
The role of developmental assessment in designing early intervention to improve communication language skills of young children with autism

Nunung Taryati^{1*}, Budi Susetyo², Iding Tarsidi³

^{1,2,3}Universitas Pendidikan Indonesia, Indonesia

e-mail: nunungtaryati@upi.edu

*Corresponding Author.

Abstract: *Early intervention plays an important role in supporting the development of communication skills in children with Autism Spectrum Disorder (ASD) from an early age. However, in early childhood education practices, intervention programs for children with special needs are often implemented without being based on comprehensive developmental assessments, resulting in interventions that may not fully address the individual needs of the child. This study aims to describe the role of developmental assessment in designing early intervention to improve the communication language abilities of young children with autism. This research employed a mixed methods approach with a descriptive case study design involving a five-year-old child with autism who experienced difficulties in communication language development. Data were collected through observation, interviews with parents, documentation, and the use of developmental assessment instruments. The results of the study indicate that developmental assessment provides a comprehensive understanding of the child's developmental profile, including strengths and challenges, which serves as the basis for designing more targeted intervention programs. The implementation of early intervention conducted collaboratively with parents through daily communication activities showed positive improvements in the child's functional communication skills, particularly in expressing needs verbally and responding to simple instructions. The findings highlight that the integration of developmental assessment and collaborative early intervention can serve as an effective approach to support the development of communication language skills in young children with autism.*

Keywords: *Developmental assessment, Early intervention, Communication language, Autism*

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Introduction

Language and communication developmental disorders are among the core characteristics experienced by children with Autism Spectrum Disorder (ASD), with global prevalence rates showing a significant increase in recent years. These communication difficulties have long-term implications, including reduced academic readiness, limited social integration, and increased dependency in later developmental stages. Children with autism often experience difficulties in understanding receptive language as well as expressing language verbally, resulting in communication that tends to be limited and less functional in everyday life.

Recent studies have consistently shown that language and communication delays remain one of the most persistent challenges in children with autism (Dewi & Morawati, 2024), (Dewi et al., 2024). Zwaigenbaum et al. (2015) explain that most children with autism show significant difficulties in the development of social communication and language since the preschool period. If not addressed appropriately, these conditions may lead to limitations in social interaction, difficulties in understanding instructions, and barriers to children's engagement in learning activities in early childhood education environments.

One approach that is considered effective in optimizing the development of children with autism is early intervention. Early intervention refers to systematic efforts provided during the early stages of child development to minimize the impact of developmental delays and to enhance the child's potential. Various studies have shown that interventions implemented during early childhood provide greater opportunities to improve communication skills and social adaptation among children with autism (Rogers & Dawson, 2010).

However, in practice, many early intervention programs still use general approaches, making them less effective in addressing individual differences in children with autism. General intervention programs may be less effective because they do not fully consider the individual profiles, needs, and developmental characteristics of each child. In fact, children with autism demonstrate diverse developmental abilities, making it necessary for interventions to be designed in an individualized and contextual manner.

In this context, developmental assessment plays a crucial role in the process of designing intervention programs. Developmental assessment functions to systematically identify children's abilities, challenges, and developmental needs across various domains, including language and communication. The results of such assessments serve as the basis for determining intervention goals, stimulation strategies, and appropriate activities that align with the child's developmental characteristics.

Previous studies have discussed the effectiveness of early intervention in improving the communication abilities of children with autism. However, although many studies focus on early intervention outcomes, few examine how developmental assessment is used to design individualized intervention programs, especially in early childhood education in Indonesia.

Based on this gap, This study aims to examine and analyze the role of developmental assessment in designing and implementing individualized early intervention programs to improve communication and language skills in young children with autism. The novelty of this study lies in its integrative framework that connects developmental assessment, individualized intervention design, and collaborative implementation involving parents within children's natural environments.

Method

This study employed an embedded mixed methods design within a descriptive case study framework. The mixed methods approach was used to obtain a more comprehensive understanding of the role of developmental assessment in designing and implementing early intervention for young children with autism. This approach allows the integration of qualitative and quantitative data to describe the process of developmental assessment, the design of intervention programs, and the changes in children's communication language abilities after the intervention was implemented.

A case study design was selected because the research focused on an in-depth examination of a single child with autism who experienced difficulties in communication language development. Through this design, the researcher was able to gain a detailed understanding of the process of identifying the child's developmental needs, designing appropriate interventions, and implementing the intervention within the context of the child's daily life. The research design used in this study was a descriptive case study. The study focused on the process of developmental assessment, the design of early intervention, and the implementation of collaborative intervention between educators and parents within the context of the child's daily life.

The subject was a five-year-old child diagnosed with Autism Spectrum Disorder (ASD) by a licensed clinician, currently enrolled in early childhood education, and experiencing significant difficulties in expressive and receptive communication. The subject was selected purposively by considering the child's characteristics, particularly difficulties in expressing needs verbally and limitations in understanding simple instructions.

The study was conducted in the child's home to ensure the intervention was natural and meaningful. Parents acted as collaborative partners in the implementation of the intervention, with guidance from the researcher in designing and monitoring the communication stimulation activities. Research procedure: The research procedure consisted of five stages: (1) initial identification through observation and parent interviews, (2) comprehensive developmental assessment focusing on receptive and expressive language, (3) collaborative design of an individualized early intervention program, (4) implementation of intervention within daily activities with parental involvement and, (5) evaluation of changes in communication abilities.

The data in this study were collected using several techniques, including: Data were collected through observation, interviews, documentation, and validated developmental assessment instruments. Triangulation across these methods was applied to ensure data validity and reliability. Data analysis in this study was conducted using two approaches, namely qualitative and quantitative analysis. Qualitative data obtained from observations, interviews, and documentation were analyzed using the Miles and Huberman interactive model, including data reduction, data display, and conclusion drawing, to examine the processes of developmental assessment, early intervention design, and collaborative implementation between the researcher and parents.

Quantitative data were analyzed using descriptive comparative analysis to examine differences in communication indicators before and after intervention. The analysis was conducted by comparing indicators of the child's communication behaviour in the pre-intervention stage and after the intervention was implemented.

Results and Discussion

Results of the Child's Developmental Assessment

These findings show that the child's receptive and expressive language difficulties reflect a typical communication pattern in autism, especially in understanding verbal information and expressing needs functionally. In terms of receptive language, the child still had difficulty understanding verbal instructions that consisted of more than one step. The child tended to respond to simple instructions when accompanied by gestures or demonstrations from adults.

In terms of expressive language ability, the child was not yet able to consistently express needs verbally. The child more frequently used gestures, pulled an adult's hand, or pointed to objects to communicate desires. In addition, the child's vocabulary was still limited and had not been used spontaneously in various communication situations.

These developmental potentials indicate the child's readiness for structured language stimulation and serve as a foundation for designing targeted intervention strategies. The child was able to recognize familiar concrete objects, showed attention to interesting activities, and was able to follow simple daily routines. These findings suggest that the child possesses developmental potential that can be optimized through appropriate communication stimulation. The results of this developmental assessment served as the basis for designing an early intervention program focused on improving the child's functional communication language abilities.

Designing Collaborative Early Intervention Based on Developmental Assessment

Based on the results of the developmental assessment, the early intervention program was designed with the objective of improving the child's functional communication abilities in daily activities. This approach emphasizes using language in daily activities to improve communication skills. The intervention program was developed collaboratively by involving parents as the main partners in implementing communication stimulation activities. Parental involvement was considered important because the child interacts more frequently within the family environment, allowing communication stimulation opportunities to occur more consistently. Intervention activities were carried out through

simple communication tasks integrated into daily routines, such as requesting desired objects, naming objects, and responding to simple instructions during play activities and household routines.

Implementation of Collaborative Early Intervention

The implementation of the intervention was carried out gradually through the child's daily activities by involving parents as the primary facilitators of communication stimulation. The researcher provided guidance to the parents regarding communication strategies that could be used to encourage the child to express needs verbally.

During the intervention process, parents were encouraged to provide opportunities for the child to express needs using simple words or short phrases before offering direct assistance. In addition, parents modeled clear and simple language so that the child could imitate the use of words within meaningful communication contexts. This improvement occurs because the child repeatedly practices communication in meaningful situations, which supports language development.

Changes in the Child's Communication Language Ability

The results of observations on the child's communication abilities before and after the intervention indicated positive changes in several indicators of functional communication.

Table 1. Changes in the Child's Communication Language Ability

Communication Ability Indicator	Before Intervention	After Intervention
Expressing needs	Used gestures or pulled an adult's hand	Began using simple words to make requests
Response to instructions	Often did not respond to verbal instructions	Able to follow simple instructions
Vocabulary use	Vocabulary was very limited	Began using several words spontaneously
Communication interaction	Communication interaction was limited	Began showing greater engagement in communication

These changes indicate the emergence of functional language skills, reflecting the child's transition from non-verbal to verbal communication. In addition, the child also demonstrated improvements in understanding simple instructions provided by adults. These findings suggest that early intervention designed based on developmental assessment results and implemented collaboratively with parents can have a positive impact on improving the communication language abilities of young children with autism.

Discussion

The findings of this study indicate that developmental assessment plays an important role in designing early intervention programs for young children with autism, particularly in improving functional communication language abilities. The results suggest that identifying the child's developmental strengths and challenges through assessment enables the development of more targeted intervention programs that are aligned with the child's individual needs.

The developmental assessment conducted in this study revealed that the child experienced difficulties in both receptive and expressive language abilities. The child had difficulty understanding complex verbal instructions and was not yet able to consistently express needs verbally. This condition is consistent with the developmental characteristics of children with Autism Spectrum Disorder, who generally experience delays in social communication and language development from an early age (Zwaigenbaum et al., 2015).

Based on the assessment results, the early intervention program was designed by emphasizing the development of functional communication within the child's daily activities. This approach allows children to gain meaningful communication experiences in real-life contexts. The results of the study showed that after the implementation of the early intervention program, the child demonstrated improvements in expressing needs using simple verbal expressions and responding to verbal instructions given by adults.

These findings not only support previous studies but also highlight the importance of developmental assessment in designing appropriate interventions. Rogers and Dawson (2010) explain that interventions implemented at an early age can help improve communication abilities, social interaction, and children's engagement in learning activities.

Furthermore Parental involvement improves intervention effectiveness because communication can be practiced consistently in the child's daily life. In this study, parents acted as partners in implementing communication stimulation during the child's daily activities. Parental involvement allowed language stimulation to occur more consistently within the child's natural environment. This finding is consistent with the study by Dunst, Trivette, and Hamby (2010), which shows that family-centered intervention approaches can enhance the effectiveness of developmental stimulation for children.

The findings of this study also indicate that using intervention approaches based on daily activities provides opportunities for children to practice communication skills in meaningful situations. Communication activities integrated into daily routines help children understand the function of communication more concretely, thereby encouraging them to use language more spontaneously.

This study integrates developmental assessment with collaborative and contextual early intervention. Unlike several previous studies that primarily focus on intervention outcomes, this study emphasizes the importance of developmental assessment as the foundation for designing intervention programs that align with the individual needs of children.

Therefore, the findings of this study highlight that developmental assessment not only functions as a tool to identify developmental challenges in children but also serves as the basis for designing more targeted and effective early intervention programs to improve the communication language abilities of young children with autism.

Conclusion

This study demonstrates that developmental assessment plays a critical role in designing effective early intervention programs for children with autism. The findings reveal that a comprehensive understanding of the child's developmental profile including strengths, challenges, and developmental needs enables the development of more targeted and individualized intervention programs. The collaborative implementation of intervention with parents in daily activity contexts has been shown to improve the child's functional communication skills, particularly in expressing needs verbally and understanding simple instructions.

From a state of the art perspective, this study not only supports previous findings on the effectiveness of early intervention but also emphasizes the foundational role of developmental assessment in designing individualized intervention strategies. The integration of assessment, contextual intervention, and parental involvement provides a meaningful contribution to family-centered and naturalistic intervention approaches. Practically, this study suggests that educators and early childhood practitioners should utilize developmental assessment as a basis for designing adaptive and sustainable intervention programs. Theoretically, it highlights the importance of an integrative approach that connects developmental assessment with real-life intervention practices to support optimal language and communication development in young children with autism.

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