Teaching the Autistic Child in Mainstream Primary Schools
ABSTRACT

The aim of the following study was to address the teaching limitations and hurdles that Autistic children in mainstream Primary Schools faces. In addition, the secondary objectives of the following study was to further address and understand variable patterns of Autism and Asperger’s in children, to discuss the various difficulties experienced by children suffering from Autism, to investigate learning issues and barriers faced by these children in mainstream settings and to elaborate the various support programs to address the obsessive, social, language and behavioural needs of Autistic children. In order to obtain the desired information as evidence material that researcher inundated the use of secondary research, where the research studies authored by previous scholars and academicians was assessed and comprehended. In order to analyse the gathered information, the researcher triangulated secondary information with the aims and objectives of the study. The results of the study revealed that around 1% of the overall students are affected by Autism Spectrum Disorder, however; the prevalence rates generally differ across multiple studies and due to various factors. Moreover, the ratio of females to males in this case is approximately 1:3. During the last few decades the issue of teaching barriers has been identified and the UK government has introduced a number of policy changes for the purpose of improving state school education. These polices were studied in contention with the difficulty faced by autistic children in acquiring mainstream primary education. Through the compilation and comprehension of the information, certain key strategies and recommendations have also been put forth by the researcher. The study presented a discussion regarding the role of teachers in educating pupils that suffer from Autistic Spectrum Disorder. The study also highlighted the role of assistants who work behind such teachers in Special Education Needs (SEN) in mainstream primary schools. Certain strategies were also discussed that could be implemented by support programs to provide a bright future to such autistic children. The process of implementing
intervention has also been discussed with respect to autistic children. The study has also contributed in making recommendations for practitioners which would make them capable of making high quality intervention programs. Certain educational strategies *mainstream primary education to autistic children* has also been discussed in the study which includes; Lovaas model, DIR model, Verbal behaviour, and Communication through Picture Exchange. Furthermore, the study also shed some light on *support programs for autism in UK* which includes National Autistic Society, The Autism Alliance, and Helping Hands. The study provided recommendation for researchers of the future regarding the use of a more qualitative approach and conduct interviews from mainstream teachers with the objective of gaining insight about the barriers faced by the teachers of children facing Autism. The study also described certain factors that cause barriers for the teachers as well as for the pupils. The study provided certain future implications for policy makers and administrators which cater this issue. The major limitation that was faced by the researcher was the availability of the literature. The papers that were studied were only those that were available online for free or did not require and fess to get access of documents.
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CHAPTER 1: INTRODUCTION

1.1 What is Autism?

1.1.1 Autism

Progress has been made recently in the identification of Autism in children at the early stages. This progress in the identification of Autism at early stages has brought a new set of challenges to clinical practices, including the reliability and accuracy of the early stage diagnosis of Autism in children. Autism in children is a prototype disorder on the spectrum of Autistic disorders. The number of children suffering from Autism is increasing in terms of Autistic Spectrum Disorder (ASD) or Autistic Spectrum Condition (ASC). Autism and Autistic Syndrome are general terms defined for a group of disorders in the development of the brain. These brain disorders are categorised by difficulties in social interaction, verbal and non-verbal communication and repetitive behaviours.

It is also defined as the disability that affects a person’s way of communication whereby he/she finds difficulty in relating to people around them. It is a type of development disorder that affects boys more as compared to girls in the ratio of 4:1. It is also explained as a spectrum disorder because of an extensive range of children and young people who have severe difficulties in learning and communication to other children and young people who have the cognitive ability and good skills of verbal communication.

Parents of an Autistic child usually notice the symptoms in the first year of a child’s life. The diagnostic symptoms of an Autistic child could become deceptive in early childhood, usually before age three. The signs of Autism develop gradually as some children reach the benchmark of development at a normal pace and then they start to regress.

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an inherited syndrome and researchers are of the opinion that both environmental factors as well as genetic inheritance are the causes of Autism. Some researchers associate Autism with birth defects whereas others proposed causes concerning environmental factors. Autism directly affects the information processing area in the brain by alteration of nerve cells by connecting and organising; this mechanism is not easy to understand.\textsuperscript{4}

Globally, Autism approximately affected 21.7 million people in the year 2013. As of 2010, the number of people affected by Autism is estimated at about 2-3 people per 1000 people worldwide. It occurs in boys more than girls, often four to five times more. Around 1.5\% of the total population of children in the US (1 in 68) are diagnosed with Autistic Spectrum Disorder in the year 2014 with a 30\% increase from 68 to 88 in 2012. The rate of Autism among adults from 18 years and over in the UK is estimated at 1.1\%. There has been a dramatic increase in the number of people diagnosed with Autism since the 1980s.\textsuperscript{5}

1.1.2 History of Autism

The symptoms of Autism and its treatment had been described before Autism was named as such. It was a story created by Martin Luther, which was later compiled by his note-taker, of a 12-year-old boy who had been suffering from severe Autism. The new Latin word, Autism, was originated by a Swiss psychiatrist Eugen Bleuler in the year 1910. It was derived from a Greek word autos which was used in the context of self-admiration, referring to an Autistic extraction of the patient to his whims against which the influence from outside becomes intolerant disturbance.\textsuperscript{6}

\textsuperscript{5} Fredrik Svenaeus, 'Diagnosing Mental Disorders and Saving The Normal' (2013) 17 Medicine, Health Care and Philosophy.
There are about 700,000 people with Autism in the UK which includes 2.8 million families who face Autism on the daily basis. The person of the UK seeks advices from the counsellors to cure the Autism syndrome in their families and children. They have applied many strategies and approaches which includes therapies, interventions and personalised treatment for the children with Autism. The type of Autism in the children varies according to their needs and demands and it is difficult for the person to choose right treatment for the right type of Autism. There was a strategy implemented by the Autism organizations in the UK which they named as Think Autism 2014, in which the Government of the UK established some programmes for the action and development of the people with Austin in the UK. This strategy and program was focused towards improving the live of the children with Autism in which the Government heavily funded the need for addressing Autism in the UK. The strategy was build on the premise that there is a need of fulfilling the needs of the Autistic children for their development. It includes three proposals for the Autism strategy (2014). The three proposal were aimed to create an impact on the lives of the Autistic children and the services provided to them by the Government of the UK over the next five years. The three proposals includes:

- Autism awareness campaigns in the UK- The think strategy of the Autism aims to create awareness of the problem and establish relevant projects which aids to develop in local communities of the UK and will be given awards to the local organization for carrying out work in the favor of Autism.
- Funding’s for Autism- the Government of the UK should provide adequate funding’s to the Autism related projects through which the innovation in the Autism is promoted in the services and schools and particular for the Autism projects in the support of children with Autism and implement preventive measures to eliminate Autism from the community.
• Collection of Data- Furthermore, the strategy aims to provide advices to the families of the children with Autism and further provide information services which includes social care staff which will record the condition of the children with Autism and find relevant information to treat Autism in the children. Furthermore, it aims to provide a strong commitment to the society for making it easy for the people with Autism to provide information through the local authorities and agencies of the UK who are performing for the cause of Autism in the UK.

The Government of the UK has allocated a total amount of 4.5 million pounds for the introduction of innovation element in the Autism and design programmes related to the communities of Autism. Furthermore, they have invested amount in training the teachers of the The IDEA (Disability Act) is responsible for ensuring rights to teach an Autistic child with an appropriate education. However, there is a variability factor in their implementation and specification of the services. The intervention of ASD in children is expensive and mostly schools, and another organisation requires financial aid from the government of the UK and their federal programs to provide relevant and appropriate services to the children with Autism. There have been many court cases as a result of tension between school organisation and families of Autistic children. In order to manage these issues, Government of the UK has adopted the strategy of Think Autism to help the mainstream schools and the parents of the Autistic Children to combat the Autism and reduce the number of children suffering from Autism in the UK. Furthermore, they have developed service centres to give training to the teachers and fight Autism.

1.1.3 Causes of Autism
In the past, around 33% of youngsters with an Autistic diagnostic had endured either pre-birth injury, for instance maternal rubella, or a post-natal injury, for example encephalitis or meningitis. While the relative incidence of these conditions has declined with the medical advancements in the previous 20 years, youngsters are still surrounded by this condition and are counselled by the experts. Among this population, the proportion of boys to girls does not demonstrate the characteristic 4:1 ratio, respectively.\(^7\)

1.1.3.1 Genetic Cause

In the majority of young people and children with Autism, there is a strong link of genetics which is represented by family accretion studies and twin studies. There have been clues from human genome projects about the gene sequences on which chromosomes are associated with Autism. It is also described by Baron-Cohen that the testosterone levels in the uterus is among the causes that might affect the development of social interaction and communication and aggressive behaviour.

If people have a high level of testosterone, then it is associated with more limited social communication and creates a barrier to learning language skills, especially in early childhood. There is a complex interaction between hormones and genes of a person which may provide an understanding of the physiology of Autism.\(^9\) While studying Autism, the identification of mirror neurons in the brain is of great interest to the neurologist.

Autism can also occur in identical twins, where much higher rates are observed among same-sex twins. There is an identical gene in identical twins whereas non-identical same-sex twins share only a few genes. This finding explains that there is a strong contribution of geneticsto Autism.

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\(^9\) M. J. Weiss, 'Hardiness And Social Support As Predictors Of Stress In Mothers Of Typical Children, Children With Autism, And Children With Mental Retardation' (2002) 6 Autism.
As scientists go beyond in the study of Autism, they find that Autism is more likely to occur among the siblings of children with Autism. The rates of Autism were reported to be 1 in 10 or 1 in 50. This does not posit a higher rate unless a person realises that the rate of Autism can lie between 1 in 800 and 1 in 1000.\textsuperscript{10} It was also suggested that brothers and sisters of children with Autism do not actually suffer from Autism, but on the beginning stages they face some difficulties concerning in learning and learning problems. It was also explained that Autism can lead to an increased anxiety and fluctuation in the mood of a child in a family facing more social difficulties.\textsuperscript{11} Researchers have highlighted the importance of genetics in Autism, as it is not straightforward or simple because it is observed that multiple genes are involved in Autism. The estimation of genes in Autism may range from 4 to 20 or even more. It was also explained that genetics cannot be the only cause of Autism as it might come in some other ways.\textsuperscript{12}

For instance, there may be a particular issue right now of origination when some genetic material may be lost or a genetic change (mutation) may happen. There can be other reasons as well, for example, premature deliveries of the baby might coordinate with a genetic tendency to cause Autism. It was further explained that some more genetic causes of Autism may be identified in the following years. Autism is now considered an epidemic concerning the genetics.

1.1.3.2 Co-morbidities

Clinical features are also associated with Autism, which displays 35% co-morbidity with a psychiatric disorder or other medical diagnoses, including anxiety, depression, bipolar

\textsuperscript{10} Editorial Board’ (2015) 156 Endocrinology.
\textsuperscript{11} Gene Expression; Posttranscriptional Modifications (2C-01 - 2C-09)' (2004) 79 Genes Genet. Syst.
diseases, schizophrenia, Tourette’s syndrome, Pica, Down’s syndrome and hypertension. The genetic disorders concerned with Autism includes Fragile X syndrome or tuberous sclerosis, metabolic disorders such as phenylketonuria and numerous other conditions that affect the condition of brain development and functioning of the brain. Parents of children facing Autism with a co-existing organic condition or neurological symptoms are not very distinct from Autistic parents without such features. Some data also suggest the link between Type 1 diabetes and Autism. Autoimmunity is also studied in the Autistic subjects with respect to parents and their close relatives.

1.1.3.3 Age of Parents

Parents aged 30 to 49 may be a cause of Autism in their children. The effect of aging on human genetic traits, focusing those that have their effects in early embryonic life, has been well documented. The human genetic traits are also known as causing the change in the rates of chromosome abnormalities at different maternal ages. There are numerous arguments with respect to increasing the age of parent risk to the Autistic child. A study was conducted of single children (not twins or multiple births) born in California and found that advanced maternal and paternal ages are independently associated with the Autistic Syndrome Disorder risks. These data contradict with the finding of an author who investigated that only increasing the age of the paternal side was responsible for the increased risk of giving birth to an Autistic child. The research showed no involvement of the maternal age in Autism many more than the paternal age. It was also confirmed by a recent study that singleton children born in California are increasingly facing Autism.

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1.1.3.4 Symptoms of Autism

The symptom of Autism and its severity varies considerably for each person on the spectrum of Autism. The core symptoms of Autism can be viewed in different functional areas, including communication, difficulty in social interaction, and repetitive behaviours. Symptoms of Autism vary from one child to another child and may have different criteria for diagnosis among children.\(^\text{15}\) The characteristics of Autism last throughout a person’s life, but can be reduced or changed considerably over time through different medications and interventions. The life of an Autistic person is different and complex as compared to other normal people in his/her life. A person who is facing a severe condition of Autism might be unable to speak or care for himself because of his disability. Early diagnosis of Autism and intensive intervention can make a huge difference in a child’s development and can result in better outcomes. The symptoms that follow Autism are drawn from the National Institute of Mental Health Website. In addition, children that are diagnosed with autism also depict ADHD(attention deficit hyperactivity disorder) in the preliminary stages of their diagnoses for autism. Moreover, early diagnoses of autism are also identified by patients experiencing epileptic fits, sporadically. In addition to the following assessment, research is indicative of the fact that young children who are diagnosed with autism experience regular fits of epilepsy, and for parents who are unaware that their offspring might be diagnosed with autism spectrum disorder, the emergence of epileptic fits can be an assertive proof of autism. Moreover, another key symptom of autism is obsessive compulsive disorder and erratic behaviour of the young child. Previous research is indicative of the fact that children with autism are also likely to depict repetitive or erratic behaviour, which is ideally classified within the paradigm of Obsessive Compulsive Disorder.

1.1.3.5 Social Symptoms

From the beginning, children at the infant and developing stage are social beings. They gaze at people, turn towards them and interact with them, grasp their finger and sometimes even smile. On the other hand, children with Autism might face a tremendous amount of difficulty in learning and human interaction in their daily routine life. In the first few months of life, many children avoid interacting with people and even avoid eye contact with people. They prefer to stay alone and seem indifferent to other people. They resist from being hugged or cuddled by other people. They respond to the display of anger from their parents and seek comfort in a typical way. Although children with Autism are attached to their parents, their expression of attachment is often found to be unusual to their parents and they also found them difficult to read. It is observed by their parents that their child is not attached to them at all. The feelings and emotions of the parents who want to cuddle their child, teach them and play with them often get crushed by the unexpected behaviour of their child.

An Autistic child is also inefficient in learning what others think and feel about them. Social clues as winking, smiling or grimace may have a little meaning to the child with Autism. They do not have the understanding to interpret gestures and facial expression of the people, the social world may seem a nightmare to them. Children at the age of 5 decide what they will be in the future. A child facing Autism has no understanding of this feeling to formulate their future goals. This inability leaves the Autistic child unpredictable and confused about their own actions and other people’s action.

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The children with Autism also have difficulty in regulating their feelings and emotions by having immature behaviour such as crying in class or verbal upsurge that seems inappropriate to those people around them. The children with Autism may sometimes be disruptive and physically aggressive at times which halts them from making social relationships. They can also lose their control when they feel frustrated from the environment which can result in breaking things, attack others or even hurt themselves.

1.1.3.6 Communication Difficulties

A normal child by the age of three has passed some learning milestones in learning different skills and languages. A toddler by his first birthday typically starts saying a few words; learns when to turn around when he listens to his name, pointing at a toy which he wants and makes everything clear as to what he wants and what not. Children diagnosed with Autism remain quiet throughout their lives. Some infants who later are diagnosed with Autism coo and babble during initial few months of life, but they soon stop prattling. The most delayed age for the development of language is 5 to 9. The most common way of communication for a severely Autistic child is through signs and pictures.

Children with Autism face difficulty in combining words to form a meaningful sentence. Many Autistic children speak only a single word and most of them repeat the same phrase again and again. Children with Autism repeat what they hear and it normally passes by the age of 3. Some Autistic children may have precious language and unusual vocabulary, but have issue in sustaining a conversation with others. Another difficulty is often in understanding the facial expressions, body language, tone of voice and phrases of speech of the other person. Conversely, the body language of the Autistic child is also difficult to understand for their parents and other people. The facial expressions, phrases of speech and
their gestures hardly match with what they are saying. Also, there is a contradiction in their words and tone of voice as it fails to reflect their feelings.

Without meaningful gestures or the language problem to ask for things, children with Autism fail to let others know what they require which results in extreme screaming and they grab whatever they want. This behaviour can be reduced by teaching the child different ways to express their feelings and needs. As the Autistic child grows up, he begins to realise the problems in understanding others and as a result they face an extreme depression and anxiousness.

1.1.3.7 Repetitive Behaviours

Children with Autism appear to be normal with their physique and have good muscle control, but their odd repetitive behaviour differentiates them from other children. Some repetitive behaviour includes spending a lot of time doing repeated actions like flapping their arms or walking on their toes. Some children freeze at their position. The child may seem normal when he spends hours lining up their cars in a specific way for playing purposes. It will vastly upset them if someone accidentally moves one of their toys away from them. They require a consistent environment in terms of their routine for mealtimes, dressing and bathing in their environment. A slight change in their routine can be extremely disturbing for them as it will create confusion in their minds.

1.2 Families with Autistic Children around the World

Families having Autistic children vary considerably in terms of their structure and functional grounds as well as influenced by the cultural characteristics. Families with Autistic children differ from country to country. The prevalence of Autism is found to be 2.64% in
children aged between 7-12 years in the general population of South Korea. The average prevalence of Autism in Europe and North America is found to be 1 per 100.\textsuperscript{20} According to a study conducted by Montiel-Nava and Pena, the prevalence of Autism in Venezuela is 1.1 per 1000 in children between 3 to 9 years. These examples provide an overview of cross-cultural studies related to Autism.

It was recently estimated by The European Autism Public Health Alliance (EAPHA) that the population in Europe is 500 million and the estimated rate of Autism was to be 5 million. It was further investigated by them that the situation for different treatments, frameworks, family support system and professional training system vary across Europe. For instance, in France, the large number of psychoanalytical models creates confusion with Autism diagnosis, resulting in mistrust towards parents and showing no progress.\textsuperscript{21}

In Croatia, early identification and intervention programs started some time ago and only a small number of children with Autism were admitted in regular schools with support. Adults with Autism remain in the schools even after the age of 21 years because there is no concept of adult care.\textsuperscript{22} Autism there was not recognised by the Ministry of health legislatives.

In Romania, early in 1989, children with Autism were treated in the same way as a disabled child. The assessment of the Autistic child is conducted in many clinics, day care centres and hospitals and they receive different kind of pharmacological treatment. There were no programs formulated for Autistic children. There had been no steps taken for the prevalence of Autism cases in Romania.\textsuperscript{23}

\textsuperscript{23} Sally J. Rogers, ‘What Are Infant Siblings Teaching Us About Autism In Infancy?’ (2009) 2 Autism Res.
In countries other than Europe, the picture shows an inconsistency. For instance, in Saudi Arabia, it was found that Autism was diagnosed in girls later than in boys. The finding also shows a picture of the societal pressures to pursue treatment for Autism is less significant for girls as due to the culture of Saudi Arabia, the girls are easily hidden from external viewers.

In India, the study of Autism showed that the families who have a child with Autism would require the family to have another child who can take care of the Autistic child in the absence of the parents or after their death. In Greece, It is found that average age of Autism diagnosis was considered to be six years. They share common characteristics of Autism with pupils in developed countries confirming that Autism is an international spectacle. In Tanzania, it is inferred that malaria fever, when contracted in the initial couple of years of life, can cause a mental imbalance and Autism. They portrayed an irresistible aetiology of Autism and mental imbalances and depicted that a legitimate outcome of the recurrence of cases with irresistible aetiologies is that the predominance of a mental imbalance ought to be higher in Africa than it is in the West.²⁴

1.3. Domains of Autism

There are two types of domains in Autism, which include physical domain and social domain.

1.3.1. Physical Domain

The manifestation of physical domain in the Autism affects the development of development in the brain because of which children face delays in their development in the physical context. In human nervous system, lower brain is mainly responsible for creating a

balance and coordination in a human body. The Autistic children face inability to maintain their balance due to improper functions of lower brain due to which both gross and fine activities in Autistic children are affected. The movements in the children can be unpredictable as their brain processing is slow due to which their writing and drawing skills are affected and are relatively weak. Autistic children may become hyper-sensitive and show intense reaction due to change in stimulations in sensory motions.

**Social Domain**

The Autistic children face difficulty in characterising their deficits in social interactions and mostly the problem arises in the social settings of Autistic children because they rarely make eye contact with other people. Furthermore, they use gestures to communicate with other people and face difficulty in starting conversations back and forth as normally children do in their childhood.

**1.3 Overall Description of Autistic and Asperger Children and their Difficulties**

1.3.1 Overview of Autism and Asperger

Klin, A., explained that Autism and Asperger are the disorders which are most common amongst the pervasive developmental disorders (PDD), a family unit having a set of conditions comprising of variations and delays encountered by a child at the stage when social, communicative, and other skills are to be developed. The categories which are included according to the revised manual of mental disorders fourth edition, (DSM-IV-TR), are the conditions that have a consistent relationship with mental retardation is Childhood Disintegrative Disorder, set of conditions that might or might not be in association with mental retardation are autism and PDD, and one circumstance which is usually related to normal intelligence is Asperger disorder. Among the disorders related to developments, the
PDDs are very common. The PDDs pertains to the set of conditions which is categorized by huge variations when it comes to present them clinically. The variations in both types of syndromes occur in terms of symptomatology and degree of affectedness but both profiles come together about distortions in the process of socialisation in the early-onset stage. By nature, they are neurodevelopmental and effects significantly on developing sociability mechanisms in the human brain. As a result, the disruption takes place in the normal processes of emerging social, cognitive, and communication developmental skills.25

1.3.2 Autism and its Diagnosis

The term Autism, which is also known as autistic disorder, childhood autism, infantile autism, and early infantile autism, is among the well-known of the PDDs. What basically happens in this condition is that certain disruption with respect to social interaction is witnessed by a child. Other sustained impairments are also evident such as communication deviations, and stereotyped behavioural patterns and interests.26

For the effective autistic disorder diagnosis requires a criterion based on six dimensions, which should include three groups of disruption in socialisation, restricted and stereotyped behavioural patterns and interests.

The criteria in the dimension of disruption in social interactions includes a clear destruction in using nonverbal communication forms and sociable meetings, child’s failure in the development of friendly relationships; deficiency witnessed in shared communication patterns and failure to reciprocate both socially or emotionally. The criteria developed for the distortion in communication cluster includes interruption in the stage of spoken language development, inability to begin with a conversation and using repetitive language. The criterion in stereotyped behavioural patterns and interests includes lack of flexibility

pertaining to specific daily routine, repetitive motor mannerism and relentless anxiety with different objects. In order to diagnose whether a child is suffering autism syndrome or not, the child must be having abnormal development under the age of 3, either in socialisation, language and communication, or symbols and imaginations. If the criterion is met, such disorders then acquire supremacy over autism.27

1.3.3 Asperger and its Diagnosis

The Asperger Syndrome is known as a disability witnessed in the process of socialisation, communication, cognition, and sensation. Due to this disorder, the individual’s inability to communicate takes place. The concern associated to this disorder is that it contains behavioural issues in the long-run. General characteristics of Asperger syndrome are: failure in understanding language styles during conversation, lack of flexibility pertaining to non-functional routines, use of repetitive words, phrases and actions, problems in fine-motor skills and sensory integration, anxious behaviours on topics that are rarely focused.28

Asperger Syndrome diagnosis also requires the exhibition of disturbance in socialisation and stereotyping in behavioural patterns of interest, criterion which is entirely same as autism. On the contrary to autism, there is no any certain criteria developed for determining the symptoms in language and communication cluster and the commencement criteria also differs in a way that there must be no hindrance in acquiring language and communication skills, cognitive and skills related to helping one’s own self. Such symptoms lead to considerable mutilation in functioning socially and occupationally.29

29 Diagnostic And Statistical Manual Of Mental Disorders (American Psychiatric Association 2000).
1.4 Autistic Disorder and associated Characteristics

As discussed in detail about the inabilities associated to autism, such as inability of developing social skills, variations in communication processes and so on. However, researchers have investigated that children having autism holds a set of unique skills and abilities which are exceptional. These are the skills which makes them a subject of interest for many people around. However, it should not be neglected that not all the individuals suffering from this disorder possess all of the skills being mentioned here. Rather, it can be said that possessing such an interesting set of skills can motivate children to overcome the deficiencies and enhance their overall personality. The skills they hold are as follows: well-built visual skills, individuals’ ability of understanding and retaining concepts which are concrete and existing, strong skills for memorising the details of maths facts, important statistics, long-term memory, technical expertise, ability and interest in music, concrete focus, particularly on an activity which is focused, Mathematical expertise and ability to solve critical Problems.30

The unique abilities of children with autism also accompany few challenges such as difficulties in sensory processing. It is a widespread belief that things are perceived differently if they are sensed normally such as touching, hearing, feelings or tasting etc. autistic disorder tags along with it a difficulty faced by individual in processing sensory receptors. Now the rising concern is that even if the children holds strong mathematical abilities or something like technical skills, if the sensory receptors are failed to process cognition, then there will be no use of possessing such unique bunch of skills.

One typical characteristic associated to autism patients is that they are not seemingly interested in any other person or socialising with them31. The reason probably is that they face delays in their ability to develop communication and language acquisition skills, which

results in showing least interest in the development of social relationships and resisting for getting into conservation with others.

1.5 *Description of Asperger Children and their Characteristics*

Asperger Disorder patients are affected to its least, while having strong language and cognitive skills. An observer who is not much experienced might presume that the children having Asperger syndrome seems to behave differently and look like the ones who are neurotypical. Unlike Autistic Disorder, people with Asperger Disorder are interested in getting into conversation with other people but the problem arises when they know how to begin and what to say as to make it a conversation starter. Their unique feature is that they look socially more awkward as they don’t know how to be an empathetic listener during a conversation. Additionally, they are not much aware about the norms, dos and don’ts of social interactions as they make a very limited eye contact and don’t understand how to use gestures or sarcasm.

They are obsessed when it comes to their interests in a particular subject or a field. Children with Asperger Disorder are likely to gather things categorised as small rocks or bottle caps. They are efficient in collecting information about the sports statistics or flower names. They are good with rote learning and have long-term memory, but succinct concepts cannot be easily digested by them.32

1.6 *Difference between Autism and Asperger Syndrome*

The major point of differentiation between Asperger Syndrome and autism lies in the areas of language difficulties and cognitive processes. Children having autism face difficulties in acquiring language skills while Children with Asperger Syndrome do not

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encounter such delay in language acquisition. Additionally, unlike the autism, children having Asperger Disorder portray intelligence at average to above-average levels. Although, not any cure or reason for both types of disorders are yet found.\(^3^3\)

Both autism and Asperger also differs in the ages when they are diagnosed. According to Todorov, Arnaoudova,\(^3^4\) the autism syndrome initiates during or before the age of 3 and disruptions in cognitive process are occurred, whereas in Asperger Syndrome, the disorder is usually diagnosed at the ages from four to eleven exclusive of considerable impediment in the development language or cognitive skills.

Children having Asperger syndrome face less anxiety with the objects parts rarely focused and less difficulty in motor-skills but in the case of autism, the clinical profile of child includes persistence in preoccupation parts of objects by consuming enormous time span while gathering knowledge and information. Children with autistic disorder typically encounters abnormalities in social processes, while in Asperger disorder, a child is motivated to indulge in social relationships, but the way to achieve this is in highly unconventional and insensible manner. Although both the disorders are of critical consideration, yet the researchers have given precedence to autistic disorders in order to conduct further diagnosis.

Many researchers have agreed upon the statement that a child having Asperger disorder might not display any evident any interruption in cognitive skills during the earlier childhood period. Certainly, some of them could be very talented and intelligent on the basis of mathematical abilities, reading and learning and in few other aspects of playing and memory. On the contrary, children having autistic disorder can be noticed while facing delay in the development of their cognitive abilities during their early years of life and diagnosed during the average age of five. However, the diagnosis in Asperger syndrome is not possible until and unless children start off with their schools and arrive at an average eleven years of

\(^3^3\) Myles BS, Hagen K, Holverstott J, Hubbard A, Adreon D, Trautman M., p. 1.

\(^3^4\) Stefan Todorov, Mariana Arnaoudova, On Differential Diagnosis Between Autistic Disorder And Asperger’s Syndrome, Journal of IMAB - Annual Proceeding (Scientific Papers) 2012, p. 335-336
age. At times, the parental concern about the autistic or Asperger disorder seems to be intuitive as the children has not yet reached the average age when children normally learns to speak or socialise.

To gain more appropriate clinical evidence, parents and teachers must observe actions of their children in the age from 3 to 11 when these inabilities are likely to be found in them. It was likewise recommended that siblings of children with Autism don't really experience the ill effects of Autism; however, on the starting stages, they confront a few challenges concerning the learning and learning issues. It was likewise clarified that Autism can prompt an expanded tension and variance in the mind-set of a child in a family confronting more social troubles. Scientists have highlighted the significance of hereditary qualities in Autism, as it is not straight forward or basic since it is watched that various qualities are included in Autism. The estimation of qualities in Autism may run from 4 to 20 or much more. It was likewise clarified that hereditary qualities can't be the main source of Autism as it may come in some different ways.

1.6 Physical and Medical Issues

1.6.1 Seizure Disorder (Epilepsy)

People having Autism develop seizures which often start in early childhood or during teenage years. It is caused by unusual electrical activity in the brain, which can produce a temporary loss of consciousness, convulsion in the body, unusual movements by a child or starting at different things. The major contributing factors towards seizure are high fever or lack of sleep. An electroencephalogram can help to understand the irregular activities in brain or seizures. People having Autism can face several types of seizure activity in their brain. The easiest seizure to identify is "grand mal" seizures. Another type of seizure includes of

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"petit mal" and sub-clinical seizures, which can be understood through EEG. In the absence of any type of seizure, the school staff may be the first one to note something crooked and it is important to alert the child's family and school team as well. The recurrent activity of seizures in a person is called epilepsy; it can be cured through medicines to eliminate their occurrences. A student having the seizure disorder, it is important for the school to recognise the seizure signs and to know the best way to treat students with seizures at school and ensure their safety. Furthermore, school teams and parents should also be aware of the side effects that may cause by seizure medications.

1.6.2 Genetic Disorders

A small number of children facing Autism can have the neurogenetic condition such as Fragile X Syndrome, Tuberous Sclerosis, and another abnormality. It is important to know the parents that the child is facing which type of syndrome because there might be some other medical issues concerned with it.\(^\text{36}\)

1.6.3 Allergies and Gastrointestinal Disorders

Due to a fluctuating behaviour and inability to verbally communicate to one another, there have been many patterns or changes in a child's behaviour having Autism, such as the increase in self-soothing behaviours or different injuries to aggressive behaviours. This can lead to physical pains such as a toothache, gastro problems or several injuries. Parents of the child with Autism many times report gastro problems in their children having Autism and the medical community has taken measures to recognise these issues which are treatable and real. The children with gastro issues such as gastritis, constipation and oesophagitis are not known to parents but it is explained that majority of teenagers with Autism have gastro problems

such as constipation or diarrhoea. In addition to these complications, the child will also face problems with communication, sensory difficulties and can result in many difficult challenges to handle children with Autism.

Some children with Autism are under the intensive care of a GI specialist or allergist who recommends particular protocols the team will require nutritional protocols and dietary interventions used in Autism which is eliminating dairy and gluten containing foods. It is, therefore, responsibility of the school team to assist with the assistance of dietary interventions to the children and it is important to communicate every aspect to the family and have the knowledge to implement those interventions effectively and efficiently.

Because of several issues concerning gastro areas, sensory issues and motor delays or learned behaviour, many people with Autism might face different eating issues and significant food aversions. People with Autism may have strict choices of food and have the different concern about nutritional health.

1.6.4 Sleep Dysfunction

Sleep problems are very significant and common in children and teenagers with Autism. The children with Autism face issues in falling asleep, they also use to do sleep-walk and they preferred to sleep less than other normal people. Lack of sleep can also be one of the issues that an Autistic child may face in learning and communicating because of lack of attention which can benefit from therapeutic interventions.

Other medical issues such as obstructive sleep may also cause issues of sleeping. Addressing the sleep issues in children with Autism may solve the problem. When there is no medical cause behind lack of sleep, it may be addressed and managed through behavioural interventions including the lessons on sleep hygiene measures such as limiting the daytime sleep and naps and establishing regular bedtime routines in a night. The school behaviourist
can provide an insight into the family with different strategies that help to improve the sleep in the children and normalised their sleep functions which will, therefore, benefit them by increasing the student's ability from educational efforts.  

1.6.5 Pica

Pica is a disorder which is concerned with the eating things that are not included in the area of food. Children between 1 to 3 years often eat non-food items but it is typically a part of development for them. The children with Autism continue to eat items such as dirt, clay, chalk or paint from the walls.

1.6.6 Sensory Processing

People with Autism give unusual responses to sensory inputs to the brain known as stimuli. These responses are difficult in processing and integrating sensory knowledge to the brain. The sensory inputs include all five senses as vision, hearing, touch, smell and taste with the sense of movement and a sense of position can all be affected by Autism. It explains that the information can be sensed normally but it is perceived differently.

A student's sensory inputs to the brain can bring various kind of difficulties which can include extreme touchiness (over-reactivity), otherwise called tangible retentiveness, on the other hand, hyposensitivity (under reactivity). Many individuals with a mental imbalance and Autism are exceptionally sensitive to certain sounds, compositions, tastes, and smells. A few youngsters discover the vibe of dress touching their skin nearly terrible, or may be diverted by the buzz of a plane or a honey bee much sooner than any other person knows about its

nearness. Hyposensitivity may be obvious in an expanded resistance of torment or a consistent requirement for tangible incitement.\textsuperscript{38} A few people with a mental imbalance are absent to amazing cool or warmth (unsafe in cold conditions or at the point when working almost a stove). A child with a mental imbalance may fall and break an arm, yet never cry. Reactions to tactile over-burden can go from closing down and "looking at" of the earth, to distraction or diversion, alternately negative practices, for example, animosity or fleeing. Sensitivities can change or enhance after some time.

\textit{1.7 Organisation and Attention}

Students with Autism faced difficult challenges concerning organisation in terms of their own selves and with the interaction with the whole world. It is a fact that the subjects which others find interesting or motivating may be difficult for the children with Autism, where at the same time people find it creative and motivating but the people with Autism may find it considerably difficult.\textsuperscript{39} The ability to quickly shift attention to a particular topic and the speed which is required for this kind of attention lacks at the children with Autism. This can directly affect the way people with Autism communicate, learn and interact socially.

It is very hard for people with Autism to understand the theory of mind or the ability to recognise different mental states in themselves as well as in other people, and find it difficult to understand the beliefs and values of others, their desires, and intentions that differ from their own. The theory of mind is an evolving area of science, which brings a great area of challenge to the people with Autism, socially, emotionally and even linguistically.

\textit{1.8 Diagnosis of Autism}


With help of researches it has been identified that Autism occurs in about 1% of the general population globally.\textsuperscript{40} However it has yet to be made clear that what the true ratio of prevalence is for Autism, as there is still no clear spectrum identified as to what Autism is. Nevertheless, according to the Diagnostic and Statistical Manual of mental Disorders, Autism or also known as pervasive developmental disorder, mentions that the case will only be identified as Autism is there is any clinical impairment, usually needing intervention. Cases of ASDs are usually identified in the general population in the preschool children at a rate of around 0.6%-0.8%,\textsuperscript{41} in school children and young adults at about 1.0%,\textsuperscript{42} and in the older adults also at about 1.0%.\textsuperscript{43}

The most basic traits of Autism have been suggested to usually be primary deficiency in social interest (usually inborn). This is identified early in life as a decrease in or lack of having the need for social communications or drive to socialize. This can be studied for example as the lack of eye direction or detection, having self-initiated joint attention, looking for the face of the care giver when faced with some problem or any unfamiliar situation, lack of speech for communication, early development of the theory mind skills or lack of central coherence. It has been impossible to identify any specific symptom for Autism.

The basic symptoms of Autism consist of a number of neuropsychological problems which also consist of various cognitive problems that can be categorised under different headings. This includes a number of social cognitive dysfunctions and physiological brain

\textsuperscript{42} Fombonne, Eric. "Epidemiology of pervasive developmental disorders." Pediatric research 65, no. 6 (2009): 591-598.
problems, which are, in turn are caused by a number of factors which are identified as specific or unspecific factors with medical terms.\textsuperscript{44}

In the modern and contemporary paradigm of clinical workup the concept and inference provided by neuropsychology is of key importance, one that cannot be undermined. Children that are presently being diagnosed with ASDs postulate minimal to moderate level of cognitive functioning, lower degree of intelligence quotient and are also prone to depict contrasting ID. Furthermore, multiple neuropsychological tests have demonstrated that children that suffer from ASD have lower verbal skills and attributes in contrast to their non-linguistic capabilities.\textsuperscript{45} Today, most of the clinical psychologists and practitioners of the neuropsychology field preach that ASD should be studied and treated in contention with general cognitive impairment as such an approach shall have a more profound and potent impact on the results as well as the patients. The importance of studying cognitive impairment amongst ASDs patients takes root from the ideology that there are different aspects to cognitive deficiency and each of the aspects have their respective level of severity, one that is generally influenced by the patients, in this case children, is their own cognitive ability.\textsuperscript{46} Research in this regards has resulted in key evidence which identifies that social interaction is the main deficiency amongst children diagnosed with ASDs.

With respect to the recent developments in medical field, the diagnostic criteria for the Autism Spectrum Disorder, that has been published in the Statistical Manual of Mental Disorders (DSM-5). The DSM-5 was published in May 2013, and since then, psychiatrists and psychologists have been advised to use the identified diagnostic criteria when evaluating

individuals for Autism. The diagnostic criteria includes analysing the difficulties in social use of communication via verbal and non-verbal means, the functional limitations in effective communication and maintaining and understanding of social relationships, the symptoms of developmental deficiencies in early stages of education and issues with understanding and portraying of word structure and grammatical contexts. It also includes symptoms related to deficits in social and emotional reciprocity, difficulties in conducting nonverbal social behaviours and interactions with others and difficulties in adjusting to social environments and difficulties in sharing and making friends.

1.8.1 Persistent and Prevalent Deficits in Social Communication and Interaction

- The deficits in the social-emotional reciprocity that ranges from having an abnormal social approach and failure of having a basic normal conversation; to the reduced emotional sharing and interest, or having the failure in taking the first step or even respond to social interactions in an acceptable manner.

- Deficits in nonverbal communications and communicative behaviours which are used for social interactions. This ranges from having lack of integration between verbal and nonverbal communication; to having abnormalities in the body language and making eye contact or having deficits in using or comprehending gestures; to having a total lack of nonverbal communications or facial expressions.

- Deficits in the developing of relationships or maintaining and understating their development. This ranges from having the difficulties in adjusting to behave under specific social contexts; to having difficulties in making friends or sharing thoughts with other people; to showing interest in social peers.

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1.8.2 Restricted or Repetitive Activities, Behaviours or Patterns of Interest

- Repetitive motor movements or stereotyped activities or use of objects or speech. For example flipping objects or lining up of toys.

- Inflexible and no adaptive routines and insistence on sameness or having fixed patterns of verbal or nonverbal behaviours, for example showing extreme levels of uneasiness and distress on small changes, having difficulties in transitions and having rigid rituals for greetings and thinking patterns. Also feel the need eat the same food every day or have repetitive schedule for eating food.

- Having heavily fixated and highly restricted focus of interest which is abnormal in intensity. For example strong attachments with unusual objects.

- Having hyper activity to sensory inputs or showing unusual signs of sensory aspects. For example, indifference to pain or temperature changes, having extreme responses to certain sounds or textures, touching or smelling of objects excessively and having fascination with light movements.

The symptoms must be present in an individual in the early stages of life but may not be manifested until the social demands are increased by the actual capacity of the individual. They may also be covered by learning different strategies learned. Symptoms can also cause clinically insignificant social and occupational impairment or affect other cognitive areas of functioning.

1.9 Diagnosis and Prevalence

ASD is considered to be a lifelong disability which can be diagnosed through criteria that includes the deficits in social communication and interaction which is restricted in

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repetitive behaviours and activities. The initials signs are typically present in the early developmental stages, however the social deficits and behaviour patterns might not be identified as symptoms for ASD the in the children until they have developed the need for social interactions or other life stage demands. The intensity and variations of these deficits vary from person to person with ASD and might develop in the individual over time.

The global prevalence of Autism has amplified greatly since the earlier studies which were conducted during the 1960-1970s. During that time period, prevalence estimates from the studies conducted in Europe were one in every 2,500 children, and by the 2000s prevalence estimates were taken from larger surveys which resulted in 1% to 2% of all the children. Although the reasons for the seemingly prevalence changes are difficult to find and the select studies identify that much of the prevalence that has increased is likely to be attributable to external factors for example, improvement in recognition and awareness and the changes in the availability of the service and the practice of the diagnostics.

The increased reports in the children who are receiving the services for the ASDs and reports of the prevalence of ASD estimates that are higher than the expected, have increased the level of concern among the local public, highlighting the need for having systematic public health monitoring of ASD diagnosed individuals.

According to the reports of ADDM (Autism and Development Disabilities Monitoring) Network, the results stated that in the surveillance of 2010, that the overall

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prevalence of the ASD amongst the ADDM sites, 1 in every 68 children under the age of 8 years was diagnosed with Autism (14.7 per 100 children). The variation of the prevalence amongst sites was measured up to 5.7 to 21.9 per 1000 children under the age of 8 years. Approximately, one in every 42 boys and one in every 189 girls living in the ADDM Network sites were diagnosed with symptoms of Autism. Apart from gender, the results were also varied according to race and ethnicity. White Non-Hispanic children had 30% likelihood to be identified with ASD as compared to black non-Hispanic children.

With respect to intellectual disability, 31% of the children with ASD were identified of having an IQ levels under the range if intellectual disability, i.e. below 70 where as 23% in the borderline range of 71 to 85 IQ scores. 46% were identified of having above the average range of intellectual ability, i.e. above 85. With respect to ethnicity and race, out of the overall 38% of the non-Hispanic children diagnosed, 48% of the black children with ASD were classified as under the range of intellectual disability and 25% of the white children with ASD were classified in the same range. The median range of the earliest diagnosis of ASD was around 53 months which was not affected significantly by race gender or ethnicity.54

After the last study conducted by the ADDM Network on ASD prevalence in 2012,55 there were numerous studies conducted which suggested on similar grounds that there was an upward trend in the prevalence of Autism.56 This updated the previous study of

ADDM Network conducted in the 2010 and represented the results on the basis of 11 different geographical area.

1.10 Implications of Diagnosis and Satisfaction with the Process

The increase in the cases of Autism has enforced people involved with Autistic individuals to undergo through difficult diagnostic processes and face the hardships of seeking appropriate interventions from practitioners. The initial diagnostic process can evoke some serious emotional stress for the family of the Autistic individual irrespective of the age of the individual.

With respect to identifying the symptoms of ASD in children often begins at the age of three during the routine check-ups from the family physician. If the signs are not clear, it varies in accordance to the good judgment of the physician of whether sharing the doubt about the child having Autism with the family or not. This also varies with context of what the next action step should be if the child shows signs of having ASD. Some may refer the family to get a more detailed check up by a HSPP (Health Service Provider in Psychology) or a developmental clinic. The physician may also refer the family to the local First Step Programs and either share his or her suspicion about the child having ASD with the First Step program providers or let them confirm or reject the suspicion of any kind of disability removing the need for a comprehensive analysis and treatment form a specialist. Physician appointments usually last to 20-30 minutes which makes it understandable if the physician would not have confirmed reports about the child having a lifelong disability such as ASD.

In case if a developmental delay or cognitive disability is suspected by a family, the parents can make a self-referral to the First Steps programs without the suggestions or referrals from a physician. The evaluation of the child will be done for the First Step Program by an Eligibility Determination (ED) Team which lasts from around 60 to 135 minutes and is
conducted in a place chosen by the family. The evaluation consists of observing the interaction patterns between the child and the family, review of the parents and performance of direct tasks with the child. The team does not aim to make a diagnosis for any disability but instead the aim to gather information which can be shared at any program meeting. Eligibility of the child for the program depends upon the child’s performance. If it is falling below a specific criteria set for the developmental area, the child is considered eligible for the program. This involves testing of basic abilities such as communication or motor skills.

Once the eligibility of the child is confirmed, under the consent of the parents to take part in the First Step programs, Individualised Family Service Plan (IFSP) is developed. First the programming outcomes are identified and explained to the parents, then the type of services which will be used to meet those outcomes are identified and then the service provider(s) (occupational or physical therapist, speech specialist, developmental criteria specialist) are selected. Services for the program must initiate within 30 days of the approval from the parents regarding the IFSP plan. If no significant disabilities or developmental delays are identified during the ED Team evaluation, then there may be no further need or suggestions in the final report for the child having suspicions of ASD or any other disability.

According to a research study, the stages of diagnosis were identified on the basis of the level of satisfaction with the diagnosis process. The results were conducted in this study from the parents or care givers for the people diagnosed with ASD. The first aspect was related to the time that was taken to diagnose the complete symptoms. Previous studies which found out more streamlined methods of which resulted in faster diagnosis had a high level of satisfaction amongst the parents or the care givers. It was identified that those who

experienced lesser delays between the initial help seeking and receiving a complete diagnosis were more satisfied with the process.

Another aspect was the age of the child which was diagnosed with Autism. It was identified that children who were diagnosed with the symptoms of Autism in their preschool years were the most satisfied and successful in dealing and coping up with ASD. This was, however, potentially linked to those children who are having a diagnosis of ‘classic’ Autism. Children with Asperger syndrome or high functioning Autism tend to be diagnosed in later stages of life. Parents or care givers of such children find the overall diagnosis process frustrating and are found to report lengthier delays in the process. The highest level of satisfaction was amongst those who were diagnosed with ASD in earlier stages of life.

Another aspect pertaining to the satisfaction with the diagnosis process was the quality of the information that was given to the parents or the care giver. It was identified that those parent who received the information of how the nature of ASD worked and how it may affect their children and what further steps they can take or which doctors they can consult for further help reported higher levels of satisfaction with the diagnosis process.\(^59\) This also includes the manner of professionalism through which the process was handled.

1.11 Summary

Mental imbalance is a critical issue in young children facing Autism at their earlier ages. Then again, the quantity of youngsters experiencing Autism is expanding by having an extremely introverted range issue (ASD), or a mentally unbalanced range condition (ASC). A mental imbalance and Autistic Syndrome both are the general terms characterised for a gathering of disarranges in the advancement of the cerebrum. The cerebrum issue are classified by troubles in social association including verbal and non-verbal correspondence

and redundant practices. It is likewise characterised as an incapacity that influences the individual's method for correspondence and discovers trouble in identifying with individuals around them. It is a sort of advancement issue that influences more young men when contrasted with young ladies in the proportion of 4:1. It is likewise clarified as a range issue due to a broad scope of youngsters and youngsters who have extreme troubles in learning and conveying to other children and youngsters who have the intellectual capacity and have great abilities of verbal correspondence.

Globally, Autism approximately affects 21.7 million people in the year 2013. As of 2010, the number of people affected by Autism is estimated at about 2-3 people per 1000 worldwide. It occurs in boys more than girls often four to five times with the ration 4:1. Around 1.5% of the total population of children in the US (1 in 68) are diagnosed with Autistic Spectrum Order in the year 2014 with a 30% increase from 68 to 88 in 2012. The rate of Autism among adults from 18 years and over in the UK is estimated at 1.1%. The symptom of Autism and its severity varies considerably for each person on the spectrum of Autism. The core symptoms of Autism can be viewed as different functional areas including communication, difficulty in social interaction, and repetitive behaviours are some symptoms of Autism. The symptoms of Autism vary from one child to another child and may have different criteria for the diagnosis of Autism in children.

The increased reports in the children who are receiving the services for the ASDs and reports of the prevalence of ASD estimates that are higher than the expected, have increased the level of concern among the local public, highlighting the need for having systematic public health monitoring of ASD diagnosed individuals. Sleep problems are very significant and common in children and teenagers with Autism. The children with Autism face issues in falling asleep, they are also prone to sleep-walking, and they preferred to sleep less than other normal people. Lack of sleep can also be one of the issues that an Autistic child may face in
learning and communicating because of lack of attention which can benefit from therapeutic interventions.
CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter presents a comprehensive literature review on the inclusion of Special Education Need (SEN) children in mainstream schools in general and particularly focuses on Autistic Spectrum Disorder (ASD) children. The review begins with an explanation of the term inclusion or inclusive education followed by the arguments presented in favour and against inclusive education within the context of human rights discourse. The review then continues to analyse laws and regulatory reforms in the UK regarding education of SEN and ASD children. The review then focuses on a variety of challenges faced by SEN children in mainstream schools. The discussion includes challenges faced by children due to disability and challenges faced by children in the learning-teaching environment. The review then continues to present major teaching approaches particularly focusing on the unique needs of SEN and ASD children and presents various methodologies currently being employed in the UK as well as other parts of the world. The review also presents a discussion of role of teachers in supporting the education of SEN and ASD children. This chapter also highlights the role of support teachers in supporting SEN and ASD children in mainstream schools. Finally, the review ends with a discussion of the role of community-oriented schools and the role of their directors in supporting the inclusion of SEN and ASD children in mainstream schools.

2.2. Inclusive Education – Inclusion of SEN Children

In the history of inclusive education, a large number of international organizations have written documents about public policies and have held conferences and written statements about the need to move towards a more inclusive education. The first serious
discussions and analysis of the process of inclusion emerged during the 1970s in the United States and England. However, the right for education was expressed in the United Nations Convention on the Rights of the Child (UNCRC) in 1989. In 1990, UNESCO produced the World Declaration on Education for All in Jomtien. In 1994, many countries around the world, including 92 governments and 25 international organizations have ratified the Declaration of Salamanca Framework for Action, entitled 'Principles, Policy and Practice for Special Needs Education'. These international treaties emphasized the right of every child to be educated in a traditional school. In 2000, The World Education Forum in Dakar, Senegal, reaffirmed a system of inclusive education for all children, confirming the guidelines for the work of UNESCO in response to the challenges of education for all.

According to the 2011 Global Monitoring Report on Education for All by UNESCO, there has been a progress in the provision of inclusive education for children around the world, but still the rate of inclusion is very slow. In addition, Anthony Lake, the Executive Director of the United Nations for Children (UNICEF), established that 72 million children of primary school age do not attend school and a third of them have a disability. Therefore, the reality is that many children are not learning because they have a disability and/or live in a developing country where they have to work and live in poverty. Many developing countries do not have, or do not provide, the necessary funds to support education for children.

In contrast to the observations that include the concept of inclusive education thought out by UNESCO, discussions about inclusive education in Western countries, for example, in the UK, tend to focus on children with SEN. In the UK, several government documents illustrate this, for example the Warnock Report of 1979 followed by the Education Act 1981.

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60 Lindsay, Geoff, et al. ‘Meeting the educational and social needs of children with language impairment or autism spectrum disorder: the parents’ perspectives.’ (2016). *International Journal of Language & Communication Disorders*

61 Webster, Rob, and Peter Blatchford. ‘Dept. of Psychology and Human Development, Institute of Education, University of London The long-awaited Children and Families Bill will very soon complete its passage to Royal Assent. The Bill sets out widespread changes to services relating to adoption, looked-after children and those with special education needs (SEN). Brian Lamb’s.’ (2014). *SEN POLICY RESEARCH FORUM: Policy Paper.*
Above all, the Green Paper NEE of Excellence for all SEN Children (Green Paper on Excellence for All children) (DFE, 1997) and the Programme for Action (DFES, 2001/2004) supported the inclusion of children with SEN. All these papers tried to promote more inclusive education practices across the UK. However, more recently, the government has issued a green paper, suggesting a need to deal with the inclusion bias. Therefore, the movement to promote more inclusive provisions in the UK is now being discussed.62

To understand the evolution of the definition of inclusion in the UK, it is important to refer to the Warnock Report (1978), which revised the education service provision for children with SEN. At that time, the integration was seen as the physical location of children with SEN within regular classrooms. According to Hegarty and Rookington (1978), there are three types of integration.63

a) The locational integration is the process of making some changes to the school to make accessible the location of the child in special classrooms or units in a regular school.

b) Social integration means that the child is interacting with peers without disability in all activities, such as the sports, the arts, or recess, and not staying in segregated conditions most of the time.

c) Functional integration means that the child with SEN is placed in a classroom with other students.

Williams et al.,64 suggested that the placement of a child in a regular school is not inclusion by itself, as a student who is fully included is the one participating fully and actively in school life, being a valued member of the school community and is seen as its

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63Arnold, Sharon, and Phil Reed. ‘Reading assessments for students with ASD: a survey of summative reading assessments used in special educational schools in the UK.’ (2016) 43(2): 122-141. *British Journal of Special Education*

integral member. According to Owen-DeSchryver et al., integration is the first step in the process of inclusion. The inclusion makes possible the acceptance of children with SEN. The vision of inclusion has been conceptualized around four main outcomes for students, namely, presence, participation, acceptance and success.

- Presence refers to the physical placement of a child in a regular class,
- Participation refers to the extent to which a child joins in all activities,
- Acceptance is the extent to which the child is welcomed by teachers and peers and,
- Success refers to the social, emotional and academic progress.

2.3. **Inclusion and Human Rights**

Based on the above discussion, for a number of years, many authors have been involved in heated debates concerning what kind of inclusion and provision of education services are most appropriate for children with ASD. A sad and cruel story is the case of William Francis Blunn who suffered severe segregation in the United Kingdom. Currently, he appears in public lectures where he suggests that if he had had the opportunity to receive education before, his story would be completely different. He said 'treat others as you like to be treated'. This is a great example of how important education is for any child with SEN. Education can change the life of a human being who deserves to be treated with respect. Valuing people and create opportunities for them to demonstrate that they can develop skills and talents they have. Then we will see the difference. Educating a child with SEN can allow

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these children to develop their skills and become productive members of society. Above all, there can be positive influence on the quality of life of children.\(^\text{67}\)

The story of William provides perhaps the most compelling reason for inclusion as a human rights issue. William's story illustrates that segregation of society, on a par with disability at an early age, denies them the opportunity to be included in the society. The perspective of human rights is best illustrated by the Centre for Studies on Inclusive Education (CSIE), whose slogan 'support inclusion, challenging exclusion' indicates a vision of defending the rights of people. They argue that inclusion is a matter of human rights and moral values and exclusion is an illustration of segregation.\(^\text{68}\) Clearly, education is a basic value and as a society, we are obliged to include every child. CSIE suggests that segregation makes people with disabilities perceived as second-class citizens, who do not deserve the same rights as the rest of society. It is also argued that questions of social justice, equity, human rights and non-discrimination are central to the issue of inclusion, and can be easy for society to forget and deny them the same opportunities as they give to others.

In the Index for Inclusion, Panerai\(^\text{69}\) suggests that every child should be included and educated in the same classroom with their peers. The main objective of inclusion is to reduce the attitudes of exclusion and discrimination, including those relating to age, social class, ethnicity, religion, gender and achievement. An inclusive school supports all students to develop strategies despite their disability, age, race or gender, allowing all students to participate fully in school activities and interact with peers.


Although all these authors have supported the right of children has to be included, many SEN children are still studying in school. As a result, they are marginalized and segregated, as pointed out by Reichow, Brian and Volkmar\textsuperscript{70} who declared that Special Educational Needs to play a significant role in understanding a larger number of people according to failures within the system of education by subsequent social marginalization and lack of opportunities for those who are unsuccessful in the regular school system. These authors claim that the rights of children to education must be respected and he or she should be educated and not segregated in a special school. Considering the perspective of human rights, every child has the right to be respected, educated and non-discrimination. Each child with SEN should be educated in the most appropriate space.

Supporters of the human rights perspective align with the suggestion of Koegel et al.,\textsuperscript{71} who argued that inclusion in a more general sense is now seen as something good and exclusion as wrong. Within this general view, there is a risk that students with SEN do not receive a high quality education. In contrast to the authors who agree to inclusion and base their arguments according to human rights, there are others who discuss this topic from an empirical perspective and base their arguments for and against an inclusion according to the results research. Chamberlain et al.,\textsuperscript{72} suggested that inclusion in regular schools is not for all children and that special schools should not be closed. Baker-Ericzén, Frazee and Stahmer\textsuperscript{73} suggested that SEN were conceived as a lie in continuation with ordinary needs and provision should also be continuous rather than being segregated, either in a special school or regular.


Therefore, a child with a learning disability should be educated in place that could better meet their learning needs, whether it is a regular school or a special school.

In a further analysis, Kern, Petra and Aldridge\textsuperscript{74} examined the research evidence on inclusive education and declared that the evidence of many authors is in favour of inclusion, however, they suggest that this interest is only in terms of the position rights and research evidence is not considered a priority or even considered irrelevant. Research evidence that may show negative effects of inclusion may not be rejected as a scientific argument. Just because such evidence can be used does not mean it should be. Above all, the main purpose of education should be to facilitate access to best provisions for all students.

Although a fundamental argument ensures that inclusive education must be based on equity and justice, it remains important to demonstrate empirically that human rights of children cannot be met in a special school. Since this has not been empirically tested, in fact, in some cases, it could be argued that the rights of a child can only be completely found in a special school.\textsuperscript{75} For example, considering a 16-year-old with severe and profound learning difficulties coupled with a severe and acute ASD who cannot speak, dress or feed himself. He cannot be in a regular school and learn with peers of the same age. It is difficult to argue convincingly that this student should attend a class in a regular school and study with other classmates. A better option might be to place him or her in a special school of higher quality. This example illustrates an extreme case and indicates why in some cases the best place for SEN children could be a special school which has the resources to develop the skills and abilities needed to live and work successfully in adulthood.\textsuperscript{76}


So it is important to assess the needs of some children with ASD who have profound and multiple learning difficulties and then make a decision about whether those needs can be better met in a special school, rather than a regular school, where they cannot find the support required. Such a decision should be according to the severity of their difficulties. Above all, this can also result in children who do not have access to high quality education nor they can get a positive social outcome. Finally, they may become more segregated in a regular school than they would be in a special school.\textsuperscript{77}

Regarding human rights and inclusion, it is debatable what rights are more important. Are these the rights of children with ASD, parental rights, or the rights of classmates? What if a parent of a child of 16 years old with an acute autism previously mentioned, prefer a regular school if the child does not have the skills to attend this school? For example, a child with ASD may interrupt their peers due to disability.\textsuperscript{78} Therefore, it can be argued that the human rights of other children to learn are being denied. Further, if all special schools closed there would be no other alternative option for parents who advocate special schools for children with severe disabilities identified that require it. Consequently, the rights of parents to have an informed choice to select the most appropriate educational choices for their children will be denied.\textsuperscript{79}

2.4. \textit{Laws and Regulatory Reforms for Education of SEN Children in the UK}

In this section, this study provides a comprehensive discussion of all the educational interventions and programmes employed in the UK educational system to educate and

integrate autistic spectrum disorder children in the mainstream schools in the UK.

Considering the challenges explained in previous sections that hurdle the inclusion process, various stakeholders, particularly the government of the UK, have launched various strategies, for example the SEN Strategy. The SEN strategy sets out a 10-year ‘vision’ of the UK government about the education of Students with Special Needs (SEN).  

According to this strategy, every school teacher is required to educate SEN children, and therefore must have capabilities and expertise as well as skills to do so. The SEN strategy has proposed a tiered approach to train the teachers and other staff through which every teacher can gain core skills, while some teachers gaining specialist skills leading to a pool of educators that have high level skills. The strategy also outlines the role of initial training of teachers as well as the role of continuous professional development so that the education system can cope with the daunting task of removing all barriers to inclusion and educational achievement of autistic children.

In the UK, the education and support for autistic children and children with special needs have been much stressed and it is widely accepted that SEN children should be integrated in the mainstream schools alongside their normal counterparts. The concept of support for SEN children and their education can be traced back to as early as the Education Act 1944, according to which the local authorities (LAs) in the UK must ensure adequate provisions for the education of all children. Following this 1944 Act, numerous Education Policies, Acts, and Regulations have been developed and implemented with the sole objective to improve educational system and practices so that children with disabilities can be integrated in the mainstream educational setting as much as possible. For example, the


Peters, Brenda, and Chris Forlin. ‘Children with ASD as part of the learning community in three international schools in Hong Kong: Practical implications for class practice.’ (2013).

Warnock Report (DES, 1978) was one of the documents that can be considered as bedrock or the foundation of the concept of inclusion. This is because it endorsed integration practices and strategies. The Warnock Report presents unambiguous directions and clear educational reforms required to make the education system in the UK more inclusive for children with disabilities such as autistic.  

It is important to stress that much has already been achieved to ensure that the education system is responsive towards the diverse needs of children, but consequently there has been a reduction in the focus on segregated SEN structures in the education system (British Eurydice Unit, 2007); for example, the Special Educational Needs and Disability Act (SEND Act) passed in 2001 in England, Wales, and Scotland. This act prohibited all forms of discrimination against SEN and disabled children in schools, colleges, and other higher education institutes (Office of the Public Sector Information, 2001). The Act was effective from September 2002 and it mandated that all schools must make essential necessary adjustments to cater the needs of SEN children under the aim to provide every opportunity for SEN children to get educated in schools similar to those without disabilities. Furthermore, the SEN children must have the same quality of both educational (such as examinations and assessments) and non-educational services (such as field trips), and other opportunities such as work placements arrangements, and equal access to learning resources and libraries. The Act is considered a comprehensive piece of regulation to support the educational needs of SEN children.

According to McConachie, SENDA encompasses the essence of all Acts and Regulations that aim to protect the right to education of SEN children in all educational

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settings. SENDA is very explicit and describes in detail the roles and duties of various stakeholders of the educational system to provide a wholesome education and relevant services for SEN children so that they harness the maximum potential of people with disabilities. For example, if a child has been denied admission in a school due to disability, the parents can approach the Disability Tribunals to get protection and support.86

In September 1994, the first SEN Code of Practice was drawn by the (then) Department of Education (DFE). This code of practice has also made significant contributions towards the provision of education and relevant services to SEN children in the UK. Later, the SEN Code of Practice was revised in 2001 for England and Wales and in 1998 for Scotland individually to make it more practical and adaptable in individual environment. The government provided hands-on guidance to local authorities (LAs) as well as other governing bodies in the education system to make sure that all schools deliver responsibilities towards SEN children.87 According to the SEN Code of Practice, various stakeholders in education for SEN children are the location authorities (LAs), the Special Education Coordinators (SENCOs), parents, schools administrators, teachers, and any other relevant party. All stakeholders must play their roles and fulfil duties to provide equal educational services to all SEN children. There is also a systematic process to identify SEN children to ensure provision of educational services to SEN at par with normal or non-disabled children.88

Furthermore, the United Kingdom recently revised its equality act and amended the legislature, and as per the changes that were incorporated, it is now mandatory for every

institutions in the UK, regardless of the nature of the work, to provide a hospitable environment for all disabled and mentally challenged citizens of the country. As per the amended equality act of 2010, disabled pupils have a right to acquire primary level education, and no educational institute can refuse to enlist a young child, diagnosed with autism spectrum disorder, from the right to gain mainstream primary level education. In addition to the following amendment put forth by the government of United Kingdom, under their equality act of 2010, primary level schools in the country should hire teachers that are well trained to teach young autistic children and are aware of the approaches that could inculcate a better learning environment for young pupils overall. In addition to the application of the Equality Act 2010, another key legislature that is being applied within the judicial domain of United Kingdom is the Individuals with Disabilities Education Act (IDEA) which was introduced in 1975.

IDEA or the disabilities act for individuals with special needs was further amended and revised in the year 2004 and decrees that all the associated member countries falling within the judicial paradigm of the United Kingdom are to offer all eligible children, children with special needs, free of cost mainstream primary level education. In addition to contemplating that all countries and judicial bodies that fall under the rule of the British Government are required to provide incremental assistance to children with autism, in terms of the acquisition of mainstream primary education and in contention with free of cost education, children with special needs should also be provided with the necessary infrastructural assistance. IDEA or the disabilities act for individuals with special needs stipulates that young pupils and children that have been diagnosed with different kinds of mental ailments and disabilities, inclusive of autism, Asperger’s syndrome, etc., are eligible for primary mediation facilities and special education.
Furthermore, children that have been diagnosed with any form of mental impairment are entitled to all sorts of diagnosis with the entire financial burden afforded by the IDEA. In addition to providing financial assistance and legislative help towards young children with autism, IDEA has also emphasized on the significance and the importance of the role of parents with respect to the educational development of their children who are diagnosed with autism. Moreover, as per the directives and framework established by IDEA, parents of autistic children are permitted to be an equivalent stakeholder with the educational institute in determining a comprehensive and an adequate educational framework for their children and their special needs. The following clause of the IDEA legislation allows parents of young autistic children to be a more potent part of their child’s educational development and thereby ensure that their child is being given the desired level of mainstream primary education. The ideology behind excessive emphasis on the provision of mainstream primary education is that it allows young pupils to develop a firm educational base, one that can allow them to achieve further education in the years to come.

2.5. Challenges Faced by Autistic Children due to Disability

Autism Spectrum Disorder (ASD) comprises generalized severe abnormalities affecting several areas of development throughout life: social interaction, language, communication, and thought. Despite showing some common characteristics, there is a variety depending on the degree of involvement. In the proposed DSM V, according to Martinez and Cuesta (2012), three levels of severity are distinguished:89

- Level 1 requires very important support because of significant deficits in communication, fixed rituals and discomfort before breaking rituals or routines.

• Level 2 requires significant support because of communicative disorders, frustration and repetitive behaviors.

• Level 3 requires support to minimize communication difficulties and behaviors that cause changes in the context.

As mentioned previously, autism is considered a developmental disorder that causes changes in some areas.

2.5.1. Qualitative Impairment in Social Interaction

One of the most striking features in children with ASD is social problems they present. Problems related to interaction with others and coexistence depend on the age of the person with autism and their functional level. Usually they show attitudes of isolation, rejection of physical contact and loneliness. Social problems that usually present are aspects that develop naturally in people with typical development. In infants, lack of social smile and lack of the shared view that at this stage marks the relationship is reflected.\textsuperscript{90}

Such anomalies are often seen at early ages. In some cases, they show nothing of interest in relationships with other people, social norms or have problems with empathy. It depends on the severity of the disorder present. They can also present problems in establishing eye contact and joint attention that does not allow them to direct attention to objects or people. This affects the social learning and language. Glenys argues that these social problems often vary over time and appear to be more severe in those related to social development in younger children. In older people are more specific problems.\textsuperscript{91}

In addition to the above mentioned assessment, research done in the domain of social science is also indicative of the fact that young children with autism, and other similar mental


or physical ailments, are victims of bullying, a practice which makes young children more reclusive, less trusting and far more introvert. Medical practitioners and associative researchers have contemplated that these negative traits can build up in the future and might take a shape of certain long term disease like depression and anxiety disorder. Furthermore, literature based research provided incremental evidence that in the past few years, the act of bullying against autism and patients with down syndrome have increased, inculcating parents to keep their children, with special needs, in order. Lack of social interaction in the early and childhood phase for children with autism can make it extremely difficult for them to take or lead an independent life in the future, necessitating the presence of a guardian and caretakers for most of the times.

2.5.2. *Qualitative Impairment in Communication and Language*

Normally, the first warning signs are usually talkative type, since during the first few months children do not develop pre-linguistic skills. Although all children with ASD have communication problems, they are not the same in all people with ASD. Generally, they have difficulties in intent, to understand the meaning of situations and generalization of behaviours. They need situations that cause communication.\(^{92}\) Kanner in 1943 refers to the monotonous language or absent presenting people with ASD. In addition, problems are characteristic prosody of children with autism. Harper et al., also mention difficulties with nonverbal communication, such as gestures, look, etc.\(^{93}\) Moreover, it is often a delay in expressive language acquisition or absence of it. When they acquire spoken language, a

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constant repetition of structures could be present, i.e. abnormal behaviour occurs. They have difficulties in expression and oral comprehension.\textsuperscript{94}

2.5.3. \textit{Patterns of Behaviour, Interests and Activities Restricted and Stereotyped}

In general, children with ASD show little repertoire of activities that interest and tend to repeat behaviours leading to obsession, i.e. they develop rituals that always develop at the same times and places. They also perform repetitive activities without any goal. Often they show resistance to change and perseverance in what is unchanged; this mental inflexibility causes them to have obsessive worries, anxiety, agitation and other emotional disturbances. Moreover, in most cases, their imaginative capacity is very limited and they need help to develop symbolic play, which is usually not developed spontaneously.\textsuperscript{95}

All people with autism have abnormalities in these areas but not all to the same degree. Today, the term "autism spectrum" introduced by Wing and Gould in 1979 because of his studies becomes important. Later it was defined by Wing in 1988. The concept of "spectrum" understood "autistic spectrum" a continuum in which there are different degrees of involvement, from the mildest to the most severe.\textsuperscript{96} In addition to these three disorders are associated disorders that affect more or less level for people with ASD. Mental retardation is one of them, along with behavioural problems such as aggressive behaviour or stereotypes. Often, changes occur in sleep and food. All these alterations cause a difficult family and

\begin{thebibliography}{99}
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\item Durkin, Kevin, et al. ‘Video games for children and adolescents with special educational needs.’ (2015). \textit{Zeitschrift für Psychologie}
\item Blamires, Mike. ‘10 Supporting the inclusion and achievement of learners with Autistic Spectrum Disorders (ASD).’ (2013). \textit{Additional Educational Needs: Inclusive Approaches to Teaching}
\end{thebibliography}
environmental adaptation.\textsuperscript{97} According to Samantha, the three common disorders of people with autism are:\textsuperscript{98}

- Behavioral and emotional problems such as anxiety, aggressive behavior, agitation, etc.
- Epilepsy
- Sleeping and eating disorder

This diversity is what must guide the educational community as intervention work with students with ASD. Whose aim should be to improve the adaptive skills of children with ASD? As for communication, it should not be simply the development of oral language, but the search for an alternative or augmentative communication that allows people with autism spectrum disorder improve their quality of life.\textsuperscript{99}

2.6. Challenges in Teaching-Learning Environment

Following are some challenges that autistic children face, particularly in teaching-learning situations.

2.6.1. The Attitudes of Classmates without Disability towards Children with Disability or ASD

A growing body of evidence suggests that the attitudes of classmates in preschool and primary school to students with SEN are positive. In elementary age, girls are generally more accepting of children with SEN. Classmates are generally incisors when interacting with students whose disabilities are more visible but tend to reject those children acting strange

and show no disability. According to a study, student attitudes towards children with ASD at the elementary school level are positive. These students usually want to interact with children with ASD, if the school provides information about the TEA. However, in another study, primary age children with ASD were less accepted by their peers compared to their classmates without disabilities. Peers can be more friendly and sympathetic towards children with autism who are highly functional when the developmental disorder is revealed.

It is easier for classmates to accept students with ASD in preschool to high school. In high schools, students can have a more negative attitude towards children with SEN. Children with ASD may be less accepted by their peers, and subsequently suffer more of the victimization of their peers compared to children typically or children developed with other types of SEN. In this scenario, the classmates with and without SEN have different interests and classmates sometimes get tired and feel that it is unfair be looking to partner with SEN. However, it is also necessary to ensure that their classmates are not overprotecting children with ASD. Although children with ASD need support, they need to learn to interact with society and be independent.

Furthermore, a study conducted focus group discussions with peers typically developed 32 schools. These students recognized the importance of social roles and social acceptance. They also suggested 7 themes summarizing different types of segregation of children with SEN: (a) the physical and social segregation, (b) differential and treatment expectations, (c) lack of knowledge about disability, (d) the communication gap between

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students with and without disabilities, (e) the challenges in behaviour, (f) negative attitudes, and (g) inadequate or inappropriate support. One of these issues suggests that expectations of children with SEN are very different compared to those of their classmates; therefore, children with SEN are treated differently than children without SEN.

2.6.2. The Attitudes of Teachers towards Inclusive Education of Children with SEN and ASD

Perceptions, experiences and attitudes of teachers towards children with SEN can be very instrumental in the inclusion of children with SEN factors. Positive attitudes of teachers can influence how classmates include children with SEN in the classroom. The methods of implementing the rules and policies to include children with SEN have also shown that may affect their inclusion in a regular school. Research on teachers' attitudes towards children with SEN have identified both attitudes; positive and negative. Countries such as Canada, USA, UK and Australia have been active in the development of inclusive policies. Teachers in these countries tend to hold more positive attitudes towards inclusion that what the teachers in developing countries. However, he also took some time for these countries to develop their educational system and is now seeing the results of a difficult process, which required strong efforts of all participants to achieve success. A study in other countries in Europe such as Norway and Switzerland revealed that the attitudes of physical education teachers in these countries are very positive towards children with SEN. In other European countries like the Netherlands, although the use of special schools prevails, the process of inclusion is still difficult. In France, a study found that difficulties arise from 'the fear of what

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is different, the institutional resistance and contradictions between professional cultures'. He suggests that teachers in regular schools should be trained to work with children with SEN for successful inclusion.\textsuperscript{108}

Since 2003, schools in Hong Kong, for example, have established different inclusive policies; however, the attitudes of many teachers towards inclusion remain negative. Although, the process of inclusion in developing countries has been slower compared to that of the first world countries like the United Kingdom, teachers in many developing countries campaigning for real inclusion. In developing countries in Latin America, the Caribbean and Africa, schools are still struggling to find the resources to train teachers and support inclusion. Studies show that teachers in these countries do not feel confident about including children with SEN in the classroom.\textsuperscript{109}

A review of 26 articles Humphrey\textsuperscript{110} indicated that although teachers seem to hold positive attitudes about inclusion, they do not fully support the inclusion of children with SEN. In fact, in some studies, teachers maintain a neutral or negative attitude towards the inclusion of primary age children with SEN. This can result in low expectations of pupils with SEN and can damage the child's academic performance. The teachers' attitudes can change when they experience the process of inclusion; consequently, they can develop their skills and capabilities. For example, in Canada, the teachers' attitudes have been changing since the inclusion process began. Initially, teachers were reluctant to include students with SEN because they feared were not adequately prepared and were not competent, and they felt overburdened due to increased responsibilities related to the inclusion of children with SEN in their classrooms. Additionally, they did not feel they had sufficient resources and felt they


\textsuperscript{109}Potter, Carol. “It’s the most important thing—I mean, the schooling”: father involvement in the education of children with autism.” (2016): 1-17. European Journal of Special Needs Education

had no choice or supporting children with SEN or their peers. However, over time, experience of the inclusion process has led to more positive attitudes towards inclusion attitudes.

The study of Charmanet et al., about the perceptions of teachers indicated that participant attitudes towards children with SEN need to be changed. Participants suggested that academic and social progress the child with SEN can reach is an important indicator of the success of inclusive education. In addition, teachers also suggested that inclusion is a process that should be planned in advance to succeed and that communication and experience among teachers must be shared.\textsuperscript{111} Other research has shown that the following factors could affect teacher attitudes toward inclusion:\textsuperscript{112}

a) The type and severity of SEN influence the attitudes of teachers towards inclusion.

Positive attitudes are more common in the inclusion of students with physical disabilities, students with specific learning disabilities and visually impaired students compared the inclusion of children with mental difficulties with social, emotional and behavioural or learning difficulties more severe. In fact, one of the main concerns of teachers is the inclusion of children with social, emotional and behavioural problems. Recent evidence of Billington\textsuperscript{113} found that perceptions of children with social, emotional and behavioural problems are most commonly compared to negative perceptions of children with moderate learning difficulties. In contrast, Robins and team\textsuperscript{114} conducted a study of teachers in Ghana indicated that perceptions were positive towards children who had any kind of disability even if they were social, emotional and behavioural problems.

\textsuperscript{114}Robins, Ben, Kerstin Dautehnah, R. Te Boekhorst, and Aude Billard. ”Robotic assistants in therapy and education of children with autism: can a small humanoid robot help encourage social interaction skills?” Universal Access in the Information Society 4, no. 2 (2005): 105-120.
b) The level of involvement of teachers in the process of inclusion and lack of knowledge and experience seems to affect their attitudes towards children with SEN. Teachers reported feeling incompetent and as a result were reluctant to teach children with SEN. So, education and training of inclusive at the undergraduate, masters or education at work are very important for the improvement of teacher education factors. Training employ this strategy could increase the confidence of teachers in teaching children with SEN and could help you develop a better way of inclusive education. In addition, teachers who have professionally experienced the inclusion of children with SEN are also more eager to accept and maintain more positive attitudes towards inclusion. The best source of knowledge is experience, even though teachers can be informed and trained, they need to have real experience with SEN children to discover their own potential and creativity and feel safer. If they do not try to get that experience, they could get caught in a negative cycle in which they learn not practice inclusion and consequently retain their negative attitudes towards the process of inclusion.

c) The personal characteristics of teachers, such as gender and age, influence the attitudes of teachers towards inclusion. For example, it is more common for women to support the inclusion. In addition, younger teachers tend to have views that are more positive. Additionally, teachers who teach in lower grades are more positive towards inclusion attitudes.

d) Most teachers hold positive attitudes towards inclusion of children with ASD; however, in the UK, some teachers' unions continue asking the government to reevaluate the process.

of inclusion. If teachers do not have the necessary support, they may experience anxiety and fear when they include children with ASD in their classrooms. Sometimes, teachers may not feel confident in managing a classroom in which children with ASD are also included. According to Jordan, ‘demonstrations related to children with ASD and their difficulty understanding the social and emotional create the attitudes of teachers towards inclusion. These attitudes, therefore, leave their mark on the interactions of teachers and their relationship with the children’. Thus, this may affect the way in which teachers perceive children with ASD. The quality of the teacher-student relationship is important for successful inclusion factor.

Previous research revealed that some teachers are frustrated by the need to use a different language and give more time to support the child in the instructions to understand. Some are not committed to using different learning styles of children with ASD. Teachers may also be vulnerable to feel exhausted, especially when the teacher is not qualified to work with children with SEN, such as children with ASD.

The findings of a preliminary investigation in England suggested that 72% of schools are not satisfied with the training that teachers have to support children with ASD. In fact, only 22 percent of teachers completed training on autism. Attitudes towards children with ASD can change if teachers receive quality training to understand autism, learn strategies to avoid and overcome difficulties and use strategies such as TEACCH and ABA.

### 2.6.3. Parental Perceptions of the Inclusion of Children with SEN

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Parents in many countries have advocated inclusion. Parents of children with SEN have been the main supporters of this process. The findings of a study Leblanc, and team conducted with 32 parents of children with SEN showed that they maintain the most positive perceptions towards inclusion. However, other parents of children with SEN were not satisfied with the results of their children. Most parents thought their children have the right to study in a regular school to have a better life.

The attitudes of principals, teachers, colleagues, and peers toward children affect perceptions of parents of children with SEN on inclusion. Most parents find positive social experiences for their children, and they want their children to fit into the school. However, in a study of White, and associates, relatives suggested that peer rejected children with severe SEN that were included in regular schools.

In a study of Levy and team, 70 of 140 parents of students with SEN suggested that inclusion should allow their children to improve their functional skills and academics to have higher expectations and an additional stimulation of the regular school achievements. The parents whose children receive quality support from their teachers expressed a more positive attitude towards inclusion. However, parents of older children with SEN are included in mainstream schools facilities had more negative perceptions due to the lack of resources available to their children.

Parents of children with SEN felt that teachers were not well trained and lacked experience in teaching children with SEN. They felt that attitudes toward school children with SEN were important factors in the successful inclusion of children, and they suggested

that the attitudes of some teachers towards children with SEN were not positive.

Additionally, negative attitudes can affect collaboration between family and school and in fact; collaboration between family and school was not found. Although parents said they were willing to participate in a collaborative family-school. The collaboration between parents and teachers is very important for the inclusion of children with SEN.  

2.6.4. The Perception of Parents towards the Inclusion of their Children with ASD

Parents of children with Autism Spectrum Disorder (ASD) in particular, have several concerns regarding the inclusion of their children, because they feel that their peers might reject their children. As mentioned previously, parents of children with ASD also want their children to be included in regular schools because they want their children to live the same lives as other children typically developed. However, they are concerned about the possible rejection of their peers and bullying. Parents perceived that teachers should be trained to educate children with ASD at both schools, special and regular to develop experience.

Parents seem to prefer that teachers are trained in regular schools.

Parents also perceived a need to increase the quality of provision, improve teacher attitudes towards inclusion of children with ASD and increase the skills of teachers to make adaptations to the curriculum. On the one hand, in a study, factors related to the success of inclusion, such as the commitment of the school, proved to be important in perceptions of parents and professionals. On the other hand, parents do not agree with professionals, about the behaviour of children, social skills and academic abilities are significant factors in the successful inclusion. The attitudes of teachers towards children with ASD and learning styles


should be individualized to each child are the most commonly influence the perceptions of parents about the inclusion.\textsuperscript{127}

Barrett and team\textsuperscript{128} compared the experiences of parents with children with Down syndrome and Autism Spectrum Disorder. They found that the age of diagnosis and assessment test are important factors that have an important influence on the perspectives of parents towards inclusion. Parents of children with Down syndrome tend to prefer the inclusion of full-time, while parents of children with ASD prefer part-time are included. The findings of an investigation of Blamires\textsuperscript{129} also suggested that it is more likely that parents of younger children with ASD have more positive attitudes toward inclusion compared to parents of older children. Parents of children who have already been included are also more positive towards inclusion. Additionally, it was also found that parents from lower social classes do not keep much contact with the school compared to those who are professionals. These findings are consistent with the study of Boesch et al.,\textsuperscript{130} in which many parents admitted that they did not spend enough time to improve the skills of their children. Therefore, it is important to recognize that parents also need to take an active part in the educational role of their children.

2.7. \textit{Teaching Strategies and Programmes for Autistic Children}

2.7.1. \textit{TEACCH}

The TEACCH method (abbreviation for Treatment and Education of Autistic and related Communication Problems), is a Division of the Department of Psychiatry at the

\textsuperscript{127} Arnold, Sharon, and Phil Reed. ‘Reading assessments for students with ASD: a survey of summative reading assessments used in special educational schools in the UK.’ (2016) 43(2): 122-141.\textit{British Journal of Special Education}

\textsuperscript{128} Barrett, Barbara, et al. ‘Comparing service use and costs among adolescents with autism spectrum disorders, special needs and typical development.’ (2015) 19(5): 562-569.\textit{Autism}

\textsuperscript{129} Blamires, Mike. ‘10 Supporting the inclusion and achievement of learners with Autistic Spectrum Disorders (ASD).’ (2013). \textit{Additional Educational Needs: Inclusive Approaches to Teaching}

School of Medicine of the University of North Carolina at Chapel Hill. Its primary aim is to prevent unnecessary institutionalization, helping to prepare people with ASD to live and work more effectively at home, school, and community, reducing or removing autistic behaviours. It is a complete program, community-based, including direct services, consultation, research, and professional training.¹³¹

Eric Schopler, Co-Director and Founder of TEACCH and Robert Reichler, developed the TEACCH Division which originated in a previous project supported by the National Institute of Mental Health. In 1972, the General Assembly of North Carolina passed a law that called for the creation of the TEACCH Division, making it the first program dedicated to provide treatment and services to people with autism and related disorders and their families throughout the extension of the state. Since February 1993, Gary B. Mesibov is the Director of the Division TEACCH and Professor of Psychology at the University of North Carolina in the Departments of Psychology and Psychiatry. Today the method has spread to 45 US states and over 20 countries follow an intervention inspired by it. TEACCH Treatment goals include:¹³²

1. Develop special ways in which the customer can enjoy and understand other people and live harmoniously at home.

2. Increase the motivation and the client's ability to explore and learn.

3. Improve the uneven development of intellectual functions. Therapists and teachers evaluate client-learning skills and design teaching methods and strategies appropriate developmental sequences to improve social, communication and customer survival skills. In collaboration with the family, behavior modification programs and skills


self-help they are also developed. All programming is designed to detect the specific needs of each client and their family.

4. Overcoming the obstacles in motor areas of fine and coarse perception through physical exercises and integration activities.

5. Reduce the stress of living with a person with autism or related to other family members disorders.

6. Overcoming the problems of school adaptation of the client.

Parents of people with ASD, initially observed treatment sessions with a parent counsellor, and move on with this work at home, commenting after the team. School programs offer individualized instruction emphasizing appropriate for the age and developmental level of each student in a structured learning environment skills. For all ages, the emphasis is on communication skills, socialization and also in promoting independence and preparation for adult life. The classes are made up of about six students with a teacher and an assistant teacher. With few exceptions, TEACCH class’s affiliates are located in primary and high schools, secondary to offer maximum opportunity to contact between autistic disabled students and that not in school. Many autistic students they are placed in these classes, or in other environments more general trend. Being placed in regular public schools offers autistic students, many opportunities to learn from their non-disabled peers, while allowing them to last broaden their understanding of individual’s disability. The students, who need related services such as speech therapy, can access them at school or may continue to receive treatment at the TEACCH regional centre. This decision is made

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according to the needs of each student and family. The principles on which it is based, according to Eric Schopler (2001) are:

- Optimal adaptation
- Collaboration between parents and professionals
- Effective Intervention
- Emphasis on cognitive and behavioral theory
- Advice and early diagnosis
- Teaching structured audiovisual media
- Multidisciplinary training in the generalist model

2.7.2. Picture Exchange Communication System (PECS)

Communication system Picture Exchange (PECS) designed by Frost and Bondy in 1985 (Cit. In Autism Foundation Journal, 2014). It is a representative communication system that uses elements such as help, pictures. Exchange begins working through the approach to the caller. It aims to achieve spontaneous communication as possible. The system Picture Exchange Communication (PECS) is an augmentative communication system widely used today. Simarro (2013) refers to a series of advantages and disadvantages in connection with other communication systems. One of the first advantages that can be emphasized is the possibility of widespread use in schools and homes. This has allowed extending the work outside the classroom or centres professionals working with children with communication

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difficulties. It is due to a very important factor, low cost necessary for their implementation material.\(^{136}\)

In using PECs, the communication development is progressive, that is, it is staggered, reinforcing the above. This allows further progress without abandoning seen in the previous phases. It is a progressive system, starting work at simpler. For example, the discrimination process is done when the person recognizes the images, it is able to deliver and look for the caller.\(^{137}\) Today, with the expansion of new technologies of information and communication they have appeared numerous applications to work through PECS, facilitating access to images and resources. On the other hand, a very important advantage of using PECS is that people with autism spectrum disorder often have a good visual memory, which benefits the development of their communication using images. These images represent a help for the person with communication problems, since it facilitates the choice and discrimination concepts.\(^{138}\)

In addition to the importance of practice by images, the Exchange Communication System Imaging presents record sheets that allows collecting data for later analyze them and know the child's development and what steps has presented major difficulties. PECs has a method to work simple sentences, "strip-phrase" the model. For this model of communication that allow notebooks to support in structuring and work with simple sentences are used. The communication system Picture Exchange does not need any particular interest except

\(^{136}\) Monica, Danielle R. *The Picture Exchange Communication System (PECS) and its effect on communicative abilities in Rubinstein-Taybi Syndrome: A retrospective case study.* (2016) Diss. CALIFORNIA STATE UNIVERSITY, LONG BEACH.


prerequisite and motor skill to catch some picture cards. Despite the benefits cited above, we can mention certain disadvantages.\(^{139}\)

Working with PECS requires good training and knowledge of the system by professionals, because the results depend on its application in the classroom or in the environment in which they work with children with ASD. For the practice of this communication system, permanent access to images is required, since it is the main material needed to work through PECS. One limitation to which we refer is that the child is developing communication using the communication system Picture Exchange must recognize the images that are presented and be able to associate the elements of reality. On the other hand, the caller who works as a receiver must also recognize the images displayed.

When you start using PECS, it has to devote much time to the preparation of the material, resources, etc. In addition to the importance of knowing the interests and characteristics of the person who is going to work. Another disadvantage to be noted is that in the early stages of this system the presence of two people working with the child is necessary. This in most schools is complicated, since they do not have two teachers per classroom. In addition, one of the major disadvantages of is that it is not accompanied by specific oral stimulation, i.e., its methodology does not include oral stimulation while the child works the different phases.

2.7.3. **Social Stories**

This strategy allows you to translate the watermark of social interaction in a particular message that allows the person with autism understand that information may be missing or misinterpreting in the context of social interaction. With social and conversational stories in comic it is intended that the student can predict how to deal with a social situation that is

confusing, difficult to interpret or against which experiences anxiety. This strategy responds to the characteristics of processing visual information displayed by people with autism.\textsuperscript{140}

In the same vein, and based on the same research, it has been found that not only social stories can positively affect the behavior of students with autism, but any written as the following strategy:\textsuperscript{141}

- Social Screenplays are written directives by which reminded students behavior or procedure to be performed.

- Agenda and visual calendars are procedures for management of activities in time, through visual diagrams (drawings) and illustrated agendas, which allow the person with autism to remember the expected behaviors in different places and the order in which they will present the events. They are used to develop skills forecasting and anticipation from short times as scheduling a class module or a school day, to longer cycles as scheduled activities, monthly, bimonthly, semiannually or annually

2.7.4. \textit{Giggle-Game}

One strategy or a program that appears very interesting in helping children with autism develop their communicative and social skills is the “giggle game” that Sonders (2002) discusses in her book titled “Giggle Time – Establishing the Social Connection: A Program to Develop the Communication Skills of Children with Autism”. The “giggle game” is not just a game that engages the child to teach them turn taking skills but it also establishes a basis for pre-conversational speech in children with autism. The game by itself is a mini-conversation, with each partner taking a communicative turn and waiting for the turn of the other. In addition to this, just like in a conversation, the giggle game also teaches a variety of

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other social and communicative skills such as “joint attention, staying in close proximity, enjoying each other’s company and social reciprocity”\textsuperscript{142} (p. 18), which are all the basic fundamental social skills for adapting in the social environment.

2.7.5. \textit{Applied Behaviour Analysis (ABA)}

ABA stands for Applied Behavioral Analysis or, interchangeably, behaviour modification method. It has its scientific origin in Thorndike, studies began in 1913 on learning cause and effect in the United States, which then continued the Russian philosopher Ivan Pavlov in 1927 with his famous experiments in dogs. Another antecedent is found in John B. Watson and learning in children and B. F. Skinner, who made valuable contributions of individual research on strengthening programs in the decade of the 50s (1950-1954).\textsuperscript{143}

Maurice (1996) specifies that the method lies basically in the division of tasks - even complex and / or abstract such as communicative language in a series of hierarchical steps; each of which prepares the way for the next. Teaching through separate efforts, therapists and parents work in combination to create a structured environment, with planned activities and a consistent way of learning. The child is rewarded for overcoming each small step. Gradually children discover not only the separate portions of what is taught, but also integration. Zakas et al.,\textsuperscript{144} states that the ABA uses methods based on scientific principles of behaviour: autistic children do not learn naturally and spontaneously in typical environments, as do other children. Then try to build them socially useful behaviours also working to reduce the problem. Whalon et al.,\textsuperscript{145} have argued that each skill that the child does not have (such as...


\textsuperscript{143}Ibid

\textsuperscript{144}Zakas, Tracie-Lynn, et al. ‘Teaching social studies content to students with autism using a graphic organizer intervention.’ (2013) 7(9): 1075-1086. \textit{Research in Autism Spectrum Disorders}

imitating, speaking, etc.) is divided into small steps. Each step is a measurable unit and specific behaviour to be achieved. It always works with small goals to achieve, to get to achieve what we want the child to learn.\textsuperscript{146}

The enormous development of the ABA method, as claimed Gare and Pear (1998), has expanded so throughout the developed parts of world as the most successful treatment of autism for three reasons:\textsuperscript{147}

1. It has proven effective in a variety of places, from psychiatric hospitals, schools and community activities in general.
2. It has been gradually given disenchantment with existing educational programs and traditional systems.
3. It has demonstrated, with the most important element that characterizes behavioral therapy: objectivity, ability to be replicated, which gives reliability and validity.

2.8. \textbf{The Role of Teacher Support in Inclusion of Children with SEN}

In many countries, including the United States, Mexico and the UK, support teachers have been employed to support inclusive education of some children with SEN in mainstream schools. In fact, the number of support teachers in the UK has almost tripled from 1997 to 2008. In some primary schools there are so many support teachers as regular teachers. A number of studies supported the positive role of teacher support in the successful inclusion of some children with ASD.\textsuperscript{148} Support teachers in the UK and the United States support the inclusion in many different ways. Many students with ASD have specific learning problems


\textsuperscript{148}Webster, Rob, and Peter Blatchford. ‘Dept. of Psychology and Human Development, Institute of Education, University of London The long-awaited Children and Families Bill will very soon complete its passage to Royal Assent. The Bill sets out widespread changes to services relating to adoption, looked-after children and those with special education needs (SEN). Brian Lamb’ s.’ (2014). \textit{SEN POLICY RESEARCH FORUM: Policy Paper}
and need care from a support teacher one to one during the day, or otherwise not learn. It is therefore important to combine work programs individualized instruction, either in class or in a small working group supported in a regular school.\textsuperscript{149}

Usually, from the perspectives of parents and teachers, many teachers may not be able to provide quality education for all students, including those with SEN, if they cannot count on help from support teachers. Support teachers also act as mediators, since they promote the participation of children with SEN and improve learning. Support teachers should be aware of how much support they should provide and when appropriate enable the child to be independent, but at the same time not isolate it from the other classmates. They can also act as mediators between the school and parents.\textsuperscript{150} In addition, collaboration between teachers and support teachers is very important. Support teachers should be trained to modify the curriculum to use proper communication and learning style to meet the needs of each child. Support teachers need to plan their activities and report them to teachers. In one study, teachers suggested that the role of teacher support is beneficial for them because support teachers help children with SEN in the classroom and allow the teacher to meet the needs of all students.\textsuperscript{151}

However, this can lead to some teachers do not interact enough with the child with ASD. The effects of the role of teacher support inclusion and academic achievement of students is complementary rather than direct. The educational courses are now instructing teachers how to work with teachers support. Additionally, it is very important that they have self-confidence and understand that their role is crucial in the process of inclusion.\textsuperscript{152}


The findings of a study by US research showed that the support of teachers support the inclusion of children with ASD, especially children with ASD, has increased as the number of support teachers has grown. San José Cáceres, and team\textsuperscript{153} reviewed studies on the role of teacher support. Before 2000, the role of teacher support was not well explained. Support teachers only expected to look after children with SEBD.

A study by Salomone and team\textsuperscript{154} indicated that according to the perception of the participants, the main barrier is the lack of inclusion teachers to support children with SEN. Support teachers, on the other hand, suggested that the main barrier was the lack of information and general attitudes of teachers and classmates. Sometimes, teachers were not prepared to support the inclusion of children with SEN and to tell other students how to interact with their classmates with SEN. According to a review of 26 different studies, Rowley et al.,\textsuperscript{155} suggested that support teachers help keep the commitment to academic activities and improve communication between the child with ASD and the teacher and classmates.

2.9. \textit{The Role of Support Teachers in supporting Children with ASD}

It has been argued that some children with ASD require an educational system based on a one to one tutoring, plus the role of teacher support is seen as important for some children. Few published studies describe the role of teacher support in supporting children with ASD. One of the most recent studies found that support teachers tend to have more positive attitudes towards children with ASD compared with teachers.\textsuperscript{156} However, a review


of Potter suggested a neutral outcome, suggesting that support children with ASD that are included teachers received support in the environment of regular schools was not related to the interaction between teacher and child.

Furthermore, a majority of the previous research studies are indicative of the fact that the role of teachers, with respect to the educational prognoses of children with autism, takes the centre stage when the pupils are enrolled in primary schools. Primary schools or mainstream primary education is an essential component for the future development of young children, irrespective of the fact whether they are diagnosed with autism or not, and without the incorporation of primary education attaining success in further studies becomes a cumbersome task. However, for young pupils with autism, the task of acquiring education, primary, secondary or higher, is a challenging hurdle, one that requires assistance from the parents, but more so from the teacher. Past research is indicative of the fact that young pupils with autism lack adequate communicational and social skills, two attributes that have been depicted as essential by scholars and academicians for the successful incorporation of mainstream primary education. Thus based on the following analogy, medical practitioners and respective researchers all claim that the role of teacher, during the primary education phase of an autistic pupil, carries immense significance and importance.

However, an investigation of Peters, Brenda and Forlin suggested that help support teachers can influence negatively sometimes academic achievement of children. If children with ASD receive more attention from the teacher support, academic achievement may decrease because teachers can leave the full responsibility for the child's teacher support. Therefore, children with ASD may interact less with the teacher and other classmates

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157 Potter, Carol. ‘‘It’s the most important thing–I mean, the schooling’: father involvement in the education of children with autism.’ (2016): 1-17. European Journal of Special Needs Education
158 Peters, Brenda, and Chris Forlin. ‘Children with ASD as part of the learning community in three international schools in Hong Kong: Practical implications for class practice.’ (2013).
therefore socially isolated. In contrast to a study by Norwich,\textsuperscript{159} found that teacher support does not affect the relationship between the teacher and the student with ASD. Other contributing factors are access to the training experience of others and the relationship between the teacher and support teacher. However, there may be a barrier if the teacher is not aware of ASD.

In one study by Mroz\textsuperscript{160} they interviewed 15 teachers' support in 4 regular high schools including working with children with ASD. Their findings suggested that access to the experience, communication with the school and the awareness of what the ASD, were some factors supporting the way in which teachers support can include children with ASD in schools. One of the earlier findings of a study by Mesibov et al\textsuperscript{161} suggested that frequent changes of teachers can have a negative effect on children with ASD, because children with ASD are not prepared to change their routines.

It is very important to stress how important can be the role of teacher support in some cases. His work with children with SEN and TEA differs across countries. For example, in Mexico, in some cases, it is the sole responsibility of support teachers provide instruction and support children with ASD.

2.10. Community-oriented Schools with an Inclusive Ethics and the role of its Directors

Inclusive schools maintain a strong inclusive ethic that promotes and supports a culture of respect for diversity. Positive attitudes of the participants indicate a positive ethic about diversity and promote values that support the inclusion of all children. Highly qualified teachers and teachers should use good practices and inclusive values into the classroom and

\textsuperscript{159}Norwich, Brahm. ‘Categories of special educational needs.’ \textit{The SAGE Handbook of Special Education: Two Volume Set} 1 (2013): 55.


throughout the school. These schools are flexible, use different strategies and see work with children with SEN as part of their own work.\textsuperscript{162}

Schools that provide access to a comprehensive curriculum support the participation of children. In the case of children with ASD it is necessary to create a friendly environment autistic, use different learning styles and develop a more flexible curriculum that can be adapted according to individual needs and involve each child emotionally. This should provide the necessary support to enhance the participation of children with ASD and break the barriers that segregate regular schools.\textsuperscript{163}

In creating an inclusive school, factors such as leadership should be considered. The role of leadership in implementing successful inclusion in the regular school has been found as crucial to challenge negative attitudes and celebrate diversity in daily practice. There is no specific type of leadership to work in inclusive schools, but most inclusive schools require the support of a director who must be a democratic leader. This type of leader influence all participants involved in the demonstration of values that support the participation of children with SEN.\textsuperscript{164} Therefore, all participants (classmates, teachers, support teachers, staff and parents) have to be committed to the idea of the actual inclusion into the class and removing any barriers. It is essential to increase awareness in the school community to change attitudes towards inclusion between teachers and teaching staff before and during the process of inclusion. Directors have to support the idea of inclusion in theory and practice, between teachers and staff who may be reluctant to change. Managers who show positive attitudes devote their time and engage in activities involving the child. Principals and schools need to

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\textsuperscript{163} Lindsay, Geoff, et al. ‘Meeting the educational and social needs of children with language impairment or autism spectrum disorder: the parents’ perspectives.’ (2016).\textit{International Journal of Language \& Communication Disorders}
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provide teachers and staff with appropriate training and motivation to enable them to become caring partners in this difficult process that needs to be well planned and continually revised to achieve success. In contrast, leaders with negative attitudes tend to think that they cannot make exceptions for children with SEN. Thus teachers should be prepared to meet the specific needs of children with SEN.\textsuperscript{165}

According to Griffith et al.,\textsuperscript{166} managers suggest that leaders need to be proud of the achievements with children with SEN, which also motivates other classmates. Leaders also suggest that inclusive schools share a culture and an ethic of respect for diversity, ideas common in practice, teamwork and supporting the inclusion and adaptation of the lessons to change the structures.

2.11 Chapter Summary

The chapter concludes that Inclusive Education is critical for the inclusion of SEN children. The debate of inclusive education is based within the human rights perspective. The chapter also presented various laws and regulatory reforms for education of SEN children in the UK to explain the role of government and politicians in pursuing inclusive education for SEN children. The chapter then continued to explore challenges faced by autistic children due to their disability in terms of qualitative impairment during social interaction, qualitative impairment in terms of communication and language, in terms of patterns of behaviour, restricted interests and activities, and in terms of stereotypes faced by the SEN children. Furthermore, the chapter also presented challenges faced by children with autism within the teaching-learning environment. These challenges include the attitudes of classmates who do not have disability towards children with autism or other disabilities, challenges created by

\textsuperscript{165} Jones, Glenys. ‘Educational provision for children with autism and Asperger syndrome: Meeting their needs.’ (2013). Routledge,

the attitudes of teachers towards inclusive education of children with SEN and ASD, challenges created by parental perceptions of the inclusion of children with SEN and autistic children, and the challenges created by the perception of parents towards the inclusion of their children with ASD. The chapter then continued to present teaching strategies as well as various programmes for children with autism which include TEACCH, Picture Exchange Communication System (PECS), Social Stories, Giggle-game, and Applied Behaviour Analysis (ABA). The chapter also highlights that teachers have a critical role and it explained the teacher could play to support the inclusion of children with SEN. It also highlights the role of support teachers in supporting children with ASD. Finally the chapter highlighted the role of community-oriented schools with an inclusive ethics and the role of its directors in supporting inclusive education for children with autism.
CHAPTER 3: MULTI-SENSORY TEACHING FOR AUTISTIC CHILDREN

3.1. Introduction

Children in preschool aging 3 to 5 years should be given a solid basis to develop ability to maximise academic achievement in later years. There are numerous obstacles faced by children with special needs as compared to children without such needs. Therefore, there must be some interventions at the early stage for autistic children for their cognitive growth and physical needs as the preschool year are the foundation of academic career of a child\(^{167}\). Research and practitioners alike propose that interventions at early stages are as crucial for the development and academic career of autistic children as they are for normal children. In various parts of the world particularly in the USA and the UK, a number of programmes have been introduced with particular set of intervention for autistic children to help them with their learning issues and challenges and bring them at par with their normal counterparts.\(^{168}\) According to Lang and associates\(^{169}\) children’s preschool experience presents most critical opportunities for educators to promote development and growth in various areas such as social-emotional, communication, intellectual development, physical/self-reliance, and aesthetics.

Following discussion begins with introducing multisensory environment and the underlying concepts. The discussion then continues to elaborate autism and sensory process deficiency to highlight the importance sensory skills for children with autism. The review then continues to discuss methods and environments of multi-sensory based teaching

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interventions that have been developed to help children with autism. The methods and environment are then supported by providing underlying theory focusing on sensory mechanism deficiency among children with autism. The discussion then integrates theory and teaching environment to provide rationale for using multi-sensory theory and sensory integration theory to improve learning and well-being of children with autism. Furthermore, in order to justify multi-sensory and sensory integration based interventions the review focuses on deficit of self-regulation among children with autism and other disabilities. The chapter then moves on to review empirical literature by critically examining findings and methodological choices of available empirical literature. The aim of empirical research is to understand the effectiveness of multi-sensory interventions for improving the developmental and educational needs of children with autism. The review also discusses visual aids, visual timetables, and social stories. The review explores how and why these interventions are used and also review literature about effectiveness of social stories in order to improve social skills of children with autism. Finally the chapter ends with a summary of discussion.

3.2. Multi-Sensory Environments

Students and children with autism who have difficulty in recognition and dealing with their environmental stimuli face challenges and problems on daily basis. This is a disorder in sensory processing and can have debilitating effects on children. On the other hand, these are the type of issues and challenges which are hard to understand for people who do not suffer from autism or disorder in their sensory processing. For instance, a child who is facing obstacles of this nature may find it very difficult and overwhelming to transition from one activity or step to the next. As a result of these feelings associated with anxiety, children and students may show a variety of different responses and manners. These can include self-injurious behaviours like slapping, biting and punching themselves; aggressive behaviours
such as kicking others and pulling their hair and vocal outbreaks such as screaming. In this paper strategies will be discussed to help students with autism and those who face sensory processing disorder (SPD). The aim of these strategies is to support these children in helping them feel more at ease and comfort in their respective environment in order that they can become fruitful and dynamic members in their classrooms and also in the society.\textsuperscript{170}

Multi-Sensory Integration (MSI) is a procedure through which animals and humans perceive their world and carry out information processing using their different senses which include sight, taste, smell, touch and audition. This process allows for quicker and more accurate interpretation of stimuli. For instance cats, if visual flash is added to an auditory condition, it results in neuronal responses which are seventy four percent quicker compared to auditory condition alone.\textsuperscript{171} Moreover, as a result of decrease in response latency, neural response in relation to audio-visual (AV) stimuli in cat’s superior colliculus are way more reliable and strong than compared to auditory stimuli in isolation.\textsuperscript{172} Neurological findings with respect to MSI in humans are strong and reliable both in case of AV speech and also for object related non-social stimuli.\textsuperscript{173} Integration of AV is first reflected in the electrophysiological changes that take place in main auditory regions, after that it is activated in the superior temporal sulcus, another area in which literature is growing with respect to AV integration.\textsuperscript{174}

The years from age three to five also known as preschool years and are very crucial for laying solid foundation for academic success and for achievements which are to take

place later in a child’s life. Children who have special requirements face a lot of obstacles in their life and their development shows a considerable lag when compared to their peers. As a result, early and timely intervention during the preschool stage is very critical to their later success in school life and for them to realize their full potential.\textsuperscript{175}

### 3.3. Autism and SPD

Autistic students who have problems in identifying and responding to sensory stimulus may suffer from SPD. SPD can be defined as a complicated and intricate disorder of the brain which affects both adults and children. People who suffer from SPD have a tendency to misconstrue normal and everyday sensory information which includes touch, movement and sound. SPD is a disorder on its own, but it also prevalent among 42-88\% of children who have ASD.\textsuperscript{176} In order to make up for this misinterpretation, people suffering from SPD may not exhibit appropriate response to a stimulus or may feel overwhelmed by the overload of information and seek experiences of an intense nature as an outlet.\textsuperscript{177} In all individuals, the most important role is played by the nervous system in interpretation and organization of sensory input. It interprets and organizes over eighty percent of the stimuli that people are exposed to in their environment.\textsuperscript{178} The nervous system successfully interprets such huge amounts of information because of the different bodily senses. These senses include not only the five common ones but also but also 3 other senses which people are less familiar with. These 3 senses are vestibular, tactile and proprioceptive senses and they play a


very important role in the context of the nervous system as they organize and interpret various environmental stimuli.\textsuperscript{179}

The vestibular sense which is also called or considered as a sense of balance, gives sensory input with respect to the movement of the body through space, the tactile sense entails sensory input with regards to touch and the proprioceptive sense includes input from joints and muscles. It is with the help of these senses that the children are able to raise their hands, walk in the classroom in a safe manner and recognize the hotness or sharpness of objects. However, students who suffer from autism may find it difficult to carry out everyday tasks that entail the utilization of these senses.\textsuperscript{180} These students also may find it difficult to adjust to changes that take place in their environment, for example in turning on the lights. As a result of this a child’s ability to function in an effective manner is severely diminished and a number of negative behaviours may result.\textsuperscript{181} As these students face a lot of discomfort, they usually struggle in terms of staying focused and successfully completing social and academic activities in the context of the school. Even though all students who are diagnosed with autism and SPD may find it hard to adapt to various stimuli changes that take place in their environment, each student is a separate case and reacts in a different manner and must be treated accordingly. Students suffering from this disorder may belong to different categories; they can be over responders, under responders or sensory seekers. There are numerous similar characteristics between over responders and sensory seekers and therefore teaching such students may need different teaching methods than normal and is usually termed as Multi-Sensory Teaching.\textsuperscript{182}


\textsuperscript{180}ibid


3.4. Methods and Environments for Multi-Sensory Teaching

To develop an effective curriculum for autistic children, educators have a variety of effective methods and environments that they can use as interventions for autistic children in early years for teaching and learning. Lately, teaching materials and curricula focusing on sensory experiences have emerged and received attention for experts of special children education in various workshops and conferences. The aim of the multisensory teaching materials and methods is to improve SEN’s academic abilities and create an environment where there are minimum challenges and they feel integrated with their peers.183 According to the arguments presented by Ferrari, Robins, and Dautenhahn,184 multisensory environments have been increasingly adopted by teachers and institutes for special education. They have evolved into a variety of methods and techniques and they are supposed to present valuable support to stimulate children learning impairments. A number of institutes have built classrooms based on concepts of multi-sensory teaching for special children. These classrooms and programmes have innovative and outstanding outcomes on the ability of autistic children.

In addition, a number of curricula have been developed based on multisensory teaching principles to develop and boost the academic skills to SEN children. For instance, there are Multisensory Structured Language Programs that aim to teach dyslexic students as well as students with related disorders to improve reading and writing. The underlying principle in these programmes is to use learning pathways in children’s brain (such as

kinaesthetic-tactile, visual/auditory, etc.) at the same time so that their learning and memory can be optimised.\textsuperscript{185}

Carter and Stephenson\textsuperscript{186} described the term multi-sensory environments (MSEs) as a setting where objects are organised in a way to stimulate learning of people with severe learning disabilities. Some of the most commonly used objects in MSEs are fibre optic lights, bubble tubes, projectors, and other musical equipment. The advocate of multi-sensory environments argue that if a person has disability or impairment with respect to physical, sensory, and/or intellectual ability, they can be stimulated in a variety of ways through multisensory objects.

3.5. \textit{The Theory of Sensory Integration}

The theory of sensory integration has been adopted by various institutions particularly in the U.S. education system. Application of sensory integration theory is most reflected by implementation of multi-sensory teaching environments and techniques. This theory states that humans use multiple perceptual systems and combine information from them to provide some sort of coherent stimuli to brain. It has become an increasingly popular technique for educators particularly among teachers of SEN (Special Education Needs) children and autistic children. The review of literature shows that there is a significant amount of theoretical and empirical literature focusing on the effectiveness of sensory integration theory. There has been a surge in the literature in the last decade. The primary audiences of this literature are teachers, parents, as well as other education practitioners that are responsible for education of SEN children.\textsuperscript{187}

There are several interventions based on sensory integration theory that are developed to optimise education and learning achievement of children with developmental disorders for instance autism. In Future Horizon’s Autism/Asperger’s Conference in 2004, sensory integration theory based interventions was a prominent debate. This theory also received special attention in the Region 18 ESC special education teacher’s workshop in 2004 for autistic children. The main audiences in these conferences were parents, teachers and administrators of schools, speech therapists, and occupational therapists, particularly related to autistic children. The debates showed that there is high level of effectiveness of sensory integration theory especially in educating autistic population\textsuperscript{188}. Furthermore, many practitioners have also developed therapies based on sensory integration theory to support children with severe disabilities.\textsuperscript{189}

3.6. Mechanism of Sensory Integration Theory

An occupational therapist Jean Ayres developed and presented sensory integration dysfunction to explain various symptoms that she noted in children having various learning disabilities. The definition of sensory integration as presented by Ayres, “\textit{the neurological process that organizes sensations from one’s own body and from the environment and makes it possible to use the body effectively within the environment}”\textsuperscript{190} (p.11). The theory concludes that the organisation process can be improved through stimulation of inputs that they provide to human brain mechanisms.

There are three basic perceptual systems of the central nervous system are involved in the sensory integration theory, namely, proprioceptive, vestibular, and tactile. The function of


\textsuperscript{189}Fletcher, Dale, Richard T. Boon, and David F. Cihak. "Effects of the TOUCHMATH program compared to a number line strategy to teach addition facts to middle school students with moderate intellectual disabilities." \textit{Education and Training in Autism and Developmental Disabilities} (2010): 449-458.

\textsuperscript{190}(Ayres, 1989, p.11)
proprioceptive system is to direct the individual’s orientation towards his/her body/self within the space/environment. It gives sense to human body and provides information to the brain regarding the location of human limbs. The information about movement in the space is then transmitted to the vestibular system which is situated in the inner ear. It provides information about acceleration (in other words any change in the motion rate) and it also gives the sense of gravity. Finally, the tactile system sends information about the touch sensations to central nervous system. There are receptors throughout human body, particularly in the tongue, hands, and lower part of face (in the somatosensory cortex). All the three perceptual system work collaboratively and coherently to organise, send/receive, and process stimuli to the brain related to human body and surrounding environment. The function of auditory and visual senses are also dependent upon the output of basic perceptual systems, although they are operating at a higher level yet their efficiency depends upon the function of basic systems.\(^{191}\)

The sensory integration theory claims that majority of the symptoms of related to learning disorders can be credited to disability/impairment in the processes of basic perceptual systems that fail to provide proper stimuli about body and environment to the brain. Sensory integrative dysfunction is defined as inability of children to organise or integrate the stimuli in the brain. Due to this disorder, children show maladaptive and unorganised interactions with the surroundings because of the faulty stimuli provided by dysfunctioning perceptual systems. Thus, due to dysfunction of perceptual systems children face problems in terms of development, learning, as well as behaviour.\(^{192}\)

The dysfunction leads to a variety of symptoms shown in the behaviour of children and they correspond to relevant breakdown of perceptual system of sensory input occurs. For

\(^{191}\)Khare, Rachna, and Abir Mullick."INCORPORATING THE BEHAVIORAL DIMENSION IN DESIGNING INCLUSIVE LEARNING ENVIRONMENT FOR AUTISM." ArchNet-IJAR 3, no. 3 (2009).

instance, if the proprioceptive system of a child is dysfunctioning then it often manifests itself as difficulty in motor skills (both gross and fine). The child is likely to appear clumsy or fail to handle and manipulate small objects such as balls. Furthermore, the child may also present attention deficit, regulatory failures, sensory defensiveness (it is defined as adverse reaction to sensory stimuli), the activity levels are either extremely high or extremely low. The child may also show undesirable behaviour. All these are typical symptoms of dysfunction of sensory integrative.¹⁹³

The aims of therapeutic interventions are to change the capacity of children to meet the environmental demands and help them to successfully organise an appropriate stimuli to the brain. This helps them to proceed with adequate developmental sequences and ultimately they help children to improve their academic achievement. In order to process information at higher level, first human brain must receive, process, and integrate stimuli regarding the body and environment¹⁹⁴. Ayres explained that sensory integration theory is grounded on the principle that children development is based on the successful integration of the sensory system and thus their motor abilities, attention, organisation, language, interpersonal relationships, and other higher level functions are dependent on integrated stimuli (p. 383).

The goal of therapies based on sensory integration, as argued by Ayres (1972), is:

"to enhance the brain’s ability to learn how to do these things. If the brain develops the capacity to perceive, remember, and motor plan, the ability can then be applied toward mastery of all academic and other tasks, regardless of the specific content. The objective is modification of the neurological dysfunction interfering with learning rather than attacking the symptoms of that dysfunction” (p. 2).

Parents, teachers, therapists, as well as others can administer therapeutic interventions; however, they are merely supplement, and cannot serve as a substitute for formal classroom lessons. The purpose of such interventions is to alleviate adverse impacts or severity of learning disability while allowing SEN children to learn quickly and effectively. The interventions based on sensory integration stimulate the tactile, vestibular, and proprioceptive systems as they apply deep pressure, use tactile stimulation, and other motor activities to help children send appropriate stimuli to the brain.\textsuperscript{195}

The interventions and relevant practices are put into effect to assist children to maintain a balance between the perception of environment with the physical and neurological conditions. For instance, several autistic children typically show hypersensitivity towards tactile stimuli and therefore they are reluctant to physical contact. This is known as tactile defensiveness. There are touch interventions that can be used to minimise tactile hypersensitivity of children which include using a soft brush to rub autistic child’s extremities. Simultaneously, children must be encouraged to experience the touch and sensation of the brush. Using therapies such as described above the practitioner try to regulate sensitivity. The learning can be improved provided that an intervention can reduce the tactile defensiveness to better organise and process information and stimuli to the brain.\textsuperscript{196}

Ayres also presented cautions for her readers to be aware that she never claimed that sensory integrative therapy can be used to eliminate all underlying causes dysfunction of neural organisation. Instead sensory integration therapy may be used to mitigate or alleviate few conditions, typically emerging due to unknown causes and are having direct adverse impacts on learning. Sensory Integration therapy primarily focuses on the organisational


\textsuperscript{196} Price, A. M. Y. “Making a difference with smart tablets.” \textit{Teacher Librarian} 39, no. 1 (2011): 31-34.
issues of sensory systems and therefore it is aimed to alter underlying neurological dysfunctions irrespective of the factor that cause impairment in academic learning.\textsuperscript{197}

The discussion above shows sensory integration interventions and multi-sensory environments focus on environmental inputs, but the sensory integration theory has explicit connections to modifications in the organization of stimuli to the brain. Thus this study uses the term multisensory to refer to teaching techniques and interventions that are used to focus on interaction of autistic children with their surrounding and stimulating multiple senses to enhance learning. In the field of especial education, sensory integration often refers to such interventions. Although the choice of words in the term may be confusing yet the theory of sensory integration focuses on the primary brain functions. There is no confirmed assessment that validates that improvement in the student after involvement in multisensory teaching interventions is credit to the intervention. This is because there may be other unconfirmed factors that may have made the improvements.\textsuperscript{198}

\subsection*{3.7. Rationale for Multi-Sensory Teaching Interventions}

According to Preece and Jordan,\textsuperscript{199} sensory processing is defined as the mechanism through which sensory information is processed and managed in the cerebral cortex and brainstem. It has been observed that abnormalities and/or difficulties may occur in any or all sensory domains such as tactile, auditory, visual, and vestibular or proprioceptive stimulus. Humans demonstrating difficulties to process sensory information often fail to appropriately

\begin{footnotesize}
\begin{itemize}
\item[]\textsuperscript{198}Taylor, Kim, and David Preece. "Using aspects of the TEACCH structured teaching approach with students with multiple disabilities and visual impairment Reflections on practice." \textit{British Journal of Visual Impairment} 28, no. 3 (2010): 244-259.
\end{itemize}
\end{footnotesize}
interpret daily sensory information including sound, touch, and movement. Oakley, et al., concluded that many teachers and therapists that are involved with children having sensory processing impairment use the classic sensory integration theory. This theory is based on individualised and enhanced sensory experiences in a self-directed and meaningful activity, and is designed to provide support to children’s proprioceptive, vestibular, and tactile perceptions. They have significant effect on nervous system’s regulatory mechanisms, and they develop the ability of a child to adequately adapt to the surrounding.

Students with autism often manifest difficulties in sensory processing. Research shows that majority (90%) of the students having autism manifest abnormalities in sensory processing. Typical traits of autism are inability to relate to the social environment, lack of communication skills, and the obsessive behaviour towards some activities and interests. There are also stereotyped behaviours such as repetitive and rigid behaviours, for instance spinning, flapping arms, and rocking among others. According to Sylvie, et al., one of the reasons for such behaviours is that the child tries to self-regulate stimulation and make sense of his/her surroundings and the environment.

According to Hussein, although abnormalities in sensory processing cannot be considered as typical trait of autistic children, yet such disabilities are commonly observed. A review conducted by Thompson concluded that there is a variety of responsiveness manifested by autistic children to sensory inputs, for example hyper-responsive. A hyper-responsive child shows extreme sensitivity to sensory stimuli. In contrast there is also Hyper-

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202 Ibid 35
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It is important to address and evaluate each sensory domain in order to assess the impact of any intervention on particular sensory needs of a child. The intervention must focus on various sensory domains such as auditory (sound), visual (sight), tactile (touch), olfactory (smell), vestibular input (movement), gustatory (taste), and proprioceptive input (pressure). Vestibular input can be described as the impairment of a child to be aware of the movement of his/her own body, loss of balance, and irregular posture, among others. According to Myles and associates proprioceptive sensory are defined as the input that control the muscles and in accordance with the information about the location of child’s body in relation to the surrounding space. The ability of the child to remain stationary or move in the environment is dependent upon the information in his/her brain about pressure, touch, pain, etc. provided by sensory functions. Table below presents common examples of self-stimulatory behaviours that have been observed autistic children and are classified according to sensory domain.

Table 1: Examples of Self-Stimulatory and Repetitive Behaviours [adopted from Mays, Beal-Alvarez, & Jolivette (2011)]

<table>
<thead>
<tr>
<th>Sensory Domain</th>
<th>Self-Stimulatory Behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditory (sound)</td>
<td>Making noise, covering ears, vocalisations,</td>
</tr>
<tr>
<td>Visual (sight)</td>
<td>covering or closing eyes, flapping hands, filtering light, gazing at lights, frequent blinking, etc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensory Domain</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tactile (touch)</td>
<td>Rubbing various high texture objects, biting and pinching both self and others</td>
</tr>
<tr>
<td>Olfactory (smell)</td>
<td>Smelling things</td>
</tr>
<tr>
<td>Gustatory (taste)</td>
<td>Licking or sucking things</td>
</tr>
<tr>
<td>Vestibular (movement)</td>
<td>Swinging, bouncing, rocking, spinning,</td>
</tr>
<tr>
<td>Proprioceptive (pressure)</td>
<td>crashing into people and things, squeezing people and things, teeth grinding, biting &amp; chewing things, etc.</td>
</tr>
</tbody>
</table>

The important thing is to evaluate behaviour of every individual and responsiveness of child to all sensory domains. After this evaluation, the therapist or teacher hypothesise various interventions to help autistic children to improve learning. Individualised and specific interventions are more helpful for students to enhance self-regulation which in turn helps them to reduce self-stimulatory and repetitive behaviours.
3.8. Self-Regulation

Taylor\textsuperscript{206} argued that self-regulation is a factor of social-emotional development of a child and it is the ability of child to self-regulate emotions and to self-organise behavioural response. Within the context of this definition and the aforementioned behaviours explained in the autistic children following connection can be observed between the two. The difficulties of autistics children towards social and emotional development are well known and since the same skills are included in the aforementioned definition of self-regulation, therefore it can be inferred that autistic children are most likely to have self-regulation issues in addition to learning difficulties.

According to Keay-Bright\textsuperscript{207} regulatory disorders of a child are manifested in behavioural patterns, motor & sensory patterns, and emotional inclinations. Hypersensitivity and hyposensitivity are typical behaviours that are commonly observed in children having issues with self-regulation. These are also observed in students that have problems in processing and autistic students. Although the research is limited there are variety of experts that suspect a significant link between regulation difficulties and autism. For example a longitudinal study conducted by Sullivan and associates\textsuperscript{208} used a sample of 65 parents of autistic children, with the age of children ranging 3 to 14 years. The study concluded that there autistic children often show lack of ability to self-regulation.

Furthermore, assessment can also be done using Temperament and Atypical Behavior Scale (TABS). It is a tool based on \textit{“observation rating system for the early assessment and clarification of significant problems in self-regulatory behaviour in children from 11 to 71 months of age”}\textsuperscript{209}. TABS cover four groups to conduct assessment. First group focuses on


\textsuperscript{209}
measuring detachment, for example, the degree of disconnection with daily routine or typical activities. Second group focuses on assessment of hypersensitivity, for example overreaction or impulsivity of individuals. Third group focuses on assessing if individuals are underactive, for example, showing low level of response, or showing extra high level of sensory tolerance. Fourth and last group focuses on assessing un-regulated behaviours, for example, high level of disorganisation. The purpose of TABS is to conduct evaluation of behaviours of individuals within natural family context with people who are well known to the children being evaluated. Data gathered can then be analysed using spread sheets or Statistical Package for the Social Sciences (SPSS).²¹⁰

The authors concluded that the early diagnoses of individuals with autism can be made by observing behaviours among children that reflect lack of self-regulation. The study concluded that people diagnosed with self-regulation difficulties in early years or at young age developed autism in later ages.

Hensley²¹¹ also conducted a longitudinal study and identified connection between regulation difficulties and autism. The authors focused on link between lack of adequate responsiveness among children towards emotions of others (i.e., affective expression) and degree of self-regulation in people with autism as well as Down syndrome within play settings. It was a follow-up study originally based on another study conducted after years of the first study. There were 18 autistic children and 18 Down syndrome children in the sample, out of which 14 autistic children and 15 Down syndrome children participated in the follow-up study. The average age for children in the first study was 8.3 years and average age in second study was 10.3 years. This study used Minnesota Preschool Affect Ratings Scale (MN-PARS) to measure the affective expression as well as self-regulation. MN-PARS is comprised of a 7 point Likert scale (with 7 as the most and 1 as the least deviant

²¹⁰Ibid
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developmentally. MN-PARS analyse self-regulation with respect to flexibility, attention, and perseverance and negative affect with respect to resentment and irritability. It also measures positive affect with respect to sharing. Video-Taps were made to observe the behaviour of participants in a play session of 25-minute. Then assessors provided ratings for MN-PARS assessment tool by observing behaviour in the videos followed by various statistical data analysis techniques.212

The results of the follow up study were consistent with the original study as they confirmed that children having autism demonstrated more deviant behaviour regarding self-regulation and positive affection factors as compared Down syndrome children. The study concluded that autistic children demonstrated lack of attention, low flexibility, low engagement, and lack of goal-directedness in play activities. Original hypotheses were also confirmed by the follow-up study and thus confirmed that there is a connection between deficit in self-regulation and social and affective deficits in autistic individuals.213

The studies above indicate that there is a significant relationship between autistic individuals and abnormalities in sensory processing. They also indicate that there is relationship between autism and difficulties in self-regulation. Thus, keeping these findings in the mind the literature focusing on multi-sensory interventions contains empirical evidence that aims to assess the effectiveness interventions based on sensory integration in order to assist autistic children in self-regulation and help them to integrate in normal schools.

3.9. Review of Empirical Evidence

Although, the popularity of sensory integration concepts as well as multi-sensory teaching intervention is increasing in the field of education of children with special education

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needs, yet there is limited empirical evidence and it is also inconclusive. Several teachers, parents, and therapists opine that interventions based on sensory integration concept is effective, however, there are mixed empirical findings regarding effectiveness of sensory integration therapy. There are some studies that concluded that it is ineffective. Many of the reviews critique the validity and reliability of the methodological choices made in the sensory integration studies. Major criticisms are insufficient sampling, absence of control groups, and invalid and unreliable measures to quantify variables. Much of the multi-sensory effectiveness studies are focused on the materials and curricula being used in education of children with disabilities and they are diverse. Lawson argued that due to diversity and lack of rigorous research tools, the effectiveness of multisensory teaching methods remains doubtful and overestimated. The degree of benefits in education of multi-sensory teachings has not been confirmed.  

Another important feature of the multi-sensory teaching studies is that they are based on case studies of students or teaching techniques used by teachers and therapists (including speech, occupational, and physical therapists) and therefore there is very limited empirical evidence. Although there are some studies providing rigorous empirical evidence yet they are focused on specific treatments or on specific disorders. Since this section aims to explore general understanding about the effectiveness of sensory integration treatments and multi-sensory methods and their impact on children with a spectrum of disorders and disabilities, therefore following discussion focuses summary of empirical studies on Sensory Integration and Multi-Sensory Education for SEN children.

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215 Berry, David. "The effectiveness of the touch math curriculum to teach addition and subtraction to elementary aged students identified with autism." *Retrieved from the Internet on April 5* (2007).
Several of the early researchers reported a high level of effectiveness of sensory integration in the treatment of children having a variety of learning disabilities. Berry\textsuperscript{216} conducted an evaluation of various studies focusing on sensory integration therapy and determined the effectiveness of therapy applied to help autistic children with mental retardation, learning disorders, as well as other disabilities. There were control groups in all studies in the review and employed quantitative measures to assess the progress. Thus, the study was based on a meta-analysis. The review concluded that therapy based on sensory integration is mostly effective in helping children with difficulties regarding linguistic and comprehension that were caused by neurological damage and they were least effective in cases of children mentally disorders. The study also inferred that the sensory integration therapies are most effective in children with respect to motor and reflex skills and least effective in terms of linguistic difficulties. Overall, the review concluded that the empirical evidence available shows that multi-sensory teaching methods are largely effective\textsuperscript{217}.

However, there are various studies that present valid criticisms on the results of effectiveness of sensory integration therapy studies. For example, Huang and associates\textsuperscript{218} raised questions regarding the validity of methodological choices. The author suggested there was a lack of comparison between the control groups and the treatment group. Furthermore, the author argued that the Howthorne effect is likely to lead to favourable results regarding high level of effectiveness of sensory integration therapies. The author argued that the treatment group made progress simply because it received an intervention and the control group did not and therefore it does not necessarily confirm effectiveness of multi-sensory interventions. Some researchers object on the sampling technique choices and argue that non-random

\textsuperscript{216}Ibid 49


\textsuperscript{218}Huang, Hui Fang, Leanne Lai, and Herminia Janet Rivera."Using an exploratory approach to help children with autism learn mathematics." \textit{Creative Education} 1, no. 3 (2010): 149.
techniques were used to identify treatment groups leading to errors such as ambiguous diagnoses, age variability, and invalid outcome measures. Botts and associates\textsuperscript{219} concluded that overall the empirical evidence existing in the literature is inconclusive and mixed. Therefore, many researchers highlight the need of studies to assess the effectiveness of multi-sensory interventions having rigorous experimental designs. Methodological reliability and validity of studies assessing effectiveness of multi-sensory interventions is critical for the success of treatments for children with autism and other learning disabilities.

Another study having a highly controlled sample, conducted by Edward and Pollak\textsuperscript{220} aimed to evaluate the effectiveness of sensory integrative based therapies for autistic children used a sample of age range 5 to 10 year. The children had a wide range of perceptual-motor deficiencies and learning disabilities. The study assigned children using quasi-random sampling technique (based on sex and age comparison) against physical education condition, a sensory integration condition, and/or a no treatment condition. The effectiveness was evaluated using pre- and post-tests of various conditions. In order to assess the progress of children in terms of various developmental aspects, study measured sensory skills, language, self-esteem, writing and reading skills, social and behavioural adjustment, and progress reports of school. The intervention provided to children was scheduled one hour programmes once a week for four months.

The study regarding the sensory integration condition identified diverse effective techniques to help children improve their balance, motor skills, tactile responsiveness, and planning. Regarding the physical education condition, the study concluded that there was high effectiveness as participants made significant progress in games and fitness activities, which included exercising, folk dancing, and learning skills sports. There was no intervention


for the no-treatment condition. The averages of both pre- and post-test scores of the groups were compared to measure the effectiveness. The study concluded that the Overall, group differences in the rate of improvement based on a variety of measures were insignificant. The authors concluded the evidence provided to support effectiveness of sensory integration therapies was not inconclusive and not compelling enough. The study suggested that there was a need for future studies that sample particular groups and particular learning disabilities and the impact of sensory integration therapy on these groups.  

Dsouza and associates also conducted a study and concluded that although the differences in the improvement of different groups were insignificant, yet there was significant progress in some of the participants due to sensory integration condition, but some made no progress. The study also indicated that children belonging to single parents were more likely to make no progress and did not benefitted sensory integration intervention. Furthermore, sensory integration based intervention provided little help to children with severe behavioural issues, epileptic children, or children with acute abnormalities in tactile stimulation. The factors that limit the effectiveness of sensory based interventions were the severity of handicaps, low quality or discouraging environmental factors. The study concluded that such children require more diverse and in-depth interventions.

Hartshorne and associates also conducted an empirical study to assess the effectiveness of multi-sensory interventions on children having a variety of disabilities. This study, in contrast to most previous studies, collected quantitative data in order to measure improvement in terms of Foundation Outcome Statement (FOS) Skills. The study also

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assessed generalisation of FOS outside the classroom settings. The study identified 98 FOS Skills and categorised them in five categories, namely, awareness of own self and own body, social interaction skills, skills to manipulate equipment and objects, effective communication and reaction, and ability to explore environment. There were 17 participants aged 5-18 years having severe disability.

The study began by observing the students before they were exposed to multi-sensory interventions three times in classroom sessions and developed children’s profiles using frequencies of all FOS Skills. Then the intervention was introduced and students received help for 30-40 minutes every session continued for a month. The interventions used in the study used equipment for visual stimulation, touch stimulation, and tactile activities, along with use of sound and music to sensory stimulation. After the four week exposure, the study again conducted observations and developed profile of the students by calculating frequency of FOS skills in the students displayed in the classroom settings.224

The study concluded that the frequencies of FOS Skills in the children after the intervention improved after exposure to the multi-sensory intervention in the classroom settings. The study presented descriptive statistics to provide evidence to summarise the improvements made in the children.225 Considering the result and findings, Hussein226 concluded that significant empirical evidence exist to support that multi-sensory interventions were effective in helping children with multiple and severe disabilities. However, again this study also lacked control group. Thus there is a need to conduct more rigorous studies to conduct quantitative and empirical research to evaluate the effectiveness of multi-sensory interventions.

224Ibid
225Ibid
3.10. **Effectiveness of Multi-Sensory Interventions for Autistic Children**

In the study conducted by Narkon and associates\(^{227}\) the aim was to evaluate the impact of sensory integration interventions to help children with self-injurious and self-stimulation behaviours. There were 7 participants aging from 8 to 19 years. Participants had pervasive developmental disorder (PDD). PDD is considered to be related to autism due to the delays in various developmental areas caused by PDD. PDD is also categorised as one of the five disorders in Autism Spectrum, but it is less common than Autism. The interventions provided to the participants focused on improvement in vestibular, tactile, proprioception, and other general areas, and also catered unique needs of individual participants. The study made 15 minutes long observations of all participants immediately following the intervention and then 15 minute observation again after one hour. Observations were made by teachers and individual targeted behaviours were focused. The results were recorded using a five point Likert scale.

This study confirmed that there was no difference in the self-stimulating behaviours before and after sensory integration intervention. But, there was a reduction in the frequency of self-stimulating behaviours after one hour of the intervention based on sensory integration. Thus the study inferred that a latency period is critical to the approach of sensory integration. Even though individuals with autism were not recruited in this study, but it still focused on self-stimulating behaviours and effectiveness of multi-sensory interventions, therefore this the results can be considered helpful in measuring the effectiveness within the context of this study.\(^{228}\)


\(^{228}\)Ibid
Stephenson and Carter also conducted a research to assess physiological and behavioural impacts of high pressure on autistic children. The sample contained 12 children having autism and aged from four to 13 years. The study randomly assigned children to receive deep pressure and to not receive deep pressure intervention using a disengaged Hug Machine. The study first provided a familiarisation period and then conducted twelve 20 minute sessions using the hug machine. There were two sessions per week and the experiment continued for six weeks. The study asked parents to participate in Conner's Parent Rating Scale (CPRS) survey after each session. The CPRS is based on six anxiety behaviours factors. The study found a significant reduction in anxiety behaviours of children who had the deep pressure intervention as compared to children that did not receive intervention. Overall there was a calming effect found by the study in autistic children. Thus, the study shows that there is a positive impact of multi-sensory intervention in reducing unwanted behaviours for children with ASD by using specific sensory interventions that focus on the unique needs of children.

3.11. Visual Aids

Visuals (pictures) are considered to be an important tool to understand something particularly instruction or caution. Visual aids help children sufficient time to invest in understanding instructions and other things. Visuals do not just disappear into thin air and are not easily forgotten as compared to instructions provided in words (written and oral) or by gestures. Visuals also help in breaking down a skill and facilitate sequencing so that children can learn bit by bit. Since visuals remain constant and do not change therefore they allow rehearsal of identical meaning and thereby create consistent memory pathways in the mind to remember the instructions. Through rehearsal of identical meaning and creation of memory

pathways of sequenced activities, the understanding and learning of students can be maximised to foster self-esteem and confidence. Typically, visual aids are used in combination with other forms of communication for example signing, speech, and tactile experiences to maximise effectiveness for autistic children.\textsuperscript{230}

Visuals are particularly important for autistic children. As discussed earlier children with autism manifest inappropriate behaviours, lack organising skills, and deficit in sensory skills, therefore; visuals become important because they help in preventing undesirable behaviours, support desirable behaviours, support organising skills, and support sensory processes.\textsuperscript{231} According to Guldberg and associates\textsuperscript{232}, visuals are effective in teaching children with autism because, they are commonly used means of communication, they attract attention of children longer, they help in reducing anxiety, and they help to make abstract ideas into concrete information.

The importance of visual aids can be determined from the fact that the major challenges faced by the children suffering the autistic spectrum disorder are problems in social interaction with people, limited interest and repetitive behaviours, visual aids cater all three of these concerns smartly. Firstly, the reason behind limited social interaction is that children are unaware of the social cues, and don’t grasp expectations which the social interaction requires. Providing visual aids can help children learning how to start a conversation. Secondly, children with autism syndrome find it difficult to make others understand what they need at that particular moment; using visuals can help them communicating their need to their parents. Finally, autistic children get anxious if there is a slight change takes place in their routine or there arises a complex situation, using visual aids

\textsuperscript{231}Ibid
can help such children understand the next event that might take place right after the particular situation.

3.12. **Visual timetables**

Visual aids have been found to be effective for children with autism to understand their surroundings. Often teachers use a visual timetable for children with autism to show times as well as associated activities by simple drawings, in order to provide exact instructions to pupils about what to do. Visual timetables especially help in helping children with autism to understand sequential activities. For example, in a primary school, a child who seems to be very anxious regarding changing clothes for physical education hour, may find it helpful to have a sequence of visuals or pictorial illustrations involving different stages of the process. The most important thing is to ensure that visual aids are laminated and are appropriately displayed so that children can watch them easily. There are also some computer software to help to create visuals and visual timetables with short instructions and descriptions using words as well as symbols.

Visual timetables are typically supported with other supports such as written lists, calendars, and objects to help children with autism to understand a sequential activity and predict the activities one after other. Parents of children with autism also use the same timetables in homes in order to assists children with autism with their organising skills for example getting ready for school day. Visual timetables are usually located at important places to remind a person about important activities or daily routine tasks. Visual Timetables can also be used to help children with autism to identify a change in routine beforehand and mentally prepare their selves to accept the same when due. This reduces anxiety in children.

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with autism as they do not take react to unexpected changes favourably. It is important to note that visual aids and timetables are also helpful for normal children and people of all ages. Typical uses of timetables are to manage time and prioritise activities to ensure efficient use of hours.  

Visual timetables play an integral part in structured teaching and effective learning for the autistic people. Scheduling the visual sessions is of crucial importance for the children with autistic disorder, because it results in many benefits. Firstly, directions given by an adult using verbal form of communication might not convey the exact message the encoder intended, as a result, there would be a compliance issue. Showing them what exactly is being expected is only possible through visual aids, and the compliance issue will be resolved. Secondly, transitions in daily routines make the autistic children anxious about the situation, setting up the visual timetable tells the children what they are required to do and this reduces the behavioural difficulties.

Timetables make the children feel independent as they are already aware of the future events. Moreover, a sense of competence and security is created in the mind of children and they are likely to behave like other normal children. In the literature, various types of visual schedules are found such as photographs, checklists, or symbol schedules, words, concrete objects and other such schedules. since, children having autistic disorder might find it bit difficult to find the links between photographs and symbolic representations, or the concreteness of object or an activity, therefore, it is advisable to use a concrete piece of object or activity in order to reflect what the tutor would be doing next as per the schedule and developing their understanding about what exactly is being expected from them.

3.13. Social Stories

Autistic children present limitations in social interactions due to deficit in non-verbal behaviours. They lack adequate ability to develop relationships with peers as compared to their normal counterparts as they find difficulties in sharing interest, pleasure, and success with peers as well as others. The social emotional behaviour of children with autism is also limited. Social skills are considered to be critical for development of children and therefore in case of autistic children social skills are identified as pronounced deficiencies. The deficiency is manifested by difficulty in initiating conversation or responding to conversation, difficulty in coping with unexpected changes in normal routine, lack of understanding about the thinking and feeling of other people including peers, and difficulty in responding appropriately in social situations.237

All these difficulties and deficiencies make it difficult for them to develop relationship with peers as a normal child would. Due to lack of inappropriate social behaviours there are adverse impacts on ability of a child to engage with others and carry out tasks that are expected from them. When the children with autism reach school age and further, the social behaviour deficit becomes more and apparent and distinctive and plays a critical role in the learning attainment as well as future life chances of autistic individuals. Therefore it is important to help autistic children to develop optimum social relationships and develop ability to develop normal social behaviour at early ages so that their life chances as adults may improve. This is because social skills are considered to be an important aspect of routine life and improvement in social functionality is critical for the academic success as well as future life chances. Therefore appropriate interventions should be put in place to improve social skills of autistic children.238

Researchers and practitioners have also emphasised the importance of social skills for education of autistic children. Considering the available literature, a number of effective interventions along with supporting evidence can be identified to enhance social skills of autistic children. One of the most commonly used interventions to develop social skills of children with autism is social stories. Research available provides various studies that provide evidence to support the effectiveness of social stories as an intervention for autistic pupils.

Social stories have also gained increasing importance in last ten years. Carol Gray, in 1991, developed social stories under the aim to enhance social skills of children with autism. Social stories are based on stories usually short in length and contain cues along with required responses focusing on important situations within social environment. They may take form of written stories or take visual form. Social stories, in this context, have been found to be very effective in enabling children with autism to better understand social situations and present appropriate response independently without the help of others.

Social stories can be distinguished from other forms of stories based educational interventions such as instructional stories on the basis of their length (typically short) and they emphasise the focus of student as they are prepared within the perspective of the pupils using first person language. Furthermore, social stories use following types of sentences: (i) descriptive (these sentences describe social situation under consideration, persons involved in it, and what and why are those people doing in it), (ii) perspective (these sentences provides appropriate information related to internal states (emotional and thinking) of others), (iii) affirmative (these sentences provide commonly shared values and expected response), (iv) directive (sentences that direct children towards appropriate action and behaviour in that social situation), (v) control (students are asked to write such sentences so that they can remember the story and use it during similar social situation), and (vi) cooperative (such

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sentences show how and what others people do in order to assist them). Social stories are based on appropriate ratios of difference types of sentences. Commonly, a simple ratio for a social story is comprised of 2 to 5 descriptive, affirmative, and perspective sentences for each directive sentence.  

Focusing on the literature available, critical review indicates that researchers have attempted to evaluate effectiveness of social stories as an intervention to improve social skills of autistic children. Generally, researchers have found that social stories are effective in developing social skills in autistic. The effectiveness of social stories can be credited to the following reasons. Firstly social stories contain visuals which are helpful for children with ASD. Social stories can be used repeatedly with the same student. Furthermore, social stories are also considered to be more time and cost efficient as compared to lengthy stories.

Social stories are created in a way that they draw pupils’ attention towards particular behaviours. The focus of social stories is on actions and behaviour of other people in social situations. Social stories are relatively easier to develop and implement in classroom environment. Finally social stories are identified as one of the most favourite interventions among teachers and parents to teach children about social norms and behaviours. Researchers consider social stories as a promising intervention for pupils with autism. Although, majority of the literature focusing on effectiveness of social stories seems promising, however, the critiques opine that more clear evidence is required to establish validity and reliability of social stories as an intervention to develop social skills of children with autism.

Critically, reviewing the research focusing on social stories as an intervention, this study finds there is insufficient evidence and experimental control studies. Furthermore, the

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literature also has limited generalisation or follow-up and literature ignore the treatment fidelity. Yet this study has found evidence about the relationship of social stories as intervention with limited social validity findings. Amos\textsuperscript{243} reviewed empirical literature and concluded that there is only limited number of studies that provide valid empirical base to establish the effectiveness of social stories. The author also highlighted that there was a need to gather more reliable data to support the fact that social stories can be effective and powerful in itself to develop, improve, and generalise skills of autistic children with respect to academic, social, or self-help abilities and success.

Considering one of the recent reviews conducted by Test, et.al\textsuperscript{244} analysed 28 studies. The study performed overlapping analysis for 10 out of 28 researches. The study was analytical and research plan contained research models based on strong functional relationship i.e. multiple baselines, ABAB, and multiple probe models. The study concluded that 17 studies out of 28 reviewed had social stories along with other interventions, and 11 studies focused on only social stories. The study collected agreement data from 13 studies under review and found that over 6 studies the agreement of social stories as an intervention was free of doubts. The study used research models based on strong functional relationship in order to carry out the analysis yet it concluded that majority of the studies reviewed lacked sufficient experimental controls and lacked sufficient generalisation, maintenance, and social validity data.

The study conducted by Spooner, and associates\textsuperscript{245} argued that due to lack of evidence supporting effectiveness of social stories, they cannot be categorised as evidence based practice particularly when they are used in isolation i.e. without combination with other


interventions. The authors opined that existing literature has provided mixed results regarding effectiveness and also lacks to satisfy objections and critiques. Some researchers do argue that there is sufficient evidence available to consider social stories as a promising intervention to enhance social skills of autistic children. However, this opinion is questioned on the fact that majority of the studies that establish effectiveness of social stories also had other interventions. Therefore, it is not possible to validate effectiveness of social stories as an intervention individually. Typically social stories are paired with other interventions including verbal prompts, visual supports, and physical prompts.

Social stories as an intervention have gained increasing popularity due to wide discussion and recommendations of practitioners. However, this study agrees with the arguments that current literature has limited studies that assess the effectiveness of social stories independently without pairing with other interventions and therefore it does not fulfil the criteria to be an evidence based practice. Furthermore, the literature also lacks sufficient details about the implementation process of social stories. Furthermore, majority of the literature both advocating and non-advocating the effectiveness of social stories as an intervention highlights the need for further research and evidence support. This implies that much evidence (both reliable and valid data and control studies) is needed to establish effectiveness of social stories. There are only limited recommendations provided by the literature in using social stories as an independent intervention to improve social skills of autistic children.\footnote{Nielsen, Charlotte Marie Bisgaard. "Towards applied integrationism--integrating autism in teaching and coaching sessions." \textit{Language Sciences} 33, no. 4 (2011): 593-602.}

3.14. Chapter Summary

The review above concludes that deficit in sensory processing and can have debilitating effects on those who face it. These are the type of issues and challenges which
are hard to understand for people who do not suffer from autism or disorder in their sensory processing. The review concludes that early and timely intervention during the preschool stage is very critical to their later success in school life and for them to realize their full potential. The aim of the multisensory teaching materials and methods is to improve SEN’s academic abilities and create an environment where there are minimum challenges and they feel integrated with their peers. The review of literature shows that there is a significant amount of theoretical and empirical literature focusing on the effectiveness of sensory integration theory. The review also highlights that the theory of sensory integration suggests that the organisation process can be improved through stimulation of inputs that they provide to human brain mechanisms. Sensory integrative dysfunction is defined as inability of children to organise or integrate the stimuli in the brain. The purpose of such interventions is to alleviate adverse impacts or severity of learning disability while allowing SEN and autistic children to learn quickly and effectively.

Students with autism often manifest difficulties in sensory processing. This theory is based on individualised and enhanced sensory experiences in a self-directed and meaningful activity, and is designed to provide support to children’s proprioceptive, vestibular, and tactile perceptions. They have significant effect on nervous system’s regulatory mechanisms, and they develop the ability of a child to adequately adapt to the surrounding. The review shows that regulatory disorders of a child are manifested in behavioural patterns, motor & sensory patterns, and emotional inclinations. The chapter shows that people diagnosed with self-regulation difficulties in early years or at young age developed autism in later ages.

The empirical literature reviewed in this chapter shows that overall the empirical evidence existing in the literature is inconclusive and mixed. Therefore, many researchers highlight the need of studies to assess the effectiveness of multi-sensory interventions having rigorous experimental designs. Methodological reliability and validity of studies assessing
effectiveness of multi-sensory interventions is critical for the success of treatments for children with autism and other learning disabilities. Literature focusing on effectiveness of multi-sensory interventions provides mixed results. Although there are significant numbers of studies that conclude that multi-sensory teaching methods are effective in helping autistic children, yet due to methodological weaknesses and lack of control experiments raises questions about effectiveness of multi-sensory interventions.

Finally, the review focused on various multi-sensory based interventions and their use and effectiveness. Firstly, the review explores visual aids as a tool to enhance learning among children with autism. The review indicates that visual aids are highly effective for children with autism and help them to attract attention of children, reduce anxiety, among others. The review also explored visual time tables. This intervention is typically used help children with autism to understand a sequential activity and predict the activities one after other. Finally the review focused on social stories as an intervention to improve social skills of children with autism. The review concludes that social stories are widely used to help autistic children. The review shows that the literature focusing on effectiveness of social stories indicate that social stories are effective in combination with other interventions however, the literature lacks sufficient evidence to establish the effectiveness of social stories when it is used without other interventions.

The chapter presented a critical review of various aspects of social stories as an intervention including teaching social skills, subjects of social stories, their environment, applied research model, ratio and ranges of different types of sentences in social stories, data related to generalisation, maintenance, social validity, treatment fidelity and inter-observer, and data collection methods to evaluate social skills of children. The study also critically examined the process implementing intervention and collection methods of social validity data. This review is thus unique from other studies to judge the effectiveness of social skills.
The study also examined the range and ratio of different types of sentences in social stories. Furthermore, articles were also examined that focus on the effectiveness of social stories as teaching intervention to improve social skills of autistic children. By making recommendations for more detailed research, this study will make a contribution to practitioners, enabling them to make higher quality interventions.
CHAPTER 4: PRACTICAL RESEARCH

4.1 Introduction

The aim of the following research study was to undertake a comprehensive analysis pertaining to the educational needs of autistic children in mainstream primary schools. In addition to the following criteria, another inclusive objective of the following study was to augment upon the support programs that are presently existent for the enhancement of Special Education Needs (SEN) of children in the mainstream educational Primary Schools and how these initiatives could be better cultivated. While the previous chapters of the following research study analysed autism from a medical perspective and the barriers and hurdles that autistic children had to endure in order to live a normal life and gain primary level education, the following chapter has shed light upon the key objectives regarding the sustenance of various support programs and to address the obsessive, social, language and behavioural needs of Autistic children.

The review also presents a discussion of the role of teachers in supporting the education of SEN and ASD children. This chapter also highlights the role of assistants in supporting SEN and ASD children in mainstream primary schools. Finally, the review ends with a discussion of certain strategies that could be implemented by the support programs and educational centres towards building a better and bright future for children diagnosed with autism.

4.2 Medical Model vs. Social Model of Autism

Even though to undertake a discussion pertaining to the models of autism is not primarily a research objective of the following study, it is imperative to undertake a short narrative regarding the medical and social models of autism. By augmenting upon the two
mentioned models, a more comprehensive and cohesive understanding can be developed towards articulating the concept of autism and subsequently provide key strategies that can be used to improve the lives of autistic children. As predicated by Jaarsma and Welin, the medical model of autism predominantly deciphers the respective medical ailment as a form of disability that any individual can end up having. Furthermore, in an assessment provided by Carbone et al., the medical model views patients that are suffering from autism as people who either have some form of physical impairment or lack certain sensory or cognitive functions that are present amongst people who do not suffer from Autism. In a similar theoretical underpinning pertaining to the medical model of autism, Milton opined that patients of ASD, or Autism Spectrum Disorder, are either classified as less able, sick or diseased.

Yet, critiquing the premise of the medical model of autism, Morris perpetuated that the medical model disregards the entire argument or the impact of social attitude and the environment upon people with special disabilities, in particular those that are diagnosed with Autism Spectrum Disorder. Even then, as narrated by Ong, the medical model of autism is a credible tool which can be used to aid the medical field and paradigm of autism. However, critiquing the following medical model of autism, Milton cited that the following model either disregards or mitigates the important economic, social and political factors and has been furthered carped as being either too dependency creating or essentially exclusionary and paternalistic. Yet, highlighting the importance of the medical model for autism, documented

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252 Ibid 3
that irrespective of the irregularities that have plagued the medical model for autism, it is still a prominent factor towards nurturing the perception of disability in most of the poor or under developed countries, where disabled children are mostly sympathised and cared for primarily due to the disability they may have.

However, in contrast to the medical model for autism, the social model perceives autism and other similar or varying disabilities through the paradigm of sociology and treats it as a result of oppressive societal frameworks rather than contemplating and discussing it through the phenomenon of individual pathologies.\textsuperscript{253} As mentioned by Chevallier et al.,\textsuperscript{254} such individual pathologies fall under the medical domain and are ailments that require constant treatment, a genuine remedy/cure or requiring the patient to undergo the process of rehabilitation. Further elaborating upon the social model of autism, a research study carried out by Shire et al.,\textsuperscript{255} noted that social constructs and paradigms such as governmental policy, state based institutions, economy and educational facilities are all key aspects that are protuberant towards the formulation of structures that are oppressing young autistic children and people diagnosed with a disability.

Therefore, it would not be wrong to assess that the social model for autism offers a supplementary and holistic ideology towards the attainment of further insight into the social policies and frameworks that are in place pertaining to the acceptance of disabled persons. The following model empathises with the concept of equality and ensures that irrespective of the disability of an individual, they are all privileged with the right to live their life without having to comply with certain requirements solely based on their disability.\textsuperscript{256}

\begin{thebibliography}{99}
\end{thebibliography}
Thus, addressing both the models in unison, out of the two models for autism, the social model is more critically acclaimed and accepted generally by the members of society, since it offers equal rights and privileges to the disabled people. Yet, the social model for autism is not free from criticism and it fails to intake the efficacy and usefulness of medication and has neglected to give importance to certain key social predicaments like ethnicity, race, religion, gender, etc. However, while the debate amongst the two models is likely to continue in terms of attaining supremacy over one another, one of the most fundamental addition brought forth by the social model is regarding the classification of disability as socio-educational ailment rather than a mere medical phenomenon.

4.3 Social Needs of Autistic Children

Throughout the preceding sections, it has been evaluated that young children who are diagnosed with Autism Spectrum Disorder lack two primary skills that most of the non-disabled people seem to have in common: communicational and social skills. According to an opinion provided by Gal et al., most of the challenges that autistic children face primordially stem from the deficit of an adequate amount of social and communication skills, and rather than being able to get their point across, children suffering from autism tend to develop introvert tendencies and attributes. Similar assessment was provided by Cotugno, where the researchers carried out a research to study the emergence of introvert attributes amongst autistic children.

Medical practitioners were interviewed on the following notion and the results provided conclusive evidence that since young children, diagnosed with autism, are unable to

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257Ibid 5
interact with peers, family members and colleagues, thereby they tend to be submissive amongst themselves and become shy towards expressing their beliefs in a social scenario. In addition, contemplating the social and communicational deficit that children with ASD suffer from, Kasari et al., highlighted that the lack of social skills is one of the first and necessary aspects towards the establishment of a healthy educational and schooling environment for children with Autistic Spectrum Disorder.

4.3.1 Difficulty towards being Empathetic

Theoretically, the word empathy describes the gesture or the will demonstrated by an individual to understand the predicament that a separate individual may be undergoing. Furthermore, according to Cheng et al., the character trait of being empathetic is not necessarily a communicational attribute and can be carried out innately on a subconscious level by an individual. However, over the years many medical practitioners and scholars have demonstrated the fact that people diagnosed with Autistic Spectrum Disorder lack the necessary skills that are required to be empathetic to a cause or towards other human beings.

Yet, even though there is a very prominent school of thought that agrees to the above mentioned assessment, a research study carried out by Schwenck et al., documented contrasting results. The study had a qualitative research design whereby caretakers of autistic children were interviewed and were asked whether or not children with autism lack the will to be empathetic. While majority of the respondents did agree to notion that the empathy quotient amongst autistic children is low, it cannot be stated without complete proof that

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autistic children lack the character trait of empathy. In a narrative provided by Auyeung et al., empathy can be viewed in two different dimensions: cognitive empathy and affective empathy. According to Smith, cognitive empathy is the art of reading the feelings of other people without others having to say anything. The scientific and medical domain claims that children with autism lack cognitive empathy; however, their lack of cognitive empathy is overshadowed by an abundance of affective empathy.

Affective Empathy, as described by Harari et al., is also called emotional empathy and is reflective of the desire depicted by an individual to relate with other people by putting themselves in the place of other people. There have been multiple sources, some with empirical evidence as well, that have highlighted that children with autism may not be able to give a proper empathetic response to an individual, but they can relate to the pain that other people are undergoing. Therefore, one of the first social needs of autistic children is to develop a more empathetic approach to the feelings of the other and in tandem with emotional empathy, develop the attribute of cognitive empathy as well. Smith highlighted that the relationship-based approach can be an ideal tool that can allow parents and teachers to develop empathetic characteristics amongst children who have been diagnosed with autism. Another relevant approach that can be used signify the importance of empathy amongst autistic children is role playing activities.

267 Ibid 25
4.3.2 Lack of Non-Verbal Social Interaction

The trait or the art of non-verbal communication and social interaction is the process where thoughts and emotions are conveyed through non-verbal methods, methods such as gestures, facial expression and emotions. With respect to educational and learning environment, the amount of learning that is undertaken by pupil through the means of verbal communication is similar to the nature of learning that is deciphered through the process of non-verbal communication. In addition, from a social perspective, pupils that are grouped together in a class inundate the use of non-verbal communication and methods to get their message across amongst their peers and friends. However, as evaluated in the preceding sections of the following chapter, children that have been diagnosed with autism fail to understand the meaning behind non-verbal actions and tend to resort to verbal communication only. This, according to Smith, is one of the key factors, which hinders the social development of autistic children.

Furthermore, according to a research study undertaken by Auyeung et al., the use of non-verbal communication and social interaction is seen as a key building block amongst pupils in a class, and the level of interaction, during and outside the classroom, seems to be critical toward the formation of friendship amongst children. However, since autistic children lack the aptitude to perform and comprehend non-verbal communication, therefore, they are deprived of developing friendly relationships with other pupils. Therefore, from a teaching and educational purpose, tutors should divide pupils into interactive groups and instil in the pupils, the importance of teamwork and cohesion. In addition, tasks that are given by the

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269 Ibid 25

270 Ibid 24

teachers to the pupils should involve activities which require at least two people to work together. This would allow pupils and children with autism to develop a friendly relationship with their peers and reduce, upon autistic children, the need to perform non-verbal functions to develop interactive relationship with other people and pupils.

4.3.3 Limited use of Social Imagination

Another social need that most of the autistic children lack pertains to the concept of social imagination. Theoretically, the term social imagination is indicative of the ability of an individual to develop different types of social activities rather than undertake similar and monotonous activities over and over again. By utilising the concept of social imagination people are able to associate themselves with other likeminded individuals that belong to a different cultural group. In addition to developing association with other people, the concept of social imagination is a necessary trait that can allow people to augment long terms relationships with certain people whom they can relate to. Yet, when contemplating upon the social needs of autistic children, the lack of social imagination can be the primary factor behind the rigid and repetitive behaviour documented by children diagnosed with autism.

Yet in a recent research study carried out by Shire et al., it was observed that children with Autistic Spectrum Disorder have the capacity to learn the trait of social imagination, debunking the assumption that it is impossible for young children with autism to demonstrate high levels of social interaction. However, after contemplating multiple literature resources, it was concluded that specific teaching and training is extremely necessary in order for autistic children to develop such social traits and attributes. Most of the children develop certain level of social skills by evaluating and observing their peers and those people that they interact with on a daily bases. This observation and interaction allows children to imitate

273 Ibid 12
the social behaviour of their peers and overtime depict the observed behaviour.\textsuperscript{274} Yet, throughout the following dissertation it has been observed that children with Autistic Spectrum Disorder generally tend to find it difficult to reciprocate the social interaction they observe and social constructs and relationships difficult to comprehend and decipher.

\textbf{4.4 Early Intervention and Development}

According to an assessment provided by Goldstein, Lackey and Schneider\textsuperscript{275} in order for autistic support programs to become more effective in terms of the functions they perform, and their intent to aid young autistic children, the first step pertains to the criterion of early intervention and development. Contemplating further upon the following assessment, Schopler, Eric and Gary-Mesibov\textsuperscript{276} perpetuated that there are four key facets which necessitate the importance of early intervention and development, with respect to autistic support programmes and one of them is that early intervention enables consistency and reliability within the overall identification process that support programs utilise when analysing autistic children. Furthermore, according to Shire et al.,\textsuperscript{277} proper identification and assessment of autism at an early age, allows better intervention strategies to be implemented. Similarly, according to a research study carried out by Shevlin et al.,\textsuperscript{278} presented conclusive evidence, that in order to assist the educational development of autistic children, support programs should be able to highlight autistic tendency amongst children.

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{274}Nadesan, Majia Holmer. Constructing autism: unravelling the truth and understanding the social. Routledge, 2013.
  \item \textsuperscript{276}Schopler, Eric, and Gary B. Mesibov, eds. \textit{Learning and cognition in autism}. Springer Science & Business Media, 2013.
\end{itemize}
\end{footnotesize}
By highlighting autistic attributes amongst the children at an early age, support programs and relevant groups can customise the services and facilities they offer and rather than cater to all autistic children as one, each individual can be given individual attention. However, even though support programs and social intervention is necessary for the betterment of autistic and special children, there are certain limitations which hurdle the efforts and objectives put forth by support programs. As mentioned by acclaimed author Penny Kershaw, two of the most prominent hurdles that limit the success of support programs stem from social repercussion and the fear of parents to denounce their children as autistic and secondly, the reservation of the children to attend special primary schools for autistic children.²⁷⁹

4.4.1 Fear of Social Implications by Parents

Penny Kershaw contemplated that even though the modern society has moved on from societal judgements and repercussions, there are still certain communities and regions which are hesitant to own their medical predicament and ailment. With respect to the above mentioned analogy, a research study was carried out by Aubyn, Suhrheinrich, and Mandell²⁸⁰ where the study intended to highlight the hesitation amongst parents of autistic children to send their child to special institutions that are formulated with the sole purpose of aiding autistic children to attain the required educational knowledge. The study concluded that even though parents are not hesitant to hide their autistic children from the society; there was a general inclination towards home schooling. Perpetuating similar results, Joyce²⁸¹ postulated that there is still a level of hesitation amongst parents to let the society know that their child

suffers from autism; however, results predicated that, such a practice stems from the social
stigma to treat autistic children differently from normal children rather than self-induced
hesitation from the parents themselves.

In addition, according to a narrative provided by Aubyn, Suhrheinrich, and
Mandell, the social stigma pertaining to the notion of autism and other similar medical
ailments has restricted parents to let their autistic children become a normal part of the
society and the primary fear of the parents is related to discrimination. As defined by
Kinnear, the notion of discrimination is the unfair treatment of an individual because of
certain distinct features and attributes, ranging from cultural background, regional heritage,
racial classification, medical conditions etc. With respect to the results of a research study
provided by Schopler, Eric, and Gary-Mesibov, after racial discrimination, people
suffering from different medical ailments are the most discriminated against.

4.4.2 Social Reluctance by Autistic Children

With respect to the debate regarding the necessity of early intervention and
educational development of autistic children, another hurdle in this regard is self-reluctance
demonstrated by children suffering from autism, to become a regular part of the society. In
a qualitative study conducted by Tait, Mundia and Fung, with medical practitioners
treating and looking after autistic children, it was evaluated that such children are more
reluctant to become a part of the society due to the fear of being bullied against. The practice

282 Ibid 1
283 Kinnear, Sydney H., Bruce G. Link, Michelle S. Ballan, and Ruth L. Fischbach. "Understanding the
Experience of Stigma for Parents of Children with Autism Spectrum Disorder and the Role Stigma
284 Ibid 2
285 Johnson, Tiffany D., and Aparna Joshi."Dark clouds or silver linings?A stigma threat perspective on the
286 Tait, K., L. Mundia, and F. Fung."Raising young children with autism spectrum disorders in Hong Kong: the
impact of cultural values and stigma on Chinese parents' coping strategies." International Journal
of bullying is the coercion or enforced pressure by a stronger, more affluent individual on a much smaller victim.\textsuperscript{287} Every professional, personal and educational institution has denounced the practice of bullying and law enforcement agencies have been taking strict actions against those individuals that have been suspected of practicing or promoting the concept of bullying. However, Cameron\textsuperscript{288} narrated that the fear of being bullied against has impact the decision of autistic children to take part in normal social activities and this hesitation is transmitted on towards their inclination to enrol in special social and educational programs.

In a recent statistical data released by IAN or the Interactive Autism Network,\textsuperscript{289} bullying against autistic children is increasing at an alarming rate and despite the efforts of concerned citizens and personal, autistic children are being bullied against at an incremental ratio, a step back towards the initiative of social outreach programs. According to a question put forth by Interactive Autism Network asked viewers and the general public that whether or not, in the modern 21\textsuperscript{st} century, are autistic children more prone to being bullied against? In order to obtain key informational data on the following notion, a research study was carried out by Nagaraju and Wilson\textsuperscript{290} where the above mentioned question was presented to a sample size consisting of family members of the patients enlisted at Johns Hopkins Bloomberg School of Public Health. The results of the primary survey contemplated that autistic children are indeed more likely to suffer from multiple counts of bullying, as

\begin{itemize}
  \item https://iancommunity.org/cs/ian_research_reports/ian_research_report_bullying
\end{itemize}
compared to both, normal people and those children who are suffering from other mental ailments.

4.5 Obsessive Behaviour of Autistic Children

According to Kanner,\(^{291}\) one of the most important symptoms which are still pertinent is obsessive behaviour. Such obsessive behaviours are interpreted as defences by autistic children against the anxieties that are experienced by such children.\(^{292}\) Similar observations were made about the rise in compulsive behaviours when these autistic children interact with other people. Thus, in order to keep anxiety and fear under control, rituals and engagement in obsessions play a key role.\(^{293}\)

Such behaviour of autistic children is divided into three categories: stereotyped play, narrow interests, and resistance to change. Baron-Cohen examined whether such behaviours of autistic children were indicative of obsessive compulsive behaviour. If such behaviours are obsessive compulsive disorder, this may have implication for behaviour management. Distinct differences were found in obsessive behaviours of autistic children as compared to obsessive compulsive disorder. It was found by Baron-Cohen that obsessions in autistic children were different than obsessions of individuals that have obsessive compulsive disorder. Baron Cohen observed that individuals having autism are not able to report on the nature of obsessions themselves. Further he noted that hand washing and checking are common in obsessive compulsive disorder unlike autism. These are considered as key characteristics of obsessive compulsive disorder.

Considerable care should be taken in using terms compulsive and obsessive while explaining repetitive features in autistic children. The repetitive behaviour in obsessive

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compulsive disorder may differ from autism but studies propose that the medication that is used for obsessive compulsive disorder can also benefit the autistic children. Clomipramine, a drug used for obsessive compulsive behaviour, was also reported to be used on autistic children. A major cause of anxiety in autistic children can be the coping mechanism for ritualistic and obsessive behaviours and anxiety.

4.6 Language Needs of Autistic Children

Autistic children seem to be self-absorbed and live in a private world. They seem to be incapable of interacting and communicating with others. Autistic children might face certain difficulties in developing language related skills and understanding the viewpoints of others. Some Children with Autism face difficulty in combining words to form a meaningful sentence. Many autistic children hear a single word from somewhere and begin to repeat the same phrase again and again. Autistic children may also face difficulties in non-verbal communication, such as through eye contact, facial expressions, and hand gestures. The body language of the autistic child is also difficult to understand for their parents and other people. The facial expressions, phrases of speech and their gestures hardly match with what they are saying. Also, there is a contradiction in their words and tone of voice as it fails to reflect their feelings.

The children with Autism face issues in falling asleep, they are also prone to sleep-walking, and they preferred to sleep less than other normal people. Lack of sleep can also be one of the issues that an Autistic child may face in learning and communicating because of lack of attention which can benefit from therapeutic interventions. They need situations that cause communication. Kanner in 1943 refers to the monotonous language or absent presenting people with ASD. Harper et al., also mention difficulties with nonverbal

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communication, such as gestures, look, etc. Moreover, it is often a delay in expressive language acquisition or absence of it. When they acquire spoken language, a constant repetition of structures could be present, i.e. abnormal behaviour occurs. They have difficulties in expression and oral comprehension.

It is not necessary that every autistic child has language related problems. Social and intellectual development of an autistic child plays a role in determining communication abilities of an autistic child. However, some of the autistic children may be incapable of speaking at all. Most of the autistic children have no or little problem in pronunciation of words. Especially while talking to others, the majority of autistic children face difficulties in effective use of language. Many of the autistic children face problems with the rhythm and meaning of sentences and words. Nuances of tones and body language may also create problems for autistic children. Following are the patterns of use of language and the behaviour that can be found in autistic children.

- Repetitive or rigid language

It can often be seen that autistic children say things that are not according to the context of conversations or have no clarity in meaning. For example, an autistic child might count from one to nine repeatedly. Or some children, after hearing a word, may repeat that word over and over. This condition is called echolalia. When children repeat certain words that they just heard from someone, such echolalia is known as immediate echolalia. Delayed echolalia refers to repetition of words that were heard by the child earlier. The teacher could help the child by providing him/her hints about the context of conversation.

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• Narrow interests and exceptional abilities

Some children may be unable to engage in a two way conversation on a topic but they may be capable of delivering a monologue on that similar topic that they feel interesting. Some children have exceptional ability to perform maths calculations and to count while some possess musical talents. Nearly 10 percent of autistic children demonstrate intellectual skills or some exceptional abilities in particular areas such as math, calendar calculation, or music.

• Uneven language development

Many of the autistic children develop some language and speech skills but usually show uneven progresses in this regard i.e. do not show normal level of capabilities. For example, they may, very quickly, develop their vocabulary in a particular area which they feel interesting. Many autistic children possess good memories for the facts just seen or heard. Some children facing autism become capable of reading words even before reaching the age of five but still do not know the meaning of what they have read. Consequently, such children are sometimes thought to be suffering from hearing problems.

• Poor nonverbal conversation skills

Autistic children are incapable of using gestures such as pointing towards anything or to give meaning to their words. They tend to avoid contact of eyes of which others may think that the person is uninterested, rude, or inattentive. Autistic children therefore sometimes become frustrated in attempts made by them to make their needs and feelings known as they are unable to use gestures effectively or cannot give meaning to their words. Such autistic children tend to release their frustrations through inappropriate behaviours or other vocal outbursts.

4.6.1 Treatment of Speech and Language Problems

If a doctor is of the view that a child is suffering from autism or any other disability that is related to development, the doctor will refer that autistic child to a number of specialists that includes a pathologist of speech and language. A Speech language pathologist is a trained health professional who treats individuals with speech, voice, and language disorders. The pathologist will conduct a detailed evaluation of communication abilities of the child and design a suitable program of his treatment.298 Furthermore, the pathologist may refer the child to a professional for audiological testing in order to ensure that his or her hearing capabilities are normal. On the other hand, parents do not agree with professionals, about the behaviour of children, social skills and academic abilities are significant factors in the successful inclusion. The attitudes of teachers towards children with ASD and learning styles should be individualised to each child are the most commonly influence the perceptions of parents about the inclusion.

Teaching communication skills to autistic children is necessary to help them reach their full potential. Many different approaches are available to improve the communication skills. The treatment that begins early in preschool years is considered as the best treatment and can be tailored according to the child’s interest and age.299 It will take into account the communication skills and behaviour of the child as well and reinforces positive actions. Most of the autistic children give good responses to specialised and highly structured programs.

Improving verbal communication is a genuine goal for younger children. Teachers and parents can increase the chance of achieving the goal by being attentive to the language development of the child early on. Just as toddlers begin to crawl before they learn to walk,


children develop their pre-language skills before they start to use words. Such skills include body movements, gestures, eye contact, and babbling and various vocalisations to make them communicate. Children do not possess enough skills may be examined and treated by a pathologist in order to avoid further delays in development.

Slightly older children that suffer from autism, basic training of communication emphasises the use of language, such as learning to engage in a conversation with others that involves sticking to the topic. However, there is a chance that many of the autistic children may never be able to develop language skills. For such children, the primary goal is to acquire the skills of gestured communication, such as learning how to use sign language. For some of the autistic children, the primary goal is to be able to communicate with the help of symbol system in which the thoughts are conveyed through pictures. The system of symbols ranges from cards or picture boards to electronic devices through which speech is generated.

4.7 Behavioural Needs of Autistic Children

Children with autism may show some challenging and unusual behaviour, and do not always give responses to normal methods of discipline. Behaviour problems are normally the first concern of parents and teachers as this problem disrupts the process of learning and development. The children with Autism also have difficulty in regulating their feelings and emotions by having immature behaviour such as crying in class or verbal upsurge that seems inappropriate to those people around them. The children with Autism may sometimes be disruptive and physically aggressive at times which halts them from making social relationships so it is the responsibility of the teacher to create such environment which arouses the feeling of being engaged in autistic child. They can also lose their control when

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they feel frustrated from the environment which can result in breaking things, attack others or even hurt themselves. It may be essential to develop a plan for this purpose.

Children with Autism appear to be normal with their physique and have good muscle control, but their odd repetitive behaviour differentiates them from other children. The child may seem normal when he spends hours lining up their cars in a specific way for playing purposes. It will vastly upset them if someone accidentally moves one of their toys away from them. They require a consistent environment in terms of their routine for mealtimes, dressing and bathing in their environment. The unique abilities of children with autism also accompany few challenges such as difficulties in sensory processing. It is a widespread belief that things are perceived differently if they are sensed normally such as touching, hearing, feelings or tasting etc. autistic disorder tags along with it a difficulty faced by individual in processing sensory receptors. Now the rising concern is that even if the children holds strong mathematical abilities or something like technical skills, if the sensory receptors are failed to process cognition, then there will be no use of possessing such a unique bunch of skills.

Any plan related to behaviour intervention should be based on the understanding of features of autism, and knowledge of needs and strengths of autistic children. In order to develop a successful intervention plan, one must understand that there is a communicative function in the behaviour. Behaviour intervention plan is a plan that includes such steps that a teacher takes in order to stop problem behaviour of autistic children. The whole process of behaviour intervention plan is collaborative in nature and involves important people in the child’s life, including teachers, parents, and special educators, language and speech pathologists and behaviour consultants. The initial point that is to be understood by the teacher is the problem that is to be solved and to examine the shortfalls in learning that may

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be the cause of problem behaviour. When educational workers and teachers are given appropriate training and information, they can deal with such challenging behaviours more effectively. Following are the steps that should be followed in the process of problem solving:

1. Identification of problem behaviour
2. Identification of behaviour function
3. Identification of alternative behaviour
4. Development of strategies for changing behaviour
5. Development of behaviour intervention plan
6. Evaluation of behaviour intervention plan

Identification of Problem Behaviour

This step includes identification and description of behaviour in terms that are observable including when and where it occurs, typical reactions and what usually happens before such behaviour.

Identification of Behaviour Function

Any behaviour’s purpose or functions is not necessarily always obvious. Collection of information about the autistic child, environment, behaviour, and consequences is often important in order to determine the purpose of such behaviour. Frequent contact with the child’s caregivers or the family provides valuable and relevant information. Parents often develop a system of communication such as a book or a communication log.

Identification of Alternative Behaviour
The evaluation of child’s behaviour provides the basis of development of behaviour intervention plan. The success of this plan depends more on proactive and instructional strategies rather than reactive strategies. Once the behaviour purpose has been hypothesised, it is likely to identify a more appropriate or an alternative behaviour that can assist the same function.

Strategy Development for Changing Behaviour

Teachers eliminate or reduce problem behaviour by adjusting the environment. The analysis and assessment of behaviour may indicate that it takes place within particular areas, or during particular times. Sometimes the possibility of the behaviour that is occurring can be reduced by adjusting the environment.

Development of Behaviour Intervention Plan

Once the child’s problem behaviour and contributing factors have been identified, strategies for management and instruction, specific interventions, and desired alternative behaviours can be planned. Written plans should be included by the teacher in the outline of objectives for change in behaviour, positive program strategies, environmental adaptations, and reactive strategies in order to maintain a persistent approach by involving people with the child.

Evaluation of Behaviour Intervention Plan

Following questions need to be asked while assessing the effectiveness of interventions:

- Is there a consistency in the implementation of intervention plan?
- Is there a need to continue it for a longer period?
- Is there a need for adjustments?
Is there a need for the modification of reinforcements?

Is there a need for alternative strategies?

With the help of responses obtained from the above questions, the job of teachers as problem solvers becomes easier. Summing up the whole plan in simple words, the teachers first identify the behaviour that is causing problems for the pupil. The function of the behaviour should be identified. Teachers should be in constant contact with the parents or caregivers of pupils. An alternative behaviour should be found by the teacher which fulfils the same functions as the problem behaviour. Now the strategies should be developed by the teacher either for the purpose of eliminating the problem behaviour entirely or adjusting the environment. The strategies should be planned and formulated keeping in mind the contributing factors and problem behaviour. Most of the teachers give preference to plans that are in written form. After the formulation and implementation of plan, proper evaluation is necessary in order to achieve desired results.

4.8 Development of Autism in the Educational Sector

Since the primary aim of the following research study was to evaluate the current situation of autism within the educational sector, multiple references have been made throughout the following dissertation pertaining to the difficulties that are generally faced by autistic children when studying in primary schools along with children that were not diagnosed with autism. However, while the previously mentioned reference were with respect to certain predefined context, the following section of the research study is solely committed towards highlighting the developments that have been made in the educational sector of UK with regards to variable of Autistic Spectrum Disorder.

Recently, the Government of UK, in order to curb down the challenge and limitations that restrict the educational growth of autistic children, launched the SEN strategy with the
intention and aim of gradually reducing and over time eradicating any barriers to
development that may persist, with respect to the educational needs of special children.304
The SEN strategy initiated by the Government of UK is a 10 year agenda and implements the
necessity for every teacher in the country to have special training pertaining to the
educational nourishment of special needs pupils and children. Thus, for state school teachers,
it has now become mandatory for them to have certain core skills and attributes that are
essential for the teacher, and in addition, teachers are also required to have certain specialised
skills which would enable them in ensuring that pupils with autism and other disabilities are
aptly looked after and there is no lack in their development and educational career.305

4.8.1 Right of Autistic children Mainstream Primary Education

Providing special need children their basic educational right has been a seriously
debated topic in the British Parliament, and over the last ten years, the support for educational
development of children with Autism, Downs syndrome, etc. has been increasing. The
primary concern for the policy makers in UK is to ensure a hospitable environment for all pupils, irrespective if they have any particular disability or not. Even though the pace of
development, pertaining to the educational rights of special needs children, has picked up in
recent years, the Educational Act imposed in the British Parliament has been in practice since
1944.306 As per the litigation put forth by the Education Act of 1944, children that fall within
the category of Special Needs are provided with free primary education and no schooling
authority can restrict admission to children with disabilities. After the implementation of the

to special educational needs and disability’ on the educational inclusion of autistic children in
Disorder (ASD)." CNS & Neurological Disorders-Drug Targets (Formerly Current Drug Targets-CNS
Education Act 1944, UK has witnessed multiple different reforms, regulations and laws, which provide special needs children with the opportunity to be a progressive part of the country’s mainstream educational system.\(^{307}\)

It is important to stress that much has already been achieved to ensure that the education system in UK is responsive towards the diverse needs of children, but consequently there has been a reduction in the focus on segregated SEN structures in the education system; for example, the Special Educational Needs and Disability Act (SENDA) passed in 2001 in England, Wales, and Scotland. This act prohibited all forms of discrimination against SEN and disabled children in primary schools, colleges, and other higher education institutes. The Act was effective from September 2002 and it mandated that all schools must make essential necessary adjustments to assist the educational requirements of SEN children under the aim to provide every opportunity for SEN children to get educated in schools similar to those without disabilities. Furthermore, the SEN children must have the same quality of both educational (such as examinations and assessments) and non-educational services (such as field trips), and other opportunities such as work placements arrangements, and equal access to learning resources and libraries.

4.8.2 Role of Primary School Teachers to Facilitate Autistic Pupils

During the formulation of the literature review chapter, the researcher addressed the notion pertaining to the importance of teachers with regards to the educational development of children with special needs. Building up from the following discussions, the researcher has analysed the importance of teachers towards the educational nourishment of autistic children in the contest of UK. As identified by Chevallier et al.,\(^{308}\) pupils that are diagnosed with autism face certain limitations and hurdles restricting their educational development and the

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\(^{308}\) Ibid 8
two primary reasons behind their slow development are the lack of social and communicational skills. Therefore, the responsibilities that are placed upon teachers and tutors are immense, when it comes to addressing the needs of special children.309

Before teachers and tutors start providing education to the pupils, there first and foremost priority should be to lay down rules negating any form of biasness towards autistic children in their classes. According to the Equality Act of 2010, in UK, any form of discrimination against children or people with any form of disability shall be a punishable offence. Furthermore, it is the responsibility of a teacher to ensure that the teaching and learning environment in which a pupil is studying is less restrictive and offers more room for social interactions to the pupils.310 Since autistic children lack the necessary social skills, therefore, the more they are put in a situation which requires social interaction, the more likely it is that they will develop extrovert personality attributes. As the learning and educational environment for a pupil, especially a pupil with special needs, the more likely he or she is to develop social tendencies and interact in an everyday environment with other pupils who are also part of the school.311

Furthermore, another key evidence provided by Chevallier et al.,312 pertaining to the development of educational needs of special children and the responsibility of the teachers, is to ensure that autism is not treated as a taboo in the classroom, and sufficient information is shared amongst all the pupils regarding the occurrence of autism and how autistic children are special, in terms of their behaviour. If non-disabled pupils are aware of the hardships and

312Ibid 8
hurdles that autistic children face in their everyday lives, the reception of the special needs children will be more hospitable and polite.

4.9 Strategies for the Provision of Mainstream Primary Education to Autistic Children

Before any strategies and recommendations are put forth, in order to improve the existing educational plan for autistic children, it is first important to highlight that every individual and child, diagnosed with Autism Spectrum Disorder, has his or her own unique set of attributes, attributes that differentiate autistic and non-autistic children. Therefore, before strategies for improving the educational standard, which is received by autistic children, is improved on, it is essential for the decision makers to first articulate and inculcate the fact that strategies being made would not have the same impact on all the children that have been diagnosed with autism.

4.9.1 Lovaas Model or DTT

One of the most widely used educational strategies regarding the development of autistic children is the Lovaas model or the Discrete Trial Teaching (DTT) approach. Rather than following a restrictive and an established curriculum outline, teachers must first articulate the need of their autistic pupils, and based on the information gathered, redesign the course outline. As defined, every child with autism has differing needs and approach to learning, therefore, rather than following a predesigned course outline, teachers and trainers should first define the needs of the pupils and then proceed towards educating the speeds

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needs children. \textsuperscript{314} Furthermore, the Lovaas model also incubates that after giving a the basic information pertaining to a study topic, teachers are required to aid children on an individual level and rather than presuming that all children in a classroom will learn through a singular approach, develop the habit of helping pupils individually. A key learning tool within the Lovaas model is the use of physical and sensory props which could aid the educational development of autistic pupils. Teachers are also advised to utilise positive reinforcement tactics with the pupils and ensure that pupils are able to practically implement what they are being taught.

4.9.2 DIR or Difference Relationship Model

Another key education and training approach that can be utilised in order to increase the effectiveness of what is being taught to them, is the use of Difference Relationship model. Theoretically, the DIR argues that teachers and tutors should drop down to the development level of the autistic children and then try and educate them rather than compelling the autistic children to demonstrate a level of understanding of non-autistic adult and teachers. \textsuperscript{315} In addition, the DIR approach to teaching autistic children further augment that teachers should use play activities where learning is done by undertaking practical undertakings.

4.9.3 Verbal Behaviour

According to scientific research, autistic children respond well to verbal commands rather than implementing the instructions which are given to them in written format.

Therefore, teachers and tutor can resort to verbal behaviour and advices while teaching,


allowing for greater retention of information. Additionally, another key motive behind the usage of verbal behaviour can be to increase the language pattern of children who are diagnosed with autism. Countless research and practical examples contemplate that people who suffer from autism are also liable to develop a distorted speech pattern. In order, offer them speech therapy and make them accustom to different words and their pronunciation; teachers are inclined and advised to use verbal behaviour while teaching autistic pupils.


4.9.4 Communication through Picture Exchange

Finally, similar to the use of verbal behaviour, clinical research has document that the children who are diagnosed with autism are likely to learn through pictorial references and other similar placards. Therefore, rather than trying to educate autistic pupils through the written mediums, teachers and parents should resort to use of pictures as a means of communication.

4.10 Support Programs for Autism in UK

4.10.1 NAS (National Autistic Society)

Considered as one the finest, charity based, autism support program in UK, the National Autistic Society has been operational since 1962 and from day one has provided exemplary services to autistic children and their family members. In addition to catering towards the necessities required by people diagnosed with Autism Spectrum Disorder, the National Autistic Society has also been providing services to the young children that are suffering from Asperger Syndrome. Amongst their plethora of services provided, the National Autistic Society is responsible for the provision of support and information related services which can be engineered to make the world a more hospitable place for autistic people and children. Furthermore, in contention to providing the basic services to young autistic children, the National Autistic Society also runs an open Autism Helpline that is available 24/7, 5 days a week. Even though, as mentioned above, the National Autistic Society is providing multiple different services, however, the following research study has shed light on three of their most prominent services; Educational Services, Diagnostic Services and Community Services.

318 http://www.autism.org.uk/
4.11.1.1 Educational Services

Understanding the individual needs of autistic children, the primary goals of the National Autistic Society is to provide educational facilities that are customised to the needs of their special pupils and rather than following a restrictive curriculum, learning undertaken at the schools and educational facilities run by the respective organisation is more engaging. According to an assessment inundated through their official website, the educational services at NAS are three pronged and begin at a very early age by offering mainstream education. Following the provision of their mainstream educational services, the National Autistic Society has also started offering secondary and higher education facilities to their pupils, thus ensuring that autistic children are not marginalised in their quest to acquire better, more proficient and technical knowledge. In their quest to ensure higher quality education for autistic children, the National Autistic Society works on the following aspects:

- To offer educational support to other special and state schools that are making an effort to offer inclusive education, without discrimination against pupils suffering from autism or other mental ailments.
- Provide specialised teachers to other schools where autistic children are enrolled. These teachers undergo specialised training, especially with the intentions to teach and hone the educational career of autistic children.
- Provide Accreditations support pertaining to its registration for Autistic children, in order to hone their educational career.
- Also, the National Autistic Society offers improvement advisors to other schools.

At present, the National Autistic Society has multiple different schools and educational facilities that are operational; however, one of their most renowned and widely accepted schools is the Anderson Academy in Bristol City. Ever since its establishment, the

Anderson School, has grown in terms of the number of teachers they hire and the pupils they enrol every semester. Even though education is the main priority at the Anderson School, special needs children are also taught how to be more socially receptive and open to other members of the society.

4.10.1.2 Diagnostic Services

Under their diagnostic services banner, NAS is running their Lorna Wing Centre for Autism, an internationally recognised care facility that is committed towards finding solutions to autism and Asperger Syndrome, along with outlining other key medical and social faculties that would enable young autistic and primary school pupils with autism to lead a more productive life, rather than be shunned away as outcasts by most of the society members and stakeholders320. Amongst the various different services that are being offered by the Lorna Wing Centre for Autism, some of the most prominent ones include:

- Providing a complete and comprehensive diagnostic assessment to autistic children that seek the NAS’s help. In addition to providing a detailed medical analogy, the medical practitioners are NAS also work upon the DISCO framework, which is targeted towards the social and communicational development of autistic children that are diagnosed Spectrum Disorder.

- In addition to the detailed diagnostic assessment provided by the NAS, another key service that they offer is adult assessment or consultations for half a day. Such a facility is provided to autistic children who are not willing to undertake the full assessment and are only seeking remedial help and aid.

- Under their diagnostic services, NAS also offers psychological assessment and general consultation.

320http://www.autism.org.uk/services/diagnosis.aspx
4.10.1.3 Community Services

Generally, the National Autistic Society has multiple different grass root practices that they offer under the domain of community services. However, none of their community services has had a similar impact than the application, Brain in Hand. Primarily, the smartphone application was released by NAS in order to provide assistance to autistic children who are unable to visit NAS physically. Amongst the services provided by the smartphone application include:

- Anxiety Reduction, is one of the key ailments that most of the autism autistic children suffer from is becoming anxious under certain tense situations and failing to articulate the right social and communicational response. Furthermore, the Brain in Hand smartphone applications allows the users to register some common anti-anxiety strategies, strategies which the user can recall under stressful situation to calm down.

- In addition to allowing the users with the feature to customise their anti-anxiety strategies, the facilitating team at NAS also monitor the anxiety rate of the users and how often they press the critical button in the mobile application, seeking professional help.

4.10.2 The Autism Alliance

Rather than being a singular functioning organisation, the Autism Alliance is a group of different strategies that undertake different services to provide support to people that have been diagnosed with Autism Spectrum Disorder. Over the years, the autism alliance has catered to more than 2000 children that are suffering from autism through their outreach.

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services and residential homes.\textsuperscript{322} Working towards the betterment of the lives of young autistic children, the primary goal of the following support group is to ensure that children with autism are able to lead a normal life, without being discriminated against or being deprived of their basic rights. For the autism alliance, one of their primary objective and service is related to the dimension of research and development and ensure that continuous research is undertaken to find suitable cure for autism or the genetic dispositions that are associated with autism.

4.10.2.1 Research and Development related to Autism

According to one of the recent research studies undertaken by the Autism Alliance, patients diagnosed with autism, especially young children, are more prone to suffer from anxiety attacks when put under stressful situations. Furthermore, according to the research department at the autism alliance, due to these anxiety attacks a high percentage of the young children suffering from autism spectrum disorder are likely to inflict injuries to themselves or in certain extreme cases, can be a cause for concern towards other people around them. This has been of the key stumbling block which has hindered the assimilation and widespread integration of young autistic children within the general society.\textsuperscript{323} Trying to fight against the following predicament, the research department at the Autism Alliance has been working in tandem with NHS in UK to find a medicinal cure which can reduce these anxiety attacks amongst people, especially amongst young autistic children, that are suffering from autism and other similar disabilities.

\textsuperscript{322} http://www.autism-alliance.org.uk/
\textsuperscript{323} http://www.autism-alliance.org.uk/research/research-introduction
4.10.2.2 Community Based Projects

As predicated in the previous subhead, young children suffering from autism are less likely to associate themselves with their surrounding societal elements and similarly, the generally public is less than cooperative towards developing a cordial relationship with the autistic community. In order to curb the following social injustice and ensure a more friendly reception towards the autistic community, Autism Alliance initiated a plan termed as “The Project” with sole purpose of enlightening social members towards being more receptive to people who are diagnosed with the autism spectrum disorder. Working in contention with the Department of Health in UK, associated charities that fall within the domain of Autism Alliance are training national and local business ventures, such as theatres, government transportation facilities for the general public, retail shops and other recreational centres to become more autism-friendly and develop policy that promote a friendlier environment for the people diagnosed with autism.

4.10.2.3 Network of Champions

Another very prominent project that is being operated by the Autism Alliance is the Champion Network, an initiative where individuals with national level reputation are working in tandem with the respective organization in raising awareness regarding the hardships that people with autism face and as to how the society, as a whole, can better treat autistic children and ensure a more friendlier environment for them. With the fan following and media reach that the selected personalities have, the Network for Champions approach provide an ideal platform for Autism Alliance to work towards their goal of achieving a better societal environment for autistic children.

http://www.autism-alliance.org.uk/Connect-to-Autism
4.10.3 Helping Hands

Compared to the previous two mentioned support programs, the NAS and the Autism Alliance, Helping Hands is a relatively small charitable organization that is solely run by parents whose children were diagnosed with autism spectrum disorder. Established in 2008, Helping Hands has spread their activities across the UK and is now recognized amongst one of the most active support programs that are trying to make a positive difference to lives of autistic people, with their final goal being the total acceptance of people with autism by the society of which they are a part of. With limited resources and capital investment, Helping Hands has focused their attention towards community services and aid people with autism on a community and societal level. Some of the most common and regularly provided services by Helping Hands include, medical awareness pertaining to autism, household equipment, tutorial manuals and therapeutic facilities.

4.10.3.1 Engaging Social Clubs for Autistic Children

As mentioned above, due to the limited resources and financial assistance, most of the work done by Helping Hands as at the community level, one which being the development of social interaction clubs for young children in different cities of UK. These social clubs are run primarily for young autistic children, where they can develop their social, educational and communicational skills, along with observing, how other children with autism are carrying on with their lives. In addition to working on their social and communication skills, these social interactive clubs for young children are also providing facilities like, Arts and crafts, Role play and dress up, Sensory Activities, social activities and community outing. Furthermore, another aspect of these social interactive clubs is also to develop the teaching skills of tutors and trainers, who belong to the field of education, and equip them with the necessary

325 http://www.hhautismbelfast.co.uk/
information and knowledge so that they can provide proper primary level education to the children with autism.

4.10.3.2 Thumbs up Program

Within the following support program, Helping Hands provides multiple recreational facilities which normal people can enjoy but are not equipped suitably for autistic children. Activities like ice skating, Bowling, Badminton, Soccer, Wrestling etc. are provided to the children with autism in order to ensure that they are able to lead a normal life, one where being autistic is not a hurdle or restriction. By providing routine recreational facilities, Helping Hands aims to develop an inclusive environment for children with autism and provide them with all the necessary support which would allow them to attain success in the field of education and personally in life as well.

4.11 Summary of Findings

The primary reason behind undertaking the following research study was to address the needs of young autistic pupils in terms of mainstream primary education and what sort of difficulties they undergo in order to overcome the imminent hurdles that are placed in their educational progress. Throughout the preceding headings and subheads it has been evaluated that young children that are diagnosed with Autism Spectrum Disorder lack two primary skills that most of the non-disabled people seem to have in common, communicational and social skills. Most of the challenges that autistic children face primordially stem from the deficit of adequate amount of social and communication skills, and rather than being able to get their point across, children suffering from autism tend to develop introvert tendencies and attributes.
Education is essential for every child and adult, and is considered as one of the most vital tool through which human beings undertake technical knowledge which shapes their entire future. However, for children suffering from autism, education holds another great importance, without the acquisition of information and knowledge. Education is a chance for children suffering from autism spectrum disorder to become a part of the society and develop key social and communicational skills that they lack. Throughout the following research study, literature data and information has documented that some of the key barriers to acquiring proper education faced by children with autism include, social persecution, being bullied upon and lack of incentive shown by the parents to allow their autistic child to socialize with general public. In addition, the lack of social imagination, speech disparity, obsessive behaviour and social inhibition make it difficult for autistic children to gain and retain the information that they are being taught.

However, citing the difficulties that are faced by young autistic children towards the acquisition of mainstream primary education, the government of UK has improved their exiting legislature and revised their equality act allowing more disabled and autistic children to undertake mainstream primary education. Furthermore, incremental support programs are now being formulated whose sole purpose is to provide a quality life standard to the people who are diagnosed with autism and to ensure that they are not being denied their educational right. Support programs like the National Autistic Society, the Autism Alliance and the Helping Hands are just some of the few support programs that are being run in the UK. These support programs have not only provided a better standard of education being given to children with autism, but these support programs are also committed towards the goal of ensuring that people, especially young children, are given all their societal rights and are treated equally by the members of the society and their fellow peers.
CHAPTER 5: CONCLUSION

5.1 Summary of Chapters

Autistic syndrome is a term that defines a collection of disorders in brain development. The disorders take the form of problems in communication, especially non-verbal communication, repetitive behaviours, and social interaction. The point to be noted is that boys are more affected by such disorder as compared to girls with the ratio of 4:1. Usually the symptoms of autism can be noticed when the child is below the age of one. There are some researchers who relate autism with birth defects. In the year 2013, 21.7 million got affected by Autism. The rate of Autism among adults from 18 years and over in the UK is estimated at 1.1%. There has been a dramatic increase in the number of people diagnosed with Autism since the 1980s. Autism is strongly linked with the genetics of a person. It is much more common in same-sex twins. Age of parents may be considered as an important factor of causing Autism in children. According to studies, parents aged 30 to 49 may be a cause of Autism in their children. Symptoms of autism are reflected in various areas, including, repetitive behaviour, social interactions, and communication. A person who is facing a severe condition of Autism might be unable to speak or care for himself because of his disability. During the initial months of his life, an autistic child normally avoids social interactions, and eye contacts with others. They have a preference of staying alone and seem indifferent of what is happening around them. Globally, Autism occurs in about 1% of the general population. Cases of ASDs are usually identified in the general population pertaining to preschool children at a rate of around 0.6%-0.8%, whereas school children

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326 Fredrik Svenaeus, 'Diagnosing Mental Disorders and Saving The Normal' (2013) 17 Medicine, Health Care and Philosophy.
and young adults constitute about 1.0%\textsuperscript{329} and in the older adults also at about 1.0%.\textsuperscript{330} Symptoms of ASD in children often show up during the routine check-ups when the child is of the age of three. However, in the case of absence of clear signs, the doubt depends on the judgment of physician. This also depends on the context of steps of actions that an autistic child normally shows. In the situation of teaching and learning, the challenges faced by autistic children are: (a) the Attitudes of Classmates without Disability towards Children with Disability or ASD (b) the Attitudes of Teachers towards Inclusive Education of Children with SEN and ASD (c) Parental Perceptions of the Inclusion of Children with SEN and (d) The Perception of Parents towards the Inclusion of their Children with ASD.

Different studies show different results with respect to such teaching-learning situations. Some of the studies show that the pupils really want interactions with autistic children if proper information about teaching and education is provided to pupils while some of the studies showed that primary age children with ASD were less accepted by their peers compared to their classmates without disabilities. The study of Charmanet et al., about the perceptions of teachers showed that there is a need to change the attitudes of participants. It was suggested by the teachers that communication and experience must be shared between teachers and pupils and this is the basis of the inclusive education. It was observed that the teacher’s level of interest and attitude towards children with SEN depends on the level of involvement. Many of the teachers reported that they feel incompetent in teaching autistic children and ultimately they seem reluctant to teach children with SEN. Experience is considered as the best source for knowledge for teachers who are engaged in SEN. Attitude of teachers toward inclusion is also dependent upon the personal characteristics of teachers. It

\textsuperscript{329} Fombonne, Eric. "Epidemiology of pervasive developmental disorders." Pediatric research 65, no. 6 (2009): 591-598.
was observed that younger teachers possess a positive attitude towards autistic children or pupils. The quality of the teacher-student relationship is important for successful inclusion factor.

The main supporters of the process of inclusion are the parents of autistic children. Most of the parents were of the view that their children are entitled to study in a regular school just like other children. However, in a study of White and Associates, relatives suggested that peer rejected children with severe SEN that were included in regular schools. There is a need for collaboration between parents of children and teachers. Attitudes of teachers towards pupils can affect collaboration between family and school. Parents of autistic children are often concerned about the rejection of their children by their peers. They perceive that teachers should be trained to educate children with ASD at both schools, special and regular, to develop experience. It can be concluded that parents seem to prefer those teachers that are effectively trained in regular schools. It is expected by the parents that the teachers of their children should provide quality supervision and attitude towards inclusion. Upon comparing the experiences of the parents of children with ASD, Barrett and team were of the view that assessment and age of diagnosis are significant factors that may influence the parents’ perspective towards inclusion of their children. Parents who belong to a lower social class are not in very much contact with the teachers of their children. Therefore, it is important to recognize that parents also need to take an active part in the educational role of their children. The difficulties of autistic children towards social and emotional development are well known and since the same skills are included in the aforementioned definition of self-regulation, therefore it can be inferred that autistic children are most likely to have self-

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regulation issues in addition to learning difficulties. Furthermore, the National Autistic Society works on the following aspects:

- To offer educational support to other special and state schools that are making an effort to offer inclusive education, without discrimination against pupils suffering from autism or other mental ailments.
- Provide specialised teachers to other schools where autistic children are enrolled.
- Provide Accreditations support pertaining to its registration for Autistic children, in order to hone their educational career.
- Also, the National Autistic Society offers improvement advisors to other schools.

Different strategies can be used in order to teach autistic children. TEACCH is a program used in the implementation of treatment of autistic children. It is a complete program, community-based, including direct services, consultation, research, and professional training. The goals of TEACCH treatment include: (a) developing special ways in which the customer can enjoy and understand other people and live harmoniously at home (b) increasing the motivation and the client's ability to explore and learn (c) improving the uneven development of intellectual functions (d) overcoming the obstacles in motor areas of fine and coarse perception through physical exercises and integration activities (e) reducing the stress of living with a person with autism or related to other family members disorders and (f) overcoming the problems of school adaptation of the client. Another strategy for teaching autistic children is Picture Exchange Communication System. It is a representative communication system that uses elements such pictures for the purpose of communication. Exchange begins working through the approach to the caller. It aims to achieve spontaneous communication as possible. However, the disadvantage of using this

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strategy is that at least two people should be present with the pupil in the early stages of implementation of strategy.

Social stories can also be used as strategies in order to cater Autism in children. With social and conversational stories in comic it is intended that the student can predict how to deal with a social situation that is confusing and difficult to interpret or against which experiences anxiety. Giggle game is another strategy that is used to tackle Autism in children. The game by itself is a mini-conversation, with each partner taking a communicative turn and waiting for the turn of the other. Pica is another disorder that is linked with the habit of eating things that does not fall under the category of food. Children between 1 to 3 years often eat non-food items but it is typically a part of development for them. Autistic children eat such non-feed items like clay, chalk, dirt, or paint from walls. DIR argues that teachers and tutors should drop down to the development level of the autistic children and then try and educate them rather than compelling the autistic children to demonstrate a level of understanding of non-autistic adult and teachers. In addition, the DIR approach to teaching autistic children further augment that teachers should use play activities where learning is done by undertaking practical undertakings.

Pupils with autism face challenges on daily basis in the form of dealing with environment and recognition. This indicates sensory disorders. These challenges are normally hard to understand for people who do not have knowledge of Autism or sensory disorders. Feelings of anxiety develop among such children or pupil that may result in aggressive or self-injurious behaviours like biting and punching themselves. The aim of these strategies is to make such children feel comfortable in their respective environment. SEN’s academic abilities can be improved with the help of multisensory teaching materials. Sensory

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integrative dysfunction is defined as inability of children to organise or integrate the stimuli in the brain. The purpose of such interventions is to alleviate adverse impacts or severity of learning disability while allowing SEN and autistic children to learn quickly and effectively. A number of institutes have built classrooms based on concepts of multi-sensory teaching for special children. These classrooms and programmes have innovative and outstanding outcomes on the ability of autistic children.

Social skills are taken as fundamental aspect of routine life therefore improvement in its functionality is important for academic success. Appropriate interventions should be put in place to improve social skills of autistic children\(^{335}\). Social stories are relatively easier to develop and implement in class room environment. Finally, social stories are identified as one of the most favourite interventions. Social clubs are run primarily for young autistic children, where they can develop their social, educational and communicational skills, along with observing, how other children with autism are carrying on with their lives.

In addition to working on their social and communication skills, these social interactive clubs for young children are also providing facilities like, Arts and crafts, role play and dress up, sensory Activities, social activities and community outing including other visual aids that assist pupils in understanding the instructions of their teachers. Visuals also help in breaking down a skill and facilitate sequencing so that children can learn bit by bit. A number of recreational facilities have been provided by “Helping Hands” to the normal people but these facilities may not be appropriate for children with autism. By providing routine recreational facilities, “Helping Hands” aims to develop an inclusive environment for children with autism and provide them with all the necessary support which would allow them to attain success in the field of education and personally in life as well.

5.2 Conclusion

Sleep problems are very common among teenagers and children with Autism. Furthermore, such children are also prone to sleep walking and there is a preference of less sleep. Lack of sleep can also be one of the issues that an Autistic child may face in learning and communicating because of lack of attention which can benefit from therapeutic interventions. Taylor\textsuperscript{336} argued that self-regulation is a factor of social-emotional development of a child and it is the ability of child to self-regulate emotions and to self-organise behavioural response. Within the context of this definition and the aforementioned behaviours explained in the autistic children following connection can be observed between the two.

The study also critically examined the process implementing intervention and collection methods of social validity data. This review is thus unique from other studies to judge the effectiveness of social skills. The study also examined the range and ratio of different types of sentences in social stories. Most of the challenges that autistic children face primordially stem from the deficit of adequate amount of social and communication skills, and rather than being able to get their point across, children suffering from autism tend to develop introvert tendencies and attributes. Throughout the preceding headings and subheads it has been evaluated that young children that are diagnosed with Autism Spectrum Disorder lack two primary skills that most of the non-disabled people seem to have in common i.e. communicational and social skills.

Furthermore, the key barriers in acquiring proper education faced by children with autism include; social persecution, being bullied upon and lack of incentive shown by the parents to allow their autistic child to socialize with general public.

The findings of a study showed that the support of teachers support the inclusion of children with ASD, especially children with ASD, has increased as the number of support teachers has grown. Before 2000, the role of teacher support was not well explained. Support teachers only expected to look after children with SEBD. There are significant numbers of studies that conclude that multi-sensory teaching methods are effective in helping autistic children, yet due to methodological weaknesses and lack of control experiments raises questions about effectiveness of multi-sensory interventions. Salomone and team\textsuperscript{337} suggested the main barrier in the treatment is the lack of inclusion teachers to support children with Autism. Support teachers, on the other hand, suggested that the main barrier was the lack of information and general attitudes of teachers and classmates. Sometimes, teachers were not prepared to support the inclusion of children with SEN and to tell other students how to interact with their classmates with SEN. According to a review of 26 different studies, Rowley et al\textsuperscript{338} suggested that support teachers programs helps in keeping the commitment to academic activities and improve communication between the child with ASD and the teacher and other classmates.

The support program discussed in this study does not only provide a higher standard of living for autistic children, but there is also a commitment of making sure all the people including young children are provided equal rights and treated equally by fellow peers and members of the society. The study also evaluated the process of implementing intervention and collection methods of social validity data. Moreover, articles also examined the focus on the effectiveness of social stories as teaching intervention to improve social skills of autistic children. Although there are significant numbers of studies that conclude that multi-sensory teaching methods are effective in helping autistic children, yet due to methodological


weaknesses and lack of control experiments raises questions about effectiveness of multi-
sensory interventions.

5.3 Future Implications

This research study pertains towards studying the children with autism and issues and problems they face. It was identified through the overall extensive literature review children that are diagnosed with ASD (Autism Spectrum Disorder) tends to face the most problems in developing their social and communication skills. Most of the issues that are identified in this research study tend to root from these problems and the issues tend to develop in the later years are because these children find it difficult to make others understand their point of view thus ends up indeveloping introvert attributes. Education for such children is empirical and as it helps in shaping their entire future. It helps them in developing their communication and social skills. The problems that have been identified in this research also highlight the peer pressure and bullying in schools and lack of interest shown by parents to make their children socialize with the general public.

With the problems identified through the extensive literature in this research study, the current study creates a stepping stone for future researchers establishing ground work for future implications to study this issue using different methods and practice based experimental researches. Future work could include a broader representation of the problems faced by such children by conducting on hand researches in various schools. Apart from studying children from mainstream schools, researchers can study children from schools

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which work especially for children with disabilities and have expertise in teaching such children. It would allow an access from a wide range of individuals involved with autistic children including teachers, care givers, parents and practitioners etc. In addition to that, researchers can also study the implications and differences in the development of autistic children which are facilitated in especial schools with those who are studying in main stream public schools. Apart from that, the policy implications and the practices studied in this research study can be studied through various methods of trial and their effectiveness can be measured by implementing those strategies in different schools where autistic children tend to study.

With respect to the practice implications of the methods and practices discussed in this research study such as Discrete Trail teaching (DTT) or the Lovaas model, researchers can study the various factors that teachers and practitioners should consider while developing the course outlines and gathering the study material for such children. As it has been identified that every children with autism has different developmental needs and capabilities, pre-defined course works and study outlines have not proven to be effective. Another theory practice that creates room for more research is the use of the DIR study model. It suggests that teacher and practitioners should understand the developmental needs and levels of autistic children and then work towards educating them rather than expecting the children to show understanding levels. This theory practice can be studied through implementation and future researchers can study the effectiveness of this theory in order to address this issue with more specific observations through first hand collection of data.

With respect to the development of teachers in regards towards educating and teaching autistic children, it has been made evident in the literature being discussed that there has been an increase in their attitudes towards inclusion. With respect to the previous researches studied, it was made evident that on general terms, teachers in Western and
European countries tend to have a positive attitude towards the inclusion process of autistic children in the educational system as compared to other countries such as Hong Kong. In developing countries like Africa and Latin America, schools strive for proper resources to train teachers for teaching such children.

The future implications for this research study with regards to the training and development of teachers pertains towards various aspects such as collection of information regarding the quality of the training given to teachers plus assessing the need to for modifying the attitudes of teachers. This will help in understating how to prepare future teachers and how to develop those which are currently working with such children. Future researchers can plan to study other factors that interrupt school practices such as policies, organizational interventions, resource utilization etc. In addition to that, future researches can also focus on a more qualitative research studying the case studies for teacher’s practices and attitudes as schools increase their emphases on more inclusive education for autistic children. They can also examine transformation across a time frame and make room for a more thorough investigation of teachers and practitioners. Such future studies can base on enhancing the current understating of the complexities of the inclusion and provide directions and guidelines for change.

This research study also makes room for future implications for policy makers and administrators which cater this issue. It can be argued that with the provision of more resources to teachers on pre- and post-service levels will improve their attitude towards the inclusion. However it can also be understood from this research that substantial training such as fostering critical thinking and teaching people through university based courses will develop the acquisition of more generic teaching attributes and skills. This crates room for further research as future researchers can study the effectiveness of various training methods
on both pre and post service level and which prove to be more effective in inducing a more favourable attitude in teachers for inclusion.

Finally, it needs to be highlighted that however the findings of this research study are useful in identifying the various issues and comparing the previous studies creating a framework for the work that has been done and the work that needs to be done, future research is need to fully resolve this issue. It is recommended that future researchers adopt a more qualitative approach and carry out interviews from teachers from mainstream teachers with the aim of gaining critical insight regarding the barriers that are faced when teaching autistic children and what factors cause those barriers according to them. This will allow the researchers in identifying the key barriers and analyse different methods and policies which can be implemented in order to overcome those barriers.

5.4 Gaps in the Research

With respect to the information collected from the previous researches for this study, it was made evident that majority of the researches were limited towards only identifying the problems faced by personnel involved with teaching autistic children or their care givers or parents. They did not address the issues in accordance to the implementation of policies and their effectiveness towards the improvement of teaching experience for autistic children or teachers. With this research study, the researcher has filled this gap of knowledge and combined the problems and issues faced in accordance with the theories and models practiced or proposed to overcome those issues. This research study not only identifies the barriers towards teaching autistic children in mainstream schools but also explains the use of proper theories and models developed over time to overcome those barriers. This research study explains the policy implications that are needed to overcome the identified problems in an extensive manner and also analyses the current practices being followed by the policy makers.
and administrators with respect to their effectiveness in improving the teaching practices for autistic children in mainstream schools. It proposes a number of various strategies such as incorporating physical activities and plays as a part of the course outlines, dealing with the toileting issues, using simple language and speaking slowly, establishing their fixed daily routines and identifying their obsessions and dealing them accordingly. Such methods have been proposed with the aim to train teachers and advise policy makers to ensure that teachers follow such practices in order to enhance the educational services for autistic children.

5.5 Limitations of the Research

While reviewing the findings of this research study, it is important for readers to be aware of various limitations. Firstly, this research study pertains towards studying the information that has been collected from past researches conducted in this regards. It explains and critically analyses the work that has been done in previous studies with regards to the problems faced in teaching autistic child in mainstream primary schools. However it lacks sufficient evidence to comment on the effectiveness of the strategies and the methods discussed. The reason being that this study lacks the collection of any primary data with respect to the problems faced autistic children, or their parents, teachers or caregivers in accordance to the education system. It only pertains towards the comparing and analysing of information that is solely secondary in nature. Apart from that, this research study is focused in theoretical and practice implementation of methods and policies with respect to the educational system of UK only. It does not provide any sufficient information with regards to the application of the said theories, practices and teaching methods in a cross-cultural or international context. This limits the general applicability of the findings of the research study as the cultural aspects, teaching practices, level of resources provided for schools for teaching such children and the level of training quality of teachers differs from country to country.
Apart from that, another limitation pertaining towards the findings of this research study is that it only focuses on the teaching and learning issues of children with autism. It does not provide any guidelines or insights regarding the learning behaviours of adults with autism and their educational development. Adults with such disparities require different behavioural models and practices to indulge them in learning and developing their social and communication skills. With reference to studying the issues of students, it is also empirical to understand that those autistic people who were neglected as children or were diagnosed with autism in later years also need proper developmental courses and methods to help them progress in their professional and personal lives.

In addition to the above mentioned limitations, this research study lacks a first-hand perspective of children with autism. All the information gathered and the research studies analysed was based on a third person perspective while studying issues and problems in teaching autistic children in mainstream schools. It lacks the analysis of personal feelings and affiliations of involved persons including the autistic children, teachers, practitioners etc. Having such information incorporated in the findings of this research study would have increased the reliability and validity of the results and would have allowed for a more generalized applicability of the results. This limitation is interlinked with that pertaining towards the lack of primary knowledge in the research study. Primary data collected through survey questionnaires or interviews sessions would have allowed the researcher to cover in-depth analysis of the problems experienced by the teachers or any other involved personal and the children themselves. This study explains that such children face difficulties in conveying their message to others but it does not explain their experiences or how to overcome those communication issues or social skills.

Another aspect that limits the findings of this research study is that this study only pertains towards studying the school and classroom settings involved in teaching autistic
children and omits the perception and the involvement of parents or care givers or others involved in home such as siblings. In order to develop the required skills in autistic children and teaching them in a successful manner, the involvement of parents and the overall changes in the home settings are also empirical to study because a combination of both will lead to better results in developing the communicational and social skills in autistic children and improving their education.

5.6. Recommended Strategies for teaching Autistic Pupil in Mainstream Schools

Schools have long desires and aspirations to teach pupils with Autistic Disorders and help them to identify their potential and to make them a part of this society and mainstream schools. The schools recognise the significance of helping pupils with Autism to analyse their various set of skills which are necessary for them to be a part of the society.\textsuperscript{342} They encourage the pupils with Autism to be independent in their school life as well as their adult life. They further encourage an Autistic pupil to build strong relationships with others and consider it as a starting point for their learning and happiness.

There is a growing realisation of pupils with Autism with the inclusion of their special needs; it is also noticed that the increasing awareness is not always to the best interest of the pupils with Autism as to be grouped together with normal pupils in the class sessions. Pupils with Autism who requires higher functioning and more of verbal communication at their needs scale should be placed in the mainstream schools to receive the education. It is, therefore, necessary for the teachers of mainstream schools to have the ability of judgements and contrast between Autistic pupil and other pupils and formulate effective teaching strategies to prosper the future life of Autistic Pupil\textsuperscript{343}.

\textsuperscript{342}Michael G. Aman and Kristen S. Langworthy, 'Journal Search Results - Cite This For Me' (2000) 30 Journal of Autism and Developmental Disorders.

It is set as a mandatory requirement that “No Child Left Behind” along with those individuals with disabilities according to Education Act. It is the fundamental right of every child to receive the appropriate education. It was also mandated by IDEA that a state should provide an eligible child with educations that meet his needs and requirement on the individual level. Teaching an Autistic pupil is his right with a thorough understanding of their needs and wants and provides them with full support and inspiration which will help them to attend a mainstream school and make an improvement to get education and employment further when they grow older without depending on their parents or caretakers.

5.6.1 Use token economy

The system of the token economy can be used by the mainstream schools to provide positive reinforcement to the Autistic Child in the school by giving them few tokens for the purpose of completing a task which aims to strategize the behaviour of the Autistic child in the desired way. The tokens can be designed in the form of coins as children used to insert while playing video games and those coins will be used to buy their favourite items when achieving a particular task. The Autistic child can earn those tokens by achieving tasks assigned by his teachers and engaging them to formulate their target behaviour in exchange of those tokens. The tokens can be used by the child to gain their favourite things for instance, toys, objects or favourite food. The token economy follows a cycle which can be followed by:

The target of this activity can be anything for instance, completing school homework, saying hello to a friend or finishing up the meal. Target behaviour varies according to the type of Autism in the child. The token system can be used for variety of reasons which can be based on completion of task in exchange of token or decreasing the amount of anger or aggression in an Autistic child to make him engage in different activities through giving him tokens.
Token economy is more like world economy in which an Autistic child has to go to school in order to complete his academic task and earn tokens, where the child trades all his tokens for activities in favour of tangible items. Token economy is an effective method through which reinforcement can be delivered through the Autistic child. For instance, the teacher can judge the difference between the response and the reinforcement. It can be used by the teachers to maintain performance records for a longer period of time.

5.7 Applied Behaviour Analysis

Applied Behaviour Analysis can be used by teachers to understand the behaviour of the Autistic child and how it affects the environment of the school. It helps them to analyse that on factors do the behaviour of the Autistic children changes. ABA is not considered as an effective to treat children with Autism in mainstream school due to lack of awareness of this treatment in the UK. The mainstream schools should come forward and use it as an effective tool for mitigating autism from the children. This program should also be implemented in the policy of the UK regarding Autism to implement effective interventions to the children with Autism. The interventions in the ABA can help children with the Autism to structure their
behaviour and do necessary modifications which can reduce aggression and obsession in the children. Careful examination is necessary to implement this program and alterations then are formulated to achieve the targeted behaviour of the Autistic child.

5.7.1 General Strategies

Teaching pupils with Autism requires determination and tolerance for the person to handle critical situations rose by the pupils and formulates strategies on individual level. The strategy for teaching an Autistic pupil should begin with catering their basic needs at the priority. The general strategy includes following:

- Use of Simple Language
- Deal with toileting issues
- Deal with eating issues
- Selection of toys and plays
- Identify their obsessions

5.7.1.1 Use of Simple Language

The most efficient strategy to handle pupils with Autism at mainstream schools which should be recommended to every mainstream school is the use of simple language to communicate with the pupil with Autism. It’s hard to use simple language being an adult or a teacher when talking to an Autistic pupil as it requires speaking with clear words. To further simplify the language, it is recommended to use symbols and pictures or either a real object. For instance, if you are asking a child that it’s time to have breakfast, then show him a picture of a food related to breakfast. This will reduce the element of frustration in the pupil of not communicating verbally to other persons. The teachers need to be careful in symbolising the

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real objects due to the diversion in the concentration of pupil if it contains too much
information on the picture. Furthermore, the connection of the objects to the symbols should
be strong as it won’t be misinterpreted by the Autistic pupil.

The picture presentation will give a sense of security to them and structure their day
in an appropriate manner. By the understanding of the pupil, various techniques can be
designed in the form of pictures as photos, symbols, drawings, etc. Furthermore, teachers can
also use timetables based on visual clips which can break an activity into several steps.

5.7.1.2 Precautions to be considered

- Precise Understanding- It is necessary for the teachers to be careful about whatever they
  are saying as the pupil can misinterpret it. The understanding of a pupil is limited as
  compared to other peoples. For instance, if a teacher says to their pupils ‘it’s raining cats
  and dogs’; the Autistic pupil may look for cats and dogs dropping from the sky rather
  than water droplets.

- Repetitive Instructions- It is necessary for the teacher to monitor whether the pupil is
  listening and understanding the symbolic objects as many of them may not look at the
  teacher or the object but still understanding everything and misinterpreting the statements.
  Teachers can repeat their statement if they think that the pupil does not grab the clear
  understanding of the picture or statement. Teacher should also wait for their pupils to
  process the information provided by them and it still it is not clear to them, repeat the
  instruction in the same manner.

- Call by first name- It should not be expected by the teacher that the pupil will respond if
  he calls out his name or the order as ‘stop there’ or ‘come here’ would be comply by
  Autistic pupil. Give them positive directives for instance say, ‘slow down’ rather than
  ‘stop running’.
## Action Plan for Using Simple Languages

<table>
<thead>
<tr>
<th>Use of Symbols</th>
<th>The teachers should use simple languages and simple words of English which help the Autistic pupil in clear understanding of the instructions.</th>
</tr>
</thead>
</table>
| **Symbols for Breakfast** | ![Symbols](image)  
*One of the Symbol above can be used for the breakfast purpose* |
| **Symbols for Lunch** | ![Symbols](image)  
*The symbol above can be used for the instructions of lunch to the Autistic Pupil* |
| **Symbols for Playing time** | ![Symbols](image)  
*This type of symbols can make a clear picture in the mind of the Autistic Pupil that it is the time for play.* |

5.7.1.3 Deal with their toileting issues
Another effective strategy to teach an Autistic child in the mainstream schools is dealing with their toileting problems as they find it difficult which is specific in the case of Autistic child. Autism syndrome creates difficulty for the pupils to understand social rules by not understanding the rules of using the toilet. An Autistic child has difficulty in controlling their bowel system and can lead to more messy outcomes. It is required for the teachers to maintain their routine of the bowel so they can have more control over their bowel.

<table>
<thead>
<tr>
<th>Action Plan for Dealing with toileting issues in the Autistic Child</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Establishing a Routine for toilet</strong></td>
</tr>
<tr>
<td>Teachers should try to establish daily routine for the toilet and guide which steps to follow in the toilet. It is also necessary for the teachers to train their toilet timings after every meal. Initially, the teachers should take the child to the toilet and use symbols to train them. Furthermore, parents are also advised to follow the guidelines provided by the school to train their child at home.</td>
</tr>
</tbody>
</table>

*This step by step guide can be used by the teachers and parents to train the Autistic child for their toileting issues.*

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Teaching Autistic Children

Keep a Track Record of their Timings

The parent and the teacher both can keep the record of the child when he/she usually goes to the toilet. Use a simple key method of w/p (w=wee/p=poo) to simplify the language for the child as it gives useful information when he/she visits toilet. Further more teachers should record the intervals and time to monitor whether they repeat the schedule daily.

<table>
<thead>
<tr>
<th>Potty Training Chart</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set on Potty</td>
</tr>
<tr>
<td>Made Pee in Potty</td>
</tr>
<tr>
<td>Made BM in Potty</td>
</tr>
<tr>
<td>Pulled Pants Up and/or Down</td>
</tr>
<tr>
<td>Flushed Toilet</td>
</tr>
<tr>
<td>Washed Hands</td>
</tr>
</tbody>
</table>

This chart can be used to keep track record of the toileting in Autistic Child.

Set Rewards for Using Toilets

Rewards are necessary for the Autistic child for using toilets so he can associate using toilet with the rewards. It gives a birth to new system to reward a child for toilet training.

The picture above elaborates how the rewards can be set for using toilets for the Autistic Child.
5.7.1.4 Deal with eating issues

Lunch timings or mainly food is critical to the Autistic child due to some pre-set flavours and textures in their mind. Trying new foods may serve as a cause of frightening them and overactive\textsuperscript{347}. Make them sit and eat in a group of pupils at their table which can help them to increase their willingness to eat everything regardless of their particular taste or food\textsuperscript{348}.

<table>
<thead>
<tr>
<th>Action Plan for Dealing with Eating Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Set Lunch Routine</strong></td>
</tr>
<tr>
<td>- Establish a consistent lunch time for the pupils along with a personal table so it is understood by the Child that it is the time for lunch. Encourage the Autistic child to sit on the table while eating his lunch.</td>
</tr>
<tr>
<td>- Know the favourite food of the child so that he can eat the food.</td>
</tr>
<tr>
<td>- Increase the amount of food on his plate gradually and provide him with a variety of the food on his plate.</td>
</tr>
<tr>
<td>- Praise the child when the food has been swallowed by him.</td>
</tr>
<tr>
<td>Allow them to use their own fingers while eating rather than using cutlery to eat.</td>
</tr>
</tbody>
</table>

\textsuperscript{347}Jianjun Cheng and Alan P. Kozikowski, 'We Need 2C But Not 2B: Developing Serotonin 2C (5-HT 2C ) Receptor Agonists For The Treatment Of CNS Disorders' (2015) 10 ChemMedChem

5.7.1.5 Identify their Obsessions

An Autistic child may have obsessions with some objects or a person, so it is necessary for their teachers to identify it, for instance, Captain America, Spiderman or Dinosaur. It can be identified when a child repeatedly talks about the same object which can be used as a powerful tool to teach him different colours and numbers and implement a visual timetable.\textsuperscript{349}

\textsuperscript{349} DAWN FALLIK, 'After Vaccine-Autism Case Settlement, Mds Urged To Continue Recommending Vaccines' (2008) 8 Neurology Today.
5.7.2 Choosing Toys and Activities

An Autistic pupil may find difficulty in doing some work or task in his free time\textsuperscript{350}. In this situation, the teacher can take steps in stimulating different activities for the child to build and enhance his skills, for instance, flicking his fingers. Offer them a favourite activity with rest of other pupils and make them enjoy it if they are not enjoying the designed activities.

Proposed Activity

The mainstream schools can plan a picnic for children where they play Scavenger Hunt game in a park. Scavenger Hunt generates more interest in Autistic children in which they have to find various objects and complete the list of items specified to find on the list. Teachers can make their teams with children as in one teacher with four children to achieve the goal and find all the elements mentioned in the list. This game can be made more creative by showing pictures and giving clues and hints by posters and arrows.

Scavenger Hunt Activity 1:

Prepare the child for the play by showing him the picture of the objects which is to be identified and start singing, like “Where is the glass of milk” with a rhythmic tune. Pretend as you are helping them to find the object, and when you find start saying “Look, the glass of milk is over there”. Move to next object once you have found the first object and repeat the same thing for next objects.

<table>
<thead>
<tr>
<th>Action Plan for Choosing Toys and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New Toys New Experiences</strong></td>
</tr>
<tr>
<td>-Buy a new range of toys for the Autistic child every week which helps to increase their ability to make their own choices concerning toys.</td>
</tr>
<tr>
<td>-Teach the child about how to use the toy or how</td>
</tr>
</tbody>
</table>

to play with it.
-Make them do different experiments with toys on their own which helps them to open their mind and think on their own style.

<table>
<thead>
<tr>
<th>New ideas for toys and activities</th>
<th>Following toys can be used for involving children with Autism which are visually also interesting for the Autistic Child as:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Bubbles</td>
<td>- Bubbles</td>
</tr>
<tr>
<td>- Jigsaw</td>
<td>- Jigsaw</td>
</tr>
<tr>
<td>- Lego</td>
<td>- Lego</td>
</tr>
<tr>
<td>- Shapes</td>
<td>- Shapes</td>
</tr>
<tr>
<td>- Visual clips and cartoons</td>
<td>- Visual clips and cartoons</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan Physical Activities</th>
<th>It is necessary for the teachers to plan their physical activities which are both healthy and a source of learning for the Autistic Child in the schools. Following physical activities can be used for teaching and involving Autistic child in the Mainstream schools.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Swimming</td>
<td>- Swimming</td>
</tr>
<tr>
<td>- Trampoline</td>
<td>- Trampoline</td>
</tr>
<tr>
<td>- Football</td>
<td>- Football</td>
</tr>
<tr>
<td>- Climbing the rope and frame</td>
<td>- Climbing the rope and frame</td>
</tr>
</tbody>
</table>
5.7.3 Musical Interaction Therapy in Mainstream Schools

It is an approach which was developed like ages ago, but schools and let forgo their charms by eliminating this practice from their schools. This method was developed in the favour of Autistic Child over a decade ago for mainstream schools. It should be implemented by the mainstream schools in their school’s curriculum which aims to prioritise communication and development skills. It should also be implemented on the school level as well as on the family level which helps to improve skills in the Autistic child. In this approach, the musician in the school plays music for the Autistic pupils on an instrument which helps them to develop interaction and support between two people.

<table>
<thead>
<tr>
<th>Action Plan For Music Therapies in School</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Firstly introduce the Autistic child to different musical instruments like guitar, trumpet, violin or drum.</td>
</tr>
<tr>
<td>- Teach them how to play or use those instruments to reduce their curiosity of using the instruments.</td>
</tr>
</tbody>
</table>

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351 'Improving Services For Patients In The Community: The Rt Hon Tony Blair MP, UK Prime Minister' (2007) 83 Postgraduate Medical Journal.
5.7.4 Socialisation Strategies for Autistic Child

It is important for the teachers to teach social skills to the Autistic pupils which are beneficial for the pupil as well as for their classmates. Socialising makes an enjoyable experience for the pupils when they share their stories, lunch and toys with Autistic mates. It creates a passion in their classmates to help Autistic pupils and understand their needs. This factor helps the Autistic child to boost their self-esteem in a positive manner when they take help from their classmates.187

It should be the primary job of the teacher to supervise social interaction between Autistic pupils and their classmates and provides them with valuable support by providing them with social guidelines and helps them to reinforce interactions with their classmates in a responsible manner. Furthermore, it is important for the teachers to consider preparing

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Teaching Autistic Children

classmates of Autistic pupils with the understanding of Autistic Syndrome\textsuperscript{354}. They should provide them with necessary learning about the syndrome through recommending different books.

<table>
<thead>
<tr>
<th>Action Plan for Socialisation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Make Partners</strong></td>
</tr>
<tr>
<td>-Make partners of the Autistic child with their classmates in activities of the class including lunch, music therapies and tasks which helps to increase their learning abilities.</td>
</tr>
</tbody>
</table>

5.7.5 Strategies for managing obsessions to various objects in Schools

There is a particular need for consistency in routines to children with Autism. In this need, anxiety and stress play a major role to frustrate an Autistic child. Teacher's strategy in such situation should be based on explaining significant changes in their daily routine. For instance, school's assembly in the morning would make the teacher place a picture or a symbol on the schedule of the Autistic pupil to reflect changes in their routine. If the transition made a few minutes ago in their daily routine task would result in confusion and frustration in their minds which leads to anxiety for the Autistic child. Furthermore, they have

an interest in few things and objects which they follow obsessively. Their obsession may include different teaching styles, new activities in break time, and reinforcing correct influences of their attitudes. To implement this strategy, teachers need to build an exceptional learning experience for the Autistic pupils which will increase their motivation to learn. Also, it is mandatory for the teachers to design the activities according to the age of Autistic child otherwise; it will eliminate the pupil from the activities in a negative way.

5.7.6 Modification in classroom of Mainstream Schools

It is the most efficient strategy to teach an Autistic child in the mainstream schools\(^\text{355}\) by modifying the classes of the pupils and further change activities formulated for the Autistic pupils to meet their needs. For instance, the pupils who cannot write their answers on a sheet of paper can verbally answer their questions. The modification in the environment of the classroom will help the pupils to learn skills successfully. It is necessary for the teachers to set an appropriate location for the pupil's desk and set required materials on their desk. It is necessary that the desk should be placed near to the teacher's desk and face the front side of the classroom.

5.7.7 Action Plan

In order to implement this strategy appropriate measure should be taken for the modification changes in the classroom which does not leads to confusion in the minds of the Autistic child. Furthermore, the modification should be made according to the taste and likeness of the Autistic child which creates a good impact in the learning abilities of the Autistic child in their schools. On the weekly basis, the charts and colours, daily menu of the

lunch and activities should be replaced with new ones to help children learn more and reduce their syndrome\textsuperscript{356}.

5.7.8 Strategy to use Reinforcement

Reinforcement strategy will help the Autistic pupil to learn through tangible objects. The reinforcing elements for pupils could be some alone zone for spending their time, taking some time out to talk to their favourite person\textsuperscript{357}, a trip to a restaurant, practising their favourite exercise (such as swimming or walking), listening to their favourite music, playing with sand or water or sitting at the corner of the window\textsuperscript{358}. It is important for the teachers to know their reinforcing elements which can help to build their personality and abide the rules of the society. It is also necessary for the teacher to maintain their likes and dislike charts which can be used for the later purpose to know the child's preferences.

5.7.9 Strategies for Planning Transitions

Pupils having Autism have a fear of unknown things which is unpredictable. It is difficult for the pupils to undertake all the information presented by their teacher in a new situation.\textsuperscript{359} The transitions in the classrooms may result in anxiety, stress and confusion in the minds of the Autistic child\textsuperscript{360}. Transitions in the case of Autistic pupils should be placed carefully and thoughtfully with appropriate planning. The transition includes the changes in

\textsuperscript{356}John Prescott and Craig Fleisher, 'SCIP: Who We Are, What We Do' (1991) 2 Competitive Intelligence Review.
\textsuperscript{358}H.M. Saeed and others, 'Molecular Cloning And Cdna Characterization Of Camelus Dromedarius Putative Cytochrome P450s 1A1, 2C, And 3A' (2014) 13 Genetics and Molecular Research.

the classroom activities and their daily schedules throughout the day or shifting from one grade to another grade.
### Action Plan for Transition in the Mainstream Schools

| Schedules | - Prepare schedules for changing in activities to minimize the anxiety and confusion for the Autistic Child about the transition.  

- Use more pictures to depict activities formulated for the Children with Autism.  

- Make the pupil set their own activities by crossing out previous activities on their own which they do not like. |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Give Signals for the Transitions</td>
</tr>
<tr>
<td>Use social stories</td>
</tr>
</tbody>
</table>

### 5.8 Recommendations and Implementations

Autism is a challenging situation for both parents and teachers which are hard to overcome but not impossible. To take care of an Autistic child, it is necessary for the parent to look after their health too which is not selfishness but a basic necessity. Taken care of their health would help them to make a good parent and cope with upcoming challenges of Autism in their child.

#### 5.8.1 Recommendations for parents
When a child is diagnosed with Autism, their parents started worrying about their future and what comes next. Parents are reluctant to listen to negative views about their children apart from their happiness and health and in such situations diagnosis can be a frightening situation for their parents. It creates a situation of the uncertainty of how to treat an Autistic child with the element of a conflicting advice of treatments. Some parents will also hear that Autism is incurable which breaks the confidence of the parents. It is therefore highly recommended that the parents should go for right treatment plan along with their support, love and care which will help their child to learn and grow.

5.8.1.1 Implementation

When the parents are aware of the Autism issues in their child, they should immediately start the treatment as delays can lead to serious problems in the child. Furthermore, they should seek help as soon as they find suspicious things going on with their child. Parents should not wait for the diagnosis of Autism in their children. Early diagnosis of Autism is the most efficient strategy to enhance the development of the Autistic child and reduce Autism and its symptoms in the child. Furthermore, parents who are facing issues in raising their Autistic child shall be provided with mental services of health support which address the family about Autism and coordinate with them to eliminate Autism in their children.

5.8.2 Effective interventions in Autism

There has been consistency in the agreement between interventions and number of features in a program which is shaped by practical and ethical considerations. An appropriate intervention should comply with the Autistic child needs along with his family needs. This recommendation is formulated after the analysis of above chapters which is established on a
point that Autistic children spend less time in social activities due to hesitations and confusions when it comes to unstructured conditions. Therefore, it’s hard to specify the time which is required for the engagement in social and physical activities which are the part of programs designed for children with Autism disorders.

5.8.2.1 Implementation

The intervention should be implemented as soon as the child is diagnosed with Autism taking into account his strength and weaknesses according to the society and family needs, the environment of living of the Autistic child, daily routine in home and classroom. An appropriate intervention should be implemented which includes a minimum of 25 hours a week, 12 months a year engagement of the child in planned activities which helps him in the development process. The intervention can be based on educational activities which should be determined on the individual basis. There are six kinds of interventions which are found appropriate to be implemented for Autistic child which includes:

5.8.2.2 Functional Intervention

That sort of intervention is based on spontaneous communication which is regarded as a primary objective of early education. For every Autistic child, programming should be built on the fact that most of the pupils can learn to speak in an efficient manner. It also implies that effective techniques which cover both verbal and non-verbal language modes should also be applied across the intervention settings.

5.8.2.3 Social Intervention
Social intervention explains that the instructions should be given to the Autistic child in the context of various settings with the use of specified activities and interventions to achieve social goals (such as cooperative activities with peers).

5.8.2.4 Playing interventions

Teachers and parent should focus towards playing activities of an Autistic child with their peers by instructing them in an appropriate manner.

5.8.2.5 Cognitive intervention

In this kind of intervention, goals are achieved through the cognitive development of the Autistic child which has to be carried in the context of general skills along with the maintenance of natural settings and acquiring new skills for the Autistic child. It may involve adopting unique and different teaching strategies to support new skills of the child.

5.8.2.6 Behavioural Intervention

The behavioural intervention should incorporate information related to the behaviours of the Autistic children whether they behave positively or proactively and train the teachers according to the conduct of the Autistic child and their skills.

5.8.3 Public Policies in the UK

The IDEA (Disability Act) is responsible for ensuring rights to teach an Autistic child with an appropriate education. However, there is a variability factor in their implementation and specification of the services. The intervention of ASD in children is expensive and mostly schools, and another organisation requires financial aid from the government of the UK and their federal programs to provide relevant and appropriate services to the children.
with Autism. There have been many court cases as a result of tension between school organisation and families of Autistic children. There is also an inconsistent pattern of findings in the context of character tics of individuals with Autism which gives a challenging background for the decision-making purposes. Therefore it can be recommended to the government of the UK to formulate their policies according to the need of the Autistic child and implement a successful mechanism that gives efficient outcomes which are beneficial for the UK.

5.8.3.1 Implementation

The UK should have appropriate training centres with a strong expertise in ASD to provide training to parents and teachers and also provide technical support to the schools in the UK. The government in the UK should also formulate policies to provide adequate support to the schools and recommend various ways for the improvement. The government of the UK and National Autistic Society in the UK should stay in coordination with the schools delivery systems and also develop numerous ways to facilitate the processes implemented in the policies. Furthermore, since the treatment of Autism is expensive in the UK, the state should look into different strategies to fund the necessary interventions that are mandatory for the Autistic children in the UK, so that the cost is not the concern of the parents or mainstream schools systems. Education departments in the UK should develop an integrated approach to collaborate with local and mainstream schools in the UK. Additionally, the Autistic spectrum differs in every child so it is necessary for the Government of the UK to review their panels in the federal agencies and implement necessary interventions for the decision-making purposes.

5.8.4 Autism Treatment Plan
There has been a variety in the treatment for children with Autism, and it can be tough for the counsellor or parent to find an appropriate method of treating an Autistic child. Parents can get confused by hearing different treatments from different counsellors and doctors. It is, therefore, recommended to the parents and teachers of the Autistic child to know that there is no particular treatment for Autism as it depends on the capability of the child. Each child on the spectrum of Autism is different regarding strengths and weaknesses, and the child should be tailored according to his strength and weaknesses.

5.8.4.1 Implementation

This can be implemented by asking following questions from the parents of the Autistic child as:

- What are the key strengths of the child??
- What are the key weaknesses of the child?
- Which type of behavior causes issues to the Autistic child?
- Which skills are deficient in the child?
- What are those activities which the child enjoys and can be utilized for the treatment of the child?

Apart from asking these questions from the parents, it is necessary to provide complete support to the Autistic child for their future and success. Parents can help their child to get the most of the treatment by working with them step by step in dealing with Autism and their teams.

5.8.5 Educational Services

The educational services should set goals same as that of the other children which include their personal independence and managing their social responsibility competencies.
These goals set the grounds for continuous improvement in the social and perceptive abilities with influencing their communication skills and skills of generalisation with multiple environments. Treatments should be implemented for positive outcomes in the condition of the Autistic child in the homes as well as classrooms. The active interventions should be implemented in the light of longitudinal studies through which the Autistic child can receive a variety of interventions. These interventions in the educational services lead to improvement in the Autistic child and help them to build the relationship with other children of the school. The specific treatments of the Autistic child can help to achieve short-term goals by addressing the weak areas of the Autistic child.

5.8.5.1 Implementation

The objectives set for the Autistic child should be SMART and according to their behaviour and skills. Furthermore, the objective should be accomplished within one year of its setting with the gradual involvement of the child in the education, community and his family and social life. The schools and organisations should focus on the social skills of the Autistic child to enhance the participation in the class and petty discussions at their homes. Furthermore, their perception about different activities in the school varies, and it is symbolised through academics of the school. In addition to the above statement, the response of every Autistic child should be recorded and monitored and frequently reviewed to check their alignment with the pre-set objectives.

5.8.6 Recommendations of Surveillance and Screening for Autistic Children

Surveillance for the Autistic child is necessary for the monitoring of the child through his infancy stage to school age whether they have risen for the social acceptance in the society.
5.8.6.1 Implementation

- Spread questionnaires based on Child development and the evaluation of parents of the development status of the Autistic child.
- A development survey should also be designed if the child fails to meet the criteria of the milestone by his ages.
- Investigations should be done in the laboratory with audio assessment and screening to know the status of the development of the child and tracking the delays in the treatment. ----Lead testing should also be performed for identifying the gap between delay in the development and pica.
- Additional assessments should be done if the development delays still exist in the Autistic child.

5.8.7 Personnel Preparation

It is recommended that the Government of the UK and their agencies set an agenda for the preparation of the personnel who are responsible for bringing up the Autistic child which includes the caretakers and teachers of the child. The efforts should be done in the collaboration with the Government of the UK to establish infrastructure for Autistic child and provide assistance to the personnel in those infrastructures or resource centres. The Autistic children committees urge the Government of the UK and federal agencies to provide necessary preparation to the personnel and also provide them with resources to create a valuable support for educating children with Autism.

5.8.7.1 Implementation
In order to implement the above recommendation, the NAS or the Government of the UK should establish a plan based on 5 years to provide necessary funding for the teachers development to provide services to the Autistic child in the UK. Furthermore, this could be implemented through applying team approach which will help the teachers to develop and mould their teaching skills according to the needs and requirements of the children with Autism. In addition to the above statement, more emphasis should be placed in favour of training of the teachers for educating children with Autism and enhance their capabilities by introducing different training programs for the teachers. The Government of the UK should further provide necessary incentives to introduce short-term training programs for teachers which cover the area of developing skills to educate an Autistic child in their resource centres and assistance systems.
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