

CHAPTER I

CONCEPTUAL FRAMEWORK

1.0 INTRODUCTION

Education is an integral part of developmental process of an individual. The aim of education is to help one from the childhood to develop his/ her individuality, inborn potentialities and innate capabilities. Hence, education plays a vital role for the holistic development of child's personality and it is of immense need for each and every child irrespective of their physical and mental health. The clarion call of Education for all (1990), Right to Education Act (2002) and Right to Education (2010) as a fundamental Right has attracted the attention of every common person. It has been discussed at every forum of educational planning and development, in pursuit of universalisation of Elementary education and fulfilment of Constitutional mandate for quality elementary education to all children up to the age of 3 to 14 years. Various projects and programmes have been undertaken by various agencies of state and central governments, voluntary agencies, individuals and groups at different levels including remote, rural and urban areas for different types of children including special children. Government has also created provisions for the special children in different forms like special schools, special provisions and inclusion in the general schools through inclusive education. National Policy on Education (1986) and the Programme of Action (1992) has given emphasise on special children as a part of the education. It also includes mission of providing quality elementary education for all including special children is done through SarvaShikshaAbhiyan (SSA, 2000). In this ways, India has come a long way and made a good progress in the education of special children including physical and mental disability. It has also made some remarkable progress in the field of disability rehabilitation through different institutions and programmes. In spite of it, there are some areas of mental disabilities where the progress is not so distinct and significant. One of such area of mental disability is Autism Spectrum Disorder (ASD). It is one of the greyareas in the mental disability where much research work has not been done. ASD also called as autism is a pervasive developmental disorder which is characterized by impairments in communication and social interaction, and restricted, repetitive and stereotypic pattern of behaviour, interests, and activities (American Psychiatric Association 1994). Previously, it was not considered as a

form of mental disability in India and it was treated as mental retardation though it is significantly different from other forms of mental disability. It is one of the most ignorant areas in medical as well as educational field due to the lack of knowledge in this area. Recently, National Education Policy 2020 has given provision for autism in inclusive education as per RPWD Act 2016, Autism was considered as one of the disabilities among the 21 disabilities stated by in the Rights of Persons with Disabilities (RPWD) Act, 2016 of the government of India. Autism is not a single disorder, but rather it is a spectrum of closely related disorders with a shared core of symptoms. The perception of medical and psychological practitioners about autism is changing from time to time with the progress in this area. But unfortunately the progress in this area is not so significant to give a clear cut direction about the treatment and rehabilitation of the children with ASD. Even the causes of ASD are not exactly known to scientists and medical practitioners. There are many causes and factors for multiple types of ASD, including environmental, biologic and genetic factors. Likewise, there is no sight of any treatment for the people with ASD. However, there are many schools of thoughts for the treatment of autism, which is/are not found so effective in the holistic and scientific treatment of children with ASD. Obviously, as the causes for ASD are not clear, there is nothing to prevent ASD among newly born children. There are few specific tests (developmental tests) for the diagnosis of autism mostly found in developed countries and now used in India but only in big cities there are centres for autism. In other parts of the country, it is very difficult to diagnose ASD in an early stage. In many cases it is considered as mental disorder even if in the educated circles. Hence, in many cases the children with ASD get the similar treatment (medicine and therapy) and similar education which are common for children with mental disorder. The number of children with ASD in India and worldwide is increasing in an alarming speed. It was found that the prevalence rates of ASD have increased nearly 17% annually worldwide (CDC, 2014) and there are more than 13 million children in India suffer from this developmental disorder. (HINDUSTAN TIMES APRIL 3, 2017; CENSUS, 2011). The major part of the autism is related to behavioural disorder without having any treatment. Hence, education and training is considered to be the only scientific measure for modifying the behaviour of the children with autism to some extent for their survival. Though there are few models like, Applied Behaviour Analysis (ABA), Relationship Development Intervention (RDI), Sensory Integration Therapy (SIT), Treatment and Education of Autistic and Related Communication-Handicapped Children

(TEACCH) are used for the education and training of the children with ASD. Most of them are originated from developed countries where educational facilities for children with ASD are up to the mark. Some of these models are used randomly in some of the centres for autism in India. Even, researches on the education and training of autism are very less worldwide and it is quite insignificant in number in India. However, most professionals agree that school-age children with ASD respond well to highly structured, specialized education programs designed to meet individual needs (Rahman et al., 2011), which are quite uncommon in India. It is felt that there is a strong need for the research in the areas related to the education of the children with ASD. Though some models of education are used in India for the children with autism, it may not be related to the actual educational need of the children. Due to which many of the education programmes in many of the centres in India found not to be so effective in mainstreaming the children with ASD. ASD is one of the worst types of mental disorder among all other types of disorders without any treatments. Parents of these children at least hope for some sort of education for the survival of these children. Though some educational centres provide education to the children with ASD in the subjects like mathematics, reading, writing, drawing, dancing, music etc., sometimes it is felt like meaningless for these children. It is not very sure whether these educations are necessary for the survival of the children with ASD.

There is strong need for research in the area of actual educational need of the children with ASD, as there are very few researches in the area of ASD in different fields including medicine, education, psychology and alternative therapies. Hence, the proposed study is an attempt in this direction to study the actual educational need of the children with autism perceived by parents, teachers, and experts, medical practitioners, helping hands and observed from the children with ASD. Present study is an attempt in this area where an attempt is made to study the educational need of the students with ASD which may facilitate special educators to prepare suitable curriculum for the education of the children with ASD.

1.1 HISTORICAL BACKGROUND

In 1906, Eugene Bleuler, a Swiss psychiatrist used autism as an adjective. Initially childhood schizophrenia was used to refer to this condition. Later, after several researches Leo Kanner

(1943) used autism as a noun and differentiated autism from schizophrenia. In 1964, Bernard Rimland proved that autism was a biological condition and not related to the parent child bond. He founded the Autism Society of America. In 1971, Eric Schopler and Robert Reichler studied the effects of parent involvement in the treatment of children with Autism. In 1972, Schopler started the Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) program to provide training for individuals with Autism.

In 1977, Susan Folstein and Michael Rutter published first autism twin study which revealed evidence of a genetic basis for autism. In 1980, *Autism was added to the Diagnostic and Statistical Manual of Mental Disorders- Third Edition (DSM-III)* as "infantile autism". In 1991, Schools begin to identify and serve students with Autism to make Autism a special education category. In 2005- Autism speaks was found by Bob and Suzanne Wright to fund research, increases awareness, and advocates for the needs of individuals on the spectrum. The films like 'The Boy Who Could Fly' (1986), Rainman (1988), what's Eating Gilbert Grape? (1993) and Temple Grandin (2010) created a great awareness about autism.

Statistics from the U.S. Centre for Disease Control and prevention (CDC) in March 2016 showed that one in 68 American children is autistic. It also showed that autism is four to five times more common among boys (age 8) than girls, an estimated 1 out of 54 boys and 1 in 216 girls are diagnosed with autism. ASD affects over 2 million individuals in the U.S. and tens of millions worldwide. Moreover, government autism statistics suggest that prevalence rates have increased 10% to 18.5% annually in recent years.

Table 1- Prevalence Rates of Autism Year wise

Surveillance year	Birth Year	Number of ADDM sites Reporting	Combined Prevalence Per1000 children (Range Across ADDM sites)	This is about in 1 in X children
2000	1992	6	6.7 (4.5-9.9)	1 in 150
2002	1994	14	6.6 (3.3-10.6)	1 in 150
2004	1996	8	8.0 (4.6-9.8)	1 in 150
2006	1998	11	9 (4.2-12.1)	1 in 100
2008	2000	14	11.3 (4.8-21.2)	1 in 88
2010	2002	11	14.7 (5.7-21.9)	1 in 68
2012	2004	11	14.5 (8.2-24.6)	1 in 69
2014	2006	11	16.8 (13.1-29.3)	1 in 59
2016	2008	11	18.5 (18.0-19.1)	1 in 54

*ADDM stands for autism development disabilities monitoring.

Source: <https://www.cdc.gov/ncbddd/autism/data.html>

The first time the term “autism” appeared in the Indian literature was in 1959 and before that there was limited knowledge about autism in the medical community. By the early 1980s there began a slow growth of ‘awareness’ of autism among some professionals. The overseas release of the film ‘Rain Man’ in 1988 based on autism attracted attention of all the people of the world. In 1991, few like- minded parents of autistic children formed Action For Autism (AFA) in New Delhi, to advocate for children and adults with autism and their families. In 1994, a school, Open Door, a specialist school for autism was started and AFA started a full time one-year teacher training course in Delhi. In 1998, AFA conducted a massive awareness campaign among more

than 1,000 paediatricians and parents of newly diagnosed children with autism. Referrals from paediatricians skyrocketed following this campaign. By the late nineties a few autism specific organisations and few schools started off in different parts of the country. Between 1998 and 1999 a series of articles on autism were released to the media to create awareness. In 2000, a boy with autism from Bangalore, Tito, published his first book, *Beyond the Silence: my life, the world and autism* highlighting his mother's methods for teaching him. It was the beginning of the education of the autism children and RCI introducing a Diploma in Special Education (Autism Spectrum Disorders) in 2003. By this time few more Parent organisations for autism had come into being in West Bengal, Bombay, Goa, Bhubaneshwar and Pune. Recently, internet has expanded the Diasporas of Indian families with autistic children to dozens of countries around the world. Awareness of autism in India has experienced tremendous growth in less than a decade. Growth has occurred in numerous domains: diagnosis, treatment and educational options, parental involvement, vocational options, human resource development, and legislation. Based on the census (2011), 1 in 89 children between the ages of two to nine years in India suffer from ASD. If extrapolated, this means at least 13 million children in India suffer from autism. It is also found that there are about 1 to 1.5 percent autistic children between age two and nine in India. Ultimately, In 2016, due to the pressure from different forums and the struggle of different organisations, autism get a place in the list of disorders among 21, in the Right to Persons with Disability (RPWD) Act of the Government of India.

1.2 MEANING AND DEFINITIONS OF AUTISM

Autism word derived from the Greek language autos which mean with a self, self, isolation. Its involve capabilities of individuals to retreat into the private, inner world. Autism process categorized such as lack of responsiveness towards others affects to isolation and to be separate from others, and subsequently, brings communication failure.

Autism word used as an autism spectrum disorder. It involves different diagnostic category in medical terms and explains what is common in all diagnostic category. Purposes of that arrive at an educational definition of autism from which maybe ensure the educational need for children with special needs. In the medical field, autism define and autism diagnosis, go on the basis of

characteristics of autism. Although autism has no such type of behaviour that can be categorised unequivocally. If defined to autism only based on the behaviour of autism it will lead to misleading explanation and so the improper way of treatment. The behaviour study of autism is necessary to understand them, but only behaviour will not help to understand about autism even it cannot define autism that how to fully understand them. Which approach would be helpful in proper understanding of autism (Thapar, 2013).

Kanner described first time about autism in 1943; he originally supposes that working intellectual was normal in children with autism, but it shown wrong. A large number of groups of children with autism, those have additional problems in learning, co- occurs with language impairment, motor, and sensory problem. At that time Asperger also identified as a group of children with an autism spectrum disorder. In the present time, children who are diagnosed with autism also develop Asperger syndrome. Those have normal working intellectual and good general structural language skill. This is not clear whether Asperger separates from Kanner's autism or it is projecting autism without extra language or intellectual impairment. While the purpose of education is that children affected by any type of autism, understand to all children equally and they should be benefited the teaching approach.

The Wing identified a triad of impairment, which represent all standardised diagnostic test to the autism spectrum disorder. Triad represents that similarity between all types of impairment which comes under the spectrum. The triad expresses difficulties in three areas of development as indicative of autism, and no one areas of development as indicative of autism and no one area can be taken on its own to be 'autistic'. Triad is completely an impairment which indicates that children are following a separate way of development. Basically major triad areas are: social impairment, communication impairment, flexibility impairment.

When we are thinking about the special education of individuals, then we need to consider all which makes them special need for individual by the impairment of autism spectrum disorder, with reference to the curriculum, teaching approach and the environment (Thaper, 2013).

There are few definitions of Autism given by psychiatrists and organisations working on autism in below.

According to **Cohen, Donnellan and Paul (1987)**, "autism a poorly understood condition, is now considered a pervasive developmental disorder because children who are autistic are

challenged by a range of impairments in the normal development of communication, social and cognitive capacities”

According to **Individual with Disabilities Education Act (IDEA, USA 1994)**, “Autism is developmental disabilities affecting verbal and nonverbal communication and social interaction generally evident before age three that adversely affects a child’s educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped moments, resistance to environmental change or change in daily routines and unusual responses to sensory experiences”.

According to **Advani and Chanda(2003)** “Autism is a brain disorder that typically affects a child’s ability to communicate from relationships with others and respond appropriately to the environment, some children with autism are relatively high functioning with speech and intelligence intact, others are mentally retarded mute or have serious language delays for some makes them seem closed off and shut down, there are others who seem locked in to repetitive behaviours and rigid pattern of thinking”.

The Autism Society of America (2011) defines an autism spectrum disorder as a complex developmental disorder that impacts children and adults in a variety of ways in their ability to be social and communicate with others. The essential features of the autism typically appear prior to 30 month of age and consist disturbance of (i) developmental rates and/or sequences, (ii) responses to sensory stimuli, (iii) speech language and cognitive capacities and (iv) capacities to tolerate to people events and objects.

According to **Rights of Persons with Disability Act (RPWD,2016)**, “Autism Spectrum Disorder” means a neurodevelopment condition typically appearing in the first three years of life that significantly affects a person's ability to communicate, understand relationships and relate to others, and is frequently associated with unusual or stereotypical rituals or behaviours”.

According to **Individuals with Disabilities Education Act (IDEA,2017)**, “(i) Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child’s educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. (ii) Autism does not apply if a child’s

educational performance is adversely affected primarily because the child has an emotional disturbance, as defined in paragraph (c) (4) of this section. (iii) A child who manifests the characteristics of autism after age three could be identified as having autism if the criteria in paragraph (c)(1) (i) of this section are satisfied.”

According to **National Institute of Mental Health(NIMH, 2018)**, “Autism spectrum disorder (ASD) is a developmental disorder that affects communication and behaviour. Although autism can be diagnosed at any age, it is described as a “developmental disorder” because symptoms generally appear in the first two years of life.”

Hence, on the basis of these definitions, autism or Autism Spectrum Disorder (ASD) can be defined as a poorly understood complex neurological condition or brain disorder or Pervasive Developmental Disorder(PDD), having developmental and performance deficiencies in verbal and non-verbal communication, social and cognitive behaviours those appear prior to the age of around 3 years. It adversely affects the child in terms of the educational performance and day to day adjustment with the abnormal behaviours like, (a) engagement in repetitive activities and stereotyped moments due to rigid pattern of thinking, (b) resistance to environmental change or change in daily routine and (c) unusual responses to sensory experiences.

1.3 CAUSES OF AUTISM

Scientists do not know all of the causes of Autism Spectrum Disorders. However, they have learned that there are many causes for multiple types of ASD. There are many factors that make a child more likely to have ASD, including environmental, biological and genetic factors.

- Most of scientists agree that genes are one of the risk factors that can make a person more likely to develop an ASD.
- Parents and sibling Children with ASD have higher risk of having an ASD.
- ASD tend to occur more often in people who have certain other medical problem. About 10% of children with an ASD have an identifiable genetic disorder, such as Fragile X syndrome, tuberous sclerosis, Down syndrome and other chromosomal disorders.
- If some mother has taken harmful drugs i.e. thalidomide during pregnancy have higher risk

of ASD.

- There is some evidence that the critical period for developing ASD occurs before birth. However, infection due to vaccination before and after birth has risk factors on children with ASD. (Boyle,2015).
- In the most cases no single cause like genetic, metabolic, or radiographic markers help in diagnosis or predict the severity of symptoms of children with ASD (Barnhil, et al., 2015).

1.3 SIGNS AND SYMPTOMS

ASD begin before the age of 3 and last throughout a person's life, although symptoms may improve over time. Some children with an ASD show hints of future problems within the first few months of life, but in some case the symptoms might not show up until 24 months or later. Some children with an ASD seem to develop normally until around 18 to 24 months of their age and then they stop gaining new skills, or they lose the skills they once had. A person with an ASD might:

- Not respond to their name by 12 months.
- Not point at objects to show interest (point at an airplane flying over) by 14 months.
- Not play "pretend" games (pretend to "feed" a doll) by 18 months.
- Avoid eye contact and want to be alone.
- Have trouble understanding other people's feelings or talking about their own feelings.
- Have delayed speech and language skills.
- Repeat words or phrases over and over (echolalia).
- Give unrelated answers to questions.
- Get upset by minor changes.
- Have obsessive interests.
- Flap their hands, rock their body, or spin in circles.
- Have unusual reactions to the way things sound, smell, taste, look, or feel.

(Sources: Centre for disease Control and Prevention (CDC,2015)

1.5 TYPES OF AUTISM SPECTRUM DISORDER

1.5.1 Autism

Autism is one type in the five type of Pervasive Developmental Disorder (PDD). It is known as childhood autism or classical autism. It is featured by significant social and communication impairment and severely restricted interests highly repetitive behaviour. These types of children usually avoid eye contact and show a lack of spontaneous self attraction behaviour. They adhere to a fixed routine and get disturb due to change of routine. Such type of children is more than 70% of the total children. They have co-morbid intellectual. Due to difficulties in social interaction and lack of self stimulated activity such type of diagnosed children may develop behaviour difficulties like anger outbursts, self-injurious behaviour and even over-activity.

1.5.2 Asperger Syndrome

Asperger syndrome has shown characteristics of impairment in social interactions and restricted interests. While there is not much intensive delay in language development. Some of the common characteristics are normal or borderlines intellectual functioning. Some of the Asperger children have usually average intelligence or above-average intelligence. Major characteristics are difficulty in showing empathetic behaviour, difficulty in making friends, signs of egocentric behaviour, unusual non-verbal behaviour, shows attachment in a specific subject and show good memory ability to the topic of interest. So people Asperger syndrome may diagnose in the self-dependent activity in daily living and usually described as socially abnormal.

1.5.3 Rett Syndrome

Rett syndromes mostly appear in the girls. Common characteristics of the rett syndrome are impairment in motor functioning. The motor impairment interferes in all body moment, which is included eye contact and speech. Some of the characteristics are stereotypic moment, the problem in gait moment, epileptic seizures, weak social skill, loss of bowel and bladder control, impairment in expressive and receptive language, poor motor skill. The intellectual and social functioning can be observed in the developmental stage. This is often developed in those children, who initially had normal development but impairments start occurring after 1½-2 years.

1.5.4 Childhood Disintegrative Disorder

Childhood Disintegrative Disorder affects children age group of 3 to 4 years but children of two years quite normally. After two years children gradually decreases the social, communication skill, impairment in non-verbal behaviour and intellectual development.

1.5.5 Pervasive Developmental Disorder-Not Otherwise Syndrome

PDD (NOS) is diagnosed when symptoms of ASD do not match with the diagnostic criteria of any of the other four types of PDD or the symptoms do not have the impairment level described in any of the four types of PDD (Paul, 2016).

1.6 CHARACTERISTICS OF AUTISM

There are some of the commonly seen characteristics found in all the children with ASD. No one with ASD will exhibit all of these characteristics, as each case of autism has its own unique gifts and struggles. Generally an individual with autism will have struggles in several characteristics.

1.6.1 Impairments in communication

Difficulties in language and communication are characteristics common to all individuals with autism. The extent of difficulties ranges from non verbal to those who have extensive vocabulary but may have deficits in the social use of language. Although the development of speech may vary, all individual display some degree of difficulty in communication, particularly in the area of pragmatics (The social use of language). (DSM-IV, 1994; Indianresource Centre, 1997).

1.6.2 Impairment in social interaction

One must separate the variable of social interaction problems from emotions. People with autism desire emotional contact with other people but they are stymied by complex social interaction” (Temple Grandin, 1995). There is impairment in the ability to read and understand social situations, and to respond appropriately (Gray& Garand, 1993).

1.6.3 Unusual Behaviour and Interests

Individuals with autism often present with unusual and distinctive behaviours, including stereotypic and repetitive motor mannerisms, such as hand flapping, finger flicking, rocking, spinning, walking on tiptoes, spinning objects and a preoccupation with parts of objects. (Berument, Rutter, Lord, Pickles; 1999)

1.6.4 Attention Difficulties

Individuals with autism may present with a range of difficulties with attention. Specific deficits in attention have major implications for development in other areas such as communication and social development. Individuals with autism often have difficulty attending to relevant cues and /or information in their environment, and may attend to an overly restricted portion. This is referred to as stimulus over selectivity (Rosenblatt, Bloom & Koegel, 1995)

1.6.5 Cognitive Deficits and cognitive learning

Individual with autism present with a psycho educational profile that is different from normally developing individuals. Studies reveal deficits in multiple cognitive functions, yet not all are affected. In addition within one domain, there may be deficits in complex abilities, yet the simpler abilities may be intact. (Bristol, et al., 1996)

1.6.6 Unusual Responses to Sensory stimuli

These unpleasant or painful experiences may contribute to some of the behaviours that are displayed by individuals with autism (Gillingham, 1995). For example, people with severe sensory processing problems may go into total shutdown when they become over stimulated (Gardin, 1995). Tantrums may be related the desire to escape situations which are over-stimulating. Self-stimulating behaviours can occur when stimuli become overwhelming, and are often used to help the individual calm down by generating a self-controlled, repetitive stimulus (Indiana Resource Centre for Autism (IRCA), 1997).

1.6.7 Anxiety

Parents and teacher of autism children identify the anxiety as a characteristics associated with autism- not being able to express oneself, difficulties with processing sensory information, possibly fearing some sources of sensory stimulation, difficulty understanding social expectation.

1.7 PROBLEMS OF CHILDREN WITH AUTISM

According to My Child without limits.org (2017) followings are the frequent problems with the children with autism.

1.7.1 Sensory problems

Most of the children with autism are highly painfully sensitive to certain sounds, textures, tastes, and smells.

1.7.2 Mental retardation

Many children with autism have some mental dysfunction. When tested, some areas of ability may be normal, while others may be especially weak.

1.7.3 Seizures

One in four children with autism will develop seizures, which often start either in early childhood or when they become teenagers. It is caused by abnormal electrical activity in the brain. It can produce a temporary loss of consciousness (blackout), a body convulsion, unusual movements, or staring spells.

1.7.4 Fragile X syndrome

Fragile X syndrome is the most common inherited form of mental retardation. It was because one part of the X chromosome has a defective piece that appears pinched and fragile when viewed under a microscope. Fragile X syndrome affects about two to five percent of people with autism.

1.7.5 Tuberos Sclerosis

Tuberous sclerosis is a rare genetic problem that causes benign (not cancerous) tumours to grow in the brain as well as in other important organs. One to four percent of people with autism also have tuberous sclerosis.

1.8 MANAGEMENT OF AUTISM

In case of Autism, there is no specific treatment available for the people with autism either partial or full cure. Even if, there is no prevention recommended to avoid the child from being autism. However, few researchers, medical practitioners and psychologists claim some sorts of treatments that may help to reduce some of the symptoms to some extent.

Some articles on autism in India recommended play therapy (Batliwalla, 1959; Bassa, 1962; Chacko, 1964) while others mentioned the used of electroconvulsive therapy (Ray & Mathur, 1965; Gamat, 1968), and parental counselling and family therapy (Chacko, 1964; Hoch, 1967; Gamat, 1968). Only drugs have been widely recommended and prescribed for treatment of autism up to 1960s (Ray & Mathur, 1965; Gamat, 1968). Some of the researchers suggest yoga is useful technique for autistic children (Radhakrishna, Nagarathna, and Nagendra, 2010; Kenny, 2002; Ehleringer, 2010; Serwacki & Cook, 2012; N. Jayaram, Varambally & Behere 2013) and music and dance training therapy (Nandi, 2010; Sengupta, 2010).

Over the years, assistive and augmentative modes of communication have evolved greatly as have techniques to bring about sensory integration. Intensively and early implementation of such educational strategies has proved major improvement in terms of skill development among the children with ASD. Few organisations like Karnataka Parents' Association for Mentally Retarded Citizens (KPAMRC) in Bangalore, Ummeed Child Development Centre in Mumbai, Action for Autism in Delhi and Autism Society West Bengal, Kolkata focus on training parents to educate and empower them to be able to provide training to their children in the areas of functional academics, self-help, socialization, language, and to make use of the valuable hours spent in the school. Many children are getting parental training because of there is no proper facilities for the children with autism, and facilities not affordable. In recent year focus has been shifted 'education' to alternative therapy.

Therapy has shown positive effect on children with autism. It include activities such as yoga, keeping dogs as pets, horse riding etc., but no therapy has proven to bring change in core area of children with ASD acupuncture, acupressure, Auditory Integrated Therapy, Ayurveda medicine, homeopathy medicine, behaviour therapy, magneto therapy, Dimethylglycine facilitated communication, etc. (Daley, 1997).

1.9 CURRENT STATUS OF EDUCATION OF CHILDREN WITH DISABILITIES

An estimated of 7.8 million children present under 19 years of age with disabilities in India and it much lower than international estimation as per (**State of the Education Report for India 2019**).

PRESENT STATUS OF AUTISM IN THE GUJARAT

Table 2-PRESENT STATUS OF AUTISM IN THE GROUP OF CWSN IN GUJARAT

Category	No. of Identify			No. of Enrolled in School		
	Boys	Girls	Total	Boys	Girls	Total
Autism Spectrum Disorder	622	463	1085	359	289	648

Table 3- CHILDREN WITH SPECIAL EDUCATIONAL NEEDS IN GUJRAT

	All school			Government school		
	Boys	Girls	Total	Boys	Girls	Total
Gujarat	65012	45160	110172	51009	36612	87621

Table 4- CHILDREN WITH SPECIAL EDUCATIONAL NEEDS IN VADODARA DISTRICT

Districts	All school	Government school
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	Boys	Girls	Total	Boys	Girls	Total
Vadodara	3150	2187	5337	2238	1621	3859

(SamagraShiksha, Annual Report, 2018-19)

1.10 PROVISIONS FOR AUTISM

Government of India has attempted to align the **SarvaShikshaAbhiyan (SSA)** norms with the provisions of RTE Act, 2009. SSA aims to adopt a ‘zero rejection policy’ so that no child is left out of the education system. SSA’s also emphasise on providing integrated and inclusive education to all children with special needs in common schools. It aims to support a wide range of approaches, options and strategies for the education of children with special needs. According to the SSA, parents of children with disabilities should receive counselling and training on how to develop their children and teach them basic survival skills. SSA encourages research in all areas of education for children with special needs.

Government of India included the children with autism as well as other disabilities in the inclusive education provision of National Education Policy 2020. NEP2020 has given provision for children with special educational needs ensuring the inclusion and equal participation of children with disabilities in ECCE schooling system will also be given the highest priority. Children with disabilities will be enabled to fully participate in the regular schooling process from the Foundational Stage to higher education. The Rights of Persons with Disabilities (RPWD) Act 2016 defines inclusive education as a ‘system of education wherein students with and without disabilities learn together and the system of teaching- learning is suitably adapted to meet the learning needs of different types of students with disabilities. Resource centres in conjunction with special educators will support the rehabilitation and educational needs of learners with severe or multiple disabilities and will assist parents/guardians in achieving high-quality home schooling and skilling for such students. Home-based education will continue to be a choice available for children with severe and profound disabilities who are unable to go to schools (NEP, 2020). Gujarat government

also made education program according to NEP 2020 to the children with special educational needs.

An Act to amend the National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act, 1999 and updated in 2018 provides scholarship for Persons with Autism, Cerebral Palsy, and Mental Retardation & Multiple Disabilities with objectives-To encourage people with Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities for pursuing post schooling any vocational training /professional courses for enhancement of their skills. The trust also sponsors for disability Health Insurance Scheme as well as other schemes such as-Disha, Vikas, Samarth, Gharunda, Sahyogi, Gyanprabha, Prerana, Sambhav, BadhateKadam.

In May 2014, the Sixty-seventh World Health Assembly adopted a resolution entitled "*Comprehensive and coordinated efforts for the management of ASD,*" which was supported by more than 60 countries to recognize the need to strengthen countries' abilities to promote optimal health and well-being of all persons with ASD. The efforts were focusing on:

- Contributing to enhancing commitment of governments and international advocacy on autism.
- Providing guidance on creating policies and action plans that address ASD within the broader framework of mental health and disabilities.
- Contributing to the development of evidence on effective and scalable strategies for the assessment and treatment of ASD and other developmental disorders.

NEP (2020) also endorses the provisions for ASD. It said "this Policy is in complete consonance with the provisions of the RPWD Act 2016 and endorses all its recommendations with regard to school education. While preparing the National Curriculum Framework, NCERT will ensure that consultations are held with expert bodies such as National Institutes of Department of Empowerment Person with Disabilities (DEPWD)."

1.11 LEGISLATION AND POLICIES IN INDIA FOR ASD

Autism or ASD was not considered as a special form of disability since 1999 and it was considered as a mentally retardation. With the continuous delegation of parents of autistic children from across India led by AFA through several advocacy drives and lobbying with the government and policy makers autism was included in the ‘National Trust for Autism, Cerebral Palsy, Mental Retardation and Multiple Disabilities Act 1999’, the first ever legislation to be passed in India that recognized autism as a distinct condition of its own.

- In 2003, the AFA training course was converted to a one year Diploma in Special Education DSE-ASD under the Rehabilitation Council of India.
- In 2010, AFA mobilized organisations providing services to individuals with autism across the nation, collated their inputs, and urged to included the specific needs of the people with ASD in the new draft of the legislation i.e. Persons with Disability (PWD) Act.1995.
- Autism or (ASD) was included as one of the intellectual disability in the Right of Person with Disability (RPWD) Act 2016 and all the provisions from the central and state government swill be provided to the persons with ASD.
- In 2017, provisions were created for CISF to train its security personnel at 58 airports in providing special care to passengers suffering from Autism. (Times of India, 30.08.2017).

1.12 PARENTS EXPERIENCES OF CHILDREN WITH AUTISM

The abnormal behaviour is a quite common behaviour in maladaptive children with an autism spectrum disorder. Every child diagnosed with autism has one challenging behaviour and usually, this behaviour may regularly represent with different level intensity causing hardship to the caregivers or support network and hindering with the individual’s learning (Mudford et al., 2008). Challenging behaviour may endanger the physical safety of an individuals and to those people which is around them therefore limited social involvement (Emerson et al., 2005). Due to abnormal behaviour, self, family and community may affect adversely.

Apart from behaviour such as self-injury, pica, and physical aggression which can create threat to the physical safety of the individual and other even apparently dangerous behaviour like stereotypy involving repetitive body movements or of objects can result in severe outcomes for the individual. Stereotypy involves and takes away the high level of attention of individuals and disturbing to the individual during focusing on the learning process (Jagan, 2018). That behaviour may also consequent in abuse and neglect among members society (Mudford et al., 2008). While this is not a pervasive list of all possible impact of challenging behaviours, it does raise so many reasons for concern (Jagan, 2018).

1.13 BEHAVIOURAL CHALLENGES IN CHILDREN WITH AUTISM

The children with autism spectrum disorder having difficulty in three areas (triad) such as impairment in social interaction and understanding, impairment in verbal and nonverbal communication, inflexibility in thinking patterns. It is not so important in diagnosis; children with autism convey so many a typical characteristics of behaviour which may cause uncomfortable to both child and family (Hartley et al., 2008). Abnormal behaviours, unusual eating habits, irregular sleep habits, tantrum and aggression to self and other people also. These behaviours are the most common in abnormal behaviour (Dominick et al., 2007). Emotional problems including none organise eating behaviour and low image. These are usually connected with a chronic medical disorder like as atopic dermatitis, obesity, diabetes, and asthma, lead to poor quality of (Ogundele, 2018). Above mention behaviour may a barrier to the social and academic development of the children with autism spectrum disorder.

1.14 EDUCATION FOR AUTISM

We should pay attention on education for autistic children is equally important with normal children. In researches it is found that individualized strategies are best for the autistic children although it is clear from the characteristics that there is wide range of basic problems of these children. Most professionals agree that school-age children with autism respond well to highly structured, specialized education programs designed to meet individual needs. Based on the

major characteristics associated with autism, it is important to consider Social skill development, Communication, Behaviour and Sensory integration.

Integrated Educational programme Programs sometimes include several treatment components coordinated to assist a person with autism. For example, one child's plan may consist of speech therapy, social skill development and medication, all within a structured behaviour program. Another student may be working on social skill development, sensory integration and dietary changes. No one program or diet is perfect for every person with autism. It is important to try several approaches and find which one work best. As the Autism Society's Options Policy states: "Each family and individual with autism should have the right to learn about and then select the options that they feel are most appropriate for the individual with autism." Hence it can be said that Need based individualised strategy may be quite useful for the education of the children with ASD.

Keeping this in mind, some of the educational needs and planning can be made or derived to solve the problems faced by them which will eventually help them in survival in later period of life. In USA, American society for autism is working in this area through a programme called Ability path. Various suggestions have been given by them which are listed below.

1. Educational need of such children should addresses a wide range of skill development, including academics, communication and language, social skills, self-help skills, behavioural issues, self-advocacy and leisure-related skills. It is important to consult with professionals trained specifically in autism to help a child benefit from his/her school program.
2. The person with autism must be involved in planning his/her future by Person-centred planning and self-advocacy skills.
3. Parents and professionals need to work together. Open communication between school staff and parents can lead to better goal-setting and evaluation of a student's progress.
4. Community goalslike purchasing meals and grocery shopping andleisure goals, such as taking time to engage in a hobby each day, can also be practiced at school.
5. Academic goals need to be tailored according to the student's intellectual ability and functioning level.

6. The curriculum should have inbuilt flexibility to try different methods of teaching, opportunities for generalization and trained toward independent functioning.

1.15 METHOD FOR BEHAVIOUR MODIFICATION FOR CHILDREN WITH ASD

There are few methods used for the education of the children with ASD. These are the methods developed mostly in the developed countries where most of the activities are sponsored by the public funded machineries.

1.15.1 Applied Behaviour Analysis (ABA)

ABA is a method of teaching children with ASD based on the premise that appropriate behaviour including speech, academics and life skills can be taught using scientific principles mainly using stimulus-response theory. The most well-known form of ABA is discrete trial training (DTT). Skills are broken down into the smallest tasks and taught individually.

1.15.2 Relationship Development Intervention (RDI)

RDI is a parent-based clinical treatment that tries to fix the social problems at the heart of autism, such as friendship skills, empathy and the desire to share personal experiences with others. RDI tries to help children interact positively with other people, even without language. When children learn the value and joy of personal relationships they will find it easier to learn language and social skills. RDI is based on the idea that children with autism missed some or many of the typical social development milestones as infants and toddlers. They can be given a 'second chance' to learn these skills through play, 'guided participation' and other activities.

1.15.3 Sensory Integration Therapy

Children learn through senses. Children with ASD, however, often have unusual responses to the senses of hearing, sight, touch, smell and/or movement. These responses can interfere with learning and affect behaviour. Children with autism spectrum disorders may over-react or under-

react to things they hear, see, taste and touch. Through sensory integration therapy, they are acquainted with different senses in a gradually manner enhancing their learning.

1.15.4 Treatment and Education of Autistic and Related Communication-Handicapped Children (TEACCH)

A TEACCH classroom is structured, with separate, defined areas for each task, such as individual work, group activities, and play. It relies heavily on visual learning, strength for many children with autism and PDD. The children use schedules made up of pictures and/or words to order their day and to help them move smoothly between activities. TEACCH respects “the culture of autism” and embraces a philosophy that people with autism have “characteristics that are different, but not necessarily inferior, to the rest of us.” It says, “The person is the priority, rather than any philosophical notion like inclusion, discrete trial training, facilitated communication, etc.”

Centres dealing with the children with ASD in India use a variety of methods for their education mainly relying on combination of Sensory therapy, Language therapy, Physical therapy, Yoga therapy, and Communities based rehabilitation like, Dance, Music and Art.

1.16 EDUCATIONAL NEED OF CHILDREN WITH ASD

The educational need of the children with ASD includes all the skill and activities which would help them in the survival by modifying their behaviour with the help of training, teaching and behaviour modelling. These educational need may be related to the survival needs like, feeding practice including eating and drinking, toilet training, brushing and cleaning, wearing dress, walking on the road, taking own safety, purchasing needed material, taking bath, cleanliness skills, doing simplest works in the house, understand difference between eatable and non eatable things, differentiating drinking liquid from other liquids which could be harmful to health; social needs like, way of greeting people, using manners while being with the group in the family and outside the family; communication needs including both verbal and non-verbal communication, language and mathematical needs like, learning of language and numbers etc. Though these are

the need seems for every child, it is very difficult to fulfil these needs for a child with ASD. Even for many children and parents with severe ASD, it is like dream to fulfil few of these needs. These needs may even vary from children to children according to the intensity and severity of the ASD. Fulfilling these needs may enable these students to work independently all the routine task so that they can work without helpers as well. These are the needs which can be fulfilled with the help of education through teaching, training, practicing etc.

1.17 CHILDREN WITH AUTISM HAVE MANY STRENGTHS AND ABILITIES

Visual thinking- this is a major strength for children with ASD. The students have the ability to grab and remember the whole picture along with written things easily. Children with autism are visual learner, so it is good for using visual intervention programs work well in teaching and supporting children for remembering lasts longer period. Spoken and auditory information are more solid for them to remember. This process helps children with ASD to process information and motivates them to respond appropriately.

- Learning by heart/ by rote
- Remembering information for long periods of time once learnt by rote
- Learning in detail and in ‘chunks’
- Concentrating on narrow topics of interest
- Paying attention to small details and
- Keeping up attention, when motivated and
- Learning language through the method of echolalia i.e. by echoing or mimicking words or phrases (Paul, 2016)

1.18 CENTRES WORKING FOR AUTISTIC CHILDREN IN VADODARA

In Vadodara city of Gujarat State, there are few centres for Special education which are run by non-government organisations, working for the children with mental disabilities. Some of these centres also admit and take care of the education of the children with ASD. Some of these schools/centres are Disha Special School and Autism centre, Kalarav Special School, Arpan-School for Mental Retarded and Autism, Spandan, Ashtitva, Reach- Centre for Autism, Asha

School, Karishma School for Mental Retarded, Balbhavan, Sai Residence School, Vermi. These are the centres doing some useful for children with ASD. Most of the centres follow the guidelines of Rehabilitation Council of India (RCI) and have different types of curriculum for autism. Most of the centres treating autism follow the tested curriculums from most of the western developed countries. The focus of some of the curriculum is given as follow.

1.19 CURRICULUM FOR THE CHILDREN WITH ASD

The curriculum for the children with ASD is divided into Early Intervention, Transition- 1 (T1), Transition- 2 (T2), Transition- 3 (T3), Pre-Vocational and vocational according to the age and the level of the students. Details about some of the curriculum of some of the stages are given as follow.

1)Early Intervention

Activity for daily living like toilet training, Bathing, Brushing teeth, taking drinking water, shoe lasing, buttoning and unbuttoning, dressing. Using communication diary to convey intention, identification of things and animals, birds, van, utensil, body part, writing, arithmetic, non-verbal activity, puzzle fitting, colour identification. Fine motor activity, Gross motor activity, training through iPad/ laptop Action song, social story based training. Sensory therapy, speech therapy, physio-therapy, playing some game meaningfully.

2) Curriculum for T-1 (Transaction 1)

Gross Motor Activities- These activities includes training on lifting object from the floor, kicking and rolling the ball, jumping /hopping, Tossing ball in the basket.

Fine Motor Activities- These activities include training on Peg board,manipulating clay, can pick small objects like pins, thread etc.

Academic skills- These activities include training on Picture description, Body part identification, recognizes self-script, photograph, roll call etc.

Language & Communication Skills- These activities includes training on Sorting words by category, attempts to his /her intention, select and bring familiar object, uses toilet, break, water, wait etc.

Sensory Intervention- These activities includes training on Spot jumping, Joint compression, Smells-Pungent, pleasant Bean bags etc.

3) Curriculum for T-2 (Transaction 2)

Gross Motor Activity-These activities includes training on Raises head & shoulder from face down position, shifting object one hand to another, Participates in bat /ball game, kicking & rolling the ball, filling containers with difference liquid/ dry items (different measure), stands on one foot with no support and eye closed, Rides a bicycle.

Fine motor activities- These activities includes training on Unbuttoning /Buttoning, Folding Paper, Turns one Page at a time, Uses scissors.

Academic skill- These activities includes training on Money concept / Time / Measurement, Finding hidden objects, Jumble sentences, object by association etc.

Language & Communication – These activities includes training on Sorting words by category, using gesture to indicate ‘no’, Uses vocal expression of pleasure when played, uses communication chart, book, independently etc.

Sensory Intervention- These activities includes training on spot jumping, joint compression, concept of depth, down-up the slope, clay/sand etc.

Social skill- These activities includes training on Adult concerns, waits for turn, interaction using gesture, asks for help, facilitating parallel play.

4) Curriculum for T-3 (Transaction 3)

Envelope making, Jewellery Making, Rakhee making, Pot painting, paper filling, Paper cutting, cutting picture, picture of piece joint on paper with fevicol, identification of inside game and outside game, identifying words then making small sentences structure i.e. this is a pen. Reading book of General Child (LKG), writing small letter, counting numbers and writing also its. Addition and subtraction number with iPad, paper pencil and with the help of calculator. Picture

drawing and painting, typing on iPad, game playing in iPad. Some identifying behaviour i.e. spitting, pee and poop in pain, developing seating tolerance also. Likewise, they have the curriculum for early interventions, transaction-3, pre-vocational and vocational. But, it was perceived that most of these curriculums for different stages are not designed as per the need of the children with ASD.

1.20 TEACHING LEARNING METHODS FOR CHILDREN WITH ASD

Learning is process of using sensory organ, motor skill, social skill and emotional skill as an input to rebuilt to desired output into behaviour successfully. Learning and brain both continue develop from conception to death of an individual. As we know that learning process is spiral but it is not applicable in case of special education rather it a part of special education for special children (Bali, 2012).

Teaching skills and reducing inappropriate behaviour for people with autism involved a variety of behavioural techniques based upon operant and respondent learning (Cooper et al., 2006). Some of these behavioural interventions for teaching people with autism included: (a) making environmental changes, such as providing structure and reducing distraction in teaching situations; (b) Using specific prompts and prompting strategies (e.g., modelling, gestural, mechanical, etc.); (c) requiring repeated practice of behaviours (e.g., DTI); (d) employing reinforcement for correct responses; (e) decreasing undesirable behaviour of the child through reinforcement, manipulation and punishment procedures; (f) implementing naturalistic teaching (e.g., incidental learning, delayed cued prompting, etc.); (g) using task analysis, chaining, and shaping to teach new skills; (h) planning for generalization and maintenance; and (i) exposing children to typical learning environments based on skills (Naniwadewkar, 2015).

1.21 RATIONAL OF THE STUDY

Autism or ASD refers to a range of conditions characterised by challenges with social skills, speech and nonverbal communication with repetitive behaviours (IDEA, 2000). It is one of the worst types of mental disorder for which no medication and prevention have been approved because the exact causes of disease are unknown and less research work in this area. The only

thing, one can do is the use of intervention programme through education to bring some sort of changes in their behaviour and to make them much capable so that they can at least fulfil their daily needs.

ASD is not like other mental disorders. In fact, the need, strength and challenges of ASD are quite different from other mental disorders. Children with ASD may find difficult to adjust in deferent settings. So controlling these problems become the priority for each and every person concerned with these children. Generally it has been found that all children with autism have behaviour problems (Inclean, 2013). These problem arise because of impairment in communication and social interaction, and restricted, repetitive and stereotypic patterns of behaviour as a result of which they have difficulty in expressing themselves so in order to express them and to reach out to other people they develop certain kind of behaviour which cause hindrance in their daily living activities (Naniwadekar, 2015).

These challenges make parents suffer a lot because of having less knowledge to tackle the problem facing by them as well as by their autistic children. Through study it was found that parenting stress was higher among parents of children with autism in comparison to other parents (Gaitonde, 2010; Patil, 2012). Considering all these things in mind, some efforts need to be made for the children with ASD not only for their basic needs but also to take care of their educational needs. Various education committees from time to time have suggested the need of educating children with special needs which is implemented through inclusive education. NCF, 2005 & 2009 also have suggested curriculum for the special children. But in these all efforts, no separate attention is given to the children with ASD and their needs. Johansson (2015) in his study also found that the prevailing poor condition and the concern of the schooling, education, coordination between the policy makers and the practitioners had made ASD untreatable in terms of educational and behavioural aspects.

In this way it can be conclude that the educational needs of these children with ASD need to be focused differently focussing on each individual's needs and some efforts to be made to develop education needs especially for these children. Although various NGOs and institutions are working all over the country for the children with ASD, there is no efforts done from the government side. So it can be said that it is one of the most neglected area of consideration. If we see other developed countries, children with ASD are taken care very efficiently by their

parents through the help of government machinery. Even the government takes the responsibility of these children and assures the proper training for them not only in basic day to day needs but also in educational needs by giving them training for basic calculation like addition, subtraction, letter recognition etc. Even in India educational centres working especially for children with ASD provide education to the children with ASD in the subjects like mathematics, reading, writing, drawing, dancing, music etc. But the question arises, whether they need all these education provided by these centres? Whether, this education is as per their mental level? Will this education help them for their future survival and can make them independent? There are endless questions related to the existing system of education of the children with ASD. Sometimes all these efforts (education practices) seem to be meaningless for these children as it does not bring much change in the behaviour of these children as it is reported by Sasikumar (2016) that mental task performance was poor for the children with ASD in comparison to the children with other mental disorder. It is felt that there is a mismatch in the educational need and the educational practice of the children with ASD. Mode of Education for these children should be based on practical and skills because many children with autism have special challenges like impairment in communication, social interaction, unusual behaviours and interest, attention difficulty, cognitive deficits, anxiety so their teaching should be based on the skills (Bondy, 1994).

Rehabilitation Council of India (2017) emphasizes on the Universal Design for Learning (UDL) which is an educational framework based on research in the learning sciences, including cognitive neuroscience that guides the development of flexible learning environments that can accommodate individual learning differences. UDL will be applicable for all type of learners including all types of disabilities. It also states the learning of children with ASD using UDL through multi-sensory learning approaches considering the strength and interest of the learners. It seems like an excellent approach for the learning of students with and without any types of disability. It talks about imparting the needed education of the children. But the question arises, what are the needed education for the children with ASD? Whether the needed education for them would be in the areas of their impairments like, lack of social skills, repetitive behaviours and lack of communication or they need education in the survival skills like, training for their day to day behaviours, for their survival without direct help from others. It is one of the very big questions for the children with ASD. Apart from the discussed impairments, they have a

spectrum of other impairments differing from child to child for which autism is also called as ASD. Hence, it is the time to identify their educational needs on the basis of which need based individualised strategy can be designed using UDL which may be effective for the children with ASD.

The researcher want to conduct the study in Vadodara city as here various centres are there who are working for the ASD children like, Disha Autism centre, Arpan, Reach-Centre for autism, Sai centre, Aarambh. Continuously making efforts to make their life smooth and better through education and training. But it has been observed that all these centres are to some extent working only with the basic trainings and education following some foreign models. Researcher felt that the children with ASD need education more on their survival and basic needs to be independent and to survive in the future which can be possible through education and behaviour modification techniques. So in the present study an attempt has been taken to study the actual educational need of the children with ASD perceived by their parents, teachers, and experts, medical practitioners, helping hands and observed from the children with ASD.

Very few studies were found on autism in education in India. Other studies were conducted in other allied disciplines related to interventions. Most of the intervention studies were based on the needs identified for the children with ASD in developed countries. No studies were reported in India related to the identification of educational needs of the children with ASD in India perceived by the immediate helping hand to them. Hence, there is a need to conduct more studies in the area of the education of the children with ASD on the basis of which researches on the intervention programmes could be conducted. Hence, the present study is an attempt in this direction to identify educational needs of the children with ASD.

1.22 STATEMENT OF THE PROBLEM

A Study on the Educational Needs of Children with Autism Spectrum Disorder

1.23 OBJECTIVE OF THE STUDY

The present study is conducted to achieve the following objectives.

1. To study the education provided to the children with ASD in terms of types of education, purpose, and approach in the centres providing education to the children with ASD in Vadodara.
2. To study the educational needs of the children with ASD perceived by parents, helpers, Special Educators, doctors and experts.
3. To study the educational needs of the autistic children conveyed by themselves.

1.24 EXPLANATION OF THE TERM

ASD: Autism Spectrum Disorder is a spectrum of brain disorders having developmental and performance deficiencies in verbal and non-verbal communication, social and cognitive behaviours those appear prior to the age of around 3 years.

EDUCATIONAL NEEDS: Needs those can be fulfilled with the help of education through the modification of behaviour.

1.25 DELIMITATION OF THE STUDY

The present study is delimited to the children diagnosed as ASD within the age group of 3-18 years of age enrolled in different centers in Vadodara.