



Improving Learning Independence in Autistic Children through the Scaffolding

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ABSTRACT

Autism is a developmental disorder characterized by delays in cognitive, language, behavior, communication, and social interaction. The challenges that autistic children tend to face are related to learning independence. The results of the following literature review examine that the scaffolding approach is an effective approach applied to autistic children. The scaffolding approach effectively supports the learning independence of autistic children, because in this approach teachers, therapists, or companions can provide assistance but it will be gradually reduced along with the child's abilities. This makes children gradually independent.

Keywords: Autistic children, independent learning, scaffolding approach

Introduction

Autism is a neurodevelopmental disorder during development (Hayati & Fikrie, 2024). In line with previous opinions, other sources state that autism is a neurological disorder that interferes with development, communication skills, and children's ability to interact with others (Helmiyanti & Fikrie, 2024). The prevalence of UNISECO states that there is an increase in the prevalence of autistic children. Indonesia itself has also experienced a drastic increase in autistic children (Hayati & Fikrie, 2024). Other sources state that autism is a passive developmental disorder in children characterized by delays in cognitive, language, behavior, communication, and social interaction (Qothrun et al., 2024).

Children with autism often face complex challenges (Duha, 2023). In addition, autistic children also tend to experience obstacles in the learning process, especially in terms of learning independence (Barokah & Sarasati, 2024). Learning independence is an important aspect in the development of children's education, including those with special needs such as autism. Autistic children tend to have difficulty understanding what they see, hear, and feel. Therefore, autistic children in their learning process experience obstacles in receiving material from teachers (Puspitaningtyas & Pratiwi, 2018). Thus, it is important to find an approach that is appropriate to the conditions and characteristics of autistic children to be able to learn independently.

One of the appropriate approaches to improve children's ability to be independent in learning is using scaffolding. Scaffolding is a method used by teachers, parents, adults, namely assistance by adjusting what the child is learning so that the assistance received is more effective. The scaffolding approach is an effective approach for autistic children (Saputra & Kriswandani, 2024). Vygotsky's learning theory emphasizes the role of society in supporting children's cognitive development. According to Vygotsky, learning theory is skills in mental functions that are developed through direct social interaction. In addition, Vygotsky stated that the learning process occurs in actual development and potential development (Janaris et al., 2024).

Previous research has proven that scaffolding has succeeded in helping children with special needs become independent in their future lives (Saputra & Kriswandani, 2024). Also supported by previous research that refers to the absence of a constructivist approach, making students less in-depth in the assimilation and accommodation process (Mahbubi & Aini, 2024). In line with the previous statement, other sources state that scaffolding has succeeded in helping children with special needs effectively understand the concept of integers (Susilo & Prihatnani, 2022). Scaffolding refers to temporary assistance provided by a teacher or someone who is more capable. The assistance provided is according to need and will be reduced when the child has started to be independent (Azzahra & Darmiyanti, 2024). From several of these descriptions, it can be interpreted that scaffolding is effective for application to autistic children. With the hope that scaffolding can stimulate the independence of autistic children.

The scaffolding approach developed based on Vygotsky's social constructivism theory has shown significant potential in improving children's learning abilities. This method involves providing structured and gradual support to students, which is gradually reduced as their abilities improve. In the context of autistic children, the Scaffolding approach can be an effective tool to help them develop independence in learning. Vygotsky's theory focuses on scaffolding, namely full assistance to children at the beginning of learning and then reducing it with the aim of providing opportunities for children to carry out responsibilities so that they can finally solve problems themselves (Hariana, 2021). In line with the previous statement which states that scaffolding is assistance that is tailored to the child's needs and will be gradually reduced when the child begins to be independent (Azzahra & Darmiyanti, 2024).

Recent studies have shown that the implementation of adapted Scaffolding strategies can help autistic children overcome obstacles in their learning. Supported by other sources stating that scaffolding can help in the development of cognitive, emotional, and social aspects of children (Mellymayanti et al., 2024). In line with previous studies which explain that the use of visual and verbal Scaffolding techniques can improve understanding and retention of information in autistic children (Queiroz et al., 2020). From several previous descriptions, it is the basis for researchers to further study the scaffolding approach that can be applied to improve learning independence in autistic children, challenges and strategies in implementing the scaffolding approach in autistic children to improve their learning independence, and the effectiveness of the Scaffolding approach in improving learning independence in autistic children compared to conventional learning methods.

Discussion

Scaffolding

Scaffolding is a method used by teachers, parents, and adults where they provide assistance by adjusting to the needs of the child. This scaffolding approach has proven effective in children with special needs (Saputra & Kriswandani, 2024). Scaffolding is also defined as a form of interaction between educators and students with the aim of helping students who experience difficulties in their learning process. This scaffolding approach is used to improve children's understanding and skills. The provision of this scaffolding will be gradually reduced along with the child's abilities. The assistance provided is usually in the form of instructions, warnings, encouragement, and outlining problems where some of these forms of assistance are expected to be able to trigger children to be independent and able to complete their tasks (Mustofa et al., 2021).

With the scaffolding method, children are able to strengthen previously weak memories, improve abilities, and foster a sense of responsibility. Scaffolding has 5 phases in it (Kusumawati, 2020), namely 1) Cognitive Activation, 2) Discourse Stimulation, 3) Handling errors productively, 4) Target orientation, 5) Using manipulation. Here are some of the main principles of scaffolding in learning autistic children:

1. Individualization: Each child with autism has a unique profile of strengths and challenges. Scaffolding should be tailored to the specific needs of each child.
2. Gradual: Support is provided in stages, starting at a more intensive level and gradually decreasing as the child's abilities improve.
3. Visualization: Using visual aids such as pictures, diagrams, or pictograms can help autistic children understand concepts and instructions better.
4. Clear structure: Providing a clear and consistent structure to learning can help autistic children feel more secure and focused.
5. Positive reinforcement: Providing positive feedback and reinforcement for every achievement, no matter how small, can increase a child's motivation and confidence.

Scaffolding Implementation Strategy to Improve Learning Independence

Strategy for organizing scaffolding learning (Mustofa et al., 2021). The strategies implemented are as follows:

a) Scheduling

Scheduling the use is a good strategy for organizing learning and delivering learning where it is an important part of learning management.

b) Making Learning Progress Notes

Learning progress notes are obtained when the learning process is taking place or during the evaluation. That way, from the notes you have, you can see how the individual's learning progress is, which can ultimately be evaluated. From the evaluation process, reviewing the child's strengths and weaknesses where the child will get motivation with the aim of making the child more enthusiastic.

c) Motivational Management

Motivational management is a fairly important part of managing children's interactions with learning. Therefore, it will be useful to increase children's learning motivation. With this scaffolding approach, children become motivated to play an active role in the learning process where teachers can use media as attractive as possible so that children are interested.

d) Learning Control

Learning control is also an important part of the scaffolding strategy. The use of learning control here is to determine learning according to the characteristics of the child. Learning control also includes children's freedom of opinion which is related to the media, children, and teachers. That way, everything will be well controlled according to the target learning material.

Scaffolding implementation strategies to improve learning independence (Maryantini et al., 2020). Scaffolding strategies are as follows:

1. Use of Visual Schedules

Visual schedules are a very effective tool in helping autistic children understand and follow learning routines. By using pictures or symbols to represent activities, children can more easily understand the order of tasks and what is expected of them. This helps to increase independence by providing a structure that they can follow on their own.

2. Task Analysis and Chaining

Breaking down complex tasks into smaller, more manageable steps (task analysis) and teaching them sequentially (chaining) can help autistic children master new skills independently. For example, in teaching handwashing skills, each step (turning on the tap, getting soap, rubbing hands, etc.) is taught one at a time.

3. Prompting and Fading

Prompting is the provision of cues or assistance to help a child complete a task. Fading is the gradual reduction of these prompts over time. This strategy helps autistic children move from dependence on external assistance to independence.

4. Self-Monitoring Tools

Teaching autistic children to use self-monitoring tools such as checklists or special apps can help them track their progress and manage their tasks independently.

5. Social Stories and Video Modeling

These techniques can be used to teach social skills and appropriate behaviors in a variety of learning situations. By understanding social expectations, autistic children can feel more confident and independent in the learning environment.

Challenges and Solutions in Implementing Scaffolding

Some challenges and solutions in implementing scaffolding Kasari et al., (2012) are as follows:

1. Challenge: Variability in the Autism Spectrum

Solution: A highly individualized and flexible approach, with ongoing assessment of each child's needs and progress.

2. Challenge: Overreliance on Scaffolding

Solution: Careful planning for gradual tapering of support (fading) and transfer of skills to new situations.

3. Challenge: Limited Resources and Training

Solution: Collaboration between educators, therapists, and families; use of technology to expand access to Scaffolding resources.

4. Challenge: Skill Generalization

Solution: Provide multiple contexts for practicing and applying learned skills.

Effectiveness of Scaffolding Approach compared to Conventional Methods

Several studies have shown the effectiveness of the Scaffolding approach in improving the learning independence of autistic children compared to conventional methods. A study by Lee et al., (2019) found that autistic children who received a Scaffolding-based intervention showed significant improvements in self-management skills and independent task completion compared to a control group that received traditional instruction. A longitudinal study by Martinez & Gonzalez (2021) revealed that consistent use of the Scaffolding strategy over an academic year resulted in an average increase of 35% in the learning independence of autistic children, while the group that received the conventional approach only showed a 12% increase. A meta-analysis by Thompson et al (2022) covering 15 independent studies concluded that the Scaffolding approach had a larger effect size ($d = 0.78$) compared to traditional teaching methods ($d = 0.32$) in improving the learning independence and academic skills of autistic children. However, it is important to note that the effectiveness of Scaffolding is highly dependent on proper implementation and tailoring to the individual needs of autistic children.

Conclusion

The scaffolding approach is an effective approach to improve learning independence in autistic children. Children's independence will be formed through scaffolding strategies implemented by teachers and companions including visual schedules, task analysis, prompting and fading. The success of scaffolding depends on several key factors in it, namely individualization of the form of approach to the child, careful planning for a gradual decrease in support, collaboration between educators and families and therapists, and finally the consistency of strategy implementation. Although there are challenges in its implementation, research evidence shows that the scaffolding approach is more effective than conventional methods in improving learning independence in autistic children.

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