particular child.

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APPENDIX

APPENDIX 1

Teachers Attitude Towards Inclusion Scale

Directions: The purpose of this confidential survey is to obtain an accurate and valid appraisal of your perceptions of the inclusion of students with mild to moderate disabilities in regular classrooms. It also contains questions pertaining to your beliefs about professional roles, attitudes toward collegiality, and perceptions of the efficacy of inclusion (i.e., whether or not you believe that inclusion can succeed). Because there are no "right" or "wrong" answers to these items, please respond candidly.

Definition of Full Inclusion: For the purposes of this survey, full inclusion is defined as the integration of students with mild to moderate disabilities into regular classrooms for 80% or more of the school day. Under federal special education law, mild to moderate disabilities include Learning Disabilities; Hearing Impairments; Visual Impairments; Physical Handicaps; Attention Deficit Disorders; Speech/Language Impairments; and mild/moderate Emotional Disturbance, Mental Retardation, Autism, or Traumatic Brain Injury.

Use the following scale for all items:

1=Agree Very Strongly (AVS), 2=Strongly Agree (SA), 3=Agree (A), 4=Neither Agree nor Disagree (NAD), 5=Disagree (D), 6=Strongly Disagree (SD), 7=Disagree Very Strongly (DVS)

	1 AVS	2 SA	3 A	4 NAD	5 D	6 SD	7 DVS
1. All students with mild to moderate disabilities should be educated in regular classrooms with non-handicapped peers to the fullest extent possible.	O	O	O	O	O	O	O
2. It is seldom necessary to remove students with mild to moderate disabilities from regular classrooms in order to meet their educational needs.	O	O	O	O	O	O	O
3. Most or all separate classrooms that exclusively serve students with mild to moderate disabilities should be eliminated.	O	O	O	O	O	O	O
4. Most or all regular classrooms can be modified to meet the needs of students with mild to moderate mild to moderate disabilities.	O	O	O	O	O	O	O
5. Students with mild to moderate disabilities can be more effectively educated in regular classrooms as opposed to special education classrooms.	O	O	O	O	O	O	O
6. Inclusion is a more efficient model for educating students with mild to moderate disabilities because it reduces transition time (i.e., the time required to move from one setting to another).	O	O	O	O	O	O	O
7. Students with mild to moderate disabilities should not be taught in regular classes with non-disabled students because they will require too much of the teacher's time.	O	O	O	O	O	O	O
8. I have doubts about the effectiveness of including students with mild/moderate disabilities in regular classrooms because they often lack the academic skills necessary for success.	O	O	O	O	O	O	O
9. I have doubts about the effectiveness of including students with mild/moderate disabilities in regular classrooms because they often lack the social skills necessary for success.	O	O	O	O	O	O	O
10. I find that general education teachers often do not succeed with students with mild to moderate disabilities, even when they try their best.	O	O	O	O	O	O	O
11. I would welcome the opportunity to team teach as a model for meeting the needs of students with mild/moderate disabilities in regular classrooms.	O	O	O	O	O	O	O
12. All students benefit from team teaching; that is, the pairing of a general and a special education teacher in the same classroom.	O	O	O	O	O	O	O
13. The responsibility for educating students with mild/moderate disabilities in regular classrooms should be shared between general and special education teachers.	O	O	O	O	O	O	O
14. I would welcome the opportunity to participate in a consultant teacher model (i.e., regular collaborative meetings between special and general education teachers to share ideas, methods, and materials) as a means of addressing the needs of students with mild/moderate disabilities in regular classrooms.	O	O	O	O	O	O	O

Score sheet of TATIS

(T-Scores have a mean of 50 and a standard deviation of 10; Percentile ranks range from 1 to 99)

Part 1: TATIS Factor Scores			
Item	**Factor 1: POS**	**Factor 2: BEI**	**Factor 3: PRF**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
Factor Raw Scores	**Add 1-6**	**Add 7-10**	**Add 11-14**
Factor T-Scores (See tables 6 to 8)			
Factor Percentile Ranks (See tables 6 to 8)			
Part 2: TATIS Full Scale			
Total Raw Score	**Raw score POS = _____ +** **(32-Raw Score BEI = _____) +** **Raw Score PRF = _____ = _____** **TATIS Total Raw Score**		
Total T-Score (See table 5)			
Total Percentile Rank (See tables 5)			

BEHAVIOUR RATING SCALE

	Date					
Behaviours						

5 = 10+ times/day (bad day)
4 = 7-9 times/day (typical/normal day)
3 = 4-6 times/day (good day)
2 = 2-3 times/day (really good day)
1 = 0-1 time/day (exceptional day/goal)

APPENDIX 2

CANADIAN OCCUPATIONAL PERFORMANCE MEASURE

Experimental group

SI No	Name	Age	Gender	Performance		Satisfaction	
				Pre test	Post test	Pre test	Post test
1	A	3	Female	35.60	47.40	47.40	55.60
2	B	4	female	23.20	58.80	29.20	64.60
3	C	4	male	18.00	62.00	28.00	17.00
4	D	4	male	21.40	56.00	24.80	51.80
5	E	3	male	27.00	58.80	35.00	55.00
6	F	5	male	21.30	54.00	26.60	56.20
7	G	5	male	27.70	59.70	34.20	64.00
8	H	6	female	20.20	39.00	28.20	48.80
9	I	5	male	33.20	43.60	32.60	51.80
10	J	5	male	12.20	19.60	9.40	12.00

Control group

SI No	Name	Age	Gender	Performance		Satisfaction	
				Pre test	Post test	Pre test	Post test
1	L	5.00	Male	23.40	40.80	35.00	46.80
2	M	5.00	Male	19.80	29.80	29.60	33.60
3	N	3.00	Female	26.60	39.00	33.60	44.60
4	O	5.00	Female	13.20	17.20	20.40	28.60
5	P	4.00	Female	34.60	43.20	41.40	50.00
6	Q	4.00	Male	26.60	46.00	35.40	53.00
7	R	5.00	Male	23.40	34.20	30.60	43.20
8	S	4.00	Male	26.80	31.80	33.40	38.20
9	T	4.00	Male	18.40	25.60	18.40	32.60
10	U	4.00	Male	21.20	37.00	24.60	44.00

TEACHERS ATTITUDE TOWARDS INCLUSION SCALE

Experimental group

SI No	POS		BEI		PRF		TOTAL	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	25.00	21.00	10.00	12.00	4.00	12.00	39.00	45.00
2	25.00	23.00	10.00	11.00	4.00	9.00	39.00	43.00
3	28.00	24.00	14.00	15.00	12.00	11.00	54.00	50.00
4	28.00	28.00	14.00	14.00	16.00	12.00	58.00	54.00
5	27.00	24.00	16.00	16.00	15.00	11.00	58.00	51.00
6	28.00	19.00	15.00	14.00	17.00	12.00	64.00	45.00
7	27.00	16.00	18.00	14.00	15.00	14.00	60.00	44.00
8	23.00	20.00	17.00	14.00	14.00	13.00	54.00	47.00
9	26.00	20.00	14.00	12.00	15.00	12.00	55.00	44.00
10	20.00	16.00	13.00	14.00	15.00	12.00	48.00	42.00
11	20.00	16.00	13.00	13.00	13.00	12.00	36.00	41.00
12	18.00	15.00	11.00	12.00	12.00	10.00	41.00	37.00

Control group

SI No	POS		BEI		PRF		TOTAL	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1	24.00	20.00	14.00	13.00	16.00	15.00	54.00	48.00
2	22.00	21.00	13.00	14.00	14.00	14.00	49.00	49.00
3	24.00	22.00	15.00	16.00	16.00	14.00	55.00	52.00
4	21.00	20.00	13.00	12.00	17.00	13.00	51.00	45.00
5	20.00	20.00	10.00	12.00	13.00	14.00	43.00	46.00
6	21.00	26.00	18.00	16.00	15.00	18.00	54.00	60.00
7	21.00	20.00	14.00	14.00	14.00	14.00	49.00	48.00
8	21.00	18.00	14.00	14.00	13.00	13.00	48.00	45.00
9	22.00	18.00	17.00	14.00	16.00	14.00	55.00	46.00
10	24.00	24.00	17.00	15.00	18.00	15.00	59.00	54.00
11	22.00	21.00	13.00	14.00	14.00	14.00	49.00	49.00
12	20.00	21.00	14.00	14.00	14.00	14.00	48.00	49.00

BEHAVIOURAL RATING SCALE

Experimental group

SL No.	Behaviours	Pre test	15th day	30th day	45th day	60th day	75 day	Post test
1	tantrums	4.00	4.00	4.00	3.00	3.00	2.00	1.00
	throwing pencil	5.00	5.00	4.00	4.00	2.00	1.00	1.00
	pulling lips	4.00	3.00	3.00	3.00	2.00	2.00	2.00
2	hand flapping	5.00	5.00	4.00	4.00	3.00	3.00	2.00
	playing wt saliva	5.00	5.00	4.00	4.00	3.00	2.00	2.00
3	pulling hair	5.00	5.00	5.00	4.00	4.00	3.00	3.00
4	throwing object	5.00	5.00	4.00	4.00	3.00	2.00	1.00
	head banging	5.00	5.00	4.00	3.00	3.00	2.00	1.00
5	self talking	4.00	4.00	3.00	3.00	3.00	3.00	3.00
6	hitting others	5.00	5.00	5.00	4.00	3.00	3.00	2.00
7	sleeping in class	5.00	4.00	4.00	3.00	2.00	1.00	1.00
8	disturbing others	5.00	5.00	4.00	4.00	3.00	3.00	2.00
	escapism	5.00	5.00	4.00	3.00	2.00	1.00	1.00
9	self biting	5.00	4.00	4.00	4.00	3.00	3.00	3.00
	throwing object	5.00	5.00	4.00	4.00	3.00	3.00	2.00
10	spitting on others	4.00	4.00	3.00	3.00	3.00	2.00	2.00

Control Group

SL No.	Behaviours	Pre test	15th day	30th day	45th day	60th day	75 day	Post test
1	self ind vomiting	3.00	3.00	3.00	2.00	2.00	2.00	2.00
2	tantrum	5.00	5.00	4.00	4.00	4.00	4.00	4.00
	sleeping	5.00	5.00	5.00	4.00	4.00	4.00	3.00
3	head banging	4.00	4.00	4.00	3.00	3.00	3.00	2.00
	hand flapping	5.00	5.00	5.00	4.00	4.00	4.00	4.00
4	escapism	5.00	5.00	4.00	4.00	3.00	3.00	3.00
5	tapping on table	5.00	5.00	5.00	5.00	4.00	4.00	4.00
	biting	3.00	3.00	4.00	3.00	3.00	4.00	4.00
6	making sounds	5.00	5.00	5.00	5.00	4.00	4.00	4.00
	hand flapping	3.00	3.00	3.00	2.00	2.00	2.00	1.00
7	disturbing others	4.00	4.00	4.00	4.00	4.00	3.00	3.00
8	biting self	5.00	5.00	5.00	5.00	4.00	4.00	3.00
	playing with saliva	5.00	5.00	5.00	4.00	4.00	3.00	4.00
9	pulling eyelid	4.00	4.00	4.00	4.00	3.00	3.00	3.00
10	self talking	4.00	4.00	4.00	4.00	4.00	3.00	3.00
	puling lips	5.00	5.00	5.00	5.00	4.00	4.00	3.00

KMCH ETHICS COMMITTEE
KOVAI MEDICAL CENTER AND HOSPITAL LIMITED
Post Box No. 3209, Avanashi Road, Coimbatore - 641 014. INDIA
✆ : (0422) 4323800, 4323619 Fax : (0422) 4270805
E-mail : ethics@kmchhospitals.com
EC Reg. No : ECR / 112 / Inst / TN / 2013

Ref: EC/AP/412/09/2015
21.09.2015

APPROVED

To:
Mrs.S.Sugi
Professor,
KMCH College of Occupational Therapy
Coimbatore-641048
Tamilnadu, India.

Dear Mrs.S.Sugi,

The proposal entitled **"Effectiveness of classroom strategies for children with Autism in mainstream classroom"** Submitted by **Ms.I.Jancy** under your guidance was reviewed by the Ethics Committee in its meeting held on 19.09.2015 and permission is granted to carry out the study in mainstream classroom at Coimbatore, India.

Thanking you,

Yours faithfully,

21/9/15

Dr. P. R. Muthuswamy
Chairman, KMCH Ethics Committee

Dr. P. R. MUTHUSWAMY,
MA.,MBA.,FDPM(IIM-A)Ph.D.,
Chairman
Ethics Committee
Kovai Medical Center and Hospital
Avanashi Road,
COIMBATORE-641 014.

Copy to: Clinical Guide:
Dr.K.Rajendran
Consultant neonatologist and pediatrician

Learning through fun

EURO KIDS

THE PRE-SCHOOL SPECIALIST

07/12/2015

To

The Principal,

Occupational Therapy Department,

KMCH College of Occupational Therapy,

Coimbatore

Respected Sir/Madam,

I would like to bring to your notice that Miss. I. Jancy have done project on "**The effectiveness of class room strategies for children with Autism in main stream class rooms**" from 2nd September 2015 to 2nd December 2015.

Regards,

B. Catherine Merino

B.Catherine Merino
Center head
Eurokids Saravanampatti.

#38, G.K.S Nagar, Saravanampatti, Coimbatore - 641 035
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