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Communication Competency Needs of Students with Autism Spectrum Disorder (ASD): Teachers' Perspectives and Students' Abilities

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Abstract: This study aims to analyze the communication competency needs of students with Autism Spectrum Disorder (ASD) based on teachers' perspectives and the communication abilities of the students themselves. A survey method with a quantitative approach was used, collecting data through questionnaires distributed to 41 teachers and 20 ASD students from Special Schools (SLB) in West Java. The sampling technique applied was purposive sampling. The data were analyzed using IBM SPSS Statistics version 23, with descriptive analysis techniques and reliability tests to ensure the validity of the instruments. The research results reveal that students with ASD need improvements in both receptive and expressive communication competencies, particularly in understanding multi-step instructions, recognizing visual symbols, and responding to non-verbal cues and complex questions. Furthermore, challenges were found in initiating conversations and using more specific vocabulary in social interactions. This study emphasizes the importance of developing more structured and individualized teaching strategies to enhance the communication competencies of students with ASD.

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Introduction

Autism Spectrum Disorder (ASD) is a spectrum of neurobiological disorders that affects an individual's social development, communication, and behaviour (American Psychiatric Association, 2013). One important aspect that requires special attention in the educational context is the communication skills of students with ASD (Pongsatornpipat, 2021). As awareness and inclusivity in the education system increases, a deep understanding of communication skills becomes increasingly important (Fuller & Kaiser, 2020).

Elementary school is an essential environment for children with ASD, where communication skills are critical in supporting students' academic, social, and emotional success (Bauminger-Zviely, 2014). At the elementary education level, students with ASD often face unique challenges in developing communication skills. Some students may show specific preferences or tendencies, such as being more successful in verbal or nonverbal communication (Ousley & Cermak, 2014). Some children with ASD cannot communicate using speech or language, and some may have minimal speech abilities. Children with ASD may also be unable to understand body language and the meaning of different tones of voice. Some individuals with ASD often experience feelings of isolation when starting to communicate (Müller et al., 2008). Communication is considered exhausting, and some individuals with ASD report a general preference for solitude (Cummins et al., 2020). Together, these difficulties affect the ability of children with ASD to interact with others, especially with their peers.

The challenges faced by students with ASD in developing communication skills have been extensively studied. Teachers, as practitioners in the field, play a crucial role in designing appropriate teaching strategies and interventions. However, much of the existing research primarily focuses on the techniques or strategies used to enhance student communication (Fuller & Kaiser, 2020; Shire et al., 2018), with less emphasis on how teachers assess and understand the specific communication needs of these students. In other words, teachers are the individuals who have the most direct understanding of the unique conditions and requirements of these children (Andzik et al., 2021; Cahyo Adi Kistoro et al., 2021).

Therefore, it is important to expand the focus of research to include teachers' views on the communication skills required for students with ASD. Furthermore, students with ASD have highly varied communication abilities, including both verbal and nonverbal preferences, which adds complexity to the development of their communication skills. Thus, the gap between teachers' perceptions and the actual communication abilities of students can lead to inappropriate interventions, which may affect students' social and academic interactions. Therefore, this study aims to explore teachers' perspectives on communication skills and assess the receptive and expressive communication abilities of students with ASD, in order to support the creation of more effective teaching approaches that are tailored to the needs of students in the classroom.

Research Method

This study employs a survey method with a quantitative approach to analyze the communication competency needs of students with Autism Spectrum Disorder (ASD) from the perspective of teachers as well as the students' own abilities. The survey method is utilized to systematically collect data through questionnaires distributed to respondents, aiming to obtain a broader understanding of the communication competency needs of ASD students. The competencies examined in this study include receptive and expressive communication competencies, which are designed based on the Merdeka Curriculum and a synthesis of various related references.

The population in this study consists of Special Education teachers (SLB) with experience in teaching students with ASD at the elementary school level, as well as students with ASD themselves. The sample in this study comprises 41 teachers from various Special Education schools (SLB) in West Java, as well as 20 students with ASD enrolled in these schools. The sampling technique used was purposive sampling, where only teachers with experience in educating students with ASD and students with varying levels of communication involvement were selected to provide relevant and reliable data. The characteristics of the respondents in this study are presented in Table 1.

The respondent characteristics consist of students with a range of ages, predominantly boys, who vary in terms of the support they require. The students' ages range from 7 to 18 years old, with the majority falling between 7 and 16 years old. A significant portion of these students (14 out of 20) requires substantial support, while others (6 students) require very substantial support. These characteristics suggest that the participants are in need of varying levels of assistance, reflecting a diverse group in terms of both age and the extent of support necessary for their academic or developmental needs.

Table 1. Respondent Characteristics (Teachers)

Characteristic		Frequency	Percentage (%)
Gender	Male	16	39%
	Female	25	61%
Education	S1	39	95%

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	S2	2	5%
Work experience	1-5 years	10	24%
	6 - 10 years	15	37%
	11 - 15 years	10	24%
	16 - 20 years	6	15%

Data collection was conducted through a needs assessment questionnaire developed using Google Forms. This research instrument consists of 46 statements that have been tested for validity and reliability, making them effective for use in this study. This resulted in 30 valid statements (See Table 3). Data collection was carried out over approximately one month, involving teachers from 10 cities/regencies in West Java Province. Additionally, assessments of ASD students were conducted to gain a deeper understanding of their communication abilities.

Table 2. Instrument of Receptive and Expressive Communication

Element	Competency	Competency Indicators
Receptive Communication	Understanding simple instructions	Following one-step instructions.
		Following two-step instructions.
		Following three-step instructions.
	Understanding symbols/visual cues	Recognizes symbols or visual images frequently found in daily routines
		Understands symbols or visual cues that indicate the sequence of steps in daily activities
		Uses symbols or visual cues to select and complete activities
	Understanding non-verbal signals	Recognize the relationship between facial expressions or hand movements and basic emotions or actions
		Understand the deeper meaning of more complex facial expressions or body movements
		Respond to more subtle non-verbal cues and social context
Expressive Communication	Identifying objects	Recognizing objects commonly found at home.
		Recognizing objects commonly found at school.
		Recognizing objects commonly found in society.
	Understanding questions	Responding to very simple and direct questions.
		Responding to structured and familiar questions.
		Responding to complex questions with contextual understanding.
	Labeling objects	Labeling objects, people, or things that are very familiar in daily routines.
		Labeling objects or people that are new or seldom encountered in daily routines.
		Labeling in more complex contexts, whether in social or emotional situations, or in new and more abstract contexts.
	Expressing desires/refusals	Expressing desires or refusals directly and simply.
		Expressing desires or refusals with simple reasons.

Answering questions	Expressing desires or refusals through negotiation or offering solutions.
	Providing simple and direct answers based on questions.
	Providing more specific and relevant answers based on personal experiences or the child's preferences.
	Providing answers according to the question asked based on a story that has been read or told.
Starting a conversation	Starting a simple conversation.
	Starting a conversation with a familiar topic.
	Starting a conversation with someone unfamiliar or in a new environment.
Using vocabulary	Using simple and commonly used vocabulary in daily conversations.
	Using a broader and more precise vocabulary in social conversations, such as discussing feelings, desires, or experiences.
	Using more formal or technical vocabulary according to the context, such as when speaking with adults or teachers.

The data obtained from the questionnaire were analyzed using IBM SPSS Statistics version 23. Descriptive analysis was employed to identify trends and data distribution related to the communication competency needs of ASD students. Furthermore, reliability analysis was performed to ensure the consistency and accuracy of the instruments used in this study.

Results and Discussion

Validity and Reliability of Instruments

Based on the Pearson correlation analysis, the significance values (Sig. 2-tailed) for the various competency indicators are highly significant, with all showing very small p-values (e.g., below 0.05). This suggests a strong statistical relationship between the competency indicators, implying that they are likely measuring a similar construct. The small p-values indicate that the competency indicators are strongly correlated with each other, reinforcing the validity of the instrument in assessing the targeted competencies. Additionally, the reliability of the instrument is confirmed by Cronbach's Alpha value of 0.985, which is well above the commonly accepted threshold of 0.7, indicating excellent internal consistency. This high Cronbach's Alpha value further supports the conclusion that the competency indicators are reliable measures of the underlying construct, ensuring that the instrument produces consistent and dependable results.

Teachers' Perceptions of Communication Competence

a) Receptive Communication

1) Understanding Simple Instructions

Findings indicate that comprehension of simple instructions is essential for supporting the development of ASD students in SLBs. The ability to follow one-step instructions (avg. 4.00; sd. 0.00; highly needed) is considered highly important. In contrast, two-step (avg. 3.95;

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sd. 0.22; needed) and three-step instructions (avg. 3.52; sd. 0.51; needed) are also necessary but with a slightly lower level of importance.

2) Understanding Symbols/Visual Instructions

The results indicate that competency in understanding and using symbols or visual cues is very important for teachers. The ability to recognize symbols commonly found in daily routines (avg. 4.00; sd. 0.00; Highly needed) is a crucial skill needed by children with ASD. Meanwhile, the ability to understand step-by-step instructions through symbols (avg. 3.95; sd. 0.22; needed) and the ability to use symbols to choose and complete activities (avg. 3.43; sd. 0.51; needed) are considered essential in supporting smooth communication.

3) Understanding Non-Verbal Signs

The results indicate that educators regard the ability to understand the deeper meanings of facial expressions or more complex body movements (avg. 4.00; sd. 0.00; Highly needed) as highly necessary. Additionally, the ability to respond to subtle nonverbal cues and social contexts (avg. 3.19; sd. 0.40; needed), as well as the ability to interpret and react to more subtle nonverbal signals (avg. 3.29; sd. 0.46; needed), is considered important for facilitating effective communication.

4) Object Identification

The results indicate that the ability to recognize objects commonly found at home and school received a high average score (avg. 3.90; sd. 0.30; needed), highlighting the importance of this skill in more structured environments. Meanwhile, the ability to recognize objects found in society (avg. 3.81; sd. 0.40; needed) is also considered important, albeit slightly lower, as it supports social interactions outside the home and school context.

5) Comprehension Questions

The results indicate that the ability to respond to very simple and direct questions received the highest average score, suggesting that this skill is highly needed compared to the other two competencies (avg. 3.95; sd. 0.22; needed). Meanwhile, the ability to respond to structured and familiar questions (avg. 3.67; sd. 0.48; needed), and the ability to respond to complex questions requiring contextual understanding (avg. 3.19; sd. 0.40; needed), is also considered important, albeit slightly lower.

b) Expressive

1) Labelling Ability

The results indicate that the ability to labeling objects or people that are new or seldom encountered in daily routines received the highest average score 3.81 (sd. 0.40; needed), indicating the importance of this skill. Following this, the ability to label in more complex contexts, whether in social, emotional, or more abstract situations, received an average score of 3.67 (sd. 0.48; needed), which is also deemed necessary. Lastly, the ability to label objects or people that are very familiar in daily routines received an average score of 3.52 (sd. 0.51; needed), suggesting that while still important, this skill is slightly less emphasized.

2) Expressing Desire/Rejection

The results indicate that the ability to express desires or rejections through negotiation or by offering solutions received the highest average score (avg. 3.9; sd. 0.30; needed), highlighting the importance of this skill in facilitating more effective communication. Following this, the ability to express desires or rejections with simple reasons received an average score of 3.81 (sd. 0.40; needed), which is also considered important. Lastly, the ability to express desires or rejections directly and simply obtained an average score of 3.52 (sd. 0.51; needed), which is still considered necessary, albeit slightly lower.

3) Answering Questions

The results indicate that the ability to provide answers according to the question asked based on a story that has been read or told received the highest average score (avg. 3.9; sd. 0.30; needed), highlighting the significance of this skill. Following this, the ability to provide more specific and relevant answers based on personal experiences or the child's preferences received an average score of 3.57 (sd. 0.50; needed), which is also regarded as important. Lastly, the ability to provide simple and direct answers based on the questions asked obtained an average score of 3.52 (sd. 0.51; needed), which is still considered necessary, albeit slightly lower.

4) Initiate conversation

The results indicate that the ability to start a conversation with someone unfamiliar or in a new environment received the highest average score (avg. 3.9; sd. 0.30; needed), indicating that this skill is crucial for establishing communication in new situations. Following this, the ability to start a conversation with a familiar topic received an average score of 3.47 (sd. 0.511; needed), which is also considered important. Lastly, the ability to start a simple conversation obtained an average score of 3.24 (sd. 0.30; needed), which, although slightly lower, is still deemed necessary in basic communication contexts.

5) Vocabulary Use

The results indicate that the ability to use a broader and more precise vocabulary in social conversations, such as discussing feelings, desires, or experiences, received the highest average score (avg. 3.9; sd. 0.30; needed), indicating that this skill is crucial for more complex social communication. Following this, the ability to use simple and commonly used vocabulary in daily conversations obtained an average score of 3.52 (sd. 0.51; needed), which is also considered important. Lastly, the ability to use more formal or technical vocabulary according to the context, such as when speaking with adults or teachers, received an average score of 3.05 (sd. 0.22; needed), which is still deemed necessary, albeit slightly lower.

Results of ASD Students' Communication Competency Assessment

Based on the competency data of the 20 students with ASD, the analysis reveals varying performance levels across different elements of receptive and expressive communication. In Receptive Communication, the students show stronger competency in understanding simple instructions, with an average score of 2.80, reflecting their ability to follow one-step directions. Their performance in understanding symbols and visual cues is slightly lower, averaging 2.70, indicating moderate competency in recognizing common visual representations. When it comes to non-verbal signals, the students score an average of 2.45, suggesting they have some difficulty interpreting body language or facial expressions. The competency in identifying objects scores 2.60 on average, implying a reasonable ability to recognize common items, but still leaving room for improvement. Lastly, the students score an average of 2.55 for understanding questions, demonstrating a moderate proficiency in comprehending various types of questions but not at a high level of mastery.

In Expressive Communication, the students show varying degrees of competence in labeling objects, with an average score of 2.50, indicating that they can recognize and name objects, but with some inconsistency. For expressing desires or refusals, the students score an average of 2.40, reflecting a relatively low ability to express their preferences or objections effectively. The ability to answer questions is slightly better, with an average score of 2.60, showing that the students can respond to questions, though perhaps not always accurately or with sufficient detail. When it comes to starting a conversation, the average score is 2.30, which suggests a significant challenge in initiating social interactions independently. Finally, the students show the lowest competency in using vocabulary, with an average of 2.20,

pointing to a need for improvement in their verbal expression and the range of words they can use in communication.

Discussion

Based on the findings from this study, the relationship between teachers' perceptions of communication competencies and the abilities of students, particularly those with ASD, reveals several critical areas of development. One of the key findings of this study is that students performed well on "Understanding Simple Instructions" but struggled with more complex instructions, particularly "Following two-step" and "Three-step instructions." This finding aligns with the work of Schaeffer et al. (2023), who noted that children with ASD find multi-step instructions challenging, often requiring more structured, repetitive teaching for complex tasks. Both studies underscore the importance of breaking down instructions into smaller, manageable steps for ASD children. The study also examined "Understanding Symbols/Visual Cues", with students scoring higher in recognizing symbols used frequently in daily routines, but facing difficulties when using symbols to complete tasks. This finding is consistent with research by Rutherford et al. (2020), which also found that children with ASD benefit significantly from visual aids, as they process visual information more effectively than verbal instructions. Highlighted that the use of visual cues can help bridge communication gaps for children with ASD, supporting the necessity of integrating visual supports into teaching strategies, as shown by the findings in this study.

Another significant competency discussed in this research is "Understanding Non-Verbal Signals." The data shows that students struggled with interpreting complex non-verbal cues, such as subtle facial expressions or body movements. This finding aligns with Alzrayer et al. (2019), who identified the difficulty children with ASD have in understanding non-verbal communication, which is essential for social interactions. They found that children with ASD often require explicit instruction and practice to recognize and appropriately respond to non-verbal cues. Both studies emphasize the need for interventions that focus on improving non-verbal communication skills, such as facial expressions and body language, to enhance social functioning in children with ASD.

The "Identifying Objects" competency also revealed significant challenges for students in recognizing objects found outside familiar environments, with lower scores for recognizing objects at school or in society. This is in line with research by Radwan et al. (2017), who found that children with ASD struggle to generalize object recognition skills across different contexts. Their study suggested that interventions that provide repeated exposure in various settings are essential to improving object identification skills, which is supported by the findings of this study. In terms of "Answering Questions", students showed difficulty when responding to more complex questions that required contextual understanding or were based on a story. This aligns with findings from Sanders et al. (2016) and Kowitt et al. (2024), who noted that children with ASD often struggle with answering questions that involve higher-order thinking or require understanding contextual information. They highlighted the need for tailored teaching strategies to help these children process and respond appropriately to more intricate questions, reinforcing the findings from this study regarding the need for further support in answering complex questions. The competencies of "Using Vocabulary" was another competency where students demonstrated challenges, particularly with using more specific vocabulary in social conversations and formal settings. This finding is in line with research by Syriopoulou-Delli & Eleni (2022), who identified that children with ASD often have limited vocabulary in complex social interactions and need targeted vocabulary-building interventions. Root et al. (2024) suggested that vocabulary training should include both everyday language and context-specific terms to help children

with ASD improve their communication skills in a variety of situations, which is consistent with the results observed in this study.

The findings of this study reveal that while children with ASD do not experience major difficulties labelling familiar objects in daily routines, they struggle when faced with less familiar objects or in more complex social-emotional contexts. This aligns with the research by Hani et al. (2013), which emphasizes the importance of exposure to objects in various contexts to help children with ASD develop more comprehensive labelling skills. Similarly, in the "Understanding Questions" competency, while children with ASD perform well with simple questions, they struggle with more complex questions requiring contextual understanding, consistent with findings by Cariveau et al. (2020), who highlight the need for repeated exposure to different types of questions and explicit instruction. In "Expressing Desires/Refusals," children with ASD tend to have difficulties in providing reasons or solutions, which is in line with La Valle et al. (2020), who found that children with ASD often struggle with more complex verbal expressions, particularly those requiring social and emotional understanding. Lastly, "Starting a Conversation" reveals significant challenges, where children with ASD struggle to initiate conversations both in familiar and unfamiliar situations, as described by Minolin et al. (2022) and Plate & Iverson (2024), who emphasize the importance of structured conversational training to improve social skills and conversation initiation.

The importance of targeted and individualized teaching approaches to develop communication skills in students with Autism Spectrum Disorder (ASD). Conceptually, the findings emphasize the need for tailored interventions, incorporating visual aids, social scripts, and contextual learning to support the development of communication competencies in these students. Practically, the results provide guidance for educators to implement more structured strategies based on real-world experiences, such as repeated practice and the integration of social-emotional learning, to enhance students' social interactions. By adopting a more holistic and focused approach, it is expected that students with ASD will overcome communication barriers and improve their social skills, ultimately supporting their overall development.

Conclusion

This study confirms that students with ASD exhibit notable difficulties in developing communication competencies, particularly in more complex tasks such as following multi-step instructions, interpreting non-verbal cues, and engaging in social interactions. While students demonstrated relative strength in simpler tasks like following one-step instructions and recognizing familiar symbols, they faced challenges in processing more advanced communication demands, such as understanding context-specific vocabulary or responding to complex questions. These findings are consistent with previous research, highlighting the need for targeted interventions that break down communication tasks into manageable steps, use visual aids, and emphasize social-emotional learning to improve interaction skills.

The results further suggest that teachers' perceptions align with the necessity for individualized, structured approaches to teaching children with ASD. Interventions that incorporate repeated practice, explicit instruction, and the use of social scripts can help address specific communication barriers. Ultimately, the study reinforces the importance of adapting teaching strategies to meet the unique needs of students with ASD, ensuring that interventions support both language development and social integration. By providing these students with appropriate tools and support, educators can enhance their communication abilities and foster more successful social interactions within diverse contexts.

Recommendation

Based on the findings of the study, the researcher recommends that education policymakers develop a flexible, inclusive curriculum, provide adequate resources, and enhance teacher training to support the education of students with ASD. The researcher also recommends that teachers use structured teaching methods, increase the use of visual aids, and collaborate with other professionals to design more personalized interventions. Additionally, the researcher emphasizes the importance of providing students with repeated social practice opportunities and developing relevant social vocabulary to facilitate their interactions. These steps are expected to improve the communication skills of students with ASD effectively.

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