

Experiences of Special Education Teachers: How the Classroom Physical Environment Facilitates Socialization and Engagement of Students with Autism Spectrum Disorder?

Manoj Bhandari

Central Department of Education, TU, Kirtipur

Email: dktmanoj@gmail.com

Umanga Jung Parakram Shah

PhD Scholar, Graduate School of Education, Faculty of Education, TU, Kirtipur

Email: shahumanga@gmail.com

Abstract

This paper explores special education teachers' experiences in engaging children in the physical environment where they work with students with autism spectrum disorder (ASD) to help them enhance social skills. We have used a qualitative phenomenological design to explore teachers' experiences. We used purposive sampling to include two special education teachers who have been educating students with autism spectrum disorder from Kathmandu and Lalitpur districts as the sample. We collected information through face-to-face and phone interviews conducted repeatedly. We conducted thematic analysis by transcribing, coding, categorizing, and identifying themes. The importance of structured classroom environments and the tools and approaches, such as visual aids, sensory management, and skill development activities, is highlighted. Ethical concerns regarding restrictive seating practices for students with autism spectrum disorder are also raised. Therapy-combined activities like music, occupational, communication, and behavioral therapies to improve communication skills, social interaction, behavioral support, and motor skills were found to be efficient while teaching students with ASD. Daily co-teaching methods, individualized lesson plans, and continuous reinforcement promoting emotional support and a collaborative learning environment were identified as effective tools. The study emphasizes the significance of an inclusive, sensory-friendly, and well-structured physical classroom environment in establishing a supportive environment that helps students with autism spectrum disorder.

Keywords: Autism spectrum disorder, special education, socialization of students

Introduction

Autism Spectrum Disorder (ASD) has received increasing attention across the fields of education, medicine, psychology, and other related disciplines worldwide. It is a neurodevelopmental disorder characterized by deficits in social communication and the presence of restricted interests and repetitive behaviors (Autism Speaks, 2024; Hodges et al., 2020). According to the World Health Organization (2023), in ASD, difficulties in social interaction and communication, along with restricted and repetitive patterns of behavior and activities, are commonly observed. Moreover, challenges with transitions and changes in routine, as well as atypical responses to sensory stimuli, are also notable. According to the Centers for Disease Control and Prevention (CDC, 2025), the prevalence of ASD is 1 in 31

children aged 8 years in the United States. About 1 in 100 children worldwide, according to WHO (2023), has autism. However, it is widely considered that low and middle-income countries lack reliable data regarding the prevalence of ASD.

Estimates from Autism Care Nepal Society (as cited in Acharya & Baral, 2023) show that 300,000 individuals are living with autism in Nepal. Among them, 60,000–90,000 are severely affected. However, these figures should be interpreted cautiously due to the absence of reliable national epidemiological data in Nepal. Moreover, Acharya and Baral (2023) also emphasize that reliable national data remain limited, reflecting broader gaps in awareness, identification, and diagnostic systems in the Nepali context.

In 2010, Nepal ratified the UN Convention on the Rights of Persons with Disabilities (UNCRPD). The convention guarantees the right to inclusive and quality education for all. Nepali citizens with disabilities have the right to free education from basic to secondary levels, as well as free higher education as provided by law (Compulsory and Free Education Act, 2075; Rights of Persons with Disabilities Act, 2074; Constitution of Nepal, 2015).

Research shows that by fostering positive relationships with students, establishing supportive classroom environments, and implementing successful social-emotional learning programs, teachers can significantly improve student outcomes (Schonert-Reichl, 2017). It has been demonstrated that training significantly improves self-efficacy ratings in inclusive classrooms and that the teacher's involvement is crucial when working with students with autism (Johnson et al., 2021). The learning outcomes of students with special needs are influenced by the abilities and readiness of teachers to work with them (Oktavianti et al., 2020).

There are ongoing concerns regarding how children with autism build social skills and learn to interact with others. Numerous issues with the socialization skills of children with autism have been identified by research findings on this subject. Acharya and Baral (2023) have pointed out that to quickly identify autism-related concerns and improve the condition of Nepali children, teachers must have proper training and awareness programs on ASD.

These days, researchers and professionals are moving forward by finding new ways and making changes to teach children with autism and enable them to learn. According to research, children with autism benefit from individualized socialization programs when they are included in the context of learning, and inclusive settings require professional development for teachers to successfully include children with autism (Clark, 2014). It is true that the amount of knowledge, skills, strategies, and experience of special education teachers determines how well inclusive education works. Students with ASD may not learn effectively if teachers are not able to create an appropriate classroom environment for them.

One of the main characteristics of autism is social difficulties (Berenguer et al., 2017). The process of social adaptation for children with autism is long and complex, and it is possible through the combined efforts of the child, family, and specialists in social, medical, and educational services (Davydova, 2021). As a result, a large number of children with ASD still experience exclusion, marginalization, and limited educational opportunities, all of which negatively impact their overall well-being and long-term outcomes.

For the betterment of autistic children and their families, teachers should be as supportive and helpful as possible. However, this is not a simple task. In Nepal, awareness

and identification of autism spectrum disorder are increasing. For them, education in Nepal is emerging as a developing field.

In this context, this study explores special education teachers' experiences engaging with children in the physical classroom environment where they work with students who have autism spectrum disorder to help them socialize. The research has many implications in identifying the educational practices, opportunities, challenges, and service provisions for ASD students. The study also helps those who are trying to learn about ASD practices in Nepal. In addition to exploring additional information regarding inclusive education, this study emphasized the strategies used in Nepal for teaching and learning autistic children with autism. The findings and conclusions of this study have contributed to our understanding of inclusive education. This study may influence policymakers to change the current educational provisions for teaching autistic children. Finally, this study provides a useful foundation for other researchers to explore other aspects of children with autism education. This study is based on the research question of what kind of physical classroom environment do teachers work in with ASD students to help them socialize?

Literature Review

Although the scientific study of autism began in the early 1940s when Leo Kanner (1943) used clinical methods to study a condition called infantile autism, since the late 1960s, there has been an increase in research on autism, and developmental research is being integrated with intervention strategies with promising results (Thompson, 2013).

Kasari et al. (2012) found in their research that structured play enhances social interaction among children with ASD. Sugai and Horner (2002) pointed out Positive Behavior Support (PBS) as an effective approach for student behavior management. Positive behavioral support (PBS) includes school-wide support, non-classroom-specific support, class or group support, and individual student support. This method can be applied to students with autism in schools. Positive reinforcement in the form of trust, encouragement, and praise can increase learner pleasure, confidence, and offer helpful insights for growth (Dornyei & Muir, 2019). One of the fundamentals of the behavioral approaches is operant conditioning theory, introduced by B.F Skinner (1953), which emphasizes the role of reinforcement to shape and maintain behavior. Additionally, the learning process of the children through imitation and observation can be well explained based on Bandura's theory, which emphasizes the importance of modeling within the educational environment (Bandura, 1977).

Furthermore, behavioral approaches can be worthwhile to consider as a tool to understand how structured environments influence behavior and engagement in children with autism. These approaches can explicitly illustrate the importance of environmental structures combined with reinforcement that ultimately supports attention in children and appropriate behaviors. Moreover, antecedent-based interventions are tailored to behavioral approaches that include modifying environmental cues such as visual signaling, which helps in reducing inappropriate behaviors (Conroy et al., 2005). In this context, visual supports help children with ASD to clarify expectations. It allows them to perceive clear visual cues and provides structure and organization within activities. It ultimately reduces challenging behaviors and helps to set alternative, appropriate responses. Authors have explicitly considered it as an evidence-based strategy (Gauvreau & Schwartz, 2016). These findings suggest that evidence-based approaches can be far more reliable, providing a more supportive and less intrusive environment, and these approaches are significant enough to replace restrictive methods and

punitive practices in schools. Furthermore, broader behavioral frameworks such as PBS also highlight the importance of providing consistent reinforcement. PBS emphasizes the importance of consistent reinforcement within a structured environment to teach expected behavior (Horner et al., 2010). These approaches suggest the importance of supportive and reinforcement-based strategies to make a healthier and more functional structured environment.

Dewey (1916), in his book *Democracy and Education*, outlined the child-centered approach to education, which he believed ensured a democratic system within education that ultimately supports a democratic society. He saw the classroom as a place where children actively participate in the search for experience and meaning, teachers engage with children on an equal basis, and teachers are able to support the process of knowledge discovery and co-construction. The ideas developed by Dewey are still seen as applicable today. Since it also describes inclusive education, it may also be viewed as a notion of good education for the purpose of discussing autism and education. Inclusion is influenced by teachers' decision-making and through features of their practice, such as communication and learning relationships; changes in teachers' understanding of how students understand can profoundly change the educational experience and possibly increase autism educational inclusion (Conn, 2019). It seems that in teaching autistic students, teachers should adopt various strategies according to their needs.

Many research studies show that teachers frequently face challenges in providing individualized support for children with disabilities when schools lack the resources they need, which can hinder their socialization. Therefore, when adequate facilities, including well-trained teachers, inclusive educational techniques, and regular routines, are in place, there is a greater chance that socialization within schools will be successful (Lindsay et al., 2014). In order to solve such problems that appear in the classroom of students with autism, Sulek et al. (2019) stressed that ASD teachers emphasize that collaboration with their network and other professionals will help to develop learning with new strategies while meeting the needs of the child.

The school environment for children with ASD should be personalized based on individual needs, and it should understand and adapt to the needs of children with ASD (Gentil-Gutiérrez et al., 2021). Students with ASD are more socially engaged when they feel safe and trusted (Sproston et al., 2017). Creating a supportive, inclusive, and adaptive environment in schools for autistic students is critical to fostering positive relationships with peers as well as teachers and fostering positive experiences through self-acceptance (McKinlay et al., 2024).

Rimm-Kaufman et al. (2010) stated that emotional support from teachers fosters social and emotional outcomes in students with ASD. If teachers proceed with planned classroom management, they will help to achieve success in creating a pleasant classroom environment for students with special needs (Oktavianti et al., 2020). The physical environment and social-emotional relationships in the classroom also influence learning outcomes. The limited capacity of teachers in this regard may pose a problem in handling students with special needs. This emphasizes that the harmonious relationship between teachers and autistic students and the teacher's experience are important for their socialization.

Furthermore, researchers have also highlighted the importance of the physical classroom environment, which plays a crucial role in supporting students with autism spectrum disorder (ASD). Sensory-friendly spaces, structured classrooms, visual organization, and reduced environmental distractions can help in developing attention, behavior, and social interaction among students with ASD. A well-organized physical classroom environment is well designed to help students with ASD in predictability, reduce anxiety, and enhance engagement in classroom activities. Additionally, sensory integration helps children in regulating and processing sensory inputs more effectively by emphasizing structured and controlled sensory experiences. Improvements in attention and better behavioral regulation can be acquired with this approach, further promoting functional participation in activities (Pfeiffer et al., 2011; Randell et al., 2022). Furthermore, recent research also emphasizes the use of multiple evidence-based practices that include communication, behavioral, and functional skill interventions combined. Such practices support the overall development of children with ASD, implemented within structured educational settings (Hume et al., 2021).

Methodology

In this research, we have used a phenomenology design to explore the experiences of teachers who teach students with Autism. A phenomenological approach was used to understand the lived experiences of teachers working with students with autism spectrum disorder. This approach of qualitative research methods provides a comprehensive understanding of the research problem. We have researched socializing activities for students with autism spectrum disorders as well as the physical environments in which teachers of students with ASD work.

In this study, we have involved a sample of 2 special education teachers of students with autism from Kathmandu and Lalitpur. Participants were selected by using a purposive sampling technique. We purposefully chose two participants: Teacher 1 and Teacher 2, to get information (for privacy issues, we used the pseudonyms of both participants). Participants were selected based on their professional experience and relevance to the research focus. The small sample size was selected due to the limited availability of qualified special educators with experience working with autism in Nepal. In qualitative phenomenological research, depth of experience is prioritized over sample size. Both of the teachers are female. In-depth unstructured interviews were conducted with each participant across multiple sessions to explore their experiences in detail, and follow-up sessions were carried out to clarify and deepen the initial responses.

Teacher 1 has been working with students who have ASD for four years. She has completed a bachelor's degree in special education and is currently doing her thesis for her master's program in inclusive education. She has also received more than one year of training related to ASD teaching. Teacher 2 has been teaching students with ASD for three years. Her bachelor's degree is in special education, and she is currently in her fourth semester in a master's program studying inclusive education. Additionally, she has received more than one year of ASD-related teaching training from different private training institutions.

After initial contact, we set up interview times with the participants. However, since it was the festive season (Dashain), it was not easy to arrange a time to meet, so we conducted

interviews both online and in person. We interacted with both teachers three times to understand their experiences. The first interview lasted for over 2 hours, while the remaining two sessions lasted 15–20 minutes to clarify and further explore issues that emerged during the initial interview. Then, both interviews were combined and transcribed. After transcribing the interviews of both participants, coding was done. All the codes were categorized, and themes were created. Thematic analysis was conducted following Braun and Clarke (2006). Finally, conclusions were drawn based on each theme by analyzing the information obtained from primary sources. The interviews were conducted in the Nepali language, which was later translated into English during transcription. During the process, some parts of the analysis were written in Nepali and then translated into English. Data were reviewed multiple times to ensure consistency and accuracy of interpretation.

Participants were voluntarily engaged in the research process, and informed consent was obtained from the participants prior to the data collection. The participants were informed about the purpose of the research, and confidentiality was maintained with high priority, while anonymity was ensured using pseudonyms. Ethical considerations were maintained throughout the study.

Findings and Discussion

The physical environment of classrooms for children with autism spectrum disorder (ASD) must be effective and supportive. Barrett et al. (2015) demonstrated that classroom design significantly influences students' learning outcomes, highlighting the importance of physical environmental factors in educational settings. Emphasizing how the physical environment can support these children's social, behavioral, and sensory development, the information gathered for this study is thematized under the following subheadings.

Classroom Sitting and Physical Setup

In the respective centers, the structured seating plan demonstrates a specific approach to supporting children with autism spectrum disorder (ASD) by promoting focus and discipline through special chairs. Initially, all children are placed in these chairs. They can sit during important study sessions. Teacher 1 stated, "Initially, all children in the center are placed in a special chair. It is locked for a certain time." According to the teacher, this method prevents unwanted walking and helps to maintain attention in learning activities. Furthermore, Teacher 1 explained, "They practice sitting in a special chair so that they do not lose focus on what is being taught, so they do not lose focus by walking." Over time, with practice, some children begin to sit in a normal chair, which reflects the individual progress model. Teacher 2 stated, "Only some children can sit in a normal chair. This is gradually possible after practice." This method may reduce distractions, support sensory management, and promote attention; such practices may also become questionable when considered from the perspective of trauma-informed practices and appropriate behavioral supports.

The overall findings we have thematized here partially align with well-recognized behavioral interventions, such as antecedent-based interventions, which show how environmental cues influence behavior. For instance, using visual signals that guide behavior. These signals are helpful while reducing inappropriate or problem behaviors in children with autism, as these cues can indicate when certain behaviors are appropriate or not, which ultimately leads to decreased stereotypic behavior. And most importantly, this is achieved

without using restrictive or controlling methods (Conroy et al., 2005). Therefore, it would be worthwhile to understand that with less restrictive and more supportive strategies, even greater outcomes can be achieved than what can be achieved through controlled methods.

Moreover, behavioral approaches also emphasized reinforcement and skill development instead of relying on restrictive methods, which is necessary to sustain achieved healthy behaviors. Research has also found that only the combination of aspects such as instructional strategies and reinforcement-based approaches with environmental structures can sufficiently provide robust conditions to maintain healthy behaviors. The broader behavioral framework, such as School-wide Positive Behavior Supports, also emphasizes the significance of explicitly teaching behavioral expectations. It highlights the importance of providing consistent positive reinforcement while emphasizing the implementation of these approaches within a well-structured environment (Horner et al., 2010). While a structured environment is essential and may support entities such as retaining attention, effective and ethical practice depends on supportive and non-restrictive approaches.

Additionally, if we look through a rights-based approach, it raises important ethical considerations, as the international agreements and conventions have precisely endorsed the non-restrictive methods in teaching and learning approaches. For Example, the United Nations Convention on the Rights of the Child (1989) has clearly stated that children should be protected from all forms of violence, abuse, neglect, and exploitation to ensure quality education that respects the rights and potential of the child. This also applies to children with disabilities in education. Furthermore, in Article 16, the United Nations Convention on the Rights of Persons with Disabilities (2006) declares that children with disabilities should be protected from all forms of exploitation, violence, and abuse. Additionally, in Article 15, it has also clearly declared that the use of corporal punishment or any other cruel, inhuman, or degrading punishment is unacceptable. From a philosophical point of view, Dewey (1916) has outlined a child-centered approach to education. This approach emphasizes active engagement in learning and the autonomy of children while learning. This philosophy has entitled children as active participants instead of being passive recipients.

Co-Teaching Methods and Personalized Lesson Plans

Co-teaching methods and personalized lesson plans support children with autism spectrum disorder (ASD) in the classroom. They emphasize the need for patience and teamwork. Daily lesson plans tailored to each child help maintain focused and structured learning. Preparing lessons for each child each day supports their attention and helps them stay engaged. Teacher 1 stated, “In our institution, each class has two teachers and one helper. The presence of two teachers and a helper helps create a collaborative learning environment, which ultimately leads to well-structured environmental supports, where each child can receive closer attention and guidance with a tailored support system. In order to help children develop social understanding, helping them engage in activities such as sharing and playing is essential. Both teachers stressed that continuous reinforcement and modeling are important to enhance expected behavior: “You have to keep telling, you have to keep listening, you have to keep showing, you have to keep getting attention.” These practices align with an ASD friendly classroom environment that emphasizes teamwork and emotional

support to demonstrate appropriate behaviors, tolerate mistakes, and promote a positive learning environment.

While looking at the process through the Lens of behavioral perspective, it reflects the approaches that use reinforcement while supporting skill development activities/learning and forming and maintaining appropriate behavior (Skinner, 1953). As the teachers sought to highlight the significance of the process, such as continuous guidance, repetition, and demonstration, it explicitly put the illustration on the learning process of the children not only with direct instruction but also through imitation and observation within structured classroom environments, consistently aligned with the Social Learning Theory (Bandura, 1977) which illustrates the role of observational learning and modeling while shaping behavior. Furthermore, structured behavioral approaches are also important as they emphasize the significance of reinforcement, feedback, and structured support. These approaches are effective in facilitating adaptive behavior among children with autism. Meanwhile, they also support engagement and participation in different activities (Horner et al., 2010). These perspectives are essential to analyze and suggest the importance of the aspects of classroom setting, including collaborative teaching, individualized planning, behavioral regulation, and social development. Additionally, while acknowledging the limited availability of resources and manpower in Nepal, considering the ethical practice and implementation of these approaches under the observation of relevant and qualified professionals would be worthwhile.

In addition, the findings suggest that well-trained teachers, inclusive educational techniques, and adequate facilities, including regular routines, are more likely to facilitate socialization within schools (Lindsay et al., 2014). Sulek et al. (2019) also support the conclusion that collaboration with professionals helps teachers develop new strategies to meet the needs of children with ASD. According to Gentil-Gutiérrez et al. (2021), school environments should be personalized based on individual needs, and the teachers in this study similarly prepared individualized lesson plans for each child.

Therapy-Integrated and Sensory-Friendly Classroom

Children with autism spectrum disorder (ASD) require therapy-integrated and sensory-friendly classroom environments that focus on sensory, behavioral, and social development. Music therapy enhances listening abilities and social interactions. Teacher 1 stated, “Students are provided with musical instruments to play, to identify various sounds, to express, to perform physical movements, and to communicate everyday topics through music.” Music therapy uses structured musical experiences and establishes therapeutic relationships that help in important aspects of functioning, like communication, expression, and interaction, that are associated with improvements in overall functioning. They play a significant role in enhanced quality of life and reduced symptom severity (Geretsegger et al., 2022). Occupational therapy can be helpful in sensory challenges and physical difficulties through targeted activities. Teacher 1 explained, “Some children walk exclusively on their toes, some only on their heels, and some dislike the sensation of the ground. They should practice brushing their shoes, learn to put on shoes, and practice stepping on soft and hard tiles.” Such activities may help children gradually adjust to tactile stimuli. According to Randell et al. (2022), children with autism are highly noted to have sensory processing

difficulties. These difficulties are significant enough to affect their daily functioning, behavior, and participation in everyday tasks. In such cases, occupational therapy can be helpful. It addresses sensory challenges through targeted interventions and improves engagement in everyday activities and can be used in the form of activity-based approaches, sensory strategies, and environmental adaptations. These are tailored to the child's needs. This therapy is delivered by Occupational therapists through structured sessions.

Behavior therapy focuses on teaching age-appropriate and socially accepted behaviors through repetition and visual supports. Teacher 2 stated, "When a child spits randomly, demonstrate with images and videos and guide them to spit only in a specific basin." It is very common to use images and videos while teaching appropriate behavior to children with autism. Gauvreau and Schwartz (2016) have also stated in their paper that visual supports, such as images and videos, are used to teach appropriate and socially accepted behaviors. Moreover, they have illustrated the importance of approaches such as modeling, prompting, and reinforcement in replacing challenging behavior with more functional alternative behaviors. These approaches highlight the importance of an organized and sensory-friendly classroom environment with behavioral supports that help in gradual development in sensory processing, behavior, and social interaction. Again, it is worth noting that these therapies must be delivered under the observation of relevant and qualified professionals to maintain ethical ground.

Motor Skill-Based Activities and Sensory Stimulation

Motor skill-based activities and sensory stimulation play an important role in addressing motor skill difficulties and sensory challenges in children with autism spectrum disorder (ASD). Gross motor skills include large body movement where major muscles of the arms, legs, trunk, and whole body are used. The gross motor skills helps a person to move, balance, maintaining postures and coordinate body movement covering the activities such as kicking, running, jumping, walking, crawling, climbing throwing or catching etc., meanwhile, fine motor skills are the small and precise movements that helps in the coordination of small muscles like the muscles in hands, fingers, wrists and eyes etc. essential in the functions like holding pencil, writing, drawing, buttoning clothes etc. Teacher 1 explained, "Children with poor motor skills are those who cannot grasp, hold, color, draw, and perform accordingly. Activities such as kicking a ball, running, or jumping fall under gross motor tasks." Supporting activities are supposed to be tailored to each student's specific needs. Teacher 1 further stated, "The child may not understand where and why they are running, and what they are hitting." Structured physical activities help improve motor skills in children. Activities such as ball games and guided movement exercises are commonly used activities and may help children improve their motor skills. Sensory experiences, including tactile exploration and calming techniques, may also support motor development in children. Thus, classroom activities should be designed to improve both motor and sensory skills. Furthermore, these findings are precisely backed up by multiple studies. Pfeiffer et al. (2011) explain the high prevalence of sensory processing difficulties among children with ASD. This difficulty may affect motor behavior, attention, and participation in daily activities, including classroom activities. The authors further discussed the role of sensory integration-based interventions for children with ASD. This intervention supports the adaptive responses and individualized

functional goals and emphasizes the importance of individualized activities tailored to each child's specific needs. This study explains how structured and guided motor activities support motor and sensory development in children. Additionally, Ceccarelli et al. (2020) highlight the consistency of motor impairment among children with ASD and how fundamental motor skills such as running, jumping, and object control are essential for physical activities. They have also stated the importance of structured motor skill intervention to improve motor performance and engagement. Furthermore, providing predictable and precise learning conditions, as Gauvreau and Schwartz (2016) might also help in supporting the learning process among children with ASD.

These findings also align with Sproston et al. (2017), who stressed the importance of a supportive school environment for children with ASD. Likewise, McKinlay et al. (2024) also emphasize the importance of supportive and adaptive environments. He emphasized that this environment must be able to respond to the social and sensory needs of the children with ASD. Moreover, Oktavianti et al. (2020) similarly highlight that effective classroom management contributes to positive learning experiences. And most importantly, it would be worth recalling Dewey's (1916) child-centered approach on a philosophical level, which explicitly supports this finding, illustrating the importance of learner-responsive classroom environment.

Visual Aids

Efficiency in visual learning is very common in children with ASD. Visual aids such as pictures and videos, including social stories, a visual schedule, and the Picture Exchange Communication System, are important instructional tools widely used to teach and help in establishing communication in children with ASD. Teacher 1 stated, "These children learn more visually, so more visual preparation is needed." Teacher 2 added, "Pictures of all the activities they do are posted on the wall." These supports help maintain attention and reinforce learning. Continuous exposure to visual materials is necessary, especially in the early stages when attention is limited.

Liang et al. (2024) have explicitly stated that visual support, such as visual schedules, helps individuals with ASD to understand task sequences with the structured and visually organized information. This process helps them in maintaining attention and increasing academic-related on-task behavior. Authors have also sought to consider visual support as evidence-based practice in the intervention regarding ASD and ultimately enhance engagement and participation in classroom activities. These arguments explicitly align with the findings.

Moreover, the finding is also aligned with the Salamanca Statement (1994). The Statement emphasizes that the right of every child must be preserved with meaningful learning opportunities. Creating a visually supportive classroom also aligns with McKinlay et al. (2024) and Oktavianti et al. (2020).

Classroom Activities Setup

To support children with autism spectrum disorder (ASD), integrating several essential activities is required. These activities include necessary elements such as music, communication, occupational, and behavioral therapies. Teacher 1 stated, "Daily, we use music to discuss necessary subjects and to encourage physical movement." Visual and

auditory strategies are the essential aspects of communication therapy. Both teachers stated, “We use pictures, gestures, and videos to practice communicating. They may not speak initially, but they observe and gradually engage.” It aligns with what Hume et al. (2021) have stated, explicitly reflecting the use of structured and evidence-based communication. Additionally, authors have also stated the interaction-focused practices in autism intervention. Occupational therapy helps to develop practical skills in children. These skills include the essential everyday skills, such as daily routines. Teacher 1 described activities like “practicing brushing shoes, learning to wear shoes, and stepping on different surfaces.” These activities align with activity-based and sensory-integrative approaches. Controlled and meaningful sensory experiences used in this approach help in meaningfully improving functional skills, attention, and adaptive responses in children with ASD (Pfeiffer et al., 2011).

Behavioral therapy helps in developing and maintaining age-appropriate behaviors in children with ASD. Teacher 2 explained, “After assessing behavior, children are guided through practice and social activities which include aspects such as sharing and preparing them for real-life situations.” This finding is consistent with the use of structured instructional strategies and visual supports. These strategies help children with ASD to understand expectations, and they help them provide clear guidance and predictability, which contributes to reducing challenging behaviors. These approaches are considered to be reliable while developing functional alternative behavior according to Gauvreau & Schwartz (2016). While emphasizing sensory-based interventions, these structured activities promote skill development and socialization. Furthermore, daily functioning and adaptive behavior are also under its aim to be improved. Enhancement in participation is another goal, resulting in creating a supportive learning environment. Effectiveness may vary across contexts (Randell et al., 2022).

Conclusion

In conclusion, the physical classroom environment must be well-structured to help promote the overall development of children with autism spectrum disorder. This environment must contain supportive, structured, and sensory-friendly aspects. Moreover, while structured environments help children with ASD to improve attention, engagement, and predictability, it is also necessary to understand that their effectiveness depends on the strategies that include supportive and nonrestrictive approaches rather than controlling methods. Though the restrictive seating arrangements, such as locked special chairs, might help in managing attention for the short period, they may limit the autonomy and active participation of the children and have an adverse effect on sustaining healthy behavior for the long term, as well as violate the rights of the children.

To promote a child-centered approach, a significant shift from traditional classrooms has become essential. This shift must bring classrooms that are more flexible, inclusive, and tailored to individual needs of students with special needs. Moreover, individualized lesson plans and co-teaching approaches are crucial. These approaches may play a significant role in providing efficient support and guidance for children with ASD. Moreover, understanding cues, sensory regulation, and regulating challenging behavior are often difficult for students with ASD, which can be addressed by promoting a supportive and functional classroom

environment with necessary modifications. It can be acquired through integrating visual supports, structured instruction, and sensory-based interventions. Additionally, the efficacy of the classroom can be enhanced through integrating therapies such as music, communication, occupational, and behavioral therapy. This therapy integrated classroom provides multisensory experiences essential for motor, social, and adaptive skill development. Overall, the inclusive and ethical classroom that is responsive to individual needs can effectively support children with ASD, while the balance between structure and flexibility is significant.

References

- Acharya, P., & Baral, P. (2023). *Knowledge on autism spectrum disorder in school teachers at government school of Pokhara. Janapriya Journal of Interdisciplinary Studies*, 12(1), 145–160. <https://doi.org/10.3126/jjis.v12i1.62250>
- Autism Speaks. (2024). What is autism? <https://www.autismspeaks.org/what-autism>
- Bandura, A. (1977). *Social learning theory*. Prentice Hall.
- Barrett, P., Davies, F., Zhang, Y., & Barrett, L. (2015). The impact of classroom design on pupils' learning: Final results of a holistic, multi-level analysis. *Building and Environment*, 89, 118–133. <https://doi.org/10.1016/j.buildenv.2015.02.013>
- Berenguer, C., Miranda, A., Colomer, C., Baixauli, I., & Roselló, B. (2017). Contribution of theory of mind, executive functioning, and pragmatics to socialization behaviors of children with high functioning autism. *Journal of Autism and Developmental Disorders*. <https://doi.org/10.1007/s10803-017-3349-0>
- Braun, V., & Clarke, V. (2006). *Using thematic analysis in psychology*. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Ceccarelli, S. B., Ferrante, C., Gazzola, E., Marzocchi, G. M., Nobile, M., Molteni, M., & Crippa, A. (2020). Fundamental motor skills intervention for children with autism spectrum disorder: A 10-year narrative review. *Children*, 7(11), 250. <https://doi.org/10.3390/children7110250>
- Centers for Disease Control and Prevention. (2025). *Autism spectrum disorder (ASD) data and statistics*. <https://www.cdc.gov/autism/data-research/index.html>
- Clark, B. N. (2014). *The sociological needs of children with autism in elementary inclusive settings* (Doctoral dissertation, Walden University). Walden University Scholar Works. <https://scholarworks.waldenu.edu>
- Conn, C. (2019). Autism, pedagogy and education: Critical issues for value-based teaching. *Macmillan*. <https://doi.org/10.1007/978-3-030-32560-2>
- Conroy, M. A., Asmus, J. M., Sellers, J. A., & Ladwig, C. N. (2005). *The use of an antecedent-based intervention to decrease stereotypic behavior in a general education classroom: A case study*. *Journal of Positive Behavior Interventions*, 7(4), 223–232. <https://doi.org/10.1177/10983007050070040401>
- Davydova, Y., Gorelik, V., Vlasov, V., Lazunina, I., Nazarenko, N., & Romenskaya, O. (2021). Features of socialization and school adaptation of children with autism spectrum disorders. *E3S Web of Conferences*, 258, 07050. <https://doi.org/10.1051/e3sconf/202125807050>
- Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. Macmillan. https://books.google.com.np/books?id=OGIhNz4YJmkC&printsec=frontcover&source=gbgs_ge_summary_r&cad=0#v=onepage&q&f=false

- Dornyei, Z., & Muir, C. (2019). Creating a motivating classroom environment. In *The Palgrave Handbook of Motivation for Language Learning* (pp. 719-736).
https://doi.org/10.1007/978-3-030-02899-2_36
- Gauvreau, A. N., & Schwartz, I. S. (2016). *Using visual supports to promote appropriate behavior in young children with autism and related disabilities. Young Exceptional Children Monograph Series, 15.*
- Gentil-Gutiérrez, A., Cuesta-Gómez, J. L., Rodríguez-Fernández, P., & González-Bernal, J. J. (2021). Implication of the sensory environment in children with autism spectrum disorder: Perspectives from school. *International Journal of Environmental Research and Public Health, 18*(14), 7670. <https://doi.org/10.3390/ijerph18147670>
- Geretsegger, M., Fusar-Poli, L., Elefant, C., Mössler, K. A., Vitale, G., & Gold, C. (2022). *Music therapy for autistic people.* Cochrane Database of Systematic Reviews, 2022(5), CD004381. <https://doi.org/10.1002/14651858.CD004381.pub4>
- Government of Nepal. (2007). *The Act Relating to Compulsory and Free Education.* Nepal Law Commission. www.lawcommission.gov.np
- Government of Nepal. (2015). *The Constitution of Nepal.* Nepal Law Commission. www.lawcommission.gov.np
- Hodges, H., Fealko, C., & Soares, N. (2020). Autism spectrum disorder: Definition, epidemiology, causes, and clinical evaluation. *Translational Pediatrics, 9*(1), S55–S65. <https://doi.org/10.21037/tp.2019.09.09>
- Horner, R. H., Sugai, G., & Anderson, C. M. (2010). Examining the evidence base for school-wide positive behavior support. *Focus on Exceptional Children, 42*(8), 1–14.
- Hume, K., Steinbrenner, J. R., Odom, S. L., Morin, K. L., Nowell, S. W., Tomaszewski, B., Szendrey, S., McIntyre, N. S., Yücesoy-Özkan, Ş., & Savage, M. N. (2021). *Evidence-based practices for children, youth, and young adults with autism: Third generation review.* *Journal of Autism and Developmental Disorders, 51*(11), 4013–4032. <https://doi.org/10.1007/s10803-020-04844-2>
- Johnson, A., Soares, L., & Gutierrez de Blume, A. P. (2021). Professional development for working with students with autism spectrum disorders and teacher self-efficacy. *Georgia Educational Researcher, 18*(1). <https://doi.org/10.20429/ger.2021.180101>
- Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous Child, 2*, 217–250.
- Kasari, C., Gulsrud, A., Freeman, S., Paparella, T., & Hellemann, G. (2012). Longitudinal follow-up of children with autism receiving targeted interventions on joint attention and play. *Journal of the American Academy of Child and Adolescent Psychiatry, 51*(5), 487-495. <https://doi.org/10.1016/j.jaac.2012.02.019>
- Liang, Z., Lee, D., Zuo, J., & Liang, S. (2024). The use of visual schedules to increase academic-related on-task behaviors of individuals with autism: A literature review. *International Journal of Developmental Disabilities.* Advance online publication. <https://doi.org/10.1080/20473869.2024.2402124>
- Lindsay, S., Proulx, M., Scott, H., & Thomson, N. (2014). Exploring teachers' strategies for including children with autism spectrum disorder in mainstream classrooms. *International Journal of Inclusive Education, 18*(2), 101-122. <https://doi.org/10.1080/13603116.2012.758320>
- McKinlay, M., Thorpe, D., Cage, E., Grainger, C., Jasper, C., & Stewart, M. E. (2024). A systematic review: Which psycho-social-environmental factors do autistic students

- identify as being important for positive experiences in mainstream secondary school? *Autism*. <https://doi.org/10.1177/13623613241285>
- Oktavianti, R. N., Sudarto, Z., & Budiyo. (2020). The class management in the setting of students with special needs in inclusive school. *Advances in Social Science, Education and Humanities Research*, 491.
- Pfeiffer, B. A., Koenig, K. P., Kinnealey, M., Sheppard, M., & Henderson, L. (2011). Effectiveness of sensory integration interventions in children with autism spectrum disorders: A pilot study. *American Journal of Occupational Therapy*, 65(1), 76–85. <https://doi.org/10.5014/ajot.2011.09205>
- Randell, E., Wright, M., Milosevic, S., Gillespie, D., Brookes-Howell, L., Busse-Morris, M., Hastings, R., Maboshe, W., Williams-Thomas, R., Mills, L., Romeo, R., Yaziji, N., McKigney, A. M., Ahuja, A., Warren, G., Glarou, E., Delpont, S., & McNamara, R. (2022). Sensory integration therapy for children with autism and sensory processing difficulties: The SenITA RCT. *Health Technology Assessment*, 26(29), 1–146. <https://doi.org/10.3310/TQGE0020>
- Rimm-Kaufman, S. E., & Hamre, B. K. (2010). The role of psychological and developmental science in efforts to improve teacher quality. *Teachers College Record*, 112(12), <https://psycnet.apa.org/record/2011-06009-003>
- Schonert-Reichl, K. A. (2017). Social and emotional learning and teachers. *The Future of Children*, 27(1).
- Skinner, B. F. (1953). *Science and human behavior*. New York: Macmillan.
- Sproston, K., Sedgewick, F., & Crane, L. (2017). Autistic girls and school exclusion: Perspectives of students and their parents. *Autism & Developmental Language Impairments*, 2, 1-13. <https://doi.org/10.1177/2396941517706172>
- Sugai, G., & Horner, R. (2002). The evolution of discipline practices: School-wide positive behavior supports. *Child & Family Behavior Therapy*, 24(1–2), 23–50. https://doi.org/10.1300/J019v24n01_03
- Sulek, R., Trembath, D., Paynter, J., & Keen, D. (2019). Factors influencing the selection and use of strategies to support students with autism in the classroom. *International Journal of Disability, Development and Education*. <https://doi.org/10.1080/1034912X.2019.1695755>
- Thompson, T. (2013). Autism research and services for young children: History, progress and challenges. *Journal of Applied Research in Intellectual Disabilities*, 26(1), 81–107. <https://doi.org/10.1111/jar.12021>
- United Nations. (1989). *Convention on the Rights of the Child*. <https://www.unicef.org.uk/wp-content/uploads/2016/08/unicef-convention-rights-child-uncrc.pdf>
- United Nations. (2006). *Convention on the Rights of Persons with Disabilities*. <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>
- UNESCO. (1994). *The Salamanca Statement and Framework for Action on Special Needs Education*. <https://unesdoc.unesco.org/ark:/48223/pf0000098427>
- World Health Organization. (2023). *Autism spectrum disorders*. <https://www.who.int/news-room/fact-sheets/detail/autism-spectrum-disorders>.