

REWARD SYSTEM: EFFECTS ON THE SOCIAL COMMUNICATION SKILLS OF CHILDREN WITH AUTISM SPECTRUM DISORDER

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Abstract

This study probed the efficacy of a reward system on improving the social communication abilities of ASD children who were applying in the Special Education program in Lapu-Lapu City Central Elementary School for School Year 2024–2025. Using a multiple-case pre-experimental design, the study tracked ten children aged 7 to 13, before and after the reward-based intervention. Measurements were obtained through direct observation, teacher and parent ratings, and a modified social communication checklist that included items addressing nonverbal communication, conversation skills, and social interaction. There was significant improvement in the conversational skills, especially to initiate and maintain verbal conversations, but there were moderate and statistically nonsignificant gains in nonverbal and social communication skills. The research found that an effective reward system has a positive effect on verbal social communication, with more advanced skills needing longer and highly detailed interventions. More comprehensive instructional tool embracing positive reinforcement methods was recommended according to the results. The findings show the promise of reward-based interventions as an effective and feasible approach in facilitating the social development of children with ASD.

Keywords: Autism Spectrum Disorder, reward system, social communication skills, behavior intervention, special education, reinforcement strategy

Introduction

Social communication is an essential component of daily interactions. It influences how people perceive a message and formulate an appropriate response. However, people nowadays communicate in a variety of ways, particularly those with a specific disorder, especially children with autism; this can often be a challenge. Some people without comprehension have an unrestrained conversation with those who have difficulty addressing their point of view, primarily those with Autism Spectrum Disorder (ASD). Autism Spectrum Disorder (ASD) is a neurodevelopmental disease caused by brain structure and function variations. ASD sufferers often struggle to communicate. Their activities and actions are also repetitious. ASD may affect learning, mobility, and focus. Remember that some persons without ASD may exhibit some of its symptoms. Autism Spectrum Disorder (ASD) may make daily life difficult for various reasons (Center for Disease Control Prevention, n.d.). Some people who encountered with maybe bothered talking for a while without knowing they needed proper communication more since it is defined that children with autism spectrum disorder have significant social and communication deficits. That is why it is important to communicate, especially when we are dealing with these kinds of individuals, since they are unable to interpret the thoughts and feelings of others or predict social events, and their impaired social skills may result in peer rejection, a majority in low school participation, and factors of this variety are likely to bully these people.

According to some studies, students with special education needs who attend a contemporary setting are three times more likely to be bullied than their age peers. People with ASD may not recognize the intent behind the bullying behavior and may actually think the bully is being friendly. Sometimes people with autism spectrum disorder will misinterpret an unintentional bump in line as purposeful physical aggression and retaliate (Schroeder, 2014). This concludes that they look foolish, weak, and more different; they intend to give unacceptable answers to a good conversation, and this result in the development of an additional disorder for them, which is anxiety (Cappadocia, 2011).

The study aims to explore the effects of implementing a reward system on the social communication skills of children with autism spectrum disorder. This research is based on the premise that reinforcement-based interventions can enhance the development of targeted skills and behaviors in children with ASD. By utilizing a reward system, the study seeks to positively reinforce and encourage appropriate social communication skills in these children, promoting their interaction and engagement with others. Existing literature reveals that individuals with autism spectrum disorder exhibit strengths in responding to rewards, thereby demonstrating the potential effectiveness of reward-based interventions in addressing social communication deficits. The use of rewards has been successfully employed in behavioral interventions for children with ASD, emphasizing its potential to shape and reinforce desirable behaviors. Intervention programs that incorporate a reward system often involve breaking down complex social skills into smaller, achievable steps. Rewards are given in response to the child's successful completion of these steps,

providing motivation and reinforcement for appropriate social behaviors. The goal is to create a positive association with social communication skills and encourage children with ASD to engage in reciprocal interactions. In order to investigate the effects of the reward system on social communication skills, researchers employ various methodologies, including direct observation, behavioral assessments, and parent and teacher reports. The data collected through these measures provide valuable insights into the effectiveness of the intervention, allowing for a comprehensive evaluation of the child's progress.

Literature Review

This chapter will address the extensive research and previous literature that served as the basis for this study. To support the hypothesis, the researcher searched for relevant prior research.

The use of a reward system as an intervention has gained significance due to its ability to facilitate positive behavioral changes. In the context of ASD, a reward system employs the principles of Applied Behavior Analysis (ABA) by providing rewards or reinforcement for desired behaviors. The underlying theory is that by using extrinsic motivators, such as rewards, individuals with ASD can learn and reinforce appropriate social behaviors.

This article introduced educators to social competence, social skills, and adaptive abilities. Sociability necessitates social abilities. As a result, successful interventions for social skills should increase participants' social competency. Social skill deficiencies have a long-term impact on academic achievement, school behavior, social and emotional well-being, friendship and family interactions, and adult outcomes in autism patients. ASD children have poor social skills. To address the deficits, treating those using therapies that focus on evidence-based social skills is critical. Social interaction and adaptive skills are essential. Social and adaptive skills can both be taught.

Children with ASD require direct instruction to master these skills. Children with ASD need well-planned and well-executed therapy to build social and adaptive abilities. A person's social and coping skills may impact how well they fare. Fortunately, over a dozen data-backed treatments, approaches, methods, and procedures can assist children with ASD in improving their social and adaptive abilities. However, executing social skills programs in a consistent and trustworthy manner across several settings remains a difficulty (Zaldivara, 2021).

There is an educational program based on modeling and social stories that helps with the improvements in the social skills of students with autism. The research centers around children with high-functioning autism spectrum disorder (HFASD) or autism spectrum disorder (ASD) with normal language and cognitive abilities. This age group is estimated to account for approximately 10% of the ASD population. They excel in art, music, mathematics, and memory. Still, individuals with HFASD have difficulty communicating with others and exhibit behavioral issues. They have difficulty making friends and learning how to play, do not make eye contact, pay poor attention together, have difficulty solving problems, have language and speech difficulties, and are unable to interpret body language or demonstrate empathy. These issues impact their ability to blend in with their peers and academic performance (Alkinj, 2022).

The present research uses modeling and social stories as its foundational methods in order to build its framework (Alkinj, 2022).

Modeling: Modeling developed from the social learning theory, which emphasizes observation as the primary component of social learning and suggests that individuals acquire behaviors by observing others instead of responding to a specific environmental incentive. Therefore, individuals do or do not do things based on the good or bad things that happen when other people do those things. Modeling takes four essential steps: paying attention, remembering, copying movements, and reinforcing what you have learned. These things can happen in real life when a child watches the model directly or through a video of a model or a clip of themselves (video self-modeling, or VSM) while doing the intended behavior to be copied and repeated later.

Social Stories: Social Stories are a teaching method that evolved from the "theory of mind" and are designed to assist individuals with ASD in comprehending the thoughts, actions, and purposes of others. In 1994, Carol Gray created and utilized Social Stories with individuals with ASD for the first time. She recommended using two to five sentences to characterize the desired skill or behavior in terms a child could comprehend. Social Stories (SS) are brief narratives instructing children on appropriate behavior in social situations or events.

In an additional aspect of research, the definition of "social story" was examined. A "social story" is a brief narrative that teaches autistic children how to respond to social situations through critical signals. Frequently, social stories are used to help autistic children understand how to interact with their peers. There are a few examples from real life that demonstrate how effectively social narrative involvement can be utilized. Using quantitative and qualitative research methods, this research aimed to envision the effectiveness of social story intervention and its long-term impacts. The frustrated behaviors of a school-aged Asperger syndrome patient were investigated during homework time. This study uses a single case study and an ABAB statistical design. According to this study's findings,

social narrative intervention may effectively reduce anger-related homework behaviors. It was also observed that the social tale intervention impacted the educational context (Adams, 2004)

One aspect of research uses a case study methodology to investigate the effects of interactive intervention for children diagnosed with autism spectrum disorders. These multiple case studies aimed to describe the outcomes for three sets of parents and their children after participating in a social interaction model of language intervention. This study aimed to determine whether an 11-week intervention may result in noticeable shifts in children's levels of participation, engagement, and the initiation of social contact. An intervention program that lasted for 11 weeks was completed by three sets of parents and their preschool-aged children diagnosed with autism spectrum disorders. The intervention taught parents how to model language for their children at their level and encouraged them to participate in daily routines and follow their children's lead. Estimates of parents' responsive language input and measurements of children's communication rate, number of engagements in social interaction, and initiations were among the outcome measures. According to the findings, all three of the moms showed an increase in the number of responsive comments they made during play interactions, and they were ranked higher on a scale that measured responsiveness. The vocabulary of all three youngsters improved, and there was a noticeable increase in the amount of time spent engaging in social activities. In addition, all three youngsters improved their ability to initiate social interactions with others. The social interaction model of language intervention predicts that there will be an increase in both mothers' responsiveness and children's participation in social interactions, and these observations are consistent with the model's theoretical mechanisms. Based on the findings, additional research using randomized controlled trials of this therapeutic strategy is required (Girolametto, 2007).

Researchers also defined that autistic-spectrum conditions cause stereotyped and obsessive behavior and social-emotional problems. However, autistic-spectrum disorder's neurobiological causes of behavioral anomalies are unclear. Lack of reward feedback may cause self- and socially motivated behavior and social interaction issues. In autistic-spectrum disease, in vivo structural imaging shows aberrant front striatal limbic system anatomy. No functional imaging study has evaluated reward response in autistic-spectrum condition. Thus, using rapid, mixed-trial event-related functional magnetic resonance imaging (fMRI), they examined reward feedback brain substrates in people with autistic-spectrum disorder and matched controls. Researchers expected that autistic-spectrum disorder patients would activate front striatal limbic brain areas differently when receiving monetary rewards than controls and that these brain areas would be physically aberrant. We also expected that reward feedback brain activation could differ (Schmitz, 2008).

Researchers did speculate that children with Autism Spectrum Disorder (ASD) may be especially receptive to digital rewards embedded within software, given their well-documented affinity for technology and their special interests. ASD is characterized by persistent deficits in social communication and interaction, as well as restricted and repetitive interests and behaviors. Computers can serve as an interface between a person with ASD and other people, thereby ameliorating social communication and interaction deficits and reducing social anxiety. Computers also provide the opportunity to modify the environment, such as by removing or reducing information that could divert attention from the primary task and by allowing children to work at their own tempo. Computers, including multi-touch tablets, have been found to be alluring to children with ASD, resulting in increased motivation, attention, and learning compared to traditional methods (Constantin, 2017).

Another relevant study by Sutherland et al. (2017) investigated the effects of a reward system on the social initiations of children with ASD. The researchers found that the implementation of a token economy-based reward system led to significant increases in the occurrence of social initiations by the participants. In an experimental study by Strauss et al. (2012), the researchers explored the effects of a reward system combined with computer-based social skills training in children with ASD. The findings revealed that the intervention, supplemented with rewards, led to improvements in various social communication skills, such as eye contact, response to social cues, and conversation skills.

The last basis of this research is related to social stories and video models that were used to assist children with high-functioning autism spectrum disorders to improve their social communication skills. This investigation is a continuation of that one. This study aimed to determine how well three children with High-Functioning Autism or Asperger Syndrome (HFA/AS) could communicate with others after viewing video models and reading social stories on a computer. Social stories and video models were displayed on a computer, and the participants' goal-directed behaviors were observed firsthand twice a week during unstructured school activities. This study used a methodology that gave each subject a unique starting point. (e.g., recess). The data indicated that the combined treatment plan enhanced the participants' communication skills. However, two of the participants required modifications to receive social reinforcement. During the two-week follow-up study, all three participants demonstrated that they had maintained their capabilities. However, only one of the subjects demonstrated that their abilities could be utilized in other contexts. This study adds to the increasing evidence that a computer-based combination intervention may effectively assist individuals with HFA/AS and social skill deficits (Powell-Smith, 2008).

Overall, the reviewed literature and related studies provide strong evidence supporting the effectiveness of reward systems in enhancing social communication skills in children with ASD. The use of rewards or reinforcements helps to motivate and encourage children with ASD to engage in appropriate social behaviors. As evidenced by the studies discussed in this essay, rewards have been found to be successful in improving social communication skills, including joint attention, social initiations, and social play. These findings highlight the importance of implementing reward-based interventions as an effective approach for promoting positive social communication outcomes in children with ASD.

Materials and Methods

To come up with the visual interpretation of the concern area, an overview of the methodology of this research branches out every procedure wherein it consists of specific major activities, particularly design, environment, respondent and sampling procedure, research instrumentation, data gathering procedures, data analysis, and ethical considerations.

Design

This study utilized a multiple-case pre-experimental design. Each case was administered twice: once prior to treatment and once after. The intervention or treatment was assumed to be the cause of changes in the outcome of interest because the control or comparison group was not employed. The effectiveness of the reward system was tested by the design utilized in this study. The aim was to deliver a comprehensive examination of the patterns of data along with consistent monitoring of correlation between all the variables.

Environment

Lapu-Lapu City Central Elementary School of Lapu-Lapu City municipality, Cebu province, Region VII- Central Visayas, is the primary venue of this research. It has a Special Education (SPED) center that serves children with varied developmental needs, including those with Autism Spectrum Disorder (ASD). This setting was selected specifically due to the well-established SPED program and availability of a population of children with ASD, which offers a complete setting in which to implement and observe the effects of a reward system on social communication skills.

Research participants are students who have been clinically diagnosed with autism spectrum disorder and are enrolled in the SPED program of the mentioned school. Inclusion criteria for participants are (1) age 6 to 10 years old, (2) clinically diagnosed with ASD by a licensed psychologist or developmental pediatrician, and (3) enrolled for one year or more in the SPED program. Exclusion criteria include (1) children with co-morbidities significantly affecting verbal or nonverbal communication (e.g., severe intellectual disability, hearing loss not yet corrected), and (2) children with no evidence of formal diagnosis. The variability in stages of development and communication skills among the participants is anticipated to add richness to the research by providing useful data and varied perceptions.

Participants

The participants of the study were ten children with Autism Spectrum Disorder (ASD), consisting of five males and five females, aged between 7 and 13 years. All the children had been clinically diagnosed by a qualified medical doctor. The parents of the children and a psychologist who was involved in the research also participated. The sample included ten parents of children diagnosed with ASD. The study was carried out using a specially created questionnaire designed to accommodate the requirements of the study. Three sections were investigated: parental mood variables, child communication, and child language development.

Participants in the study were individuals aged 7 to 13 years with a professional diagnosis of Autism Spectrum Disorder (ASD) as diagnosed by a certified medical professional. Children used in the study were not suffering from any co-morbid intellectual disabilities or other developmental illnesses that may possibly have a significant effect on the study results. All of the participants were in an institutional educational environment, i.e., school or therapy center, and exhibited the capacity for performing simple social communication tasks with minimal assistance. Their parents or legal guardians also needed to provide informed consent and consent to participate in the study.

The research employed the total enumeration sampling approach, or complete enumeration sampling. The method involves the enrollment of all participants that meet the given inclusion criteria within the entire population. In this study, all children diagnosed with Autism Spectrum Disorder (ASD) currently enrolled in the Special Education (SPED) program in Lapu-Lapu City Central Elementary School were selected.

The use of complete enumeration was justified in light of the relatively small and controllable population of potential participants in the institution. Since the study aims to investigate the effect of a reward system on social

communication skills among children with ASD, involving all eligible participants allowed for increased and richer insight into behavior patterns, avoiding pertinent perspectives being left out, and improved the reliability of findings.

This process also assists in the objective of optimizing data collection from the available population without the threat of sampling bias, which would have been faced if a random or small sample were used to create such a specialized population. Hence, the complete enumeration method was used as a base to document the influence of the intervention on the whole available and qualified population within the study setting.

Instrument

The instrument used in this study was an adapted observation checklist based on the available tools used in previous studies that tracked the social communication skills of children with Autism Spectrum Disorder (ASD). The instrument was designed to measure the effect of a reward system in enhancing specific social communication behaviors of the participants.

The instrument consisted of two main components. The Social Communication Skills Checklist targeted observable behavior with structured play and classroom interaction. It actually assessed such indicators as approaching others for contact, gesturing at a distance, and being physically in contact with others. The Sharing Behavior Checklist then targeted cooperative play and sharing behaviors. This included giving and receiving toys or objects, asking others to give objects, and obedience to peer requests to share or give objects.

The measure was administered via direct observation by the SPED teachers and school psychologists and with concurrent input from parents to ensure home-school response consistency. It was adapted from validated measures applied to similar studies on ASD interventions to suit the setting and the developmental levels of the participants in this specific context. By focusing on these key indicators, the measure provided a valid measure of participants' social communication skills before and after the use of the reward system intervention.

Data Gathering Procedure

The data collection in the study was conducted in three phases: Pre-Data Collection, Actual Data Collection, and Post-Data Collection.

Pre-Data Collection. Before the initiation of the study, the researcher sought required ethical clearance. A formal request was submitted to the Research Ethics Committee (REC) with the complete research manuscript. Permission was also taken from the College Dean to ensure that the study was following institutional research guidelines. After obtaining consent, the researcher coordinated with Lapu-Lapu City Central Elementary School's SPED program head to screen for potential participants. Informed assent (where needed) and parental consent forms were distributed and returned from parents or guardians of children with Autism Spectrum Disorder (ASD) diagnosed.

Actual Data Collection. Actual data collection was the implementation of the pre-test and post-test observation of participants' social communication skills through the adapted observation checklist. The pre-intervention entailed direct observation of every participant under naturalistic situations (e.g., in class or during playtime) to record baseline social communication behavior—such as initiating interaction with peers, gesturing, and sharing toys. After the baseline, reward system intervention was implemented for a predetermined duration. The reward system used structured positive reinforcement strategies like praise, tokens, or concrete rewards delivered immediately following correct social communication behavior. Parents and SPED teachers collaborated to ensure consistency across school and home settings. Following the intervention period, the same tool was used in conducting post-test observations to assess any change or improvement in the social communication skills of the participants.

Post-Data Collection. Upon collection of data, the researcher orderly arranged and analyzed pre- and post-intervention observation data to identify trends and evaluate the effectiveness of the reward system. Rigorous confidentiality was accorded to all data collected. Participants' names were coded and kept anonymous in all reports and documentation. Handling of data by the researcher was carried out following ethics standards by keeping all the records securely locked and having access to the research team only.

Data Analysis

To effectively assess the influence of the reward system on the social communication skills of children with Autism Spectrum Disorder (ASD), a combination of qualitative and quantitative methods of data analysis was employed. For the participant profile, content analysis was applied to explain the descriptive data gathered, the learners' background, and relevant behavioral observations. This was done to provide a contextual understanding of each participant's emerging characteristics prior to the intervention.

To compare social communication skills pre- and post-intervention with the reward system, the Mann-Whitney U test was used. This statistical test of nominal data is appropriate to use when paired nominal data is being analyzed, i.e., to determine if there are statistically significant differences in the frequency of observed behaviors both before and after the intervention. It is appropriate for small samples and is usually used when data are collected in a "before-and-after" format with the same set of participants.

In addition to McNemar's test, frequency counts and percentage descriptive statistics were also employed in summarizing observed social communication behaviors (e.g., initiating interaction, gestures, object sharing). This provided for easy presentation of how the behavior was distributed throughout the observed sessions.

All data were laboriously collated and reported in systematically tabulated tables. Tables 1 and 2 were merged into a single table to present the comparison of pre- and post-intervention behavior. Table 3, which had been incorrectly numbered, was renumbered and redubbed Table 4 to maintain consistency. Descriptions for tables were also revised for accuracy and clarity and were constructed in compliance with the rating scale used within the study. Moreover, tables were typeset in such a way that they would not be split across pages and would maintain readability and consistency.

Descriptive and inferential statistical analyses in combination offered a robust evaluation of the effect of the reward system on the social communication skills of children with ASD.

Ethical Considerations

The research was performed in compliance with the ethical guidelines included in the Declaration of Helsinki and the National Ethical Guidelines for Health and Health-Related Research Involving Human Participants in the Philippines. The Research and Ethics Committee (REC) of the University of the Visayas approved the ethics, with Reference No. NP 2024-MAEd 327, dated October 22, 2024.

Since the research was on children diagnosed with Autism Spectrum Disorder (ASD), informed consent from parents or guardians was secured, and assent was requested from the child participants when developmentally relevant. The purpose of the study, volunteer status of participation, procedures for the intervention, and steps taken to ensure the children's safety were explained clearly to the parents/guardians and school administrators.

All information gathered was handled with strict confidence and anonymity. Personal identifiers were eliminated, and codes were applied in data reporting to maintain privacy. Participants were able to withdraw from the study at any point without penalty. The reward system applied in the intervention was non-coercive, appropriate for their age, and aligned with ethical practice for behavioral support.

There were no material or financial rewards offered to participants or their relatives. There was no conflict of interest on the part of the researchers in conducting and reporting this research.

The study was conducted in accordance with the ethical principles of the Declaration of Helsinki and was reviewed and approved by the Research and Ethics Committee (REC) of the University of the Visayas, Reference No. dated. This research had small participants with Autism Spectrum Disorder (ASD) enrolled in a Special Education (SPED) program. There was parental informed consent and, as needed, child assent obtained prior to participation. A full description of the purpose, procedures, risks and benefits, and voluntary participation was provided through a formal letter of consent.

The data collection process was done with utmost confidentiality and privacy. No personally identifiable information was disclosed, and data was stored securely and accessible only to the research team members. All participants had the right to withdraw from the study at any point without penalty.

The intervention (reward system) was ethically justified, developmentally appropriate, and nonharmful. No financial rewards were given. The authors declare no conflict of interest for this study.

Results and Discussion

This chapter of the study investigates the effects of a reward system on the social communication skills of children with Autism Spectrum Disorder (ASD). It also aims to analyze the data collected from the participants, focusing on their social communication abilities before and after the implementation of the reward system. The findings will be contextualized within the framework of existing literature, highlighting the significance of reinforcement-based interventions in enhancing social skills among children with ASD. Additionally, the chapter will explore individual case studies of the participants, providing insights into their unique experiences and progress throughout the intervention. Ultimately, this chapter seeks to contribute to the understanding of effective strategies for improving social communication in children with ASD through targeted reward systems.

Provided for them a 15-item assessment questionnaire consisting of 15 statements related to Nonverbal Communication Skills, Conversational Skills, and Social Communication Skills. It is intended to be completed and

answered by the parents/guardians and teachers of the individual with ASD, which aims to evaluate one's current knowledge and comprehension of autism spectrum disorder (ASD).

Table 1

Profile of the Child with Autism Spectrum Disorder (ASD)

#	Age	Sex	Family Background	Medical History	Educational Background	Social Communication Background
1	7	F	Middle income	Speech delay	Grade 2	Sometimes interactions
2	9	F	Low income	Bone Fractures	Grade 3	Seldom interacts
3	9	F	Middle income	Social Anxiety	Grade 4	Seldom interacts
4	8	F	Lower Middle income	Speech delay	Grade 5	Sometimes interactions
5	9	F	Lower Middle income	Social Anxiety	Grade 2	Seldom interacts
6	11	M	High income	Anxiety Disorder	Grade 6	Frequent interacts
7	7	M	Lower Middle income	Sensory Processing	Grade 2	Seldom interacts
8	11	M	Middle income	Developmental Delay	Grade 5	Frequent interacts
9	8	M	Middle income	Social Anxiety	Grade 2	Sometimes interacts
10	8	F	Middle income	Speech delay	Grade 3	Sometimes interactions

This section discusses and summarizes background and demographic profiles of ten Autism Spectrum Disorder (ASD) children based on their social communication skills, as tabulated in Table 1. Variables considered during data collection are age, sex, family background, medical and educational history, and most importantly, their social communication interactions (i.e., frequent, sometimes, or rare interactions). These profiles are significant in establishing how different background factors may affect the effectiveness of reward systems in enhancing social communication skills among children with ASD.

Based on the reading of the table, participants who exhibited the highest level of social communication interaction ("frequent interacts") are Participants 6 and 8, both male, 11 years old. Ironically, Participant 6 is from a high-income household, is a Grade 6 student, and has been clinically diagnosed with an anxiety disorder. Participant 8, meanwhile, comes from a higher-income family, is in Grade 5, and has a developmental delay. Their repeated "frequent" contacts suggest that despite medical complications, their relatively higher education, age, and potentially greater accessibility to interventions through higher income may have influenced their social communication favorably.

On the other hand, the lowest social communication level ("seldom interacts") was observed in Participants 2, 3, 5, and 7. These children are mostly from low- to lower-middle-income families, are in Grades 2-4, and have medical histories of social anxiety, speech delay, or sensory processing disorder. This cohort consists of both younger and older children, but all but Participant 7 are female and have not advanced past Grade 4. The "seldom" social interaction witnessed between them could be the result of various cumulative variables—less exposure to formal learning settings, less social modeling within home or school environments, and possibly fewer therapeutic interventions because of financial constraints.

These variations in the levels of interaction can be explained better in light of Zaldivara's (2021) theory that children with ASD require explicit teaching and formal therapy to acquire social and adaptive skills. Without this incessant intervention, especially in impoverished settings, there is no likelihood of social interaction gains. The study of Sutherland et al. (2017) also supports this, where the implementation of a reward system significantly improved social initiations among children with ASD. This therefore demonstrates the practicability of reinforcement-based techniques towards promoting positive behaviors even among those with initially bad social skills.

Moreover, the high levels of positive interaction of Participants 6 and 8 can also be attributed to the impact of digital or organized learning tools, as postulated by Aurora Constantin (2017). Constantin pointed out that organized reward systems and computer tools can significantly boost the motivation and social interaction of children with ASD, provided they have access to technology and continuous educational support. This could be the explanation for the better response among participants with greater education and income, hopefully rendering more stable intervention contexts.

Finally, social communication heterogeneity among participants emphasizes the necessity of interventions customized for each individual, such as the use of reward systems, which have proved to be successful in multiple

research studies. The results show that while age and educational levels play their role, medical history and socioeconomic status dominate the outcomes. Hence, incorporating coordinated reward-based interventions, especially among infancy and preschool groups and resource-poor populations, is required to make children with ASD achieve their maximum communicative capacity.

Table 2

Pretest Performance of the students in Social Communication Skills

Indicators	Mean	SD	Interpretation
Nonverbal Communication Skills			
1. The child maintains appropriate eye contact during interactions.	2.90	0.32	Neutral
2. The child uses gestures to convey meaning effectively.	1.40	0.52	Strongly Disagree
3. The child points or reaches to indicate wants or needs.	2.90	0.32	Neutral
4. The child's facial expressions correspond with their emotions.	2.50	0.71	Disagree
5. The child responds non-verbally when called or addressed.	2.90	0.32	Strongly Disagree
<i>Weighted Mean and Standard Deviation</i>	2.52	0.74	Disagree
Conversational Communication Skills			
6. The child begins to engage in conversations with other people.	1.30	0.95	Strongly Disagree
7. The child is able to respond appropriately to questions.	1.40	0.97	Strongly Disagree
8. The child is able to take turns when speaking.	2.20	0.42	Disagree
9. The child's remarks relate to the subject of conversation.	2.00	0.67	Disagree
10. The child expresses needs or emotions verbally.	2.20	0.42	Disagree
<i>Weighted Mean and Standard Deviation</i>	1.82	0.80	Disagree
Social Communication Skills			
11. The child engages in group activities with peers.	2.90	0.57	Strongly Disagree
12. The child cooperates with others during play or tasks.	2.60	0.70	Disagree
13. The child observes simple social norms (e.g., waiting in line).	1.90	0.57	Disagree
14. The child demonstrates understanding of others' feelings.	2.20	0.79	Disagree
15. The child engages in sharing or cooperative activities.	2.20	0.92	Disagree
<i>Weighted Mean and Standard Deviation</i>	2.36	0.78	Disagree

Note. 1.00-1.80 = Strongly Disagree/Very Low 1.81-2.60 = Disagree/Low 2.61 - 3.40 = Somewhat Agree/Somewhat High 3.41- 4.20 = Agree/High 4.20 - 5.00 Strongly Agree/Very High.

This chapter introduces and reports the findings of the pre-intervention measure on the social communication abilities of a child with Autism Spectrum Disorder (ASD) against three important areas: Nonverbal Communication, Conversational Skills, and Social Interaction. The results provide a baseline knowledge of the performance of the child in social communication prior to imposing the reward system.

The nonverbal communication area boasted the greatest weighted mean of 2.52 (SD = 0.74), which meant Disagree. Three items in this area, namely, the child's capacity to have proper eye contact (M = 2.90), utilize gestures properly (M = 1.40), and facial expressions that match emotions (M = 2.50), showed variability in abilities. Among these, the three most highly scored indicators were eye contact, pointing to communicate needs, and responding without words (all M = 2.90), still, however, rated as Neutral. The lowest rating was for "The child uses gestures to communicate meaning effectively" (M = 1.40), and this was rated as "Strongly Disagree." This indicates a great disparity in the child's utilization of body language to augment communication—a pervasive difficulty among children with ASD, wherein gestures are minimal or mixed as a result of joint attention and imitation problems.

The lowest-scoring domain was the domain of conversational skills, with a weighted mean score of 1.82 (SD = 0.80), rated as Disagree. This indicates significant problems in the child's verbal social communication. The item "The child starts having a conversation with other individuals" had the lowest mean rating (M = 1.30), reflecting strong

disagreement and implying minimal initiation or desire to talk. Likewise, low ratings were seen regarding responding to questions ($M = 1.40$) and connecting remarks to topics of conversation ($M = 2.00$). These scores highlight notable expressive and pragmatic language limitations, an established feature of ASD, that impede mutual communication. In the social interaction section, the child scored a weighted mean of 2.36 ($SD = 0.78$), also scored as Disagree. The item "The child participates in group activities with others" ($M = 2.90$) ranked the highest in this section, though still indicating difficulties. Conversely, "The child observes simple social norms (e.g., waiting in line)" scored 1.90, which points to trouble with rule-guided and socially expected group behavior. All these scores indicate the child's poor capacity to be engaged in cooperative or rule-governed interactions and will probably result in social isolation and limited peer interaction.

The findings of this baseline measure concur with Zaldivara (2021), who supported that children with ASD usually have impairments in social skills that heavily influence their emotional health and future development. Zaldivara highlighted that interventions addressing social competencies—especially those including structured, evidence-based practices—are needed to enhance adaptive and interactive behaviors. The current results are consistent with this statement because the child showed significant impairments in almost all areas of social communication, warranting the use of specific strategies such as reward-based interventions.

In short, pre-intervention data show significant difficulties in all the areas measured, with conversational skills most affected and nonverbal communication slightly less affected but still at insufficient levels. These results suggest the necessity for a goal-directed and engaging strategy, like a reward system, to encourage cooperation, solidify positive behaviors, and ultimately enhance the child's social communication abilities.

Table 3
Posttest Performance of the students in Social Communication Skills

Indicators	Mean	SD	Interpretation
Nonverbal			
1. The child maintains appropriate eye contact during interactions.	3.30	0.95	Agree
2. The child uses gestures to convey meaning effectively.	2.20	0.79	Disagree
3. The child points or reaches to indicate wants or needs.	3.00	0.47	Neutral
4. The child's facial expressions correspond with their emotions.	2.50	0.97	Disagree
5. The child responds non-verbally when called or addressed.	2.80	0.92	Neutral
<i>Weighted Mean and Standard Deviation</i>	2.76	0.89	Neutral
Conversational			
6. The child begins to engage in conversations with other people.	2.30	1.16	Disagree
7. The child is able to respond appropriately to questions.	2.40	1.26	Disagree
8. The child is able to take turns when speaking.	2.60	1.07	Neutral
9. The child's remarks relate to the subject of conversation.	2.50	0.71	Disagree
10. The child expresses needs or emotions verbally.	2.80	1.14	Neutral
<i>Weighted Mean and Standard Deviation</i>	2.52	1.05	Disagree
Social			
11. The child engages in group activities with peers.	2.90	0.74	Neutral
12. The child cooperates with others during play or tasks.	2.60	0.97	Disagree
13. The child observes simple social norms (e.g., waiting in line).	2.50	0.85	Neutral
14. The child demonstrates understanding of others' feelings.	2.90	1.20	Neutral
15. The child engages in sharing or cooperative activities.	2.90	1.10	Neutral
<i>Weighted Mean and Standard Deviation</i>	2.76	0.96	Neutral

The intervention attended to three major domains of social communication: nonverbal, conversational, and social behaviors. After the rewards system was put in place, data were collected and displayed in Table 3 to see if there were any changes in the child's behavior through various indicators. In the results, mixed outcomes were shown, with areas of improvement and some continuing challenges noted.

In the nonverbal category, eye contact seemed to receive the highest mean ($M = 3.30$, $SD = 0.95$). Practically, this shows that the reward provided encouragement for the child to give and maintain eye contact, the hallmark of nonverbal communication in social situations. Improving in this area is an essential social cue and begs the possibility for reward-based intervention in shaping meaningful interpersonal behavior in children with ASD. This corroborates the findings of Sutherland et al. (2017), whereby it was shown that the use of token economy-based reward systems significantly increased social initiations such as eye contact and a response to social cues among children with autism. On the contrary, the lowest mean score ($M = 2.20$, $SD = 0.79$) was also recorded under the nonverbal domain in the area of using gestures to mean. This suggests that although the child had been able to make eye contact and indicate wants or needs, the child had not shown much spontaneous use of gestures. Perhaps gestural communication needs more structured modeling or could simply be more difficult to reinforce through pure rewards alone.

Bearing in mind the three domains, nonverbal and social categories each yielded a neutral adjusted mean of 2.76, pointing towards some advancement in those areas. On the other hand, the conversational domain received a rating of lowest ($M = 2.52$, $SD = 1.05$), with several items under this category, such as initiating conversations and responding when being questioned, falling under the "disagree" interpretation. This suggests that while nonverbal and some social behaviors might more immediately respond to reward-based interventions, more profound conversational skills—requiring more complex cognitive and linguistic processing—might need more time, repetition, and possibly multimedia interventions like social stories and modeling.

Indicators in the social domain, including engaging in group activities, understanding others' feelings, and cooperating with others, all remained around the neutral level ($M = 2.90$ for three items), suggesting that although there are slight observable occurrences, such behaviors have yet to be internalized. The results speak to a measure of the reward system's success and indicate a need for some direct teaching and repetition, as suggested by Zaldivara (2021), who pointed out the necessity of using structured, evidence-based interventions to improve adaptive and social functioning within children with ASD.

In summary, the findings support reward systems as an effective mechanism for facilitating specific aspects of social communication, particularly nonverbal aspects such as eye contact. The limited conversational and gestural gains reflected in this report indicate that rewards alone may not suffice: complementary measures employing, for example, modeling or social stories, as suggested by Alkinj (2022), may be more likely to address some of the difficulties in the rationale. The different responses of the various indicators further support the individualized nature of ASD interventions, thus necessitating the use of these tailored and multimodal methods.

Table 4
Reward System and Social Communication Skills

Variables		Mean	Variance	df	t Stat	P-value (2t)	t Critical (2t)	Interpretation
Nonverbal	<i>Before</i>	12.6	0.71	9	-1.327	0.217	2.26	not significant
	<i>After</i>	13.8	7.73					
Conversational	<i>Before</i>	9.1	3.66	9	-3.656	0.005	2.26	significant
	<i>After</i>	12.6	20.49					
Social	<i>Before</i>	11.8	3.51	9	-1.879	0.093	2.26	not significant
	<i>After</i>	13.8	15.51					

Note. $n=10$

This table indicates whether a reward system significantly impacts the acquisition of social communication skills—like nonverbal communication, conversational (verbal) communication, and social skills—of a child with Autism Spectrum Disorder (ASD). With a post-test and pre-test design and 10 participants, intervention was planned to measure specifically how rewards impact the various components of social communication. The null hypothesis (H_0) was that the implementation of the reward system would have no quantifiable effect on the child's social communication skills across the three areas.

Upon examination of Table 3 data, the most change was observed in the conversational communication skill, with an increase in the mean from 9.1 (pre) to 12.6 (post). It was significant statistically, as seen in a t of -3.656 and p of 0.005, both significantly less than the critical value of 0.05. This indicates that the reward system significantly improved verbal or conversational communication skills. It reflects on improved turn-taking, speech initiation, and possibly greater verbal interaction, important communication milestones for children with ASD.

Conversely, non-verbal communication abilities, although showing a mean score rise from 12.6 to 13.8, were least affected, giving a p-value of 0.217. This result implies no statistically significant rise, since the value is greater than the standard alpha value of 0.05. The increase in variance also points to inconsistency in results among participants and points towards individual differences in the way children respond to visual or gesture mode communicational improvement in reward contexts.

Social skills also saw an increase in moderate mean scores (from 11.8 to 13.8), but the 0.093 p-value remains above the significance level. Although close, the result is still not statistically significant, i.e., some improvement did occur, but not consistently or strongly enough in the sample to reject the null hypothesis in this domain.

With regard to the null hypothesis, the findings support the hypothesis to some extent. In particular, the null hypothesis for conversational skills is rejected, implying that the reward system enhanced verbal communication among children with ASD significantly. For non-verbal communication and social skills, however, the null hypothesis is maintained, meaning that the observed changes were not statistically significant.

These findings are consistent with previous research. For example, the study by Sutherland et al. (2017) indicated that social initiations in children with ASD were greatly improved with a token economy reward system. Similarly, Strauss et al. (2012) demonstrated that rewards and computer-based social skills training led to significant increases in a variety of social communication behaviors, particularly those like eye contact and verbal response, which are most directly associated with conversational communication—the domain that was found to be significant within this study.

The difference in outcome between regions may be attributed to the nature of the reward system itself, being more immediately reinforcing to observable and verbal behavior. The non-verbal reactions and more diffuse social skills, which are more abstract and situational in nature, may require longer and more powerful interventions before they yield statistically significant effects. As noted by Zaldivara (2021), people with ASD are assisted by carefully planned and systematically conducted treatment to learn these skills, and heterogeneity of implementation influences outcomes.

Conclusion

This research investigated the impact of a reward system on the social communication ability of a child with Autism Spectrum Disorder. The results proved that the intervention resulted in significant improvements in non-verbal communication, specifically in eye contact, and modest changes in participating and cooperating social skills. Conversational ability had some improvement but was still an area that needed more work. These findings underscore the promise of an organized reward system to augment certain aspects of social communication in children with ASD. Even with these favorable results, the research was limited by its focus on a single subject of lower-middle-income family background, and this may restrict the applicability of the outcomes. The existence of comorbid conditions such as speech delay and social anxiety may have affected the speed and degree of improvement seen. Subsequent research could build on this investigation by using a larger, more representative sample, examining long-term intervention effects, and looking at other strategies to treat conversational skill deficits.

The creation of a personalized teaching aid involving token-based reinforcers, pictorial aids, and gamified activities provides a promising line for further advancing social communication skills. Further development and trial of such aids will be necessary to maximize support for children with ASD in a range of social contexts.

Recommendations

Based on the findings of this study on how a reward system can influence the social communication competence of a child with Autism Spectrum Disorder (ASD), some key recommendations can be offered. These are aimed at enhancing intervention methods, training stakeholders such as teachers and parents, and guiding subsequent studies. The regulations take into account the mentioned progress in social and non-verbal skills, the continued challenges in conversation skills, and the socio-economic limitation that is affecting the child.

Develop and Implement an Integrated Instructional Tool

A formal instructional tool must be crafted that integrates a token-based reward system with visual cue cards, behavior charts, and schedules of reinforcement for eye contact, gesture use, and turn-taking. The tool must be implemented in school and home environments to ensure consistency and maximize effectiveness.

Utilize Gamified Social Tasks and Digital Aids

Embedded within the design are gamified tasks and digital learning tools that facilitate enhanced motivation and engagement for practice during social interactions. Such tools, supported by prior research (e.g., Constantin, 2017), can be especially effective in maintaining the child's interest while inviting desirable behavior.

Because conversational skills were least improved, there must be script-conversations, peer-mediated training activities, and role-playing scenarios. These need to address initiating, sustaining, and closing conversations in a proper way.

Provide parents and caregivers with training on the administration of the reward system and reinforcement process in a consistent manner at home. This is particularly pertinent in the situation of children from low-income backgrounds with very little professional therapy access.

Develop an interdisciplinary team that involves teachers, special education teachers, speech therapists, and psychologists to design a single intervention plan that addresses both behavioral challenges and communication challenges at the same time.

Monitor and Change Interventions Based on Individual Progress

Progress must be checked regularly in order to adjust the intervention based on the changing needs of the child.

Continuous monitoring will identify what works and what should be altered.

Partner with NGOs or local government units for possible support programs and alliances that would provide available intervention resources and materials for families who come from disadvantaged backgrounds.

Structured group interventions that promote cooperative play and peer interaction must be incorporated on a regular schedule. They provide natural contexts in which to practice social norms and conversation interactions.

Evaluate the Long-Term Impact of the Reward System

Increase the length of the intervention and assess long-term outcomes to determine whether enhanced communication skills are maintained, carried over to other settings, and lead to increased independence in social interaction.

Follow-up studies would have to sample a bigger, more representative sample to maximize generalizability and investigate response differences by socioeconomic and developmental categorizations. Longitudinal studies would further be needed in order to examine the extended impact of token-based reward interventions and investigate hybrid models using behaviorist and developmental communication approaches for maximizing outcomes, particularly conversational skill learning.

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