

A Survey of Strategies Used to Educate Children with Autism in the State of Goa

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Abstract

In India, the education of children with autism is still an emerging field. The complex nature of autism means that there is no ‘*one size fits all*’ instructional strategy. When the comorbidity of intellectual disability exists along with autism the picture becomes even more challenging. Often labelled as ‘low functioning autism’ this group of children require specialized content along with autism specific strategies to address their needs. Research regarding education of children with autism in India is quite limited. While the number of children diagnosed with autism along with special schools serving children with special needs including autism has increased significantly from the 1990’s there have been no studies on which strategies are being used to educate children with autism or the quality of these programs. This study sought to address various issues related to the education of children with autism and intellectual disability in the state of Goa. 6 special schools and 4 life skills resource rooms in the state of Goa were selected for this study. A total of 22 teachers were observed on a checklist (Checklist to Evaluate Programs for Children with Autism) created by the researchers to understand what autism specific strategies were being used to educate children with autism. Through two questionnaires administered to heads of the schools and the teachers the researchers surveyed what resources were available to teachers along with the barriers that prevented them from implementing autism. The results showed that most teachers did not use autism specific strategies to educate children with autism. Researchers were also able to ascertain that the barriers to using these strategies were systemic in nature.

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Introduction

Autism is a lifelong, developmental disability that affects how a person communicates with, and relates to other people, and how they experience the world around them (National Autistic Society). It generally has life-long effects on how children learn to be social beings, to take care of themselves, and to participate in the community. The number of children identified with ASD worldwide has risen in the last few years. In the US the prevalence of autism for children between the ages of 4.5 years to 9 years in the year 2000 was 1 in 150. In 2012 the prevalence rate had risen to 1 in 68 (Centre for Disease Control). The International Clinical Epidemiology Network Trust (INCLIN), conducted the first ever survey of children with autism between the ages of 2-9 years in 2013 in India. They found the prevalence to be about 1 to 1.5 per cent. They estimated that this works out to roughly 10 million children with autism in India. This translates to 1 in 66 children with autism which is much higher than the estimate given by the Rehabilitation Council of India (RCI) in 2003 which gave the incidence as 1 in 500. With the increase in numbers of children being diagnosed comes the need to provide services which are need based and sensitive.

The characteristics of autism often combine to present a picture that is as unique and confusing to the stakeholders concerned giving validity to the statement 'if you have seen one child with autism you have seen one child with autism'. In their book 'The Treatment and Education of Autistic and Communication Handicapped Children, Mesibov, Shea et al (1996) have devoted a whole chapter entitled 'The Culture of Autism' where they describe how children with autism 'think differently, learn differently and have differently neurobehavioral patterns of behaviour'. The chapter highlights areas in which children with autism face learning challenges while also drawing our attention to the learning strengths of this group of children. It follows that

if we have a group of children whose thinking and learning styles are significantly different from the general population it is vital that we become familiar with these differences and develop education programs accordingly.

The state of Goa has twenty-two special schools and nine resource rooms all of which provide education and related services like speech therapy, occupational therapy and physiotherapy to children with autism. There is very little research available which documents the quality of the services that children with autism receive in India (Johannsson, 2017, Rehabilitation Council of India, 2012). The researchers were unable to locate any studies which provide an insight into the services for children with autism in Goa. The study was conducted in order to throw light on various aspects related to the education being provided for children with autism in the state of Goa.

Objectives of the study

This study sought to address some of the issues confronting the education of children with autism in India specifically in the state of Goa by surveying the quality of educational programs offered for children with low functioning autism. The study had the following objectives.

- a) To document the various autism specific strategies used by teachers of CwA
- b) To document differences (if any) in the attention given to CwA as compared to other children with special needs in the classroom
- c) To document the outcome of the strategies used in terms of student progress
- d) To document the various resources available to teachers
- e) To identify reasons for gaps (if any) in the delivery of autism specific strategies

Review of literature

Understanding Autism as a Spectrum Disorder

Persistent deficits in social communication and social interaction across multiple contexts and restricted, repetitive patterns of behaviour, interests, or activities are the two diagnostic criteria for autism spectrum disorder in DSM 5 (American Psychiatric Association, 2013). To facilitate a clear diagnosis, these two criteria are broken up into several clearly defined behavioural characteristics.

Under the first criteria- social communication and social interaction one will observe deficits in a) social and emotional reciprocity, b) deficits in verbal and non-verbal communication and c) difficulty in maintaining social relationships (American Psychiatric Association, 2013). Other behavioural concerns in this area include inconsistent use of eye contact, social smile, imitation or response to name and joint attention. Pretend play is also absent in many toddlers who have autism. Blenner, Reddy and Augystyn (2011) add that the most common parental concern in children diagnosed with autism is delayed language development.

The second diagnostic criteria viz. restricted and repetitive behaviour manifests itself as a) stereotyped or repetitive motor movements, use of objects, or speech b) insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behaviour, c) highly restricted, fixated interests that are abnormal in intensity or focus d) hyperreactivity or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment (American Psychiatric Association, 2013).

The term ‘spectrum’ used in the DSM 5 emphasizes the point that all these behaviours exist on a continuum, in other words, autism impacts children differently in terms of severity. DSM 5 has provided a table which clearly specifies how to score these behaviours in terms of the level of support needed:

- a) Level 3 (Requiring very substantial support)
- b) Level 2 (Requiring substantial support)
- c) Level 1 (Requiring support).

Since this study is concerned with children with severe autism, it will focus on those behaviours described under the social communication criteria in Level 3 (Requiring very substantial support). These behaviours include severe deficits in verbal and nonverbal social communication skills which cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. Under the criteria of restricted and repetitive behaviour, Level 3 descriptions include inflexibility of behaviour, extreme difficulty coping with change, or other restricted/repetitive behaviours which markedly interfere with functioning in all spheres. There is also great distress/difficulty in changing focus or action.

Level 3 behaviours correspond to the term low functioning autism used by researchers to describe individuals with autism who have minimal verbal ability, poor adaptive behaviours (i.e., struggles with transitions, repetitive behaviours, and sensory-related issues, and limited social skills (Feather, 2015). Described in 1943 by Kanner as classic autism these are the children who have limited language or non-functional language, heightened response to sensory stimuli, ‘anxiously obvious desire for the maintenance of sameness, limitation in the variety of

spontaneous activity,' and better relationships to objects than people. Irrespective of the level of severity of autism experienced by a child, it is an accepted fact that education and training must form a large part of the child's growing years. (Downs and Downs, 2010; Vakil et al, 2009; Iovanone et al, 2003).

Education for Children with Autism

The right to education for children has been reflected internationally (Universal Declaration of Human Rights, 1948). The United Nations Convention on the Rights of Persons with Disabilities (2006) reaffirmed the right to education, specifically for persons with disabilities. In India the constitution has made education for all children a right, through Article 21 A (Constitution of India, Eighty Sixth Amendment Act 2002). This right is further reinforced through the Right to Education Act (2009). The current Rights of Persons with Disabilities Act (2016) reaffirms the rights of persons with disabilities for an education which is inclusive and supports them in attaining their potential. The education of children with autism is no exception to this hence the need to ensure that they receive quality education which enables them to maximize their potential. We therefore need to understand the indicators of a quality education program for children with autism. Iovanonne et al (2003) surveyed several respected educational programs designed especially for children with autism such as TEACCH program (Treatment and Education of Children with Autism and Communication Handicaps) , LEAP program (Young Learners- An Alternative Program , and the UCLA Behavioural Intervention Programs. They identified six essential core components or themes which should be included in any educational program for children with autism. These include 1. Individualized supports and services for students and families 2. Systematic instruction 3. Comprehensible and/or structured environments 4. Specialized curriculum content 5. Functional approaches to problem behaviours

6. Family involvement. In addition to the components mentioned, Dalrymple (2004) stresses the importance of early intervention and intensity of engagement as important components in educational programs for children with autism.

The guidelines for an effective program for children with autism stress the need for a specialized curriculum content (Cereveza, 2011; Downs and Downs 2010; Dalrymple, 2004; Iovanonne et al 2003). The National Research Council (2001) outlined those skill areas which needed to be part of the specialized curriculum. The skill areas mentioned were 1. Social skills, 2. Expressive, Receptive and Non-verbal Communication 3. Functional and Symbolic Communication, 4. Attending to the Environment and Responding to Motivational Systems 5. Fine and Gross Motor Skills 6. Replacement of Problem Behaviours with Appropriate Behavioural Skills 7. Cognitive Skills 8. Skills needed to function in a regular classroom.

A review of specialized curriculum for children with autism that already exists such as the Comm DEALL Curriculum (The Communication DEALL (Developmental Eclectic Approach to Language Learning) ABLLS-R (Assessment of Basic Language and Learning Skills Revised), TEACCH Curriculum and the STAR Curriculum (Strategies for Teaching Based on Autism Research) necessarily have separate sections in their curriculum devoted to building social skills, communication skills and dealing with behaviour issues. The importance of such a curriculum cannot be overemphasized. Bal et al (2015) have emphasized that treatment for individuals with autism must encompass daily skills. Their study reported that irrespective of the level of cognitive functioning, individuals with autism lag on the acquisition of daily living skills.

Education of Children with Severe Autism

(For this study the term severe autism will be used to describe children who are more severely impacted in terms of their functioning due to autism while also having intellectual disability. Use of the term ‘low functioning will be used only when authors of studies directly use it)

While the educational provisions discussed above can be applicable to all children who are on the autistic spectrum, the severity of autism necessarily means that supports will differ in terms of their intensity. Children who are severely impacted by autism and requiring substantial support have very different needs from those children who are on the milder end of the spectrum. It is important to understand that these children form a separate group in ASD in order to plan effective intervention. Many researchers agree that defining low functioning/severe autism is a challenge in itself because of the lack of agreement as to what exactly constitutes severe autism. (Stedman et al, 2018). The term low functioning autism has been used by many researchers to describe a group of children with autism who have the combined characteristics of minimal verbal ability, intellectual disability and low adaptive functioning (Stedman et al, 2018; Chakrabarti, 2017; Bebko et al, 2005). The prevalence of children with low functioning autism varies. The National Research Council (2001), U.S. place the number of children with autism and a ‘mental handicap’ (low functioning autism) at 80% from the total population of children with autism. Other researchers place it at 70 % (Srivastav and Schwartz, 2015). However, in recent years researchers agree that the number is closer to 31% of the total population of autism (Stedman et al, 2018; Chakrabarti, 2017). This change in numbers is due to a better understanding of autism along with the development of more accurate measurements. This has led to the identification of more children on the spectrum specially those who are high

functioning. Concomitant with the decrease in the percentage of children with low functioning autism comes a decline in the number of studies that focus on this population. (Stedman et al, 2018; Chakrabharti 2017; Bebko et al, 2005). Siegel (2018) clearly states that research on individuals severely affected by autism, including those who are minimally verbal, have intellectual disability or challenging behaviours, has become less common Crossland et al (2013) specifically reviewed research on autism intervention from three major journals between 1995 and 2009. They reported an increase in the number of articles pertaining to high functioning autism and a decrease in those studies for persons with low functioning autism.

Those researchers that are focused on low functioning autism, repeatedly stress the necessity of identifying more effective interventions to ensure that this population is not neglected. Extrapolating from the characteristics in the DSM5 for Level 3 categorization (Requiring very substantial support), programs for children with severe autism should strongly emphasize the attainment of communication goals as well as skills for daily living. McConachie et al (2018), reported that parents who were questioned as to the outcomes of an educational program said that they wanted their children to be taught skills which contributed to everyday life and functioning.

The question that confronts us now is “Are children with severe autism getting the services they need to help them become as independent as possible.

Evidence Based Practices

In a study on guidelines to evaluate programs for autism Freeman (1997) stated that “only one treatment has passed the test of time for all children, autistic or normal, and that is structured educational intervention that is geared to the developmental level of the child.” A good

curriculum is the first step in the education of children with autism, but one must consider the teaching strategies being used in order to ascertain whether children are being taught in the ways best suited to them. Today stakeholders are on the lookout for those interventions which yield positive outcomes for individuals with autism and their families. In this context the use of evidence-based practices becomes necessary. The No Child Left Behind Act (2001), required that required that education strategies should be developed from scientific based research (Simpson, 2005). Also called evidence-based practices these refer to those interventions which have been scientifically tested in high quality research designs and then found to be efficacious. Jack and Andy (2006) made a distinction between practices scientific based practices and promising practices. The former refers to those practices in which the **significant and convincing evidence** exists to support that the intervention is effective for some children with autism while the latter refers to ‘**some**’ evidence exists to show that the practice is effective for children with autism but more rigorous research is required. Odom et al (2010) have made another important distinction when considering evidence- based strategies viz. the difference between comprehensive treatment models (CTM) and focused intervention. Focused interventions are designed to produce specific behavioural or developmental outcomes for children with autism. Examples of focused intervention include prompting, reinforcement, discrete trial or visual schedules. CTMs consist of a set of practices designed to achieve a broader learning or developmental impact on the core deficits of ASD. Odom et al (2010) identified 30 CTMs which addressed various behavioural and developmental domains which represented the core features of autism i.e. social competence, communication and repetitive behaviours. Examples of these included the Lovaas Model, the Denver Model, the STAR

(Strategies to Teach individuals with Autism based on Research), the TEACCH approach and the Hanen Model.

Heflin and Simpson (1998) categorized various interventions programs to support children with autism based on (a) physiological considerations (b) skills training (c) relationship building and (d) a mixed approach. Some of them have been scientifically validated but many of them are not. Among the skill training interventions, those which are highly validated include (a) PECS (Picture Exchange Communication System), (b) Azzrin 24 Hour Toilet Training (c) Joint Action Routines (d) Visual Schedules and (e) Applied Behaviour Analysis and Discrete Trial Method. In the mixed method section, the TEACCH (Treatment and Education of Autistic and Communication Handicapped Children) has also been highly recommended for educating children with autism. Lindgren and Doobay (2011) also included Pivotal Response Training and Functional Communication Training as evidence-based interventions that are supported by significant scientific evidence. The DSM5 has included hypo- or hyper reactivity to sensory input or unusual interests in sensory aspects of the environment as one of the characteristics of autism. It is of interest to note that Sensory Integration (SI) Therapy has not yet been universally accepted as a therapy which has been scientifically validated. In 1998, Heflin and Simpson mentioned that there were several efficacy studies concerning SI that were being developed, however in 2011 Lindgren and Doobay stated that SI has still not been scientifically validated. They did however add that some of the SI therapy when used in conjunction with a wider program on ASD intervention led to children with autism becoming more physically active as well as more receptive to a wider range of sensory stimuli. It is important to understand that educators rarely limit themselves to just one approach alone. Humphrey and Parkinson (2006) state that there is no one strategy which is a 'cure-all'. They further stress that ongoing research

suggests that most children with autism benefit from a combination of various approaches and show improvement in a variety of skill areas (Prizant and Rubin, 1999 in Humphrey and Parkinson, 2006). It is interesting to note that several treatment programs developed to educate CwA were designed specifically for those children with severe autism (Parkinson and Humphrey, 2006). These include the TEACCH model, the Lovaas Model, and PECS. While there are many evidence-based strategies in existence which have been proven to be efficacious in the education of children with autism there is still a wide gap between the research findings and their actual implementation in schools (McMahon and Cullinan, 2014). This research to practice gap has long been the subject of study and debate among many researchers (Bondy and Brownwell, 2014).

Service Delivery Models for Children with Autism

The delivery of service to children with autism can be classified various criteria. Cerveza et al (2011) consider two criteria when looking at models of service delivery. viz. setting and age (Cerveza et al.2011). Programs based on setting or location, range from home based, to centre based or school based (special or mainstream). Programs which are based on the age of the child are listed as early intervention programs, school-based programs and adult programs. In India, there are four models of service delivery available for parents of children with autism (Narayan, et al, 2005). These include (a) mainstream schools, (b) special schools (c) centre-based instruction and home-based training and (d) parent initiatives. The placement of children with autism in school in India is largely determined by their ability level. The choice of the education model depends on the child's ability level and parental aspiration. (Narayan et al, 2005). This means that most children with severe autism in India go to special schools since admission to mainstream is dependent on the academic ability. However, the Rehabilitation Council of India

(2012) observes that the quality of education being imparted in schools for children with autism is uneven. They further add that there is no monitoring of standards to ensure quality education. Most schools – even those specifically for children with autism do not have staff trained in necessary strategies to deal effectively with children with autism. According to Gupta and Singhal (2005) the needs of children with autism are not being met in the regular or special school system. Narayan et al (2005) also mentioned that that many children with autism discontinued regular school because of their ‘inability to cope with academic life’. Bhargava (2010) reports that most children with special needs in India generally receive their education in the nearest special school. In the West the nature of education placement and intervention is dependent on a number of factors such as the child’s age, their strengths and weaknesses, the nature and extent of the difficulties associated with their autism and the presence or absence of additional learning difficulties (Jones, 2002 in Humphrey and Parkinson, 2006). These schools are not autism specific but cater to all children with varying disabilities. Action for Autism- the pioneer group in autism advocacy and training in India report that there are approximately 79 schools or organizations that specialize in teaching children with autism. It must be noted that these organizations are different from special schools mentioned earlier. These organizations claim to use autism specific strategies unlike special schools which adopt a more generic approach to all teaching. With the increasing pressure on mainstream schools to be more inclusive (Right to Education Act, 2009) the numbers of children going to mainstream schools is on the rise (Taneja-Johansson 2014). However, an article in the Hindustan Times (April 02,2018) mentioned children with autism go through 4-7 schools before they pass out of the schooling system at 18 years. Based on in-depth interviews with parents the article quoted Dr. Subharati

Ghosh as saying that parents of children with autism face great difficulty when trying to ensure their children have inclusive education.

The state of Goa has three models of education for children with autism. (Scheme for Children with Special Needs, 2018; Sarva Shiksha Abhiyan 2012). These models can be seen to exist along a continuum of inclusion ranging from full inclusion to complete segregation. In the first program children with autism attend regular school full time. They access the regular curriculum and may avail of alternative subjects offered by the Goa State Board of Education. Generally, the children attending this program are high functioning with an average or above average IQ. The second program is the Life Skills Resource Room- a classroom in a regular school which offers a curriculum focusing on functional skills. Children in this program almost always have intellectual disability along with their autism. In addition to attending the resource room, they also participate in various co-curricular activities of the school. The third model for children with autism is special schools. This model is at the other end of continuum and is completely segregated. Special schools accept children with high functioning autism and low functioning autism. Those who are high functioning participate in an academic curriculum and those who are low functioning avail of a functional curriculum.

Evaluation of Programs Serving Children with Autism

In order to promote positive developmental outcomes for children with autism spectrum disorders (ASD), researchers have developed comprehensive treatment models of service (National Research Council, 2001) like the Lovass Model, or the SCERTS (Social Communication Emotional Regulation and Transactional Support) over the past decades. While many of these models are indeed based on research and evidence-based practice there is very

little research to study the efficacy of all these models (Hume et al 2011; Iovannonne et al, 2003). This finding points to the need for ongoing program monitoring and evaluation along with constant modification of goals according to the changing needs of the child (Cerveza et.al 2011). Callahan, Henson and Cowan (2008) stress the importance of individualized programming, data collection, empirically demonstrated strategies and intervention, active collaboration and long-term outcomes.

A sense of urgency in the field of autism to understand and measure the efficacy of programs is becoming an important aspect of research proposals (Hume et al, 2011).

Program evaluation is the use of planned activities to monitor process, outcomes, and impact of a health program or intervention. The application of program evaluation to behavioural analytic treatment programs for children with autism is a useful and necessary activity to inform practitioners and other stakeholders of the efficacy of these programs and to promote adherence to best-practice treatments. Many researchers have identified core components or themes that are essential to any program for autism (Lynch and Irvine, 2009; Humphrey and Lewis, 2008; Iovannone et al 2003). However, researchers report that many evaluation programs are not designed to evaluate autism specific programs effectively. Oren and Ogletree (2007) state that traditional methods of evaluating programs such as compliance monitoring and efficacy outcome may be too limited to address the wide variety of services for children with autism. They further add that assessing the quality of program services delivered to children (i.e., process goals) and the progress of children in meeting those goals (i.e., outcome goals) should be the fundamental concern of programs for students with autism. McMahon and Cullinan (2014) point out evaluation programs conducted by the government rarely address the issue of best practices

because they lack a cohesive framework of knowledge by which to measure autism programs. They quote an example where one such evaluation failed to address the presence of indicators like functional behavioural assessment or systematic instruction- both of which are vital in any program for autism. The result of a lack of program evaluation leads to the continuation of the development of programs for children with autism which do not have specialized requirements for children with autism. Conversely the results of program evaluation can lead to the adoption of long-term strategies that increase quality, efficiency, and access to services (Miller, 2017). Some of the autism evaluation programs that were developed with the specific purpose of measuring best practices include the Autism Program Evaluation Rating Scale (APERS) and the APQI (Autism Program Quality Indicators).

The Autism Program Evaluation Rating Scale (APERS) was developed in 2011 by the National Professional Development Center for Autism Spectrum Disorders with the intention of measuring the quality of services in programs for children with autism. Separate versions of the *APERS* were created to measure specific aspects of program quality for two age ranges: APERS PE (for primary education) and APERS-MHS (for middle and high school).

The APQI was developed in 2001 by the University of the State of New York. It is a self-review and quality improvement guide for programs serving young students with autism spectrum disorders. It includes total 14 areas organized in two main sections with 7 areas covering program characteristics and supports while other 7 areas relating to specific aspects of educational process for students.

Conclusion

The review of literature highlights the following issues.

- a) Autism is a spectrum disorder which means that the needs of each child will be different.
- b) The unique nature of autism requires that these children should have certain areas necessarily included in their curriculum.
- c) There are also certain evidence-based strategies which have proven effective in teaching children with autism. There exists a gap between the awareness of evidence-based strategies and practice
- d) 30% of children with autism have intellectual disability which means that they form a subset of autism spectrum disorder which requires a different approach in terms of education and other services. Research studies concerning the needs and treatment for this group is on the decline.
- e) Standardized scales to measure the efficacy of autism programs are few.
- f) The research in India regarding how special educators address the educational needs of children with autism is limited.

Methodology

This chapter describes the steps adopted by the researchers in order to achieve the aims of the study. The study was undertaken using a combination of observation based on a checklist, questionnaires and interviews.

Operational Definitions

Special educator: Teaching professionals with a degree or diploma in special education

Headmaster: Administrative head of school

Special schools: The schools which cater exclusively to children with special needs (CwSN).

Mainstream schools: The schools which cater to typically developing children and CwSN with resource room support.

Children with Autism (CwA): Children with autism and intellectual disability

Life skills resource room: This is a classroom in a mainstream school where children with more challenging disabilities are included. Children with IQs in the range of 70 and below are the main population of this resource room. This includes children with intellectual disability and autism. This model allows children with more severe disabilities to be a part of mainstream schools while learning skills which are functional.

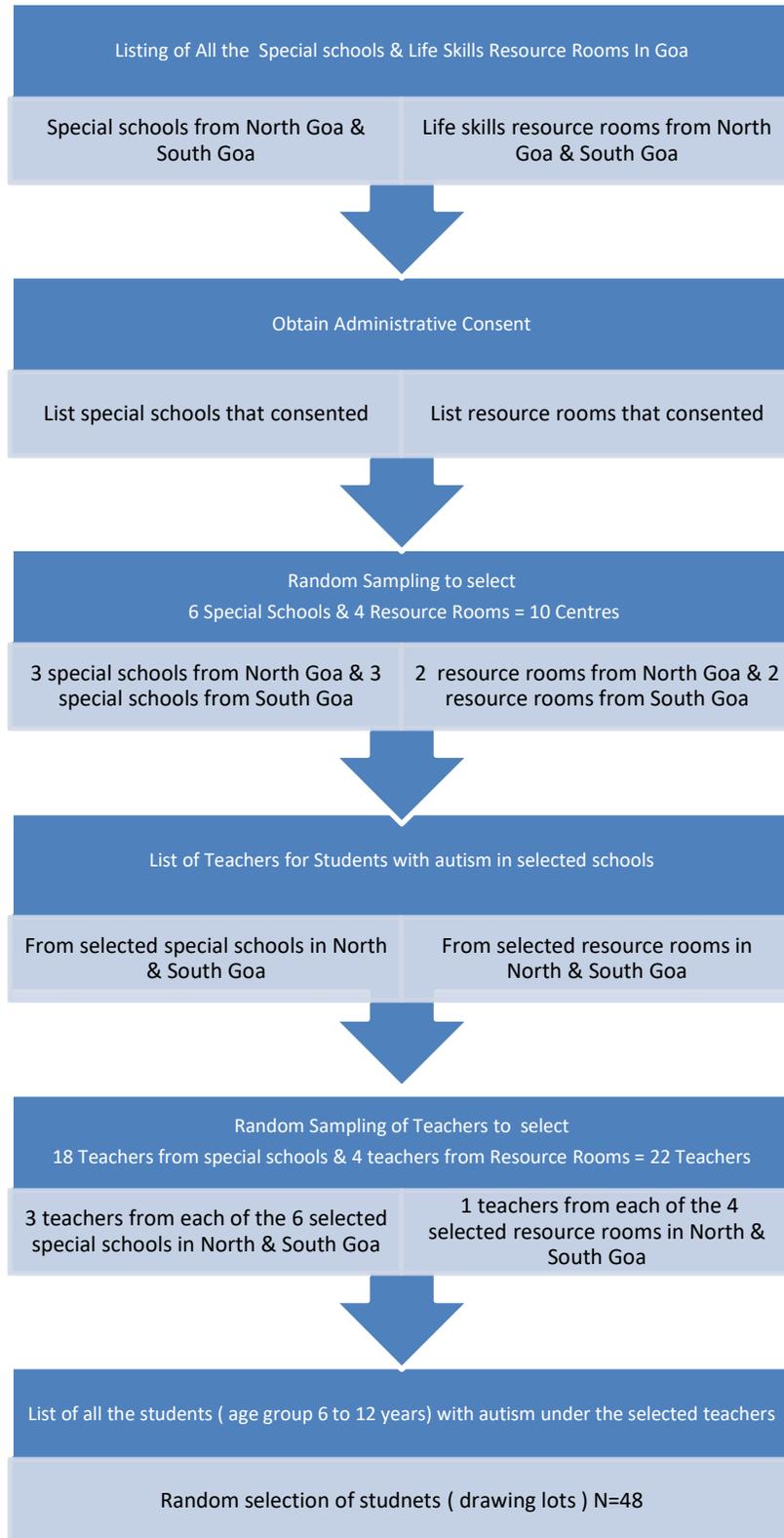
Procedure for Sampling

The population consisted of all trained special educators working in special schools and life skills resource rooms in the state of Goa.

Inclusion criteria for Special Educators (Teachers):

1. Trained Special educators i.e. teachers with diplomas or degrees in special education.
2. Class composition of these teachers must include children with autism (CwA) in the age group of 6 to 12 years.

Figure 1
Flow chart outlining sampling procedure



Sample Size

Six special schools- 3 from North Goa and 3 from South Goa

4 mainstream schools with life skills resource rooms -2 from North Goa and 2 from South Goa

10 Headmasters / Administrators -1 for each school selected

22 Special educators -18 from Special schools (3 per special school) and 4 from mainstream schools (1 per life skills resource room)

Tools for Data Collection

Three tools were developed by the researchers in order to generate data for the study.

1. The **Checklist to Evaluate Programs for Children with Autism (CEPCA)**. A fifty-eight-item rating scale to measure the performance of teachers of children with autism in the classroom. (See Appendix F)
2. A teacher survey questionnaire to identify factors influencing teacher performance. (See Appendix E)
3. A headmaster survey questionnaire to identify resources provided to the teachers. (See Appendix D)

Construction of the Tools

The steps to develop the Checklist to Evaluate Programs for Children with Autism (CEPCA) are listed below.

1. Review of available rating scales: The investigators conducted a review to identify existing rating scales which were designed to evaluate programs educating children with autism. These included the scale for the ASD Nest program, the Autism Classroom Evaluation (ACE) and the Autism Program Environment Rating Scale (APERS). The ASD Nest program focused exclusively on the general classroom and not on special schools and was therefore considered unsuitable for the study. Scales like the Autism Classroom Evaluation (ACE) and the Autism Program Environment Rating Scale (APERS) appeared to be suitable for the study, but when the investigator attempted to contact the developers of the scale via email she did not receive a reply from them. A scale which yielded information regarding components of effective autism programs was the Autism Performance Quality Indicators (APQI). However, the APQI was considered too detailed to use for the Indian education system. It contained many areas which though vital to any program with autism did not exist in the special school system in India. Some of these areas included inclusion, program evaluation, transition and community collaboration and support.

2. It was thus decided to develop a scale which was suitable for current special education models in India. Review of literature- Several studies were reviewed to determine the components of effective programs for children with autism. Some of the components that were common across many studies were a) communication and socialization programs, b) structured environments c) behaviour management programs.

3. Development of First Draft- The first draft of the scale was developed based on the information gained from studying other rating scales as well as the review of literature. The scale was called the Checklist to Evaluate Programs for Children with Autism and

consisted of 10 categories each of which focused on a necessary component of quality programs for children with autism

4. Experts review- This draft was sent out to experts in the field for their comments. The team of experts consisted of persons in India who had over 10 years of experience in the field of autism as educators, therapists or teacher trainers. Many of the experts who replied had set up their own programs for children with autism. Based on the comments the scale was reviewed and changes made. Some of the changes included

- (a) Giving examples for items to make usage of the scale easier for all persons.
- (b) Addition of items to enhance information about the categories.
- (c) Using quantifiable terminology to make scoring easier.

5. Pilot Study - After the checklist was modified, the investigators conducted the pilot study in order to test out the usability of the CEPCA. The pilot study was carried out on one special school and one life skills resource room outside the randomly selected sample of special schools and resource rooms. The team of observers consisted of two investigators who were trained as teachers for children with autism and one parent of a child with autism. A total of 6 teachers were observed by all three observers. The results of the pilot study were as follows

- (a) The following items were added/ broken into smaller units in the CEPCA

| Section | Old Descriptor | New Descriptor |
|-------------------------------|---|--------------------------------|
| 4.Management of Sensory Needs | Descriptor 1- A comprehensive sensory profile based on the assessment of each student is made available to the teacher | Divided into 2 descriptors |
| 5. Assessment and IEPs | Descriptor 1- Students are assessed in a variety of areas (functional, sensory, behavioural, communication, socialization) using comprehensive assessment tools | Divided into three descriptors |

| | | |
|--------------------------|--|--|
| 6. Instructional Methods | Descriptor 3- This descriptor was deleted because it was an overlap of items 2 and 4 | |
| 8. Parent Involvement | All the descriptors were listed in point form under a general heading | Each item was listed as a complete statement |

- (b) The presentation of the CEPCA was changed to incorporate space for notes on each page making it easier than having a page for notes at the back.
- (c) It was decided to review all the scores at the end of the three days observation and not discuss any details till the observation period was over.
- (d) To make the scoring easier, the researchers have added descriptors of each score on the CEPCA. This helped to make score each rating section objectively.
- (i) A score of 1 (No evidence) meant that there was no observable evidence of any of the materials or practices.
- (ii) A score of 2 (Efforts to set up) was given if teachers stated that there were plans to buy items. A score of 2 was also given if IEPS were written but not followed in practice.
- (iii) A score of 3 (Evidence Inconsistent) meant that the material or services were available for some children, or only some situations.
- (iv) A score of 4 (Evidence Consistent) meant that the material or services were consistent across children and situations.

*See Appendix F

Teacher Survey Questionnaire to Identify Factors Affecting Teacher Performance

This is a semi-structured proforma prepared by the researcher to understand special educators' personal and professional profile. It also surveyed teacher knowledge about autism specific strategies along with challenges faced in educating children with autism.

Table 1

Break up of questions in Teacher Survey Questionnaire

| Section No | Name of Section | Description |
|------------|--------------------------|---|
| 1. | Personal details | Questions seeking information regarding age, sex, basic education, training qualification |
| 2. | Organizational details | Information about type of school/resource room, number and type of students, employee type and status, service years, professional and parent support |
| 3. | Evidence based practices | Information on teachers' perception on their familiarity about EBPs and their skill level |
| 4. | Open response questions | Information regarding challenges to teaching children with autism |

Headmaster Survey Questionnaire to Identify Resources Provided to Teachers

This is a semi-structured proforma prepared by the researcher to understand HM's personal and professional profile along with details on organizational resources and challenges in educating children with autism.

Table 2

Break-up of questions in Headmaster Survey Questionnaire

| Section No | Name of Section | Description |
|------------|--|---|
| 1. | Personal details | Questions seeking information regarding age and sex |
| 2. | Academic and professional details | Information regarding basic education, training qualification, in service & preservice training etc. |
| 3. | Organizational details. | Information about organizational status, affiliation, grant structure, staff available, enrolment of students |
| 4. | Professional development opportunities | Information regarding resources available to teachers and opportunities for in-service training |
| 5. | Barriers to Inservice training | Information regarding possible obstacles to in-service training. |
| 6. | Open response questions | Information regarding difficulties in educating children with autism |

Procedure for Data Collection

1. A list of all the special schools and mainstream schools with resource rooms was obtained from the Directorate of Education (Goa).
2. An email explaining the objectives of the study along with the supports to be extended by the school was sent to all the heads (See Appendix A). Schools which were willing to participate were requested to email their consent to the researchers. Schools which did not email their consent within two weeks received a follow up phone call to ascertain whether they wished to participate.
3. After obtaining the consent from schools, a sample of 6 special schools (3 from North Goa and 3 from South Goa) and 4 mainstream schools (2 from North Goa and 2 from South Goa) was randomly selected through a computerized program.
4. The researchers visited these schools and had a meeting with the heads in which they discussed the study in detail. The following points were addressed.
 - (a) Signing of the consent forms of administrators (See Appendix B)
 - (b) Obtaining the list of special educators who fulfilled the criteria required for the selection
 - (c) Fixing of dates for the observations and interview
5. Random selection of teachers from list provided by headmasters. Since the total number of teachers of children with autism in a special school rarely numbered more five the researchers simply selected the teachers through a process of drawing lots.

6. Random selection of children with autism for observation. In most cases there were two children in each class. When there were more than three children the researchers also selected three children through the process of drawing lots.

7. Signing of consent forms by teachers selected (See Appendix C)

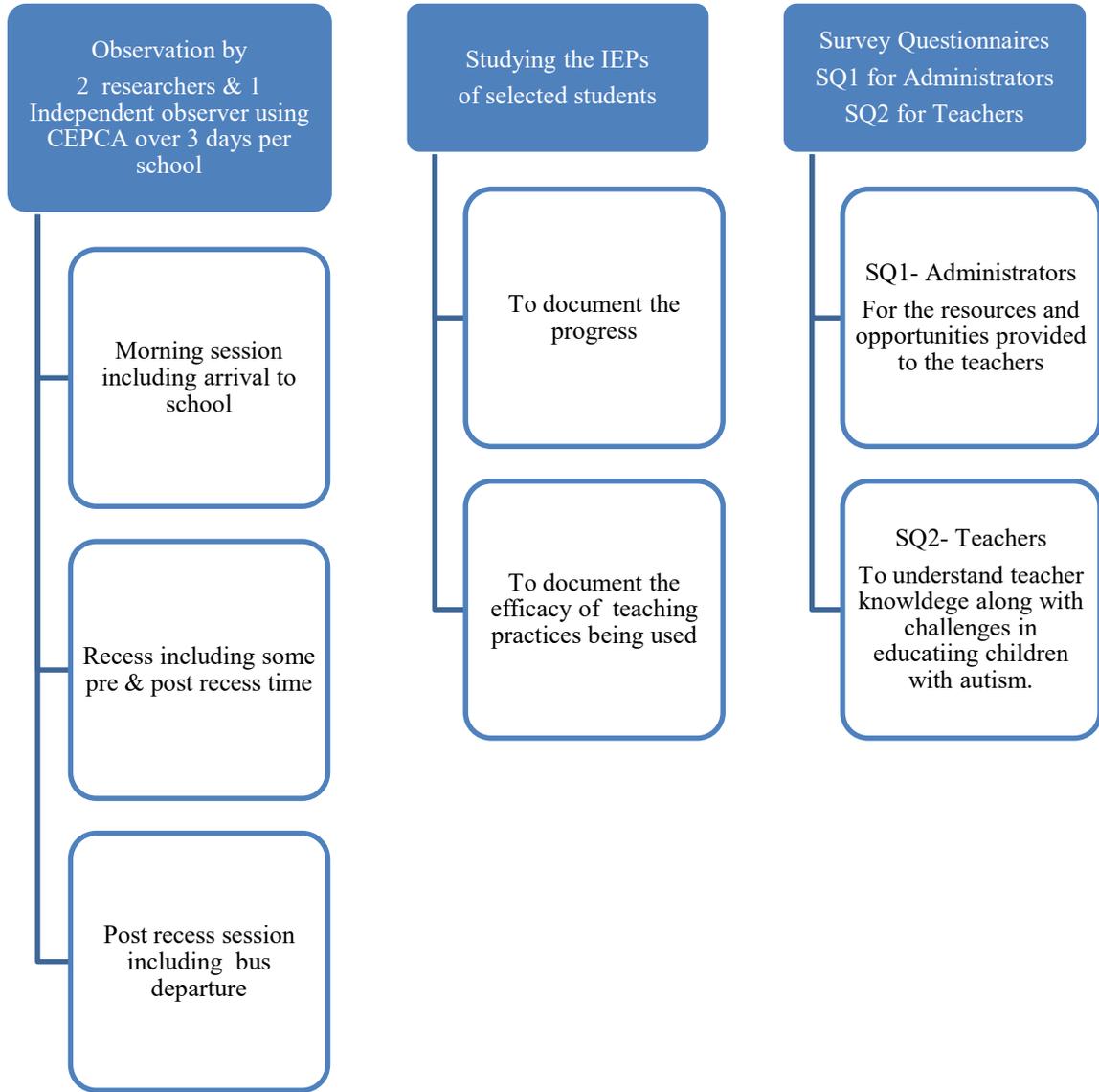
8. Permission from the HM to review the IEPs and the files of the selected CwA. Researchers mentioned that the file reviews would be done during the observation days planned and the confidentiality obligation

9. Three days of observations per school over a period of 4 months (Fig 2)

10. Interviews of teachers and headmasters on the last day of observation.

Figure 2

Flow chart outlining process of data collection



Ethical Guidelines for the Study

1. An informed written consent was obtained from the school authorities signifying their willingness to participate in the study.
2. Details regarding the study were explained and given in writing.
3. Participants were assured of the confidentiality of their identity and the shared information.
4. The participants involved in the study were at liberty to withdraw from the study at any point of time.
5. The participants could request for the results of the study after it was completed.

Data Analysis

Data was collected from three sources – the CEPCA, the administrator survey questionnaire and the teacher survey questionnaire. The data was systematically processed, classified and tabulated using SPSS computerized package (Statistical Package for Social Sciences).

The data was analysed using descriptive statistics wherever relevant. Responses from teacher and headmaster interviews were collated and linked to the quantitative findings.

Analysis of data

The study was based on five objectives. In order to achieve these objectives data was generated from multiple sources (CEPCA, Questionnaires (Headmaster and Teacher) and Interviews (Headmaster and Teacher). The data has been analysed and presented under each of the objectives.

18 teachers from 6 special schools and 4 teachers from life skills resource rooms were observed. Observations on the CEPCA have a sample size of 22. However, since only 9 out of 10 headmasters and 19 out of 22 teachers returned the survey forms, data from the survey and interviews has a sample size of 9 schools and 19 teachers.

Research Question 1. Do teachers use autism specific strategies when teaching children with autism?

Teacher performance in the area of autism specific strategies was observed and scored based on the various indicators on the CEPCA. Use of autism specific strategies in the following areas was observed. Physical arrangement of the environment, communication programs, socialization programs, management of sensory needs, instructional methods and behaviour management programs. Each teacher was observed for three days by three different observers. The mean score of the teachers in each area of the CEPCA from three observations was computed. Based on the scores obtained, teachers were then placed into the ranges mentioned below. The percentage of teachers in each range was also computed in order to gain a better understanding of how many teachers used autism specific strategies.

Mean teacher scores were presented within the ranges shown below along with the descriptors.

Table 3

Range scores on the CEPCA along with their descriptors

| | | | |
|-------------|-------------------|------------------------|----------------------|
| No evidence | Efforts to set up | Evidence inconsistency | Evidence consistency |
| 1.0 – 1.74 | 1.75 – 2.49 | 2.50 – 3.24 | 3.25 – 4.00 |

Table 4

Mean Performance Score for Teachers for Physical Structure

| Physical Structure | Qualifier | N (Frequency) | Percentage |
|--------------------------|-----------------------|---------------|------------|
| Score range 1.17 to 3.50 | No evidence | 18 | 81.8 |
| | Efforts to set up | 2 | 9.1 |
| Mean 1.65 (No evidence) | Evidence inconsistent | 1 | 4.5 |
| | Evidence consistent | 1 | 4.5 |

For the indicator of physical structure, the mean performance score of the teachers was 1.65. This score falls into the range of 'No evidence'. 81.8% of teachers scored in this range showing that most teachers have not arranged their classroom using physical structure (as specified by TEACCH).

Table 5*Mean Performance Score for Teachers for Communication Programs*

| Communication Programs | Qualifier | N (Frequency) | Percentage |
|--------------------------|-----------------------|------------------|------------|
| Score range 1.00 to 3.33 | No evidence | 17 | 77.3 |
| | Efforts to set up | 3 | 13.6 |
| Mean 1.50 (No evidence) | Evidence inconsistent | 1 | 4.5 |
| | Evidence consistent | 1 | 4.5 |

For the indicator of communication programs, the mean performance score of the teachers was 1.50. This score falls into the range of 'No evidence' 77.3% of teachers scored in this range showing that most teachers do not have communication programs for their students.

Table 6*Mean Performance Score for Teachers for Socialization Programs.*

| Socialization Programs | Qualifier | N (Frequency) | Percentage |
|--------------------------|-----------------------|------------------|------------|
| Score range 1.00 to 2.87 | No evidence | 20 | 90.9 |
| | Efforts to set up | 1 | 4.5 |
| Mean 1.19 (No evidence) | Evidence inconsistent | 1 | 4.5 |
| | Evidence consistent | 0 | - |

For the indicator of socialization programs, the mean performance score of the teachers was 1.19. This score falls into the range of 'No evidence'. 90.9% of teachers scored in this range showing that most teachers do not have socialization programs for their students.

Table 7*Mean Performance Score for Teachers for Management of Sensory Needs*

| Management of Sensory Needs | Qualifier | N (Frequency) | Percentage |
|-----------------------------|-----------------------|------------------|------------|
| Score range 1.00 to 3.33 | No evidence | 15 | 68.2 |
| | Efforts to set up | 4 | 18.2 |
| Mean 1.65 (No evidence) | Evidence inconsistent | 2 | 9.1 |
| | Evidence consistent | 1 | 4.5 |

For the indicator of Management of Sensory Needs, the mean performance score of the teachers was 1.65. This score falls into the range of 'No evidence.' 68.2% of teachers scored in this range showing that most teachers do not use sensory integration strategies for their students.

Table 8*Mean Performance Score for Teachers for Autism Specific Instructional Strategies*

| Autism Specific Instructional Strategies | Qualifier | N (Frequency) | Percentage |
|--|-----------------------|------------------|------------|
| Score range 1.00 to 3.24 | No evidence | 15 | 68.2 |
| | Efforts to set up | 5 | 22.7 |
| Mean 1.60 (No evidence) | Evidence inconsistent | 2 | 9.1 |
| | Evidence consistent | 0 | - |

For the indicator of autism specific instructional strategies, the mean performance score of the teachers was 1.65. This score falls into the range of 'No evidence.' 68.2% of teachers scored in this range showing that most teachers do not use sensory integration techniques for their students.

Table 9*Mean Performance Score for Teachers for Behaviour Management Program*

| Behaviour Management Program | Qualifier | N (Frequency) | Percentage |
|---|-----------------------|------------------|------------|
| Score range 1.00 to 1.50 Mean 1.06 (No evidence) | No evidence | 22 | 100.0 |
| | Efforts to set up | 0 | - |
| | Evidence inconsistent | 0 | - |
| | Evidence consistent | 0 | - |

For the indicator of behaviour management strategies, the mean performance score of the teachers was 1.06. This score falls into the range of 'No evidence.' 100% of teachers scored in this range showing that no teacher had a planned behaviour management program for their students.

Research Question 2. Do teachers pay the same attention to children with autism as they do to children with other disabilities in the classroom?

Teacher attention to children with autism was measured by observing the amount of instructional time the teacher gave to children with autism compared to other children with disabilities in the classroom.

Table 10

Mean Performance Score for Teachers for Attending to Children with Autism in the Classroom

| Teacher Attention to Children with Autism | Qualifier | N (Frequency) | Percentage |
|--|-----------------------|---------------|------------|
| Score range 1.33 to 4.00 Mean 3.04 (evidence inconsistent) | No evidence | 2 | 9.1% |
| | Efforts to set up | 5 | 22.7% |
| | Evidence inconsistent | 6 | 27.3% |
| | Evidence consistent | 9 | 40.9% |

On Item 56 measuring the attention given by the teacher to children with autism in the classroom the mean score for teachers was 3.04 which falls in the ‘evidence inconsistent category’. 27.3% teachers scored in this range along with 40.9% teachers scoring in the ‘evidence consistent’ range. This indicates that the majority of teachers do not discriminate between children with autism and those with other disabilities in their classes.

Research Question 3. Is the outcome of the strategies assessed comprehensively in terms of student progress?

Students' progress was measured by observing teachers in terms of how they conducted the assessment process, how they wrote the individualized education programs and how they evaluated and documented the student progress.

Table 11

Mean Performance Score for Teachers Assessment and IEPs

| Assessment & IEPs | Qualifier | N (Frequency) | Percentage |
|-------------------------------|-----------------------|------------------|------------|
| Score range 1.00 to 3.08 | No evidence | 5 | 22.7 |
| | Efforts to set up | 9 | 40.9 |
| Mean 2.15 (efforts to set up) | Evidence inconsistent | 8 | 36.4 |
| | Evidence consistent | 0 | - |

Table 3.8 shows that the mean score of teachers was 2.15. This falls into the category of efforts to set up. 40.9% teachers had written IEPs. 36.4% teachers scored in the evidence inconsistent range.

Research Question 4. What are the various resources available to teachers to help them teach children with autism?

The tables in this section provide details to help document various resources available to teachers. The data was derived from the headmaster's survey which was presented to 10 headmasters of schools. 1 headmaster did not consent to filling out the survey therefore the table presents data from 9 headmasters. (N=9)

Table 12

Professional Support (Human Resources) Provided to the Teachers

| Professional Support (Human Resources) | (Frequency) Yes | (Frequency) No | Percentage |
|---|--------------------|-------------------|------------|
| Aayah (shared between the classes) | 9 | 0 | 100.0 |
| Shadow teacher | 0 | 9 | 100.0 |
| Speech Therapist | - | 4 | 44.4 |
| | 5 | - | 55.6 |
| Physio/Occupational Therapist | - | 3 | 33.3 |
| | 6 | - | 66.7 |
| Counsellors | - | 3 | 33.3 |
| | 6 | - | 66.7 |

Table 13 shows that all 9 schools had ayahs/assistants to support teachers in in their classes. In some schools the ayah was shared between the classes. There was no shadow teacher in any of the schools. 6 out of the 9 schools (66%) had counsellors while 3 schools (33.3%) did not have counsellors. 5 schools (55.6%) had a speech therapist, while 4 schools (44.4%) had no speech therapists (these were the resource rooms in mainstream schools), 5 schools (55.6%) had a physiotherapist or occupational therapist while 4 schools (44.4%) had no therapist (these were the resource rooms in mainstream schools)

Table 13*Professional Support (Material, Technology, Other) Provided to the Teacher*

| Professional Support (Material, Technology, Other) (N=9) | (Frequency) Yes | (Frequency) No | Percentage |
|---|----------------------------|---------------------------|-------------------|
| Lesson planning time | - | 1 | 11.1 |
| | 8 | - | 88.9 |
| Teaching Learning Material (TLM) funds | 9 | - | 100.0 |
| | - | 0 | |
| Internet access | - | 1 | 11.1 |
| | 8 | - | 88.9 |
| Services by an autism consultant | - | 5 | 55.6 |
| | 4 | - | 44.4 |
| Meetings to discuss challenges and/or successes | - | 1 | 11.1 |
| | 8 | - | 88.9 |

Table 14 shows that all 8 out of 9 schools (88%) said that they allotted lesson planning time for teachers while 1 school (11.1%) did not. All 9 schools mentioned that they provided funds for TLM. 8 out of 9 schools (88%) stated that they provided internet access while 1 school (11.1%) did not. 4 out of 9 schools said that they used the services of an autism consultant. 8 schools out of 9 stated that they conducted meetings to discuss challenges and successes.

Table 14*Professional Support (Autism Specific Training) Provided to the Teacher*

| Professional Support (Autism Specific Training in the Last Five Years) | N (Frequency) | Percentage |
|---|--------------------------|-------------------|
| 0 | 4 | 44.4 |
| 1-5 | 3 | 33.3 |
| 6-10 | 2 | 22.2 |

Table 15 shows the number of autism specific training programs taken by the teachers over the past 5 years. Four schools (44.4%) did not conduct or send their teachers for any such trainings, three schools (33.3%) had between one -five trainings and two schools (22.2%) had between 6-10 trainings.

Research Question 5. To identify reasons for gaps (if any) in the delivery of autism specific strategies

In order to identify the reasons for gaps in service delivery, the researchers identified possible barriers to service delivery. Some of these included qualifications of the teachers, in-service training specific to autism and availability of resources. Headmasters were interviewed in order to understand their perspective regarding challenges in educating children with autism. Teachers were also interviewed in order to understand the challenges that they faced along with their perception of their own skills. The responses to these questions were analysed qualitatively drawing on the interview data from both headmasters and teachers. The responses of both headmasters and teachers have been presented under the headings of the questions asked.

Data from the Headmaster's Interview

In the headmaster's interview the issue of gaps in the delivery of service was addressed through two main questions viz. areas of support, and barriers to in-service training.

There were two groups of headmasters from a total of 10 who participated in the interview. The first group consisted of 6 headmasters from special schools. Out of these 6, one headmaster declined to be interviewed and therefore the responses of only 5 headmasters have been recorded and analysed. Among the five headmasters interviewed, four had a bachelor's degree or diploma in special education while the remaining headmaster had a certificate in pre-primary general education. The second group consisted of four headmasters from mainstream schools who had life skills resource rooms in their schools. Two of them had a bachelor's degree in general education, one of them had a master's degree in management and one of them had a master's degree in general education.

Areas of Support- Various areas in which teachers would need support were identified and headmasters were questioned as to the availability of these resources.

Time for Planning- Eight out of nine headmasters stated that enough time was given to teachers for lesson planning, assessment and preparation of Teaching Learning Materials (TLM). All headmasters stated that work time was allotted- generally on Saturdays or some afternoons during the week however, teachers were not told specifically that this time was for planning or preparation of TLM. Headmasters agreed that there was no monitoring system to ensure that lesson planning and development of aids was happening regularly.

Funds for TLM- All headmasters stated that they provided funds to the teachers for the preparation of TLM.

Internet Access- Eight out of the nine headmasters stated that the school provided internet access to the teachers. Two headmasters mentioned that the teachers did not make use of the internet during the time given for lesson planning or the preparation or TLM.

Autism Consultant - This question was asked to ascertain whether schools had experts in the field of autism to guide teachers to work with children with autism. Five headmasters stated they had no help while four of them said yes. Questions as to who the consultants were yielded various answers. Two headmasters (special schools) said that they had a teacher who had a D.Ed. in autism, whom they consulted when they had any problems with children with autism. However, when these two teachers were questioned, they said that they had never been asked for any inputs from any of the teachers or the principal. The third headmaster (life skills resource room) stated that the life skills resource room was set up by a teacher trained in autism who is currently supervising the program. This teacher had set up the whole resource room in terms of

physical structure, schedules, and other autism specific strategies. The fourth headmaster (life skills resource room) said that the teacher was in communication with an expert in autism, but the headmaster was unaware of when this happened.

Barriers to Inservice Training- Among the difficulties in teaching children with autism lack of training is listed as one of the key reasons. Headmasters were questioned about the number of autism specific trainings that they had provided to the teachers in the past 5 years in order help them deal more effectively with children with autism.

Inservice Training -The question on in-service training was divided into two sections- General in-service training and autism specific training. Nine of the headmasters who were interviewed stated that in-service training was conducted at least once a year for all teachers. They listed topics like sex education, positive thinking, Swatch Bharat training and mental health awareness programs. When it came to autism specific trainings, four headmasters said that they had not conducted such trainings, while 5 schools said they had a few trainings. They had no records as to exact numbers. Some headmasters mentioned topics like '*Sensory Pathways to Understanding Autism*' and '*Introduction to Autism*' and '*Medical Aspects of Autism*' as titles of the trainings. Other headmasters considered training to be any event connected with autism. This included attending autism rallies conducted by local NGOs to raise awareness about autism. When asked whether there were any barriers to in-service training, six headmasters said there were no barriers. However, three of them stated that there were challenges and listed low motivation of teachers, lack of funds, insufficient time, non-availability of experts as some of the barriers to in-service training specifically related to autism.

Specific Concerns in Educating Children with Autism- In order to understand further challenges to educating children with autism, headmasters were asked if there were any specific concerns in that area. The responses given were extremely diverse. Only one headmaster stated that she had no concerns in educating children with autism. Many headmasters listed the lack of teachers trained in autism, lack of occupational and speech therapists and the high student teacher ratio as challenges in educating children with autism. Teaching children with autism to communicate was also perceived as a real concern. This concern is intensified when children with autism are non-verbal. Headmasters also mentioned problem behaviours as challenges in educating children with autism.

Unrealistic expectations or denial on the part of the parent about their child's condition was yet another concern that was mentioned. *In a specific example the headmaster cited parents who brought their non-verbal child to the school at the age of 22 and expected the school to teach him to talk. Parents clearly stated that the child did not have autism but would learn if he was in school.*

The same sentiment was echoed by another headmaster who gave examples of parents who only wanted their child to write, irrespective of the fact that what the child really needed to learn was functional skills.

In life skills resource rooms, the attitude of general educators to children with autism poses a challenge to including these children in the mainstream classroom. The headmaster stressed the need for constant sensitization for both general educators and parents to ensure a more accepting attitude towards children with autism.

As a follow up to the question relating to concerns about educating children with autism headmasters were asked if they had identified any ways to address these concerns. Some headmasters stated that they needed more teachers trained in autism. One headmaster added that a longer internship at preservice training should be considered. Most headmasters mentioned the need for therapists and felt that the government should provide them with funds for this. Two headmasters specifically mentioned the need for greater sensitization of the community about children with autism while one headmaster called for parent education programs via counselling or talks by parents who had benefitted from the school or senior teachers from other schools who had experience in teaching children with autism.

Data from the Teachers Interview

Twenty-two teachers were presented with questionnaires for interviews to gain an understanding into the challenges they faced working with children with autism. Nineteen out of twenty-two teachers consented to be interviewed. (It should be stated that the three teachers who did not give the interview were not allowed by the headmaster to do so). From the nineteen teachers who were interviewed, four of them were teachers were from life skills resource rooms and fifteen teachers were from special schools. The qualifications of the teachers were as follows. Nine teachers had a degree in special education (B.Ed.), nine of them had a diploma in special education (D.Ed.) while the remaining teacher had a diploma in vocational rehabilitation. Among those with a D.Ed., three teachers had a diploma in autism while the remaining six were qualified in intellectual disability. Nine teachers had B.Eds. in intellectual disability, however in the case of eight of these nine, their course also included a whole paper in autism complete with practicum. The practical component of this paper included 20 lessons in autism along with a

case study of a child with autism. The responses of the teachers are presented under the following headings along with the observations of the researchers.

Greatest Challenge Working with Children with Autism- Out of the nineteen teachers interviewed, fifteen teachers (78%) stated that the greatest challenge they faced with children with autism was behaviour challenges. Among the behaviours that were considered challenging, teachers listed hyperactive behaviour, hitting, pushing, spitting, head banging and throwing things like chairs and toys. Teachers stressed that it was especially difficult to handle these children because very often the child would hit the teachers. They mentioned that when the child had these tantrums, the whole class was disrupted. Some teachers added that it was difficult to record data in order to conduct behaviour modification programs. One teacher felt that recording two weeks of data was very challenging and often very frustrating since there was no manpower to do so.

The next issue to be most challenging for teachers was communication. Four teachers stated that making the child engage in eye contact was challenging and they found it especially hard to work with non-verbal children. Phrases like ‘he is in his own world’ were mentioned often. The inability to follow instructions was mentioned as a factor which increased the difficulty in teaching children with autism. Difficulty in following instructions often led to non-completion of tasks by the children with autism which teachers found frustrating.

A few teachers mentioned that they found it difficult to teach these children social skills as well as self-help skills.

A Strategy that Worked- The researchers wanted to ascertain whether the teachers had tried any strategies to deal with the challenges that the teachers faced. The most common

strategy that teachers used was visual schedules and visual supports. However, during observation of the classes, researchers noted that there were very few examples of actual use of visual supports in the classrooms. Most visual supports consisted of a timetable. The timetable was consistently referred to only by two teachers. In one special school, it was interesting to note that teachers began to use individual visual schedules after the first visit. In two resource rooms the teachers consistently used individual schedules with the children. The observers did not observe the use of visuals in any other contexts.

Some teachers mentioned that they used social stories but when the observers asked the teachers to show them the social stories only two teachers were able to present social stories. The same two teachers also mentioned social stories as a strategy in the IEPs of the students. On further questioning most teachers were unable to explain how they used a social story to help the child overcome issues. Other teachers confused the purpose of social stories and used them simply to stop repetitive behaviour which resulted from a sensory need rather than lack of awareness of social rules.

The next commonly used strategy mentioned by teachers was the use of reinforcements. Teachers said that they used reinforcement to get children 'to listen' but observation of classroom activities showed that there was no systematic use of reinforcements among students. Many teachers used verbal reinforcers, but these were not specifically targeted at increasing behaviours. For example, one teacher kept on saying "P is a good boy" consistently even though he banged his head on the table and refused to do his work. Another teacher mentioned that her student cried a lot when he came to the class first but when she redirected his attention to reinforcing activities, the crying stopped. Another teacher gave the example of how she increased sitting behaviour by reinforcing the student using praise.

Two teachers gave examples of using sensory integration techniques to deal with challenging behaviour among students like giving them ‘water therapy’ or allowing them to drop marbles into a bottle. Another teacher said that she gave a student a sparkly bottle to help him to calm down because he was attracted to bright visual things.

Other strategies mentioned but not observed were the use of discrete trials and work systems.

How Did Training Prepare You for Working with Children with Autism? Since the training experiences of teachers varied, it was felt necessary to try and understand if there was any aspect of training that helped them understand and plan for teaching children with autism.

Of the nineteen teachers interviewed, five teachers said that their course gave them no exposure to autism. Five other teachers said that their training gave them knowledge on the use of visual aids for autism which they found helpful. Of the three teachers who had a diploma in autism only one teacher clearly mentioned that training in visual schedules and sensory issues helped her to deal with children with autism. The other two teachers gave more generic responses like the use of the play-way method and writing of IEPs and lesson plans.

Other teachers listed social stories, case study work, and hands-on practical experience during the training, along with exposure to PECs and information on behaviour management as some parts of training that helped them to deal with children with autism.

What Aspects of Training Are You Currently Implementing in Your Practice? In response to this question six teachers said that the use of visual schedules was one aspect of training that they were currently implementing. Among these six teachers, it was observed that only three of them referred to the visual schedule throughout the day, while the remaining three

only used it at the start of the day. Teachers mentioned that they also used physical structure, functional routines, writing of IEPs, use of the quiet corner and the use of behavioural teaching strategies like task analysis, chaining, modelling, and prompting. However, observations of these teachers in the classroom revealed that there were no behavioural strategies that were being followed. Examination of the IEPs showed that only three teachers wrote IEPs in a manner that documented student progress.

What Aspects of Training Are Difficult to Implement and Why? Once again, the responses of the teachers varied greatly. Some of them mentioned components of training that were difficult to implement such as teaching children communication skills or developing communication books for them. This included the implementation of PECS- something which many teachers had been exposed to during their training. Others mentioned the use of structured teaching in terms of arrangement of furniture, behaviour management, writing of IEPs as well the development of socialization programs and Behaviour Intervention Programs as being difficult to implement in a real-life classroom.

Others said that the small size of the classroom (a common feature specially in special schools) made it difficult to implement physical structure and organization. One teacher mentioned that the lack of a multidisciplinary team (speech and occupational therapy) made it difficult to address the complexity of autism in terms of speech and sensory needs. One teacher mentioned the need for a separate classroom for children with autism where all aspects of the training could be implemented. She said that it was hard to work in mixed classroom (children with autism and children with intellectual disability) and do justice to the needs of all the children.

Suggestions to Equip Special Educators to Work with Children with Autism-

Teachers were also asked for suggestions to enable them to be better prepared to deal with children with autism. All teachers interviewed stated the need for further training through workshops. They emphasized the need for these workshops through in-service training or through Continuing Rehabilitation Programs (CRE) specific to autism. While many of them simply said that they felt the need for workshops specific to autism others suggested various topics. These included behaviour management, development of communication skills through Alternative and Augmentative Communication (AAC) and PECS. A few teachers suggested workshop on the basics of physiotherapy and occupational therapy in order to understand the sensory needs of children with autism more clearly.

Discussion of results

The purpose of this study was two-fold. The researchers wished to gain an understanding of the use of autism specific strategies used by teachers of children with autism in special schools and life skills resource rooms. The second was to identify reasons (if they existed) for lack of use of these strategies. The results of the study will be discussed in detail using data generated from the CEPCA, the questionnaire and the interview.

(The terms autism specific strategies, evidence-based practices and evidence-based strategies are used interchangeably in this discussion).

Researchers have attested to the fact that there is no one-size-fits all for educating children with autism (Odom et al, 2010; Prizant and Rubin 1999 in Humphrey and Parkinson, 2006). Notwithstanding this, researchers have identified vital components which must be included in programs designed to teach children with autism such as communication, socialization, and behaviour management (Cerveza et al, 2011; National Research Council 2001). The use of autism specific strategies makes up the other arm of successful programs for children with autism. Sensory strategies, discrete trials, visual schedules, social stories and the use of alternative and augmentative forms of communication are examples of some of the autism specific strategies that should be used in any program to teach children with autism (Lindgren and Doobay, 2011; Odom et al 2001).

Results from the CEPCA

In order to ascertain whether schools admitting children with autism were using autism specific strategies, teachers were scored on 6 areas of the CEPCA- physical structure, communication programs, socialization programs, management of sensory needs , instructional

methods (teaching strategies) and behaviour management. The data from the CEPCA provided insights into how the curriculum was transacted in these key areas.

Physical Structure- Physical structure and arrangement of the of the environment is one of the key components in the TEACCH model (Mesibov, Shea and Schopler, 2005) and is considered an evidence based strategy while teaching children with autism (Odom et al, 2001). It refers to the way in which areas in the class are designated so that the child has a clear idea as to the location of various classroom activities. It includes arrangement of the furniture into clearly delineated areas or the actual marking of boundaries on the floor for activities such as play, quiet area or independent work. For this indicator, 81.8% teachers scored in the 'no evidence' category indicating that they do not use physical structure in their classroom set up. The lack of physical structure was mainly observed in all the special schools. Reasons given by teachers varied from lack of knowledge on the part of the teachers about physical structure to lack of space for anything other than tables and chairs. When questioned in detail teachers admitted that they had not even made suggestions to the administration regarding need for physical structure. In three life skills resource rooms researchers observed the following elements of physical structure. These classrooms had clearly demarcated areas for work time, a quiet area and circle time and in some cases play time. Activities and toys were displayed and labelled in cabinets. In some resource rooms there were cubicles for the students for independent work time. Teachers explained that these classrooms were primarily set up with the purpose of educating children with autism, therefore they incorporated physical structure from the beginning. This contrasts with special schools where the classrooms were set up with the primary purpose of educating children with intellectual disability and hence had a more traditional classroom structure of desks and chairs in rows. Teachers mentioned that the resource rooms

were also designed with the help of an expert in teaching children with autism. The management of the school along with the parents had worked to ensure that the classroom was furnished and arranged to ensure that various elements of physical structure were present.

Communication Programs- The second indicator on the CEPCA was communication programs. Teachers were observed to see whether they had arranged the environment in order to stimulate communication, whether they used any form of AAC (alternative and augmentative communication) and whether they had specific goals for communication for the students. One of the areas of impairment for CwA lies in the area of communication (American Psychiatric Association, 2013). The need for an effective communication program is reflected in the recommendations for a specialized curriculum by the National Research Council (2001). Autism specific curricula like the Comm DEALL Curriculum, ABLLS-R, TEACCH Curriculum and the STAR Curriculum all have sections focused on building communication skills. Among the 22 teachers observed, 77.3% of the teachers scored in the 'no evidence' category indicating that there were no communication programs being addressed. Observation of the classroom revealed that the environment was not set up to stimulate communication e.g. there were no reinforcers or activities for the child to request nor was there any evidence of communication books or any other mode of AAC. In two life skills resource rooms and one special school, the teachers used visual schedules to communicate the activities of the day to their students. Communication goals were addressed specifically only in one life skills resource room. Five out of the ten special schools had speech therapists, however, in most cases, the teachers were not aware of the speech goals of the students. This could be one reason that they were not incorporated into the class program. As a rule, speech therapy was conducted during therapy sessions once or twice a week. The benefits of combining the services of the therapist along with the classroom teacher has been

well documented in research (McGinty and Justice, 2006). The American Speech, Language and Hearing Association recommends a continuation of speech goals in the classroom after a duration of clinical sessions. This practice did not exist in any of the schools that were observed. Other examples of gaps in providing communication programs included not addressing goals that were dictated by the need of the child. For example, one of the speech goals for a child with autism focused on articulation even though the child was barely communicating his needs independently. In two classrooms, teachers did address communication goals in a discrete trial set-up but did not generalize the skill out of the session. For example, children were taught to request using pictures during the session, but these pictures were not used in the classroom situation.

Socialization Programs- The third area on the CEPCA was socialization programs. Impairments in socialization are one of the criteria on which the diagnosis of autism is made (American Psychiatric Association, 2013). It follows therefore, that any education program for CwA necessarily must incorporate the teaching of social skills. (National Research Council, 2001). Recognized autism specific curriculum like the Comm DEALL Curriculum, ABLLS-R, TEACCH Curriculum and the STAR Curriculum have sections focused on teaching social skills for children with autism.

In this study, 90.9% (20 out of 22) teachers scored in the ‘no evidence’ category thus illustrating that social skill training was not a part of the child’s program. Only one teacher scored in the ‘efforts to set up’ category and one teacher scored in the ‘evidence inconsistent’ category. The main reason for the lack of teaching social skills was due to the fact that no curriculum used in the schools included social skills as a component. Currently all special

schools use the Functional Assessment Checklist for Programming (National Institute for the Mentally Handicapped, 2004) in order to plan IEPs. The Functional Assessment Checklist for Programming (FACP) was designed to draw up programs for children with intellectual disability and there is no emphasis on teaching of social skills in a targeted manner. The social skills that do exist are limited to ‘wishing others, playing in a group and sharing’. Many skills in the social domain focus on following instructions or expressing needs and functional skills in the community. In the life skills resource room, the teachers use the ‘Life Skills Curriculum’ which is an informal teacher made checklist which has been in use for 16 years in most life skills resource rooms in Goa. This curriculum is not standardized, and this does not contain any section of social skills. Since social skills were not part of the curriculum, they were not considered when planning a program for the child. The lack of any systematic social skill programs for children whose core impairment is difficulty in initiating and sustaining social interactions points to a gap in addressing the actual needs of the child.

Management of Sensory Needs – The fourth area of the CEPCA dealt with management of sensory needs. The American Psychiatric Association (2013) has included atypical sensory behaviours as one of the symptoms for diagnosing autism under Criterion B which states ‘*restricted, repetitive patterns of behaviour, interests, or activities as manifested by at least 2 of 4 symptoms.*’ Under this criterion the symptom of atypical sensory behaviour is described as ‘*hyper or hypo reactivity to sensory input or unusual interest in sensory aspects of the environment*’ While the use of sensory integration therapy as an evidence based strategy has long been debated, recent studies have been conducted showing it to be evidence based (Schoen et al, 2018; Pfeiffer et al, 2011). Systematic reviews of studies providing Ayres Sensory

Integration therapy to children with autism indicates that it is an evidence-based practice according to the criteria of the Council for Exceptional Children. (Pfeiffer et al 2018).

In this study 15 out of the 22 (62.8%) teachers scored in the 'no evidence' category indicating that they did not use sensory strategies in their classroom. Five of the six special schools had a physiotherapist or occupational therapist, where the children received sensory therapy once a week for 45 minutes. No teachers were aware of the sensory program planned, but in one school the suggestions of the therapist were posted on the class notice board. Observation of classroom activities showed that the suggestions were not incorporated into the daily program of the child. It was also observed that many children displayed behavioural problems in the class which were related to sensory issues e.g. a child who had extreme vestibular hyposensitivity was consistently out of his place and jumping from the table or climbing the windows. This proved to be a constant distraction for the teacher and class and was labelled as disruptive behaviour, but the teacher was not aware of any sensory techniques by which to handle the behaviour. The school did have an occupational therapist but there was no input given to the teacher in terms of meeting the sensory needs of the child.

Four teachers scored in the 'efforts to set up category' which meant that the researchers saw evidence of some written programs by therapists. One teacher scored in the evidence inconsistent category which meant that sensory integration therapy was practiced for some children but not all. Only one teacher had a full-fledged sensory integration program prepared by the occupational therapist which the teacher herself carried out every day with those students that needed it. During the teacher observation the researchers observed many children in the

classroom who had sensory issues. In general teachers opined that dealing with sensory needs was the responsibility of occupational therapist.

Assessment and Individual Education Programs (IEPs)- Assessment and IEPs was indicator number 5 on the CEPCA. Measuring a student's progress objectively as well as documenting it is crucial to any educational program and has a very high bearing on the success of the educational program. Though this aspect of a program is not specific to autism it is the foundation of any good program for children with special needs. For these children an Individualized Education Plan (IEP) based on comprehensive assessment is a crucial parameter to measure student's progress along with the effectiveness of the strategies used. The assessment of the child forms the foundation to develop the IEP. Ideally the teacher shares the assessment results with the parents. Together, they discuss the child's needs and decide the goals to be addressed for a given period- generally one term.

IEP goals should specify the domain, the skill to be addressed, current level of the child for that skill, specific objective, teaching learning material, teaching learning strategies, starting date and the date of completion. As the skill is taught the child's progress is measured and reported in the IEP. This documentation later forms the basis of the review meetings to discuss child's progress and future goals.

The importance of progress monitoring was stated by Gordillo and Miller (2017) thus *“Progress monitoring is a scientifically based practice used to assess a child's academic progress on IEP goals and evaluate the effectiveness of instruction. Progress monitoring tells the teacher what a child has learned and what still needs to be taught.”*

The importance of assessment and progress monitoring in terms of effective programs led the researchers to also survey the protocols used for assessment and planning to gain a deeper insight into the quality of the programs for students with autism. Researchers reviewed the student's files to understand the assessments used, selection of goals, progress evaluation and documentation, parent meetings as followed by the teachers. Eight questions on CEPCA indicator 5 indicator address the areas of assessment (functional, communication and social skills), development of need based goals, use of evidence-based practices and recording protocols.

It was noted that all special schools except one used the Functional Assessment Checklist for Programming (FACP) in order to develop IEPs. This is a standardized checklist used in many special schools across the country. The special school that was the exception used a modified version of the Comm DEALL curriculum which is an autism specific curriculum developed in India. The life skills resource rooms used Life Skills Curriculum (LSC) to develop IEPs for their students.

The mean score of teachers on this indicator was 2.15. This falls into the category of 'efforts to set up'. 40.9% teachers had made efforts to assess students, draw up IEPs and conduct evaluations. 36.4% teachers scored in the evidence inconsistent range which means that IEPs were written for some students or they were written for only some areas.

The results on the CEPCA based on detailed observation of the IEPs show that overall scores indicate that teachers have made efforts to draw up IEPs however, the researchers noted the following inconsistencies in the implementation of the IEP.

In many IEPs teachers had recorded the student's progress incorrectly. For example, in the case of one student the skill of dressing was recorded as independent in the first term and prompt dependent in the third term. Teachers were unable to explain the discrepancy except to say maybe one recording was a mistake. In another IEP the student was recorded as independently knowing numbers however when one looked at the test paper testing number knowledge it was labelled as 'with help'.

Observation of the IEPs showed that in some cases only some skill areas were filled in while others were left incomplete. In another example it was observed that the first term assessment was recorded but the second term assessment was left empty.

When it came to preparing a report, most teachers (81.8%) did not prepare a report based on the initial baseline assessment. A report is a summary of the initial assessment made by the teacher. It presents an overall picture of the child's strengths as well as those areas which need improvement. In the absence of a report, a lay observer would have to go through pages of the rating scale in order to understand the baseline of a child. In short there was no comprehensive report regarding the results of the first assessment.

The students were assessed on the FACP or the Life Skills Curriculum both of which emphasized functional skills. The goals in the IEP were based on one of these two curricula. However, there was a discrepancy between goals that were written and goals that were actually practiced in the classroom. For example, many students were being taught academic goals most of which were not from the functional curriculum. In yet another example, students were engaged in academic work like writing of two letter words or simple addition which was not connected to the assessment. Others were writing pages of numbers or letters.

In some cases, students were being fed by the ayah which indicated that they could not eat independently however, this goal was not reflected in any IEP.

Another observation made by the researchers was that most teachers did not write the strategies by which goals would be achieved. This omission in writing strategies could perhaps account for the lack of use of autism specific strategies. Teachers had a generic format of mentioning just the list of goals taken for the child without providing other details mentioned above. Beech (2012) specifically mentions the importance of writing strategies - *“Develop and implement a well-supported plan involving evidence-based strategy to attain the goals”*

With lapses in proper assessment and writing and implementation of IEPs, measuring the progress objectively becomes next to impossible. This was evident from the CEPCA data showing that 72.7% teachers fell into the ‘no evidence’ category when it came to recording progress objectively. Beech (2012) stresses the importance of recording where he writes *“Determine how student progress will be monitored and how the integrity of implementation will be ensured. Evaluate the effectiveness of the plan in relation to stated goals. Monitor student response to the intervention and use progress-monitoring data at agreed upon intervals. If the student is not improving, determine how the intervention plan will be adjusted to better support the student’s progress”*.

Instructional Strategies – CEPCA indicator number 6 focused on Instructional Methods. Items under this indicator included teaching need-based goals and the use of autism specific strategies like social stories, discrete trials, visual schedules and reinforcement along with the use of appropriate aids.

The use of autism specific strategies in the teaching learning process is a key component in any program for the education of children with autism. In a study to survey the practices used in the early intervention for children with autism Downs and Downs (2011) listed various instructional methods specific to teaching children with autism. These included discrete trial training, structured teaching, functional routines and positive behavioural support. Iovannone et al (2003) have also mentioned modelling, prompting, task analysis and social stories as other strategies specific to autism.

In this study 15 out of 22 teachers (68.2%) did not use any autism specific strategies while instructing the children. For the greater part of the day, children were given various apparatus like beads, peg boards, puzzles to keep them occupied. Often these activities were age inappropriate e.g. older children doing cartoon pegboards or stacking wooden rings. Teaching was limited to verbally instructing the child what to do and then correcting him/her when a mistake was made. There were large parts of the day when the children were kept unoccupied. Five teachers (22.7%) scored in the category of ‘efforts to set up’ for using autism specific strategies. These teachers had written plans using autism specific strategies mentioning social stories and modelling and imitation but had not yet begun to implement them. Two teachers (9.1%) scored in the ‘evidence inconsistent’ category meaning that some of the skills that were taught incorporated the used of autism specific strategies like work systems, visual schedules, consistent reinforcement, modelling and prompting.

Behaviour Management – CEPCA indicator number 7 focused on Behaviour Intervention Programs. Challenging behaviours in children with autism are often the result of difficulties in communicating or dealing with overwhelming social situations (Koegel et al, 2012; Hagopian

and Graham, 2009; Conroy et al, 2005a). Other studies also report that for most teachers it is the behavioural problems like tantrums and self-injury that present the greatest challenge in working with children with autism (Martinez et al, 2016; Lindsay et al 2014). The need for comprehensive Behaviour Intervention Programs for children with autism is thus paramount. (Martinez et al, 2016; Lindsay et al, 2014; Koegel et al 2012).

The findings in this study indicate that none of the 22 teachers (100%) used any form of behaviour management strategy for the students displaying behaviour problems. This resulted in all teachers falling into the 'no evidence' category. In the interview section of the survey 14 out of 22 teachers indicated that they found behaviour problems to be the most difficult aspect of dealing with children. Headmasters of schools also mentioned behavioural issues to be one of the areas of concern in educating children with autism. Despite this observation researchers did not observe even one behaviour management plan that was written or executed. Researchers did not observe any system to gather data, nor were there planned strategies such as social stories, reinforcement or teaching communication skills to deal with inappropriate behaviour. When questioned as to why they did not implement any Behaviour Intervention Programs some teachers said they did not know how to deal with it. Others said that they were aware of what a behaviour management entailed but lacked the manpower and time to put it into action. Most teachers showed no knowledge of basic behavioural principles- for example when a child was banging his head on the table the teacher kept on saying 'P is a good boy'- in effect reinforcing the child for inappropriate behaviour.

The results from the seven indicators of the CEPCA discussed above, clearly demonstrate the limited use of autism specific strategies by most teachers of children with autism. When it

came to evidence-based practices, as a rule, teachers fell into the ‘no evidence category’ or the ‘efforts to set up’ category. This issue is not unique to the Indian situation. Research from the West states that despite the increased research and public awareness, the field of autism continues to struggle with adopting scientifically validated autism specific strategies (Downs and Downs, 2010; Callahan, Henson and Cowan 2008).

The discussion above might give the impression that children with autism are largely ignored in schools. In fact, interviews with parents in newspapers or magazines often report that they face huge struggles in obtaining admission for their child in school. However, this phenomenon seems to be limited to those parents who seek admission in regular schools. In the context of special schools, it was encouraging to observe that children with autism were not ignored or segregated in the classroom. As mentioned in the methodology section, classrooms where the observation was done consisted of a mixed population of children with intellectual disability and low functioning autism. Nine teachers (40.9%) did not discriminate between children with autism and other disabilities in their classroom for any activities while six teachers (27.7 %) paid the same attention to children with autism for **most** of the activities. Five teachers gave at least one child with autism the same attention as other children with disabilities. Only two teachers (9.1%) showed that they paid more attention to children with intellectual disability for all activities in their classroom. In general, teachers had written IEPs for all children in their classroom, devoted the same amount of instructional time and included all children in all activities. In special schools it was observed that the tendency to pay less attention to children with autism increased with the severity of behavioural issues- in other words a more challenging behaviours meant less involvement of the child in activities.

The focus of this part of the discussion now shifts to the next question i.e. “What are the barriers that exist which prevent teachers from using autism specific strategies?” This question was answered by analysing the data from the survey questionnaire and the interview conducted with headmasters and teachers. The survey for teachers included questions on the general background of the teachers (years in service, qualifications) as well as obtaining information on factors which could possibly affect performance of teachers in the classroom (time for planning, funding for TLM and in-service training).

The survey for the headmasters sought to understand whether the school system was geared towards ensuring teachers delivered quality service. It listed various resources considered to contribute towards better teaching and the researchers noted the presence or absence of these resources while discussing the findings.

As mentioned earlier in the study one school chose not to answer questions in the teacher and headmaster survey and interview hence the results below are discussed in the context of five special schools and four life skills resource rooms.

The first category surveyed was human resources. Personnel surveyed under human resources included speech therapists, occupational therapists and physiotherapists. Five special schools had speech therapists who were provided by the government. None of the resource rooms had speech therapists because the government did not provide therapists for resource rooms in mainstream schools. Five special schools also had either occupational therapists or physiotherapists provided by the government. Three out of four resource rooms did not have occupational therapists or a physiotherapist. One resource room did have an occupational therapist, who was paid by the parents. The researchers asked the teachers whether the goals

drafted by the therapists were shared with them. Only one teacher had a copy of the occupational therapy goals with her which she incorporated into the daily schedule of children requiring therapy. The list of goals for one child with autism was posted in only one classroom in a special school but the teacher did not carry out any of the prescribed exercises. On questioning teachers stated that goals were not shared with them nor did they receive any guidance from therapists as to how to incorporate goals into the classroom routine. The state of Goa has only recently started a training program for occupational therapists. There is no training program for speech therapists. The lack of therapists in Goa was dealt with in a novel manner by one special school. The school arranged for speech and occupational therapists from out of town to visit the school every six months. Children were assessed and therapy programs were drawn up. These programs were then conducted every day by attendants. While this was indeed a practical approach to the lack of therapists, the efficacy of the program when conducted by untrained personnel without any supervision needs to be queried. All classrooms had at least one teacher assistant or ayah. This was a significant support to all teachers. However, while some teachers chose to train the ayah and utilize the extra pair of hands to actively teach children other teachers chose to limit the role of the ayah to simply taking the children to the toilet or attending to them while eating.

The area of material support included planning time, internet access and as well as funding for teaching learning materials (TLM). Both teachers and heads agreed that time was allotted for planning. Eight out of nine schools had internet access which means that teachers were able to keep in touch with new strategies and information. Funding for TLM is provided through a government grant for all government aided schools (eight out of the nine schools qualified for this). In their survey headmasters stated that teachers were provided with funds for TLM which they made available to the teachers, however, in one school the teachers refuted this

saying that they themselves were expected to pay for all the TLM and did not receive reimbursement from the school. It is significant to note that there were very few TLM in the classrooms observed in that particular school. Although schools provided funds for TLM as well as internet access, they did not use it for the purpose of making aids like use visual schedules, or communication books or work-systems. Internet access also did not result in teachers updating their knowledge about autism through reading or watching videos. It is worth noting that making of teaching aids is an important factor in preservice training. Teachers who give lessons are expected to make their own aids. Once teachers begin to work in the school system there is very little evidence of teaching aids (made or bought).

The results of the CEPCA clearly demonstrate that teachers are not educating children with autism using evidence-based strategies. Results from the survey show that and teachers do have the resources and support considered necessary to plan effective programs for these children. The reasons for this discrepancy must be understood as a systemic flaw rather than one or two specific factors. Foster (2014) talks about barriers to the use of evidence-based practice and lists the environmental factors of the school as one such barrier. She states some of these barriers may relate to the characteristics of a school, including its philosophy, it's routines and systems, the size of classes, resourcing, and senior leadership support. The philosophy of the school will determine how it allocates its resources, finances and personnel to achieving its objectives.

In the context of school objectives, it can be noted that the responses in the interview with headmasters or teachers revealed that there was there were no specific program when it came to educating children with autism, even though every classroom observed had at least one

if not more than one child with autism. One school even had a separate class for children with autism. The question that one needs to ask is “Is quality based education of children with autism an objective of the school?”

Barriers to evidence-based practices

Analysis of data from the headmasters and teachers survey led the researchers to conclude that the main reason for lack of evidence-based practice in autism education programs was due to systemic flaws. These will be discussed in detail below.

Allocation of appropriate personnel - Allocation of personnel also demonstrates the school's commitment to a program. The assignment of multiple responsibilities to teachers without ensuring that they receive the time to plan and execute these responsibilities systematically is a barrier in ensuring the use of evidence-based practices. The following cases illustrate the point clearly. A teacher from one of the life skills resource rooms mentioned that she is expected to share her instructional time between her students with autism who learn only functional skills and 20 children with specific learning disabilities who learn academic skills. Thus, her time is split between two extremely challenging groups of students and lesson preparation time is limited. In a similar case another teacher stated that during the mornings she deals with children whose needs are purely functional while in the afternoons she must focus on children with academic difficulties. Neither of these teachers were given adequate time to prepare for either group of children, resulting in difficulties in writing lesson plans and making appropriate TLMs. Teachers also shared that a lot of their non instructional time goes in training children for cultural activities and therefore lesson planning takes a back seat.

Time for lesson planning- Interviews with the teachers also showed that no specific time is allocated for lesson planning. Teachers are expected to fit in lesson planning along with the other responsibilities that they have in the 'off time' that they are given such as Saturdays or two afternoons a week. Headmasters admitted that they do not have time to review teachers lesson plans, check on appropriate TLM or supervise lessons let alone providing feedback. Lesson plan books when they are submitted are simply signed by headmasters without any attention to actual details. There is also no requirement for teachers to produce TLM regularly hence the scarcity of aids like visual schedules, communication books and social stories.

Lack of monitoring- The lack of monitoring of teachers is a serious lacuna in the education system. Atwebembeire et al (2018) and Reddy et al (2015) both attest to the fact that teacher monitoring is essential for quality teaching. Nandamuri (2012) surveyed 188 secondary schools in Andhra Pradesh and reported that formal quality appraisal does not exist in any one of them. He further mentions that there is no comparison of previous performance of teachers with current performance which in turn does not motivate teachers to improve performance. One can conclude that mere provision of resources will not guarantee quality performance in teachers. The need for monitoring and feedback is essential.

Lack of qualification in autism- Out of the ten heads surveyed none of them had any training in autism. Five heads had a B. Ed in special education (Intellectual Disability) while the other five had degrees in general education. Similarly, out of the 22 teachers surveyed only three of them had a degree in autism. The rest had degrees in intellectual disability or vocational training. The lack of training at the pre-service level results in a basic unawareness of autism specific strategies. When teachers were asked about the lack of use of autism specific strategies,

they cited lack of qualification as one of the reasons. Schiuchetti, Mckenna and Flowers, (2016) found similar results in their study citing lack of teacher knowledge as one of the primary reasons for not using evidence-based strategies.

Lack of mentoring- Very often schools compensate for lack of specialized knowledge by engaging the services of a consultant or a mentor. Quality teaching is essential if the mission of education is to be fulfilled and mentoring plays a vital role in this (Koki, 1997). The survey posed a question as to whether the school used the services of any expert in autism to guide teachers. Given the fact that none of the heads were trained in autism and very few teachers were trained in autism none of the schools had appointed officially appointed resource person specializing in autism. 2 teachers from life skills resource rooms stated that they were in touch with an expert in autism whom they consulted whenever they had difficulties with students. The lack of any experienced resource person in autism coupled with the lack of trained teachers and heads in the area of autism could account for the lack of autism specific strategies in schools.

Lack of autism in-service training programs - Ineffective professional development is one of the barriers in the use of evidence-based practices. (Foster (2014)- in other words if teachers are not given opportunities for training and updating their skills, they will continue to use outdated and ineffective strategies. The survey revealed that four schools fell into the category of no autism specific training in the last five years, four schools claimed that they had between one to five trainings in the last five years while two schools said that they had between six to ten trainings. However, the quality and relevance of the trainings was questionable. In depth questioning showed that many trainings did not impart any skills to the teachers e.g. one school had a lecture given by psychiatrist on the kids of medication available for children with

autism. Another school listed participation in autism awareness programs held on World Autism Day as training for teachers. Another school had invited a nutritionist to speak on diet and had listed that as a training for autism. When some schools were pressed for details of the trainings, they claimed that the book in which the trainings were written was not available and they could not remember the titles. Some teachers had gone for trainings in topics related to educating children with autism but they stated that any gains from the training were not incorporated by the school as a whole and so they gradually stopped using what they had gained. Interviews with the teacher showed that many teachers felt that they would benefit from in-service training but were not getting them from the school.

Gap between research and practice - The gap between research and practice is further complicated in India for a number of reasons. Firstly, research in the field of education in India is hard to access (Singal, 2006) especially in the field of autism. (Vijay Sagar, 2011; Taneja Johansson, 2014). Secondly, research in autism in India is still in its nascent stage. The current scenario of research in Autism Spectrum Disorders (ASD) in India is limited to largely clinic-based case reports, case series, retrospective chart reviews, few attempts to study neurobiological, genetic substrates and effectiveness of available treatment approaches. (Vijay Sagar,2011).

Theoretical versus practical knowledge of skills- The interview with the teachers showed that many of them were aware of some autism specific strategies like visual schedules, social stories and reinforcement. Teachers showed awareness about sensory issues and communication challenges experienced They mentioned that they had learned about them during their training. Observation of the classes showed that these strategies were rarely used by most teachers, raising

the question as to whether pre-service training remains at a theoretical level. Most strategies that are considered evidence based come from the West. They were in the context of Western education systems. When these strategies are taught at the preservice level, they are presented as a model to be learned without reference to the modifications that would necessarily need to take place for the Indian context. For example, when teachers were questioned as to why they did not incorporate these strategies into teaching many of them cited lack of time for planning or high student teacher ratio two characteristics in the Indian education system. Other teachers said that the lessons that they gave were with small groups of students and the real-life classroom situation was very different. Researchers have shown that mere training or provision of information to teachers does not translate into using evidence-based practices therefore there is a need to develop implementation frameworks which support teachers in implementing research in the classroom. (Fixsen et al, 2005).

Educational Implications

The findings of the study clearly show that the use of autism specific strategies in special schools and life skills resource rooms is extremely inadequate. This means that children with autism are not receiving the intervention that they need in terms of the skills they are being taught or the teaching strategies used to teach them. It follows that these children are in school but are not learning skills that they need to function independently in society. More importantly, the core deficits that make up autism (social communication, sensory needs, restricted repetitive behaviour) are not being addressed. Schools or indeed any organizations educating children with autism should commit to a systemic change in order to deliver effective intervention. The intervention needs to happen at many levels

Firstly, special schools need to develop a vision for all children that they are teaching including children with autism. This vision can take the form of making them independent through functional skills, or addressing core deficits, or including them in the community. This vision has to be communicated to the staff, parents and other stakeholders.

The vision has to then be translated into a plan of action with duties assigned to various stakeholders. If the vision was to teach communication skills to children with autism, the plan of action can include listing all communication skills to be taught, carefully assessing all children with autism to see which skills they have and which they don't. For this step, the school will have to source out an appropriate checklist of communication skills for children with autism. Listing out which teachers will assess which students will form part of the plan of action. Once the assessment is completed teaching of students will commence. At this stage the school can decide to have an in-service training in communication skills for all teachers so that the communication program is delivered in a structured, uniform manner. If parents are to be involved their role has to be clearly stated. The need for parent education may also need to be considered. Accurate measurement of student's progress is another important factor and therefore the school needs to ensure that there are forms for this to be documented.

Finally, the school needs to review the success of this program at the end of the year with feedback from all stakeholders in this program. This will enable the school to identify areas of strength while providing support in those areas which needed it.

Conclusion

The study has shown that when it comes to educating children with autism most teachers do not use autism specific strategies. While lack of qualification at the pre-service level and

subsequent lack of in service training could account partly for lack of autism specific strategies, it is felt that the special education system as a whole (in special schools and life skills resource rooms) does not require teachers to develop or implement research based teaching strategies. The importance of planning, implementation and evaluation coupled with mentoring and feedback is clearly lacking in schools. Schools will have to re-evaluate their entire system in the light of the findings if they are to do justice to children with autism and deliver quality teaching.

Limitations of the Study

The researchers made every effort to ensure that that the objectives of the study were met however there were some limitations that were imposed by circumstances. These have been mentioned below.

1. Method of data collection- On completion of the study the researchers identified two areas in data collection which could have been undertaken in order to provide more in-depth information.

- (a) Time scheduled for the interview- The schedule of teacher observation given to the headmasters included time for teacher interviews on the third day at the end of the last school visit. But teachers were reluctant to give a lot of time at the end of the day. Thus, the interviews were not as in-depth and detailed as the researchers wished. The interview could have been scheduled on a Saturday when teachers were engaged in non-instructional activity.

- (b) Use of focus group- To gain deeper insights regarding the teachers' attitudes, motivations and perspectives on teaching children with autism it would have been advisable to have a focus group session. The responses of focus group

would have given the researchers a perspective on the commonality of the issues that teachers face and enriched the qualitative component of the data generated.

2. Location of sample - The sample for study was selected only in the state of Goa. Other states in the country may have different guidelines for special schools and the results should not be taken as indicative of schools across India. Similarly, the study focused only on children with autism in special schools and life skills resource rooms. Children with autism in mainstream schools did not form part of the sample.

3. Nature of the sample- The study was limited to surveying the needs of only one group of children with autism viz. autism and intellectual disability. There are other categories of children with autism such as those without intellectual disability or those with other disabilities which were not considered in the study.

Summary and conclusion

Introduction

The study is entitled ‘A Survey of Strategies to Educate Children with Autism in Goa’. This study sought to address some of the issues confronting the education of children with autism in India specifically in the state of Goa by surveying the quality of educational programs offered for children with low functioning autism.

Objectives of the Study

1. To document the various autism specific strategies used by teachers of CwA
2. To document differences (if any) in the attention given to CwA as compared to other children with special needs in the classroom
3. To document the outcome of the strategies used in terms of student progress
4. To document the various resources available to teachers
5. To identify reasons for gaps (if any) in the delivery of autism specific strategies

Sample Selection

A list of all the special schools and mainstream schools with resource rooms was obtained from the Directorate of Education (Goa).

The schools were divided into two groups- those that fell into North Goa and those fell into South Goa. Using a computer program for random selection, three schools and two life skills resource rooms were selected from North and South Goa respectively. Thus, the final sample size of six special schools and four resource rooms was chosen for the study.

In order to select the teachers in the schools, the researchers asked the headmasters for a list of teachers who had at least two children with autism between the ages of 5- 15 in their class.

When the researchers visited the schools, they chose three teachers by the simple process of drawing lots. The same procedure of drawing lots was followed to select students if they were more than three in the classroom.

The final sample size was twenty-two teachers _____ students

Tools

Three tools were developed by the researchers in order to generate data for the study.

1. The **Checklist to Evaluate Programs for Children with Autism (CEPCA)**.

A fifty-eight-item rating scale to measure the performance of teachers of children with autism in the classroom.

2. A teacher survey questionnaire to identify factors influencing teacher performance

3. A headmaster survey questionnaire to identify resources provided to the teachers

Procedure for Data Collection

A list of all the special schools and mainstream schools with resource rooms was obtained from the Directorate of Education (Goa).

1. An email explaining the objectives of the study along with the supports to be extended by the school was sent to all the heads. Schools which were willing to participate were requested to email their consent to the researchers. Schools which did not email their consent within two weeks received a follow up phone call to ascertain whether they wished to participate.

2. After obtaining the consent from schools, a sample of 6 special schools (3 from North Goa and 3 from South Goa) and 4 mainstream schools (2 from North Goa and 2 from South Goa) was randomly selected through a computerized program.

3. The researchers visited these schools and had a meeting with the heads in which the following points were discussed.

- (a) Detailed explanation of the process of the study
- (b) Signing of the consent forms
- (c) Obtaining the list of special educators who fulfilled the criteria required for the selection
- (d) Fixing of dates for the observations and interviews.

4. Random selection of teachers from list provided by headmasters. Since the total number of teachers of children with autism in a special school rarely numbered more five the researchers simply selected the teachers through a process of drawing lots.

5. Random selection of children with autism for observation. In most cases there were two children in each class. When there were more than three children the researchers also selected three children through the process of drawing lots.

6. Permission from the HM to review the IEPs and the files of the selected CwA. Researchers mentioned that the file reviews would be done during the observation days planned and the confidentiality obligation

7. Three days of observations per school over a period of 4 months (Fig 2)

8. Interviews of teachers and headmasters on the last day of observation.

Analysis of Data

The data for the study came from the afore mentioned tools. The results from the CEPCA were analysed quantitatively. The results from the survey were analysed qualitatively.

Results and Conclusion

The results of the study will be summarized in the context of each objective.

Objective 1: ‘To document the various autism specific strategies used by teachers of CwA’. The results from the study showed that autism specific strategies are not widely used by most teachers. The mean score of most teachers fell into the category of ‘no evidence’ ‘or efforts to set up’ for areas like physical structure, communication, socialization, sensory management, instructional strategies and behaviour management

Objective 2: ‘To document differences (if any) in the attention given to CwA as compared to other children with special needs in the classroom’. The findings for this objective were very positive. Most teachers did not discriminate between children with autism and those without autism in their classes.

Objective 3: ‘To document the outcome of the strategies used in terms of student progress’. The data for this objective came from analysing the IEPs of students. Findings for this objective were that teachers did not maintain progress reports that were measurable. The reports kept by the teacher were not based on assessment, there were inconsistencies between progress across the year. Most teachers did not mention teaching strategies in their IEPs therefore it was hard to understand the outcome of strategies

Objective 4: ‘To document the various resources available to teachers.’ Answers from a survey conducted for heads and teachers revealed that most schools provide some support in terms of human resources. Special schools had a physiotherapist or occupational therapist, but life skills resource rooms had no therapist. Speech therapists were present in only 2 out of the six schools. Time for planning and internet access was provided but not used appropriately by teachers. Funding for teaching learning material was provided but appropriate teaching learning materials were not observed in the classroom. Very few schools provided in-service training in topics related to autism.

Objective 5: ‘To identify reasons for gaps (if any) in the delivery of autism specific strategies.’ The reasons for gaps in the delivery of autism specific strategies was largely systemic in nature. These included inappropriate allocation of personnel for teaching, lack of autism in-service training programs, inadequate monitoring and mentoring of teachers, lack of qualified teachers for autism.

References

1. American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Pub.
2. American Speech-Language-Hearing Association | ASHA. (2020). Retrieved from <https://www.asha.org/>
3. Atwebembeire, Juliet & Musaazi, John.C.S. & Namubiru, Proscovia & Malunda, Paul. (2018). Performance Monitoring and Quality Teaching and Research in Private Universities in Uganda. *International Journal of Learning, Teaching and Educational Research*. 17. 70-85. 10.26803/ijlter.17.10.5.
4. Bal, V. H., Kim, S. H., Cheong, D., & Lord, C. (2015). Daily living skills in individuals with autism spectrum disorder from 2 to 21 years of age. *Autism*, 19(7), 774-784.
5. Bebko, J. M., Demark, J. L., Im-Bolter, N., & MacKewn, A. (2005). Transfer, control, and automatic processing in a complex motor task: an examination of bounce juggling. *Journal of motor behaviour*, 37(6), 465-474.
6. Bhargava, A. (2009, December). Country Report: India: School Education of Children with Special Needs in India With a Perspective on the Initiatives for Children with Autism. In *Final report of the... Asia-Pacific International Seminar on Education for Individuals with Special Needs* (Vol. 29, pp. 48-53).
7. Blenner, S., Reddy, A., & Augustyn, M. (2011). Diagnosis and management of autism in childhood. *BMJ*, 343, d6238.
8. Bondy, E., & Brownell, M. T. (2004). Getting beyond the research to practice gap: Researching against the grain. *Teacher Education and Special Education*, 27(1), 47-56.

9. Callahan, K., Henson, R. K., & Cowan, A. K. (2008). Social validation of evidence-based practices in autism by parents, teachers, and administrators. *Journal of Autism and Developmental Disorders*, 38(4), 678-692.
10. Cervera, G. R., Romero, M. G. M., Mas, L. A., & Delgado, F. M. (2011). Intervention models in children with autism spectrum disorders. *Autism spectrum disorders-from genes to environment*, 133-156.
11. Chakrabarti, B. (2017) Commentary: critical considerations for studying low-functioning autism. *Journal of Child Psychology and Psychiatry*, 58 (4), 436-438.
12. Conroy, M. A., Dunlap, G., Clarke, S., & Alter, P. J. (2005). A descriptive analysis of positive behavioural intervention research with young children with challenging behaviour. *Topics in Early Childhood Special Education*, 25(3), 157-166.
13. Crimmins, Daniel & Durand, Vincent & Theurer-Kaufman, Karin & Everett, Jessica. (2001). Autism Program Quality Indicators: A Self-Review and Quality Improvement Guide for Schools and Programs Serving Students with Autism Spectrum Disorders.
14. Crosland, K. A., Clarke, S., & Dunlap, G. (2013). A trend analysis of participant and setting characteristics in autism intervention research. *Focus on Autism and Other Developmental Disabilities*, 28(3), 159-165.
15. Divan, G., Vajaratkar, V., Desai, M. U., Strik-Lievers, L., & Patel, V. (2012). Challenges, Coping Strategies, and Unmet Needs of Families with a Child with Autism Spectrum Disorder in Goa, India. *Autism Research*, 5(3), 190-200.
16. Downs, R. C., & Downs, A. (2010). Practices in early intervention for children with autism: A comparison with the National Research Council recommended practices. *Education and Training in Autism and Developmental Disabilities*, 150-159.

17. Duquette, A., Michaud, F., & Mercier, H. (2008). Exploring the use of a mobile robot as an imitation agent with children with low-functioning autism. *Autonomous Robots*, 24(2), 147-157.
18. Feather, K. A. (2015). Low functioning to high functioning autism: A prescriptive model for counselors working with children across the spectrum. In *the 56th Annual European Branch of the American Counseling Association Conference, Naples, Italy*.
19. Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., Wallace, F., Burns, B., ... & Chambers, D. (2005). Implementation research: A synthesis of the literature.
20. Foster, R. (2014). Barriers and Enablers to Evidence-Based Practices. *Kairaranga*, 15(1), 50-58.
21. Freeman, B. J. (1997). Guidelines for evaluating intervention programs for children with autism. *Journal of Autism and Developmental Disorders*, 27(6), 641-651.
22. Gupta, A., & Singhal, N. (2005). Psychosocial support for families of children with autism. *Asia Pacific Disability Rehabilitation Journal*, 16(2), 62-83.
23. Hagopian, L., & Graham, C. (2009). Problem behaviour in autism. *Interactive Autism Network*.
24. Hume, K., Boyd, B., McBee, M., Coman, D., Gutierrez, A., Shaw, E., ... & Odom, S. (2011). Assessing implementation of comprehensive treatment models for young children with ASD: Reliability and validity of two measures. *Research in Autism Spectrum Disorders*, 5(4), 1430-1440.
25. Humphrey, N., & Lewis, S. (2008). Make me normal' The views and experiences of pupils on the autistic spectrum in mainstream secondary schools. *Autism*, 12(1), 23-46.

26. Humphrey, N., & Parkinson, G. (2006). Research on interventions for children and young people on the autistic spectrum: A critical perspective. *Journal of Research in Special Educational Needs*, 6(2), 76-86.
27. Iovannone, R., Dunlap, G., Huber, H., & Kincaid, D. (2003). Effective educational practices for students with autism spectrum disorders. *Focus on autism and other developmental disabilities*, 18(3), 150-165.
28. Juane Heflin, L., & Simpson, R. (1998). Interventions for children and youth with autism: Prudent choices in a world of exaggerated claims and empty promises. Part II: Legal/policy analysis and recommendations for selecting interventions and treatments. *Focus on Autism and Other Developmental Disabilities*, 13(4), 212-220.
29. Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous child*, 2(3), 217-250.
30. Karanth P. Communication DEALL Developmental Checklists. Bangalore: Com DEALL Trust, 2007.
31. Koegel, L., Matos-Freden, R., Lang, R., & Koegel, R. (2012). Interventions for children with autism spectrum disorders in inclusive school settings. *Cognitive and Behavioural practice*, 19(3), 401-412.
32. Koenig, K. P., Bleiweiss, J., Brennan, S., Cohen, S., & Siegel, D. E. (2009). The ASD nest program: A model for inclusive public education for students with autism spectrum disorders. *Teaching Exceptional Children*, 42(1), 6-13.
33. Koki, S. (1997). *The role of teacher mentoring in educational reform* (pp. 1-6). PREL Briefing Paper. Honolulu, HI: Pacific Resources for Education and Learning. Retrieved

from <https://www.nmu.edu/Webb/ArchivedHTML/UPCED/mentoring/docs/Role-mentor.pdf>

34. Lindgren, S., & Doobay, A. (2011). Evidence-based interventions for autism spectrum disorders. *The University of Iowa, Iowa*.
35. Lindsay, S., Proulx, M., Scott, H., & Thomson, N. (2014). Exploring teachers' strategies for including children with autism spectrum disorder in mainstream classrooms. *International Journal of Inclusive Education, 18*(2), 101-122.
36. Lynch, S. L., & Irvine, A. N. (2009). Inclusive education and best practice for children with autism spectrum disorder: An integrated approach. *International Journal of Inclusive Education, 13*(8), 845-859.
37. Martinez, A., McMahon, S. D., Coker, C., & Keys, C. B. (2016). Teacher behavioural practices: Relations to student risk behaviours, learning barriers, and school climate. *Psychology in the Schools, 53*(8), 817-830.
38. McConachie, H., Livingstone, N., Morris, C., Beresford, B., Le Couteur, A., Gringras, P., ... & Parr, J. R. (2018). Parents suggest which indicators of progress and outcomes should be measured in young children with autism spectrum disorder. *Journal of autism and developmental disorders, 48*(4), 1041-1051.
39. McConachie, H., Parr, J. R., Glod, M., Hanratty, J., Livingstone, N., Oono, I. P., ... & Garland, D. (2015). Systematic review of tools to measure outcomes for young children with autism spectrum disorder.
40. McGinty, A. S., Justice, L., Justice, L. M., Bender, F., Clark, B., Daly, G., ... & Eichstadt, T. (2006). Classroom-based versus pull-out interventions: A review of the experimental evidence.

41. McMahon, J., & Cullinan, V. (2014). Education programmes for young children with autism spectrum disorder: An evaluation framework. *Research in developmental disabilities, 35*(12), 3689-3697.
42. Mesibov, G. B., & Shea, V. (1996). Full inclusion and students with autism. *Journal of autism and developmental disorders, 26*(3), 337-346.
43. Mesibov, G. B., & Shea, V. (2010). The TEACCH program in the era of evidence-based practice. *Journal of autism and developmental disorders, 40*(5), 570-579.
44. Mesibov, G. B., Shea, V., & Schopler, E. (2005). *The TEACCH approach to autism spectrum disorders*. Springer Science & Business Media.
45. Miller, K. L. (2017). The use of evaluation in treatment programs for children with autism. *Behaviour analysis in practice, 10*(1), 35-44.
46. N.I Mental Blog (n.d.). Retrieved from <http://nimhindia.org/>
47. Nandamuri, P. P. (2012). The Status of Secondary Education in Andhra Pradesh: Ground Realities and Need for Strategic Reorientation. *IUP Journal of Business Strategy, 9*(2).
48. Narayan, J., Chakravarti, S. N., David, J., & Kanniappan, M. (2005). Analysis of educational support systems for children with mental retardation and autism spectrum disorders. *International journal of rehabilitation research, 28*(4), 365-368.
49. National Professional Development Center on Autism Spectrum Disorder. (2011). Autism program environment rating scale (Preschool/Elementary and Middle/High School). Chapel Hill, NC: Author
50. National Research Council. (2001). Educating children with autism. Washington, DC: National Academy Press

51. Odom, S. L., Boyd, B. A., Hall, L. J., & Hume, K. (2010). Evaluation of comprehensive treatment models for individuals with autism spectrum disorders. *Journal of autism and developmental disorders, 40*(4), 425-436.
52. Odom, S. L., Collet-Klingenberg, L., Rogers, S. J., & Hatton, D. D. (2010). Evidence-based practices in interventions for children and youth with autism spectrum disorders. *Preventing school failure: Alternative education for children and youth, 54*(4), 275-282.
53. Ogletree, B. T., Oren, T., & Fischer, M. A. (2007). Examining effective intervention practices for communication impairment in autism spectrum disorder. *Exceptionality, 15*(4), 233-247.
54. Oren, T., & Ogletree, B. T. (2000). Program evaluation in classrooms for students with autism: Student outcomes and program processes. *Focus on Autism and Other Developmental Disabilities, 15*(3), 170-175.
55. Partington, J. W. (2006). *The assessment of basic language and learning skills-revised (the ABLLS-R)*. Pleasant Hill, CA: Behaviour Analysts.
56. Pfeiffer, B. A., Koenig, K., Kinnealey, M., Sheppard, M., & Henderson, L. (2011). Effectiveness of sensory integration interventions in children with autism spectrum disorders: A pilot study. *American Journal of Occupational Therapy, 65*(1), 76-85.
57. Pfeiffer, B., Clark, G. F., & Arbesman, M. (2018). Effectiveness of cognitive and occupation-based interventions for children with challenges in sensory processing and integration: A systematic review. *American Journal of Occupational Therapy, 72*(1), 7201190020p1-7201190020p9.

58. Pratap, A. (2018). Children with autism go through 4-7 schools in Mumbai before the age of 18, says study. *Hindustan Times*.
59. Reddy, L. A., Kettler, R. J., & Kurz, A. (2015). School-wide educator evaluation for improving school capacity and student achievement in high-poverty schools: Year 1 of the school system improvement project. *Journal of Educational and Psychological Consultation*, 25(2-3), 90-108.
60. Rehabilitation Council of India. (n.d.). Retrieved from <http://rehabcouncil.nic.in/>
61. Saleem, S., & Sumalini, K. Functional Assessment Checklist for Programming of Students with Profound Mental Retardation.
62. Schoen, S. A., Lane, S. J., Mailloux, Z., May-Benson, T., Parham, L. D., Smith Roley, S., & Schaaf, R. C. (2019). A systematic review of Ayres Sensory Integration intervention for children with autism. *Autism Research*, 12(1), 6-19.
63. Sciuchetti, M. B., McKenna, J. W., & Flower, A. L. (2016). Teacher knowledge and selection of evidence-based practices: A survey study. *Journal of Vincentian Social Action*, 1(2), 8.
64. Siegel, M. (2018). The Severe End of the Spectrum: Insights and Opportunities from the Autism Inpatient Collection (AIC). *Journal of Autism & Developmental Disorders*, 48(11), 3641.
65. Singal, N. (2006). Inclusive education in India: International concept, national interpretation. *International journal of disability, development and education*, 53(3), 351-369.

66. Stedman, A., Taylor, B., Erard, M., Peura, C., & Siegel, M. (2019). Are children severely affected by autism spectrum disorder underrepresented in treatment studies? An analysis of the literature. *Journal of autism and developmental disorders*, 49(4), 1378-1390.
67. Taneja Johansson, S. (2014). A critical and contextual approach to inclusive education: Perspectives from an Indian context. *International Journal of Inclusive Education*, 18(12), 1219-1236.
68. The National Autistic Society: autism: Asperger Syndrome (n.d.). Retrieved from <https://www.autism.org.uk>
69. The United Nations. (1948). *Universal Declaration of Human Rights*.
70. UN, C. (2006). Convention on the Rights of Persons with Disabilities. *GA Res*, 61, 106.
71. Vakil, S., Welton, E., O'Connor, B., & Kline, L. S. (2009). Inclusion means everyone! The role of the early childhood educator when including young children with autism in the classroom. *Early Childhood Education Journal*, 36(4), 321.
72. Vijay Sagar, K. J. (2011). Research on autism spectrum disorders in India. *AP J Psychol Med*, 12(1), 69-72.
73. What's New! (n.d.). Retrieved from <http://www.autism-india.org/>
74. Zavatkay, Dana & Cleveland, S. (2014). The Autism Classroom Evaluation (ACE): A Tool for Evaluating Services and to Guide Training in Autism Classrooms.

Appendix A

To whom it may concern,

We, Giselle Lobo and Madhura Joshi have undertaken a research study titled

‘A Survey of Strategies Used to Educate Children with Autism in the State of Goa’

This research is funded by Tata Trusts and be carried out for 2 years 2018-20. The investigation involves an enquiry through a survey of the educational practices in schools educating Children with Autism (CwA) in the State of Goa in Segregated (Special Schools- Group A) and Inclusive settings (Mainstream schools with life skills resource Rooms- Group B). The researchers will be accompanied by an independent observer during data collection to minimize researcher bias. The duration of data collection and schedule will be duly informed to school admin to avoid any inconvenience.

The researcher intends collecting the data using

1. Observation Checklist prepared by the researchers
2. Survey Questionnaires prepared by the researchers.
 - a) SQ1- . For Administrators (Head of the School) to identify the resources provided to teachers.
 - b) SQ2. For Special Educators working to identify the difficulties faced by teachers & challenges faced by CwA
3. IEPs of the students taught by the teacher (3 students per teacher)

These enquiries do not involve any intervention and invasive investigations. The research will help to develop better understanding about

- a) various autism specific strategies used by teachers of CWA
- b) differences (if any) in the attention given to CwA as compared to other children with special needs in the classroom
- c) the outcome of the strategies used in terms of student progress
- d) the various resources available to teachers
- e) the reasons for gaps (if any) in the delivery of autism specific strategies

The information generated through observations and shared by the respondents will be kept confidential and used for the purpose of this study only. The research process will not impede the performance of any employee nor is it intended to focus any negative aspects of work or workplace. Based on the research findings, an effort will be made to prepare a training module specific to Best practices for educating CwA.

We would be grateful if you could permit me to carry out this research and oblige.

Thanking You

Giselle Lobo

Madhura Joshi

Appendix B

Admin Consent Form

I, _____ (Full Name),
 _____ (Title of Administrative post) _____
 _____ (Name of the School), located at _____,

hereby give the administrative consent and grant the permission to the researchers, Giselle Lobo, Madhura Joshi and an independent observer to carry out data collection in our school during their research study Data Collection Schedule during 2018-20.

I understand that this data from school and school staff is required for the research study, 'A Survey of Strategies Used to Educate Children with Autism in the State of Goa' and funded by Tata Trust.

The researcher has given satisfactory explanation about the nature, purpose and benefits of the research study along with the ethical considerations like

1. The information collected through observations and shared by the respondents will be kept confidential and used for the purpose of this study only.
2. Voluntary consent will be taken from each respondent separately.
3. The research process will not impede the performance of any employee nor is it intended to focus any negative aspects of work or workplace.
4. The participants and the authorities will be entitled to know the results of the study when it is completed.
5. Based on the research findings, an effort will be made to prepare a training module specific to Best practices for educating CwA.

Signature of the researchers

Giselle Lobo

Madhura Joshi

Signature &

Seal of the Administrator

Appendix C

Teacher Consent Form

We, Giselle Lobo and Madhura Joshi will be carrying out a research study titled
'A Survey of Strategies Used to Educate Children with Autism in the State of Goa'

This research is funded by Tata Trust and be carried out for 2 years 2018-20.

The researchers & an independent observer will collect the data from Special schools & Mainstream Schools with Resource rooms in the State of Goa, educating Children with Autism.

Following tools will be used for Data Collection

1. Observation Checklist prepared by the researchers
2. Survey Questionnaires prepared by the researchers.
 - a. SQ1- . For Administrators (Head of the School) to identify the Resources provided to teachers.
 - b. SQ2. For Special Educators working to identify the difficulties faced by teachers & challenges faced by CwA
3. IEPs of the students taught by the teacher (3 students per teacher)

These enquiries do not involve any intervention and invasive investigations. The research will help to develop better understanding about

- a) various autism specific strategies used by teachers of CWA
- b) differences (if any) in the attention given to CwA as compared to other children with special needs in the classroom
- c) the outcome of the strategies used in terms of student progress
- d) the various resources available to teachers
- e) the reasons for gaps (if any) in the delivery of autism specific strategies

The information generated through observations and shared by the respondents will be kept confidential and used for the purpose of this study only. The research process will not impede the performance of any employee nor is it intended to focus any negative aspects of work or workplace. Based on the research findings, an effort will be made to prepare a training module specific to Best practices for educating CwA.

Your cooperation is solicited for the participation in the study.

I, _____ hereby give voluntary consent to take part in the study after satisfying myself with all the details.

Signature of the Researcher

Signature of the Respondent
Date:

Appendix D

| |
|-------------|
| School Code |
|-------------|

Survey Questionnaire – Administrator (Headmaster/Headmistress)

A) Personal Details:

1. Age: _____ Sex: Male Female

B) Academic & Professional Detail:

2. Basic Qualification: S.S.C H.S.C. Graduate Post-Graduate

3. Training Qualification (General Education): (for HM of Regular school)

B. Ed M. Ed M.A (Education) other (Specify)_____

4. Training Qualification (Special Education): (for HM of Special school)

D.Ed (Sp.Ed) B.Ed (Sp.Ed) M.Ed(Sp.Ed) Other (specify)_____

5. Training Specialization: Autism ID (MR) Learning Disability

Multiple Disabilities Cerebral Palsy

Subject Methodology (Gen Ed) Mention Subject methodology_____

6. RCI Registration: Yes No

7. How many years have you been working as a Head teacher in this school?

8. How many years have you worked as a regular teacher? (General/Special Ed.)

9. Number of in-service trainings for Head Teachers attended in last 5 years:

10. Number of in-service training programs specific to Inclusive Education attended:

11. Number of trainings which covered information about Autism Spectrum Disorder:

School Code

C) Details of Organisation:

1. Name of the School/Organisation: _____
2. Status of Organisation: Government Private Autonomous
3. Grant Structure: Aided Partially Aided Unaided
4. Type of School/Setting: Special School Life Skills Resource Room
5. Affiliation: Goa State Board CBSC ICSE
6. School Location: Rural Urban Semi urban
7. Professional Staff available &/ approved for your school. **Tick the appropriate box**

| | Staff Category | |
|---|---|--|
| 1 | Special educators | |
| 2 | Support teachers/ Shadow teachers | |
| 3 | Speech therapist | |
| 4 | Occupational therapist/ Physiotherapist | |
| 5 | Psychologists/ Counselors | |

8. Aaya/ teacher assistants to support the special educators: Yes No
9. Current enrolment of the Special school / resource room
10. Number of students with Autism
11. Class Load / Class strength (Ratio of students: Special Educator)
(Number of Students per teacher)
12. How are the students allotted to respective teachers – **Tick appropriate box**

| | | |
|----|---|--|
| a. | Students grouped more or less randomly | |
| b. | Grouped by age group (same age – mixed Disabilities) | |
| c. | Grouped by disability (same disability – mixed age group) | |
| d. | Expertise of teacher (Good one) | |
| e. | Request by parent (for a specific teacher) | |

School Code

D) Professional development opportunities and supports provided to Special Educators

| | Area of Support | Yes | No |
|----|--|-----|----|
| a. | Teachers are given enough time assessments, planning and preparation of TLMs (apart from routine class schedule) | | |
| a. | School provides funds and materials for visual schedules & other Teaching Learning Materials (TLMs) | | |
| b. | School provides internet access to get necessary information for work related activities and updates | | |
| c. | School arranges training to upgrade the professional skills of the staff | | |
| d. | School has a consultant / expert in Autism to suggest and overcome challenges teachers' face. | | |
| e. | There are regular meetings with teachers to discuss student related issues (Challenges & success stories) | | |

E) In-service and In-house Training for Teachers

Do you think, your teachers need disability specific in service trainings? Yes No

1. How many trainings are conducted by you school for your Teachers in last 5 years

2. How many of the above were autism specific trainings

3. Are there any challenges or barriers for organizing 'in service' & 'in house' professional training-modules for the Teachers? Yes No

If YES, which of the following do you consider as the barriers for such trainings?

| | Barriers for In-service & In-house training | Tick |
|----|---|------|
| a. | Insufficient time to plan during instructional days and instructional hours | |
| b. | Insufficient teaching staff for class coverage or replacement | |
| c. | Low motivation of teachers to spare after school hours or holidays | |
| d. | Unavailability of experts/ resource persons | |
| e. | Lack of management support | |
| f. | Lack of funds | |
| g. | Lack of Space | |

Any Other barriers- (Please mention) _____

Appendix E

| |
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| School Code |
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Survey Questionnaire -Teachers

G) Personal Details:

1. Age: _____ Sex : Male Female

H) Academic & Professional Detail:

2. Basic Qualification: S.S.C H.S.C. Graduate Post-Graduate

3. Training Qualification: D.Ed (Sp.Ed) B.Ed (Sp.Ed) PG-Certificate

4. Training Specialization: Autism ID (MR) Learning Disability
 Multiple Disabilities Cerebral Palsy Others (Specify)_____

5. Type of Training: Regular Distance

6. RCI Registration: Yes No

7. Number of In-service training programs attended in the last 5 years:

8. Number of training programs specific to autism:

| Sr No | Training Module Title | Topics Covered under the training | Duration of Training |
|-------|-----------------------|-----------------------------------|----------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Mention the details of autism specific trainings specific to Autism (Pre-service & In-service)

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| School Code |
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D) Details of Organisation:

13. Name of the School/Organisation: _____

14. Type of School/Setting:

 Special School Regular School –Life Skills Resource Room
15. Employee Type: Government Private16. Employee Status: Contract/Temporary Permanent17. Total number of years of service in special educational setting 18. Total number of students you cater to (class strength) 19. How many of your present students have the diagnosis of ASD? 20. Do you have a teacher-aide/ assistant/support staff: Yes No**If Yes, how:**a. Only for Your Class b. Shared Between Other Classesc. for a Specific Student as- Shadow Teacher Parent Volunteer

21. Support from parents of children with autism in your class is:

 Poor Fair Good Very Good Excellent

22. Support from other professionals (Therapists & Psychologists) is:

 Poor Fair Good Very Good Excellent

23. Support from other colleagues (Special & General Educators) is:

 Poor Fair Good Very Good Excellent

24. Support from administrator (Head Teacher of your school) is:

 Poor Fair Good Very Good Excellent

25. Support from the management of your school is:

 Poor Fair Good Very Good Excellent

School Code

J) Evidence Based Practices (EBPs)

Here are a few, Evidence Based Autism Specific Teaching Strategies. Teachers use them along with other teaching strategies which are commonly used across disabilities.

You are requested to report how familiar you are about these practices and how skilled you think you are for implementing the same for teaching Children with Autism in your school.

Below is the rating for each response.

| How Familiar are you? | Rating | How skilled are you in implementing it? | Rating |
|--|--------|--|--------|
| Not Familiar (Never heard of it) | 1 | Not Skilled (Novice) | 1 |
| Somewhat Familiar (Heard of it and know the basis) | 2 | Moderately Skilled (I do it for some children / sometimes) | 2 |
| Very Familiar (Know the principle behind it very well) | 3 | Skilled (Implement it well whenever possible) | 3 |

Kindly tick the appropriate using the rating indicated above

| ASD Specific Evidence Based Strategies (EBPs) | How Familiar Are You? | | | How Skilled Are you in Implementing it? | | |
|---|-----------------------|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 |
| Discrete Trial Training (DTT) | | | | | | |
| Structured Work Systems (TEACCH) (Work systems) | | | | | | |
| Functional Behaviour Assessment (FBA) (Antecedent-Behaviour-Response) | | | | | | |
| Augmentative Alternative Communication (AAC) (Communication tools & Programs like PECS) | | | | | | |
| Social Stories | | | | | | |
| Visual Supports /Visual aids | | | | | | |
| Discrete Trial Training (DTT) | | | | | | |

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| School Code |
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K) Open Response Questions (through interview)

1. Give an example of something you find most challenging in teaching students with Autism Spectrum Disorders (ASD).
2. Describe your implementation of a strategy that is/was effective with a student with ASD.
3. What aspect of your training best prepared you for the demands of your teaching assignment especially for educating children with autism (CwA)?
4. What aspects of training are you currently implementing in your practice?
5. What aspect of training do you find difficult to implement and why?
6. What in your opinion is needed to equip special educators to work with CwA and why?
7. How much time you dedicate for planning your work with the students in your class and what aspects do you take into account during planning? Explain.

Appendix F

Checklist to Evaluate Programs for Children with Autism – CEPCA

Checklist to Evaluate Programs for Children with Autism – CEPCA

Giselle Lobo | Madhura Joshi

Introduction:

The Checklist to Evaluate Programs for Children with Autism (CEPCA) has been designed to help teachers and administrators in special schools and life skills resource rooms (self-contained classrooms in mainstream schools teaching functional skills) gain awareness of the essential requirements for an effective program to teach children with autism.

For any successful program that focuses on the education of children with autism key areas like physical structure, sensory needs and behaviour management (to name a few) are vital. Teaching strategies are also equally important and therefore teachers have to teach children using strategies which are evidence based and autism specific. The selection of the components of the CEPCA has been based on a review of many established and research-based programs for educating children with autism. The CEPCA also includes areas which are common to any good educational program for child with special needs e.g. Assessment and IEPs (Individualised Education Programs), Parent Involvement and Positive Classroom Environment.

The CEPCA can be used by people with a basic knowledge of autism along with the guidelines provided in the manual.

We believe that when we evaluate our educational programs regularly, we can appreciate the strong points of our program while highlighting areas needed for improvement.

We hope that the use of this checklist allows special schools and Life skills resource rooms for children with autism to plan programs which address the core issues. This in turn should lead to an all-round development in children with autism thus allowing them to become independent in their communities.

CEPCA

How to Use the CEPCA

The CEPCA consists of 3 main sections – (1) CEPCA Indicators and Recording Forms (2) CEPCA Rating Guidelines (3) CEPCA Scoring Guidelines

1. **CEPCA Indicators and Recording Forms** - This is the main observation scale. It contains 10 indicators or components of what a good program of autism should contain. These indicators are further divided into descriptors which are detailed descriptions of each indicator in observable terms. The number of descriptors for each indicator varies. Observers must rate each descriptor based on a four-point rating scale. These are the 10 indicators on the checklist.

| | |
|---------------------------|---|
| 1. Physical Structure | 2. Communication Programs |
| 3. Socialization Programs | 4. Management of Sensory Needs |
| 5. Assessments and IEPs | 6. Autism Specific Instructional Strategies |
| 7. Behaviour Management | 8. Parental Involvement |
| 9. Community Involvement | 10. Positive Learning Environment |

The table below explains how to rate each descriptor of the indicators.

| Score | Qualifier | Description |
|-------|------------------------------|--|
| 1 | No Evidence | The items on this indicator are non-existent in the classroom / classroom practices |
| 2 | Efforts to Set Up | When observed and/ asked, the items on this indicator provide information that there is an effort to start / plan to work on |
| 3 | Evidence Inconsistent | When observed and /asked, the items on this indicator provide information of an effort made sometimes/with some students |
| 4 | Evidence Consistent | When observed and/asked, the items on the indicator provide information of an effort made all the times with ALL students |

CEPCA

SAMPLE OF CEPCA INDICATOR FORM

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 1. Physical Structure | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | There is adequate and clearly defined space in the classroom for students to keep their possessions (bags, bottles etc.) | | | | |
| ii) | Areas are delineated in the class wherever possible for various activities (play, therapy, quiet area) | | | | |
| iii) | All areas are clearly labelled with print and pictures | | | | |
| iv) | The timetable is clearly displayed for all students to see and is presented in print as well as pictorial form. | | | | |
| v) | Students have adequate desk/ learning space to do activities. | | | | |
| vi) | There is a clearly marked space for children to calm down or de-stress | | | | |

CEPCA RATING

CEPCA QUALIFIER

CEPCA
DESCRIPTOR

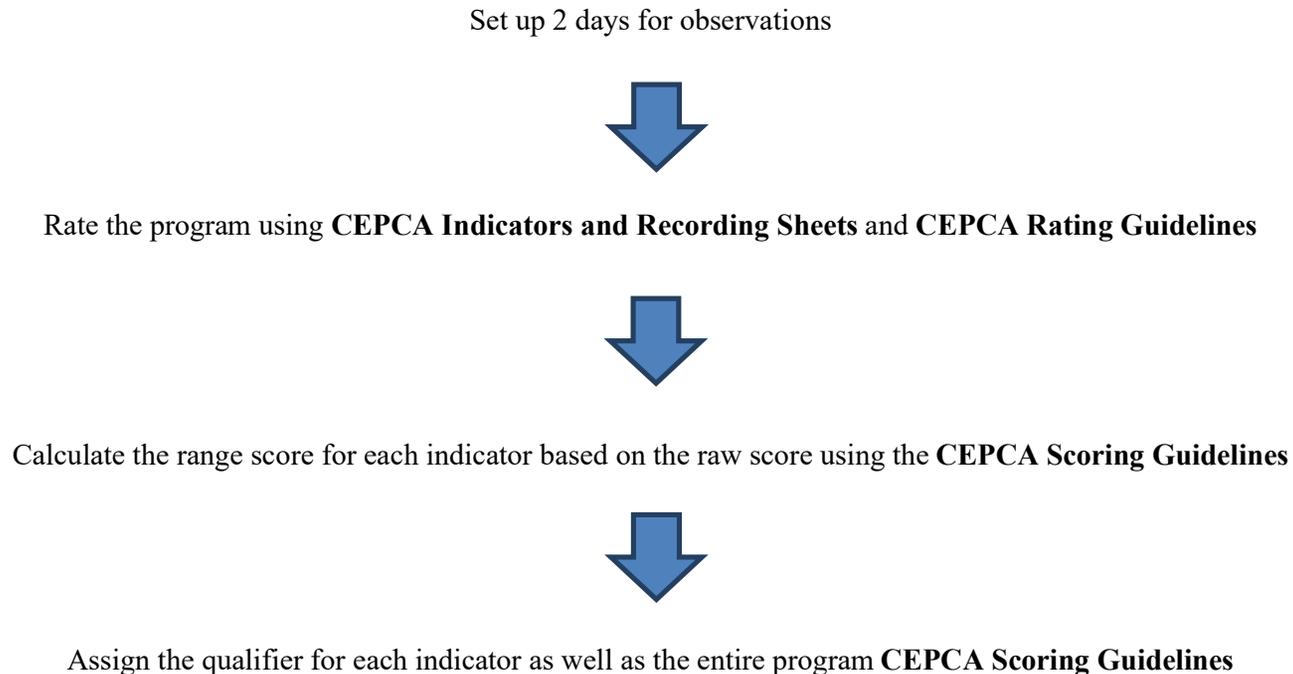
Comments by the observer:

Raw Score:

CEPCA

1. **CEPCA Rating Guidelines**- The CEPCA Rating Guidelines were developed to help observers understand what each rating on the scale means in terms of each descriptor. Each descriptor is described in concrete terms of what would constitute a rating of 1,2,3 4. It enables observers to look for specific details during their observation session. Guidelines as to when to ask the teachers questions are also written in brackets for certain descriptors.
2. **CEPCA Scoring Guidelines** – The scoring guidelines contain three tables to record and interpret scores. There are also clear steps for single observers and multiple observers which clearly explain how to record, calculate and interpret scores.

The process of using the CEPCA is described in the flow chart below



CEPCA

Instructions for Conducting the Observation Sessions

1. The CEPCA can be used by individual observers or multiple observers to evaluate the programs for children with autism.
2. Read through the **CEPCA Indicators and Recording Forms** carefully and familiarize yourself with the terminology in the descriptors.
3. Read through the **CEPCA Rating Guidelines** next. This will help the observers to understand what has to be observed in order for a descriptor to receive a particular score.
4. It is recommended that the observations are recorded during the regular school hours on 2 different school days. (The minimum number of days for observation is 2 days however, for best results 3 days is recommended). The days for observation are selected such that the observer gets the opportunity to observe the students and teachers during different activities and settings.
5. Observers must observe the teacher for the entire school day starting from the time the child enters the school.
6. It is ideal to keep a gap of at least a week between two observations. This will help when making observations regarding the progress of students with respect to behavioural or skill-based goals.
7. Observers should request access to students & teachers records like assessments, IEPs, home programs, behaviour management programs, parent-teacher meeting records etc. in advance.
8. Observers should also schedule some time after school hours with the teachers to ask specific questions marked in the guidelines with *.
9. Observers should ask the teachers to suggest a place in the classroom where they can sit in order to observe sessions to avoid any distraction for the students and activities/class routines. Observers should strictly abide by the 'unobtrusive observational mode' and be silent during the class routine.
10. Observers should carry a set of **CEPCA Indicators and Recording Sheets along with the CEPCA Rating Guidelines** to ensure that observations are recorded immediately and accurately.

CEPCA Indicators And Recording Forms

CEPCA

Instructions on Using the Indicator and Scoring Forms

1. Decide which indicator you are going to observe in advance.
2. Read it thoroughly and become familiar with which descriptors will be scored through observation and which descriptors will be scored through interviews.
3. Understand what each descriptor means by referring to the ‘**Guidelines for Rating**’ section in the manual.
4. Sit in the class and begin the observation session
5. Look for each descriptor and observe its status. e.g. if you are looking at the communication indicator, descriptor ii) reads as “*The environment is structured to stimulate communication. e.g. desirable items are kept in sight, communication cards are easily available*” Look around the classroom and see whether desirable items are kept in sight or not. Check whether communication cards are easily accessible.
6. Rate the descriptor in terms of ‘No evidence, Efforts to set up, Evidence inconsistent or Evidence consistent with a score of 1,2,3 or 4.
7. Enter these scores in pencil so that you can change them if you observe something different on another day.
8. Do this for each indicator.
9. When you are done with the indicator total the scores of all descriptors and enter it into the raw score box at the end of the table.
10. Read the instructions for scoring from the CEPCA Scoring guidelines to arrive at the total score along with the qualifier for each indicator.

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 1. Physical Structure | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | There is adequate and clearly defined space in the classroom for students to keep their possessions (bags, bottles etc.) | | | | |
| ii) | Areas are delineated in the class wherever possible for various activities (play, therapy, quiet area) | | | | |
| iii) | All areas are clearly labelled with print and pictures | | | | |
| iv) | The timetable is clearly displayed for all students to see and is presented in print as well as pictorial form. | | | | |
| v) | Students have adequate desk/ learning space to do activities. | | | | |
| vi) | There is a clearly marked space for children to calm down or de-stress | | | | |

Comments by the observer:

Raw Score:

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 2. Communication Programs | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | The teachers use positive language in referring to and addressing students. e.g. ‘Do this’ rather than ‘don’t do this’ | | | | |
| ii) | The environment is structured to stimulate communication. e.g. desirable items are kept in sight, communication cards are easily available | | | | |
| iii) | Students who have difficulty in communicating verbally are prompted to use alternate modes of communication like communication books or assistive devices like ‘Go talk’ or ‘iPad’ | | | | |
| iv) | Communication skills required by students are targeted and taught in a structured manner via the IEP | | | | |
| v) | Communication skills taught in the IEP are practiced by the teacher in generalized situations. | | | | |

Comments by the observer:

Raw Score:

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|---|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 3. Socialization Programs | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | Activities in the classroom are set up with the aim of promoting social interaction (circle time, group learning, art and craft activities) | | | | |
| ii) | Structured play time with the aim of teaching socializing is an important part of the timetable. (doing puzzles, playing board games, construction games) | | | | |
| iii) | Challenges in social interaction are addressed sensitively in a planned manner using evidence-based strategies. e.g. social stories, role play | | | | |
| iv) | Goals for socialization form are included in the IEP | | | | |
| v) | The buddy system is used to support social interaction | | | | |
| vi) | Students are exposed to community settings to generalize social skills | | | | |

Comments by the observer:

Raw Score:

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 4. Management of Sensory Needs | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | A comprehensive sensory profile based on the assessment of each student is prepared. | | | | |
| ii) | The sensory profile is made available to the teacher | | | | |
| iii) | The teacher is aware and practices sensory techniques which help the student function with greater ease in the class and at home e.g. a massage, jumping on the trampoline, going to the quiet corner, use of soft voices, use of headphones | | | | |
| iv) | The classroom reflects elements of awareness of sensory issues such as a quiet corner, squeeze toys, quiet area with pillows | | | | |
| v) | When students have ‘meltdowns’ due to sensory issues the teacher is able to deal with them effectively through awareness of sensory integration techniques. | | | | |

Comments by the observer:

Raw Score:

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 5. Assessment and IEPs | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | Students are assessed in the area of functional skills | | | | |
| ii) | Students are assessed in the area of socialization | | | | |
| iii) | Students are assessed in the area of communication skills | | | | |
| iv) | Assessment results are recorded, and a written report is prepared. | | | | |
| v) | Assessment is done using various inputs e.g. observation, testing, interview with parents etc. | | | | |
| vi) | Assessment leads to the development of need-based goals in all areas (functional, sensory, behavioural, communication, socialization) which are written in measurable terms. | | | | |
| vii) | Intervention/ teaching strategies mentioned in the IEP are based on evidence-based practices | | | | |
| viii) | Progress is measured objectively, and goals are reviewed and updated regularly | | | | |

Comments by the observer:

| |
|-------------------|
| Raw Score: |
|-------------------|

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|---|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 6. Instructional Strategies | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | During instructional time, students are taught skills which are need based. | | | | |
| ii) | The skills taught during instructional time match with the goals written in the IEP | | | | |
| iii) | When students are not involved in direct instruction, they are meaningfully occupied in activities according to their interest and ability level | | | | |
| iv) | Teachers use appropriate teaching aids to address student goals | | | | |
| v) | Autism specific strategies like work systems, visual schedules and social stories are used to teach students | | | | |
| vi) | Teachers use reinforcement appropriately to enhance student's performance | | | | |
| vii) | Teaching is aimed at making the students independent in the skills selected. E.g. opportunities for practice and generalization are factored into the instructional process | | | | |

Comments by the observer:

| |
|-------------------|
| Raw Score: |
|-------------------|

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 7. Behavioural Management | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | Data gathering is an integral part of behaviour management procedure. | | | | |
| ii) | Behaviour management follows a standard operating procedure which is known by all teachers. E.g. functional behaviour analysis etc. | | | | |
| iii) | Behavioural goals are written in objective terms | | | | |
| iv) | Strategies to manage behaviour problems reflect the need to address the cause of the behaviour. E.g. social stories, sensory integration therapy, role play, etc | | | | |
| v) | The emphasis of the intervention incorporates teaching alternative skills which increase student's independence | | | | |
| vi) | Changes in the behaviour (positive or negative) are recorded and tracked so that intervention can be modified | | | | |

Comments by the observer:

| |
|-------------------|
| Raw Score: |
|-------------------|

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|---|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 8. Parental Involvement | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | Parents are involved in assessment process of their child. | | | | |
| ii) | Parents are involved in the development of the IEP. | | | | |
| iii) | Parents are called for term reviews and developing new IEP goals. | | | | |
| iv) | Regular parent education sessions are conducted by the teacher (at least once every two months) | | | | |
| v) | Written home programs are developed and given to the parents. | | | | |
| vi) | Behaviour management programs are shared with parents and their feedback is recorded | | | | |

Comments by the observer:

Raw Score:

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 9. Community Involvement | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | Students are helped to transition for activities outside the classroom (assembly, recess, therapy) appropriately | | | | |
| ii) | Students are given exposure to community experiences like shopping, going to the park etc. | | | | |
| iii) | Interaction with persons in the community (nonteaching staff, shopkeepers, visitors etc.) is a planned program. | | | | |
| iv) | Community experiences are age appropriate | | | | |
| v) | Interaction with typical children is a planned part of the community exposure | | | | |

Comments by the observer:

Raw Score:

CEPCA

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|---|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 10. Positive Learning Environment | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | The physical environment appears child friendly, welcoming and geared towards learning. e.g. furniture is age appropriate, clean classroom, bright and airy | | | | |
| ii) | The teacher creates a positive learning environment by being enthusiastic, welcoming and supportive. | | | | |
| iii) | Students with autism are given the same instructional time as other students in the class. | | | | |
| iv) | There are toys and recreational activities that are easily available to students. | | | | |
| v) | Appropriate behavior is acknowledged and reinforced by the teacher | | | | |

Comments by the observer:

Raw Score:

CEPCA Rating Guidelines

CEPCA

| 1. Physical Structure | | | | | |
|------------------------------|---|---|--|--|---|
| | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
| 1 | There is adequate and clearly defined space in the classroom for students to keep their possessions (bags, bottles). There is a fixed place for toys books etc. | Student’s belongings are kept at different places (on/ under the chair/table/hanging on chair). There is no designated space for toys, books etc. | At least one set of items are kept in a fixed place | Some items are kept in place and some are not. e.g. there is a place for toys, stationary etc but students’ possessions are kept wherever there is space. | Space for bags, bottle etc is marked with child’s name or photo and ALL the students keep or are being taught to keep their belongings in assigned spaces every day. There is space designated for other teaching learning materials. |
| 2 | Areas are delineated in the class wherever possible for various activities (circle time, play, therapy, independent workspace) | All activities take place in one area which is undefined. | At least one area in the classroom is clearly marked for an activity e.g. circle time or independent work areas | More than one activity area is marked. The teacher creates clear spaces for activities whenever necessary by moving chairs etc. | Areas are delineated in the class wherever possible for various activities (play, therapy, work area-independent) – Marked- labelled with print & picture and also used for specific purpose – specific time |
| 3 | All areas are clearly labelled with print and pictures | No areas are labelled | At least one area is labelled | Some areas labelled (print/pictures) but some are not. Some areas have only print but no pictures | All Areas are clearly labelled in print and pictures and used for the purpose specified |
| 4 | The timetable is clearly displayed for all students to see and is presented in print as well as pictorial form. | The class timetable is not visible for students. The timetable with teacher only for teachers’ use | The class timetable is written and clearly displayed but not understood by students. e.g. only in print and not in pictures. It is not followed regularly. | The class timetable is clearly displayed with pictures and print but not used throughout the day | Class timetable is clearly displayed for all students to see and is presented in print as well as pictorial form. Used regularly with student involvement |
| 5 | Students have adequate desk/ learning space to do activities. | Cramped classroom, not enough place to structure it for different activities | Only one- two students have adequate desk space, the rest have very cramped space. | In a class of 8 students at least 4 students have adequate learning space at some time during the day. | Adequate space for al learning spaces, use of space consistent and purposeful |
| 6 | There is a clearly marked space for students to calm down or de-stress | No quiet corner | There is a space in the classroom, but it is not labelled. Students are made to sit in an open corner in the classroom to de-stress. | Quiet corner is available but not used always When need arises it is used only for some students. | There is a clearly marked space for students to calm down or de-stress. Students use it or made/being trained to use it whenever need arises |

CEPCA

| 2. Communication Program | | | | | |
|---------------------------------|--|--|---|--|--|
| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
| 1 | The teachers use positive language in referring to and addressing students. e.g. Do this rather than don't do this | Use of STOP IT, Don't Do, NO ...more frequent in correcting children | Teacher uses positive language at least once during the day for one particular situation or behaviour. | Teacher uses positive language with some students or for more than one situation. e.g. at painting she might say "Keep your brush down rather than don't wave your brush" | Teacher uses positive language with all the students, across all situations and behaviours e.g. "sit on your chair rather than don't jump" |
| 2 | The environment is structured to stimulate communication. e.g. desirable items are kept in sight. Communication cards are easily available | No efforts to place reinforcing items in sight. Communication cards are not displayed. | Desirable items are not kept in sight but communication cards are displayed but not used. | Desirable items kept in sight. The teacher responds to children's request sometimes. Communication board / book is available but not for all children/ across situations/for all skills. | Environment is structured to stimulate communication. e.g. desirable items are kept in sight, communication cards are easily available for all students and across situations & skills |
| 3 | Students who have difficulty in communicating verbally are prompted to use alternate modes of communication like communication books or assistive devices like 'Let me Talk or iPad' | Teacher communicates with all students verbally irrespective of their level of understanding. | One can observe the presence of communication boards/books, but they are not in use. | Communication board / book/ other devices are made available but not for all students who need such alternate modes/ use not seen across situations/for all skills for the students. | All students who have difficulty in communicating verbally have communication books/boards/ devices which are used across all situations. |
| 4 | Communication skills required by students are targeted and taught in a structured manner and reflected in the IEP. The timetable reflects a communication period. | There is no period set aside for communication. Teachers communication with students is unstructured | Teacher has kept the materials ready and plans to start targeting communication goals. The timetable does not reflect a communication period | Communication is targeted and taught in structured way for some skills/some students only/ sometimes. The timetable reflects a communication period which is followed sometimes. | The timetable has a communication period. Communication is seen as a focused skill which is planned well, taught in structured manner for all students/ across skills and situations |
| 5 | Communication skills taught in the IEP are practiced by the teacher in generalized situations with the use of consistent and appropriate language e.g. short sentence, clear instructions one medium of instruction. | Lengthy sentences, incomprehensible use of words and phrases... beyond the level of the student. Multiple mediums of instruction | Teacher attempts to target at least one skill from the IEP for generalization. However, teachers use of language to communicate with students is still not appropriate to the student's level e.g. long sentences or the use of multiple instructions, or multiple mediums of instruction | IEP skills are generalized for some students but not all. Skills are generalized across some situations but not all. The use of teacher's language is appropriate in most situations. Teacher uses one medium of instruction | Use of consistent & appropriate language, short- meaningful phrases is seen for all the students and across situations and skills Teacher uses one medium of instruction |

CEPCA

| 3. Socialisation Program | | | | | |
|---------------------------------|---|---|--|--|--|
| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
| 1 | Activities in the classroom are set up with the aim of promoting social interaction (circle time, group learning, art and craft activities) | Activities do not necessarily promote social interaction nor are planned with that aim | At least one activity that promotes socialization is observed in the day. | More than one group activity to encourage social interaction takes place during the day. Teacher encourages some students to interact with each other. | Circle time, group activities are planned, and social interaction is one of the focused areas targeted during such activities. Needs and strengths of all students are considered during planning and implementation is consistent. |
| 2 | Structured play time with the aim of teaching socialization is an important part of the timetable. (doing puzzles, playing board games, construction games) | Play time is not planned, no appropriate material is used even in unstructured play time. | Play time is listed on the timetable does not take place. There are games in the classroom but not used. | Play time is a part of the timetable and students are given opportunities to play but social skills like sharing, turn taking and requesting are targeted for some students. | Play time is a part of timetable and used as an opportunity for socialisation addressing needs of all the students e.g sharing, helping, waiting for the turn, asking for help, asking more, etc are targeted during play time |
| 3 | Challenges in social interaction are addressed sensitively in a planned manner using evidence-based strategies. e.g. social stories, role play | Challenges in social interaction are addressed by conventional modes e.g. – telling the student to stop the behaviour or threatening punishment | The teacher targets challenges in social skills using evidence-based strategies for at least one child. | Attention is given to address social interaction using appropriate strategies, but effort is not consistent for all situations/all students/across social skills | Social skills are targeted using evidence-based strategies and in structured manner and for all students depending on their strengths and needs. (e.g. role play- each student is given a special task in a planned role play to target certain skill) |
| 4 | The buddy system is used to support social interaction | There is no buddy system observed. | At least one student has a buddy | Buddy for some students but no social interaction targeted/ inconsistent focus | Buddy system is planned well and targeted to support social interaction for all students with such need |
| 5 | Students are exposed to community settings to generalize social skills (Ask teacher) | No exposure to community experiences with aim of generalization | Planning for such community exposure for the skills learned at classroom | Community outings are planned for, students are taken for the outings, but specific social skills are not targeted. | Special attempts are made for community exposure opportunities to generalise social skills and for all Students according to their level of learning |

CEPCA

4. Management of Sensory Needs

| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
|------|--|---|--|--|---|
| 1 | A comprehensive sensory profile based on the assessment of each student is prepared | No assessment done | A therapist has been hired by the school or the teacher has informed the parents of the need for sensory therapy. | A sensory profile has been filled in for some students who need it, but it is incomplete | Every child who needs it has a sensory profile. |
| 2 | The complete sensory profile is made available to the teacher (Check with teacher) | The teacher says that she does not have a sensory profile | The teacher says she has plans to talk to the school therapist or has requested parents to share the report with her. | The teacher may have an incomplete profile or a profile of only some students | The teacher has a complete sensory profile of all students |
| 3 | The teacher is aware and practices sensory techniques which help the student function with greater ease in the class and at home e.g. a massage, jumping on the trampoline, going to the quiet corner, use of soft voices, use of headphones | The teacher does not use any sensory calming techniques to deal with the child. There are no strategies posted in the classroom | The child's timings for therapy and a list of suggestions are posted in the classroom but the teacher does not incorporate them into the child's schedule. | Sensory intervention is displayed in the class for all children. The teacher may address some needs of the child but not all or only focus on addressing the needs of one child. | Sensory intervention is displayed in the class for all children. The teacher implements sensory techniques for those students as a routine of the class. |
| 4 | The classroom reflects elements of awareness of sensory issues such as a quiet corner, squeeze toys, quiet area with pillows | No elements mentioned are present. | Sensory toys, quiet corners are present, but they are not used. | There is some equipment and materials which address the needs of some children. The teacher attempts to use them some time e.g. jumping on the trampoline | The classroom contains equipment for sensory issues, or the teacher has another place where students can easily access sensory equipment if they need it. |
| 5 | When students have 'meltdowns' due to sensory issues the teacher is able to deal with them effectively through awareness of sensory integration techniques. (Ask teacher) | Teacher does not address sensory issues appropriately | The teacher has consulted the therapist and is aware of some techniques | Teacher may deal with one child effectively but not others Teacher may deal with a sensory issue appropriately sometimes but not always. | The teacher deals with meltdowns effectively with appropriate strategies when they happen |

CEPCA

| 5. Assessment and IEPs | | | | | |
|-------------------------------|--|--|--|---|---|
| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
| 1 | Students are assessed in the area of functional skills | There is no assessment done | The files contain functional assessments formats which are not used | There are incomplete assessments or only some students are assessed | There is a full functional assessment profile for all students |
| 2 | Students are assessed in the area of socialization | There is no assessment done | The files contain socialization assessments formats which are not used | There are incomplete assessments or only some students are assessed | There is a full socialization assessment profile for all students |
| 3 | Students are assessed in the area of communication skills | There is no assessment done | The files contain communication assessment formats but not used | There are incomplete assessments or only some students are assessed | There is a full communication assessment profile for all students |
| 4 | Assessment results are recorded, and a written report is prepared. | There is no written assessment or report | There are assessments but they are in rough. No reports are written | Results are not recorded systematically or are contradictory. Written reports are prepared for only some students | Assessment results are recorded for all students along with a written report. |
| 5 | Assessment is done using various inputs e.g. observation, testing and interviews with parents etc. | Assessments are not done | Assessments are done through only one input either observation or parent input. | Assessments are done through various inputs but not for all students or not in all areas | The assessment is based on multiple inputs for all students in all areas. |
| 6 | Assessment leads to the development of need-based goals in all areas (functional, sensory, behavioural, communication, socialization) which are written in measurable terms. | No goals are written | Goals are written but not in measurable terms. | Goals are written in measurable terms some students | Goals are written in all areas in measurable terms for all children. |
| 7 | Intervention/ teaching strategies mentioned in the IEP are based on evidence-based practices | There is no recording of strategies. | Teachers are aware of need based strategies but have not written them (Ask teachers) | Evidence based strategies are used for some students or for some goals only | Evidence based strategies are used for all students or for all goals. |
| 8 | Progress is measured objectively, and goals are reviewed and updated regularly | There is no record of progress | Progress reports are planned. There are formats provided to the teachers but not filled up or they may contain contradictory information | Progress reports are written and updated regularly for some students or only in some areas | Progress reports are maintained and reflect the progress systematically in objective terms for all students in all areas. |

CEPCA

| 6. Instructional Strategies | | | | | |
|------------------------------------|--|---|--|---|---|
| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
| 1 | During instructional time, students are taught skills which are need based. . | Students are engaged in non-functional activities or no activity | Students learn at least one need-based skill during the day. | Students learn more than one need-based skill but are still engaged in some non-functional activities. Only some students are taught need-based skills | All students are engaged in need-based skills throughout the day. |
| 2 | The skills taught during instructional time match with the goals written in the IEP | Students are engaged in activities which are not linked to the IEP | Students are engaged in at least one IEP goal in the day. | Only some students are engaged in IEP goals. Students are engaged in IEP goals for part of the day. | All students are engaged in IEP goals throughout the day. |
| 3 | When students are not involved in direct instruction, they are meaningfully occupied in activities according to their interest and ability level | Students are unoccupied or given non- functional repetitive tasks | Students are occupied in at least one meaningful age appropriate activity during the day | Only some students are kept occupied. Students are kept occupied for only some part of the day but other times they are unoccupied | All students are kept meaningfully occupied throughout the day. |
| 4 | Teachers use appropriate teaching aids to address student goals | No aids can be seen. Aids which are used are inappropriate. | Appropriate aids are used for at least one activity or one student | Aids are used for some students but not others. Aids are used for or some activities | All students are taught using appropriate aids. Appropriate aids are used for all activities. |
| 5 | Autism specific strategies like work systems, visual schedules and social stories are used to teach students | No autism specific strategies are observed. | At least one autism specific strategy is observed e.g. discrete trial, structured teaching, visual schedule, social story, visual aids | Autism specific strategies are used for some students or in some activities. | Autism specific strategies are used for all students in all activities. |
| 6 | Teachers use reinforcement appropriately to enhance student's performance | No reinforcement used | Generic reinforcement e.g. good boy at any time. | Teacher reinforces students specifically for a particular task with a meaningful reinforcer. This is observed for some tasks or some situations. | Teachers provide appropriate reinforcement according to the child's interest for all children. |
| 7 | Teaching is aimed at making the students independent in the skills selected. E.g. opportunities for practice and generalization are factored into the instructional process (Ask teacher about old skills) | No attention given for making student independent in the skill and generalisation | The teacher practices generalization for at least one student during the day. | Some students are involved in tasks requiring generalization. | Teaching is aimed to make students independent in the skills in all the skills. Generalisation and practice is focused for all activities for all students. |

CEPCA

| 7. Behaviour Management | | | | | |
|--------------------------------|--|---|--|---|---|
| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
| 1 | Data gathering is an integral part of behaviour management procedure. | There is no evidence of any data gathering | There are data sheets but not filled in | Data sheets are filled in but incomplete or not for all children | There are data sheets which have been completely filled in for all students requiring them. |
| 2 | Behaviour management follows a standard operating procedure which is known by all teachers. E.g. functional behaviour analysis etc. (Ask teachers) | The school has no SOP to deal with behaviour | Teachers say the counsellors have a plan, but it is not followed in the class. | Teachers have some knowledge of the behavioural plan, but it is incomplete. | All teachers can explain the SOP for behaviour management. The behaviour management plans reflect a systematic procedure. |
| 3 | Behavioural goals are written in objective terms | There are no written goals. | Goals are written though not objectively Teachers are given forms, but they are not filled in | Some goals are written in objective terms Goals are written in objective terms for some children | Goals are written in objective terms of all students who need them. |
| 4 | Strategies to manage behaviour problems reflect the need to address the cause of the behaviour. E.g. social stories, sensory integration therapy. | There is no evidence of EBS to manage behaviour problems. The teacher just verbally corrects the child. | Evidence-based strategies to manage behaviour problems are used for at least one child. | The teachers use evidence-based strategies only for some students. | The teachers use evidence-based strategies for all students with behaviour challenges. |
| 5 | The emphasis of the intervention incorporates teaching alternative skills which increase student's independence | The teacher does not redirect the student to appropriate behaviour. | Teachers attempt to redirect inappropriate behaviour for at least one student | Teachers redirect the behaviours for some students but not all. | All students with behaviour challenges are redirected to appropriate behaviour. |
| 6 | Changes in the behaviour (positive or negative) are recorded and tracked so that intervention can be modified | There is no evidence of follow up or progress | Teachers have the necessary forms and have been given input but are not recording it | Tracking is seen for some students not all | Tracking of progress is seen for all students. |

CEPCA

| 8. Parent Involvement | | | | | |
|------------------------------|---|--|---|--|---|
| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
| 1 | Parents are involved in assessment process of their child. | Parents are never called in for assessment of their child | Parents are called for meetings, but no assessments are discussed | Parents are called for assessment for only some areas. Only some parents are called for assessment | All parents are consulted for all areas of assessment for their children |
| 2 | Parents are involved in the development of the IEP. | IEPs are developed without parent involvement and not shared with the parents | IEPs are developed without parents but are shown to the parents at the beginning of the year | Only some parents are involved in the development of IEPs | All parents are involved in the development of all areas in the IEP |
| 3 | Parents are called for term reviews and developing new IEP goals. | There are no term reviews and parents are not called for goal setting | There are meetings which are irregular, and parents are informed about new goals but not consulted. | There are regular term meetings Only some parents are consulted for developing new goals. | There are regular term meetings All parents are consulted for new goals. |
| 4 | Regular parent education sessions are conducted by the teacher (at least once every two months) Topics must be relevant to understanding and educating the child at home | No parent education sessions are conducted at all. | At least one parent education session has been conducted during the year. | Between 2-3 parent education sessions have been conducted during the year. | More than three parent education programs are conducted during the year. The teachers have a list of topics that they are going to present. They have already planned resource persons. |
| 5 | Written home programs are developed and given to the parents. | No home programs are written. There are no formats present | There are formats for home programs but not filled in | Home programs are present in the files, but they are incomplete. | Home programs are present in each child's file and they are all complete. |
| 6 | Behaviour management programs are shared with parents and their feedback is recorded | There are no behaviour management programs in the class and parent feedback is not asked for | Teacher share programs with parents and take oral feedback but do not write their feedback. | Teachers share the behaviour management programs with some parents. Parent feedback is present only for some programs | Teachers share the behaviour management programs with all parents. Parent feedback is present for all programs |

CEPCA

| 9. Community Involvement | | | | | |
|---------------------------------|--|--|---|--|---|
| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
| 1 | Students are helped to transition for activities outside the classroom (assembly, recess, therapy) appropriately | No visual schedule, no finish box, teacher takes students out without informing them or preparing them. | Teacher uses a bell to mark the end of a period, gives a verbal prompt to say for example assembly, playground etc. | Visual schedule is in place for all/some students, but teacher uses it for some activities. Only some students are directed to the schedule. | Visual schedule is for all students with start and finish boxes. Teacher uses verbal cues like “what next”. Students are prepared for transition in time by directing them to the visual schedule. First, then cards in place. |
| 2 | Students are given exposure to community experiences like shopping, going to the park etc. | No planner for the year is in file. The teacher has no knowledge of activities that are planned. Places visited have no significance in terms of community experience. | The teacher has drawn up a list of places to visit which is targeted towards community experiences however, there is no year planner or dates in files. | There is a planner for the year but out of six places only two have been visited. (we can score them based on last year’s planner). There is a planner for this year with no months or dates just places | There is a planner for the entire year with the list of places they are to visit and the months and tentative dates. Last years’ planner shows that out of six places they visited at least five and all targeted towards community experiences |
| 3 | Interaction with persons in the community (nonteaching staff, shopkeepers, visitors etc.) is a planned program. | Interaction with persons in the community does not take place. | Students are taken out but there is no planned interaction with members of the community. Visitors come to the class but there is no plan to teach students to interact. The same holds good for non-teaching staff. | There is a planned program for interaction but only for some students. Interaction with non- teaching staff or visitors is not taught | Visitors card is available with teacher, social story is available in students file, a planned program for all visits are in file. Students are systematically taught how to interact with visitors and non-teaching staff. |
| 4 | Community experiences are age appropriate (Ask Teacher) | Students are not taken for field trips. They are taken for general school trips without keeping age and interest in mind. | The teacher shows planning for at least one trip that kept the students age and interest in mind. This is still in the planning stage | The teacher shows one examples of community experiences that were age appropriate which the students attended | The teacher shows 3-4 community experiences that the students attended which were age appropriate. |
| 5 | Interaction with typical students is a planned part of the community exposure | There is no planned interaction with typical children. | In a special school, typical students may come and visit, or special needs students may go and visit but there is not planned interaction. In the resource room typical students may come and interact with the special need students but it is not a planned activity. | Buddies are appointed for only some student. They are sensitized about the needs of their partner and interact accordingly with the child. | All students in the classroom have a buddy. Typical students are sensitized about aspects of autism like sensory needs, communication difficulties etc. before meeting CWA. |

CEPCA

10. Positive Learning Environment

| Item | Descriptor | No Evidence | Efforts to Set Up | Evidence – inconsistent | Evidence – consistent |
|------|---|---|--|--|---|
| 1 | The physical environment appears child friendly, welcoming and geared towards learning. e.g. furniture is age appropriate, clean classroom, bright and airy | The environment has too much visual clutter. The classroom appears untidy. The toilets are unclean. | The teacher is aware of the untidy environment and talks about plans to improve the classroom. She mentions certain strategies to overcome this. | The classroom is organized and neat in some areas but not in others. E.g. the learning area is neat but not the play area. The toilets may be dirty | Clear well-defined spaces, clean bright airy room. The pictures on the wall contribute to enhancing the learning environment. |
| 2 | The teacher creates a positive learning environment by being enthusiastic, welcoming and supportive. | The teachers attitude appears negative. There is a lot of correction. There is little encouragement of student effort | Teacher appeared energetic and enthusiastic but did not maintain the same level of enthusiasm throughout the day. | Teacher was welcoming, enthusiastic, supportive but displayed this with the more capable children. | The teacher projects an attitude of enthusiasm and encouragement. Teacher was encouraging to all students in terms of completing work. |
| 3 | Students with autism are given the same instructional time for teaching skills as other students in the class. | Students with autism were ignored. | At least one student with autism was given the same instructional time as students without autism. | Only certain groups of students with autism receive the same instructional time as other student e.g. those who are doing academics or those who are verbal. | The teacher gives the same amount of instructional timeto ALL student |
| 4 | There are toys and recreational activities that are easily available to students. | No toys or recreational activities available the classroom at all | Toys and recreational activities are present but not made available to students. | There are toys and activities, but they are not age appropriate. Only some students have toys to play. | Toys to promote independent learning are easily available in a specified area. Teacher gives it to the student as a reinforcer or break time and play time. |
| 5 | Appropriate behavior is acknowledged and reinforced by the teacher | No tangible reinforcements are seen in classroom No verbal reinforcement is used by teacher | Verbal reinforcements are used but not for specific behaviours. | The use of reinforcement for appropriate behaviour takes place for some students. | The use of reinforcement for appropriate behaviour takes place for all students. |

CEPCA Scoring Guidelines

- A) Single Observer.....pg 29
- B) Multiple Observer...pg 32

CEPCA

A) CEPCA SCORING GUIDELINES FOR SINGLE OBSERVER

1. Score all indicators by rating the descriptors with the rating scores listed below on the indicator recording sheet

| | | | | |
|-----------|-------------|-------------------|-----------------------|---------------------|
| Qualifier | No Evidence | Efforts to Set up | Evidence Inconsistent | Evidence Consistent |
| Score | 1 | 2 | 3 | 4 |

2. Total the scores on the descriptors to get a raw score. (see example below) e.g. 1+4+2+3+1+2= 13

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 1. Physical Structure | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | There is adequate and clearly defined space in the classroom for students to keep their possessions (bags, bottles etc.) | | | | |
| ii) | Areas are delineated in the class wherever possible for various activities (play, therapy, quiet area) | | | | |
| iii) | All areas are clearly labelled with print and pictures | | | | |
| iv) | The timetable is clearly displayed for all students to see and is presented in print as well as pictorial form. | | | | |
| v) | Students have adequate desk/ learning space to do activities. | | | | |
| vi) | There is a clearly marked space for children to calm down or de-stress | | | | |

Comments by the observer:

Raw Score:

CEPCA

3. Once all the raw scores are entered on the indicator sheets, transfer raw score for each indicator into column titled ‘Raw Score’ in **Table 1**
(CEPCA FINAL SCORES FOR SINGLE OBSERVER)

4. Calculate the **Mean Score** = $\frac{\text{Raw score of indicators}}{\text{Total number of items for that indicator}}$ e.g. $\frac{\text{Mean Score for Physical Structure}}{\text{No of items of Physical Structure}} = \frac{13}{6} = 2.16$

5. Enter the mean score in column titled Mean Scores.
6. Transfer the mean score into the column titled CEPCA Range Score to get the range score for each indicator. In the above example the mean score for a single observer = 2.16. 2.16 falls in the (1.75 – 2.49) range bracket and thus gets ‘Efforts to set up’ as the assigned Qualifier.

| Qualifier | No evidence | Efforts to set up | Evidence – inconsistent | Evidence – consistent |
|--------------|-------------|-------------------|-------------------------|-----------------------|
| Range scores | 1.0 – 1.74 | 1.75 – 2.49 | 2.50 – 3.24 | 3.25 – 4.00 |

7. Enter the qualifier attained for each indicator in Table 3 entitled CEPCA INDICATOR QUALIFIER to understand how your program fares for each indicator.

CEPCA

Table 1. CEPCA FINAL SCORES FOR SINGLE OBSERVER

| CEPCA Indicators | Total Items Per indicator | Raw Score | Mean Score (Raw Score/ Total Items per indicator) | CEPCA Range Scores (based on Mean Scores) | | | |
|--|---------------------------|-----------|--|--|----------------------|----------------------------|--------------------------|
| | | | | 1.0 -1.74 | 1.75 –2.49 | 2.50 – 3.24 | 3.25 – 4.00 |
| | | | | No Evidence | Efforts to set up | Evidence – inconsistent | Evidence – consistent |
| Physical Structure | 6 | | | | | | |
| Communication Program | 5 | | | | | | |
| Socialization Program | 5 | | | | | | |
| Management of Sensory Needs | 5 | | | | | | |
| Assessment & IEPs | 8 | | | | | | |
| Autism Specific Instructional Strategies | 7 | | | | | | |
| Behaviour Management | 6 | | | | | | |
| Parental Involvement | 6 | | | | | | |
| Community Involvement | 5 | | | | | | |
| Positive Learning Environment | 5 | | | | | | |

CEPCA

B) CEPCA SCORING GUIDELINES FOR MULTIPLE OBSERVERS

***Note: in the case of multiple observers, each observer should hand over their indicator recording form to a one person from the team who will be responsible for the final scores.**

1. Score all indicators by rating the descriptors with the rating scores listed below on the indicator recording sheet

| | | | | |
|-----------|-------------|-------------------|-----------------------|---------------------|
| Qualifier | No Evidence | Efforts to Set up | Evidence Inconsistent | Evidence Consistent |
| Score | 1 | 2 | 3 | 4 |

2. Total the scores on the descriptors to get a raw score. (see example below) e.g. 1+4+2+3+1+2= 13

| Sr. No. | CEPCA Indicator | Scoring | | | |
|---------|--|-------------------------|-------------------------------|-------------------------------------|-----------------------------------|
| | 1. Physical Structure | 1 No Evidence | 2 Efforts to Set Up | 3 Evidence – inconsistent | 4 Evidence – consistent |
| i) | There is adequate and clearly defined space in the classroom for students to keep their possessions (bags, bottles etc.) | | | | |
| ii) | Areas are delineated in the class wherever possible for various activities (play, therapy, quiet area) | | | | |
| iii) | All areas are clearly labelled with print and pictures | | | | |
| iv) | The timetable is clearly displayed for all students to see and is presented in print as well as pictorial form. | | | | |
| v) | Students have adequate desk/ learning space to do activities. | | | | |
| vi) | There is a clearly marked space for children to calm down or de-stress | | | | |

Comments by the observer:

Raw Score:

CEPCA

1. Hand over indicator recording sheets to designated scorer
2. The scorer must enter each raw score for each indicator into column titled raw scores of **Table 2 (CEPCA SCORING GUIDELINES FOR MULTIPLE OBSERVERS)**
3. Calculate **Average Raw Score** = $\frac{\text{Raw score of Observer 1} + \text{Raw score of Observer 2} + \text{Raw score of Observer 3}}{\text{Number of Observers}}$ e.g. $\frac{14+16+16}{3} = \frac{46}{3} = 15.33$
4. Enter the Average Raw Score in column titled Average Raw Score.
5. Calculate the **Mean score** = $\frac{\text{Average Raw Score for the Indicator}}{\text{Total number of descriptors for that indicator}}$ e.g. $\frac{\text{Average raw score for physical structure}}{\text{Total number of descriptors for physical structure}} = \frac{15.33}{6} = 2.55$
6. Enter the mean score in column titled Mean Score.
7. Transfer the mean score into the appropriate range bracket in the column titled CEPCA Range Scores.
8. In the above example the mean score for multiple observers is 2.55. 2.55 falls in the (2.50 – 3.24) range with the qualifier ‘evidence inconsistent’.

| Qualifier | No evidence | Efforts to set up | Evidence inconsistent | Evidence consistent |
|--------------|-------------|-------------------|-----------------------|---------------------|
| Range scores | 1.0 – 1.74 | 1.75 – 2.49 | 2.50 – 3.24 | 3.25 – 4.00 |

9. Enter the qualifier attained for each indicator in Table 3 entitled **CEPCA INDICATOR QUALIFIER** to understand how your program fares for each indicator.

CEPCA

Table 2. CEPCA FINAL SCORES FOR MULTIPLE OBSERVERS

| CEPCA Indicators | Total Items per indicator | Raw Score | | | Average Raw Score (Ob1+Ob2+Ob3)/ 3 | Mean Score (Avg. Raw / Total Items per indicator) | CEPCA Range Scores (based on Mean Scores) | | | |
|--|---------------------------|-----------|-----|-----|--|--|--|-------------------|-------------------------|-----------------------|
| | | Ob1 | Ob2 | Ob3 | | | 1.0 -1.74 | 1.75 –2.49 | 2.50 – 3.24 | 3.25 – 4.00 |
| | | | | | | | No Evidence | Efforts to set up | Evidence – inconsistent | Evidence – consistent |
| Physical Structure | 6 | | | | | | | | | |
| Communication Program | 5 | | | | | | | | | |
| Socialization Program | 5 | | | | | | | | | |
| Management of Sensory Needs | 5 | | | | | | | | | |
| Assessment & IEPs | 8 | | | | | | | | | |
| Autism Specific Instructional Strategies | 7 | | | | | | | | | |
| Behaviour Management | 6 | | | | | | | | | |
| Parental Involvement | 6 | | | | | | | | | |
| Community Involvement | 5 | | | | | | | | | |
| Positive Learning Environment | 5 | | | | | | | | | |

CEPCA

Table 3. CEPCA QUALIFIER TABLE

Check the box that fits the indicator based on your CEPCA Range Score (Table 1 or Table 2)

| | CEPCA INDICATOR | CEPCA QUALIFIER | | | |
|----|--|-----------------|-------------------|-------------------------|-----------------------|
| | | No Evidence | Efforts to set up | Evidence – inconsistent | Evidence – consistent |
| 1 | Physical Structure | | | | |
| 2 | Communication Programs | | | | |
| 3 | Socialization Programs | | | | |
| 4 | Management of Sensory Needs | | | | |
| 5 | Assessments and IEPs | | | | |
| 6 | Autism Specific Instructional Strategies | | | | |
| 7 | Behaviour Management | | | | |
| 8 | Parental Involvement | | | | |
| 9 | Community Involvement | | | | |
| 10 | Positive Learning Environment | | | | |