

## Guidelines for Teachers of Early Childhood Education: Learning Interaction Support Methods to Enhance Resilience in Children with Autism Spectrum

Lailatuz Zakiyah, Hamid Patilima

Master's Program in Early Childhood Education, Panca Sakti University Bekasi, Indonesia

### ABSTRACT

This research aims to develop a guide module based on the learning interaction support method to enhance the resilience of children with autism spectrum. The research method employed is research and development (R&D) using a qualitative and quantitative (mixed methods) approach following the ADDIE development model. This research is conducted at TK AL-IMAN located at Jl. Airlangga 52 A Jelak Ombo, Jombang, East Java. The process of developing the guide module based on the learning interaction support method involves several stages, starting from needs analysis, design, prototype creation, to limited trials. Data is collected through observations and interviews conducted with teachers, parents, and children at TK AL-IMAN. The research results indicate 1) The needs analysis shows that the majority of children with ASD in TK AL-IMAN have low to moderate levels of resilience, with difficulties in emotional regulation, adapting to changes, and building social interactions. Teachers require more systematic guidance in implementing the Learning Interaction Support method. 2) The developed module demonstrates a very good level of feasibility based on expert validation, 3) There is a significant increase in the resilience levels of children with ASD after using the module. The aspects of ease of use, suitability for children's needs, implementation time, and the appeal of the module received positive evaluations from the teachers. These findings contribute significantly to the development of inclusive learning methods, particularly in the context of enhancing the resilience of children with ASD. The developed module not only meets practical needs in the field but also provides a strong theoretical foundation for the development of similar interventions in the future.

**Keywords:** *Guideline Book, Learning Interaction Support Method, Resilience, Children with Autism Spectrum*

**Corresponding author**

**Name:** *as Lailatuz*

**Email:** *lailatuzzakiyah105@gmail.com*

### INTRODUCTION

Children with Autism Spectrum face unique challenges in the development process and social interactions that require special attention and innovative approaches in education. Inclusive education for children with ASD must be able to accommodate their individual needs while fostering resilience skills that will serve as an important foundation in facing various life challenges. The importance of teacher guidance in enhancing a child's

ability to confront, adapt, and rise from challenges or stress in everyday life is recognized as resilience. Children with Autism Spectrum often experience difficulties in social interaction, communication, and emotional regulation, which can affect their levels of resilience. Therefore, teachers in early childhood education must have learning strategies that support inclusive interaction and learning.

The teacher plays an important role in the inclusive education process. Because inclusive education cannot succeed without the assistance and collaboration of all other school resources (Tarnoto, 2016; Rusmono, 2020). It is essential for educators to enhance their awareness, knowledge, and ability to manage classrooms with students of diverse backgrounds and abilities. To understand inclusive education, teachers must receive relevant training to acquire the knowledge, skills, and competencies necessary to teach students from various backgrounds (Elisa et al., 2022).

Children with Autism Spectrum Disorder (ASD) possess unique characteristics that include challenges in social communication, repetitive behaviors, and difficulties in adapting to environmental changes (Mulrine & Kollia, 2020). According to data from the World Health Organization (WHO), the global prevalence of ASD continues to rise, with an estimate that 1 in 100 children worldwide exhibits symptoms of ASD (Dow et al., 2020). This phenomenon underscores the urgency to provide effective interventions to support the development of children with Autism Spectrum, particularly at an early age, when interventions have the greatest impact on their development (Yang et al., 2023).

Resilience, as the ability to bounce back and adapt when facing challenges, becomes one of the important aspects in the development of children with Autism Spectrum. These children often face various emotional and social challenges that can affect their resilience development (Malindi & Hay, 2023). Although resilience has been identified as a key factor in supporting the long-term success of children with Autism Spectrum, research on specific strategies to enhance resilience in this population is still limited.

According to the author's observations at Al-Iman Kindergarten, it is an inclusive educational institution that identifies children with special needs, including autism, facing several challenges. The number of educators and educational personnel involved in the Play Group and Kindergarten unit totals 53, consisting of 40 teachers, 6 special assistant teachers, and 7 administrative staff. To observe the learning process, the author conducted further observations at Al-Iman Kindergarten to understand the importance of building resilience for children with special needs. TK Al-Iman organizes inclusive educational programs supported by student-centered learning interactions. This approach enables teachers to provide more individualized, emotion-based guidance and ensures that every student with special needs has an environment that supports their growth, both academically and psychosocially.

TK Al-Iman utilizes the Learning Interaction Support (LIS) method to promote positive social interaction, emotional empowerment, and enhancement of adaptive skills in children with Autism Spectrum. TK Al-Iman conducts regular diagnostic assessments every 1-2 months to monitor the development of children with special needs and children with learning difficulties in collaboration with psychologists. The method that supports the

interaction of children with special needs for the inclusive education environment at Al-Iman Kindergarten, which implements inclusive education. The learning approach for Autism Spectrum students in a class of 18 students, including 3 students with special needs, does not have a special assistant teacher, but rather a special assistant teacher acts as a behavioral therapy teacher for Autism Spectrum children. At Al-Iman Kindergarten, students with Autism Spectrum can participate in lessons in regular classes, where they will learn alongside other regular students. If Autism Spectrum students are unable to participate in lessons in regular classes, they will be withdrawn from class and study in an inclusive learning room where behavioral therapy is provided according to the child's needs. An individualized learning program (ILP) derived from a modified curriculum is used to teach students with special needs.

Empirically, this research provides significant contributions in offering practical guidelines that can be applied by educators and parents in AL-IMAN kindergarten as well as similar educational institutions. By developing a guide module based on the LIS method, this study not only bridges the gap between theory and practice but also introduces an innovative approach that focuses on the holistic needs of children. The practical implications of this research include enhancing educators' competencies in supporting children with ASD, increasing parental involvement, and strengthening the inclusive education ecosystem.

The position of this research in the map of knowledge is as a developmental study that integrates theory-based approaches with practical needs in the field. The proposed module is not only designed based on the principles of LIS but is also tailored to the cultural and social context of Indonesia, which has unique characteristics in supporting inclusive education. Through a research and development approach, this study aims to produce a module that is valid, practical, and effective in enhancing the resilience of children with ASD.

## **METHOD**

This research utilizes a development approach (research and development) with the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). The ADDIE model was chosen due to its systematic stages which are suitable for developing learning media, such as a parenting pocketbook, designed to enhance the expressive language skills of children aged 5-6 years. Each stage in this model is designed to ensure that the resulting product is relevant, effective, and meets the needs of the users (Tegeh & Kirna, 2013).

This research was conducted at TK Al-Iman Jombang. The characteristics of the subjects in this study are children with special needs with psychological disabilities, early childhood with intellectual disabilities, children with special needs facing different learning problems, such as communication issues, motor limitations, or sensory processing disorders. Early childhood with social interaction, communication, and behavioral (ASD) barriers, alongside peers without disabilities, involved five experts, consisting of one psychologist, two inclusive education specialists, and two early childhood education experts. This module assists teachers in understanding the needs of students and provides

appropriate support with an organized approach to help children develop cognitive, social, and emotional skills. For the small-scale trial, the researcher involved 12 special needs children from group B.

This research instrument is structured in the form of observations. The measuring tool in this research adopts the Child and Youth Resilience Measure (CYRM), which is a tool that reveals the social-ecological resilience of individuals. The CYRM-R score on this measure reflects their ability to engage with external resources to manage difficulties (Ungar & Liebenberg, 2011). In the process of developing the Learning Interaction Support Method Guide Module for the interaction capabilities of children with special needs, there are several forms of validation from the validator team (subject matter experts) regarding the results of the module creation. At this stage, the validation will be based on the assessments of five validators who hold Doctoral degrees in the fields of early childhood learning module experts, child psychology/assessment experts, and subject matter experts. This is because the validator team is used as a reference source in the research.

In the research on the development of a guide module for the Learning Interaction Support method to enhance the resilience of early childhood children with Autism Spectrum Disorder at TK Al-Iman, data analysis was conducted comprehensively using a mixed-method approach that combines qualitative and quantitative analyses.

Qualitative data analysis is carried out through a systematic process that begins with the collection of data from observations, in-depth interviews with teachers and parents, as well as documentation during the development and implementation of the module. This data then undergoes a data reduction stage, where the information collected is sorted and categorized according to the research focus on the development of resilience in children with ASD. This reduction process results in more organized and meaningful data for further analysis.

Meanwhile, the quantitative data analysis was conducted on the results of the pre-test and post-test that measured the resilience level of children using validated instruments. This quantitative data was analyzed using descriptive statistics to calculate the mean, median, and standard deviation, which provide an overview of the distribution of children's resilience scores before and after the implementation of the module.

**Table 1. The Results Of Paired Sample T-Test.**

Total Score Range	Resilience Category	Interpretation
76 – 84	Very High	The child demonstrates excellent resilience in various aspects. The child is able to regulate emotions, build social relationships, and optimally receive support from family, school, and the environment.
61 – 75	High	The child has a fairly good resilience but still requires support in certain specific aspects, such as emotional regulation or social interaction.
46 – 60	Moderate	The child has sufficient resilience but shows difficulties in several important aspects, such as perseverance in

21 – 45

Low

completing tasks or asking for help when needed. Further intervention is required to strengthen resilience.

The child experiences difficulties in various aspects of resilience, such as emotional regulation, social interaction, and receiving support from the environment. The child requires specific learning strategies and interventions to enhance their resilience.

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## FINDING AND DISCUSSION

This research begins with a needs analysis conducted through pre-observations and pre-interviews with teachers and parents at AL-IMAN Kindergarten. The purpose of this analysis is to understand the initial resilience level of children with Autism Spectrum Disorder (ASD), the challenges they face, and their specific needs in learning. In addition, the researcher also analyzes the implemented curriculum, the available facilities, and the competencies of teachers in handling ASD children. Based on the results of this needs analysis, it can be concluded that the development of the Learning Interaction Support Method-Based Guidance Module is essential to assist teachers in building the psychosocial resilience of children with ASD, as well as to provide guidelines for parents in supporting the development of resilience in children at home. This module is expected to be an appropriate solution to enhance the children's ability to manage emotions, establish social interactions, and face challenges more effectively.

After conducting a needs analysis, the next stage in the development of the Learning Interaction Support Method-Based Guide Module is the design stage. At this stage, the researchers begin to design the framework of the module that will be used as a guide to enhance the resilience of children with Autism Spectrum Disorder (ASD). The material in this module is structured according to the characteristics of children with ASD and the needs identified during the analysis phase. The preparation of this material considers the following aspects:

**Table 2. The Preparation of the Material Framework**

Aspect	Description
The concept of resilience in children with ASD.	Understanding resilience and how to build it in children with ASD.
Metode Learning Interaction Support (LIS)	The fundamental principles of LIS and their application in the education of children with ASD.
Emotion Regulation Strategy	The technique helps children with ASD manage emotions and stress.
Social Interaction and Adaptation	How to build positive interactions and adapt to the environment.
Family and School Support	Guidelines for teachers and parents in supporting the development of resilience in children with ASD.

The design stage in the development of the Learning Interaction Support Guide Module aims to create a systematic framework for the module based on the real needs of children with Autism Spectrum Disorder (ASD). With the determination of clear objectives, the arrangement of appropriate materials, the selection of effective learning strategies, as well as the design of activities and evaluation instruments, it is expected that this module can serve as a valuable tool in enhancing the resilience of children with ASD. Furthermore, the designed module will be further developed in the development stage to test its practicality before being implemented in school learning.

In the Development stage of the ADDIE development model, the researcher develops a detailed and comprehensive guide module based on the Learning Interaction Support (LIS) method. This module is designed to enhance the resilience of children with Autism Spectrum Disorder (ASD) at AL-IMAN Kindergarten. This development includes the writing of module content, the creation of necessary learning media, as well as the preparation of practical guides for teachers and parents to effectively use the module. Each part of the module, from interactive activities to instructions for educators, is organized with consideration of the specific characteristics of children with ASD, thereby supporting them in managing emotions, improving social skills, and strengthening resilience in facing challenges.

The validation by experts is crucial to ensure that the developed module is not only based on strong theory but also pragmatic and tested for its applicability in the field. The results of this validation will be used for the refinement and revision of the module, so that the resulting module is truly effective in enhancing the resilience of children with ASD and can be successfully implemented by educators and parents at AL-IMAN Kindergarten.

**Table 3. Recapitulation Of Expert Validation Results**

No	Assessment Component	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Total Score	Average Score	Interpretation
1	Content Relevance	91	91	94	89	88	453	90.6	Very Good
2	Accuracy of Content	73	66	68	66	66	339	67.8	Good
3	Content Completeness	64	66	70	63	65	328	65.6	Good
4	Visual Appearance & Design	83	87	88	79	78	415	83	Very Good
5	Usability	90	89	90	88	86	443	88.6	Very Good
6	Language Appropriateness	105	104	104	103	99	515	103	Very Good
<b>Total Score</b>		<b>193</b>	<b>197</b>	<b>198</b>	<b>198</b>	<b>192</b>	<b>978</b>	<b>195.6</b>	<b>Very Good</b>
<b>Score (%)</b>		<b>80%</b>	<b>82%</b>	<b>83%</b>	<b>83%</b>	<b>80%</b>	<b>81.50%</b>	–	–

he expert validation of the developed module demonstrates a high level of feasibility and appropriateness across multiple dimensions. The total score achieved is 978 out of a maximum possible 1024, resulting in an overall average percentage of 95.5%, which is categorized as *Very Good*.

**Content Appropriateness** received one of the highest average percentages (93.3%), indicating that the module content aligns very well with the learning objectives, is relevant to the needs of early childhood children with ASD, and supports resilience development effectively through the LIS method.

**Accuracy of Content** was rated as *Good* (81.25%). This reflects that while the module generally presents up-to-date and valid information supported by research, there is room for improvement in fully integrating best practices and ensuring consistent source citation.

**Material Completeness** scored lower (76%), also in the *Good* category. While most essential topics are covered, some elements like implementation guidance and chapter structure need enhancement to reach optimal comprehensiveness.

**Display and Design**, with a score of 81.9%, shows that visual aspects, font readability, and layout are generally user-friendly and appealing, although a few areas such as visual clutter and illustration integration could be further refined.

**Usability Feasibility** attained a strong 83.75%, categorized as *Very Good*. This indicates that the module is practical and adaptable in diverse teaching contexts. The instructional design facilitates ease of use and motivates educators to apply it with flexibility.

**Language Appropriateness** received a high rating of 92.6%. The language used is clear, educationally appropriate, grammatically correct, and effectively communicates the intended messages without ambiguity.

In conclusion, the module is considered to be of very high quality based on expert validation. Some refinements, particularly in content depth, visual consistency, and structural completeness, are recommended to further enhance its effectiveness. The results strongly support the module's implementation in early childhood educational settings.

In the Implementation stage of the ADDIE model, this research will be conducted gradually, starting with a limited trial involving 12 children with special needs and their parents at AL-IMAN Kindergarten. This trial aims to test the effectiveness of the guidance module based on the Learning Interaction Support Method in enhancing the resilience of children with ASD in the context of inclusive education.

**Table 4. Recapitulation of Pretest and Posttest Results of Resilience in Children with ASD**

Respondent	Pretest Score	Pretest Category	Posttest Score	Posttest Category	Score Increase
Children_01	40	Low	80	Very High	40
Children_02	41	Low	67	High	26
Children_03	44	Low	76	Very High	32

Children_04	46	Medium	84	Very High	38
Children_05	42	Low	62	Very High	20
Children_06	52	Medium	72	High	20
Children_07	42	Low	75	High	33
Children_08	21	Low	63	High	42
Children_09	40	Low	84	Very High	44
Children_10	41	Low	72	High	31
Children_11	38	Low	71	High	33
Children_12	36	Low	63	High	27
<b>Average</b>	<b>40.92</b>	—	<b>72.08</b>	—	<b>31.17</b>

The data show a significant improvement in the resilience levels of children with Autism Spectrum Disorder (ASD) at TK Al-Iman after the implementation of the *Teacher's Guide in the Application of the Learning Interaction Support Method*.

During the pretest, the average resilience score of the 12 respondents was 40.92, with most children categorized as having low resilience. Only two children (ABK-04 and ABK-06) fell into the medium category, while the rest were in the low category, indicating a generally limited ability to adapt and manage stress or challenges in their environment.

After the implementation of the Learning Interaction Support method, the posttest results revealed a remarkable increase, with the average score rising to 72.08. The majority of the children transitioned into high and very high resilience categories. Notably, five children (ABK-01, ABK-03, ABK-04, ABK-05, and ABK-09) achieved very high resilience, demonstrating exceptional progress in their ability to cope with social and emotional challenges.

The average score improvement was +31.17 points, reflecting the effectiveness of the intervention. The highest increase was recorded by ABK-09 (+44), followed closely by ABK-08 (+42), who initially had the lowest pretest score. This indicates that even children with the lowest initial resilience can significantly benefit from structured and supportive educational strategies tailored to their needs.

In conclusion, the *Teacher's Guide for Implementing the Learning Interaction Support Method* has proven to be a highly impactful tool in enhancing the resilience of children with ASD, supporting both their emotional development and their ability to navigate everyday interactions within the school environment.

The development of the Teacher's Guide in the application of the Learning Interaction Support method to enhance the resilience of children with Autism Spectrum has shown positive results in its implementation at AL-IMAN Kindergarten. This discussion will analyze the research results from various aspects in accordance with the established problem formulation.

Regarding the needs analysis, the research findings indicate a pressing need for the development of specialized modules to enhance the resilience of ASD children. This aligns with the findings of Kuhlthau et al. (2023) in their study in the *Journal of Academic Pediatric*, which identifies that children with ASD have lower levels of resilience compared to typically developing children, particularly in aspects of emotional regulation and social interaction (Kuhlthau et al., 2023). The needs analysis conducted at AL-IMAN Kindergarten reveals a similar situation, where the majority of ASD children demonstrate difficulties in managing emotions and establishing positive social interactions.

A significant increase in resilience scores before and after the use of the module indicates the effectiveness of the interventions conducted. These results align with the longitudinal study by Ghanouni and Jarus (2021) in the *American Psychological Association*, which reported a 45% increase in resilience among children with ASD after participating in a social interaction-based intervention program for 6 months (Ghanouni & Jarus, 2021).

However, this module also has several limitations that need to be considered. First, as noted by Gibson et al. (2021), social interaction-based interventions require a considerable adaptation period to demonstrate optimal results (Gibson et al., 2021). The limitations of the research timeline may affect the maximum level of success that can be achieved. Second, the variety of activities in the module still needs to be enriched to accommodate a broader spectrum of ASD, as suggested in feedback from experts.

The impact of the product on improving the quality of learning is evident from several aspects. First, this module provides a clear structure for teachers in implementing the Learning Interaction Support method, as articulated by Ardianingsih et al. (2023) regarding the importance of structured guidance in ASD interventions. Second, the enhancement of children's resilience contributes to the improvement of their adaptability in learning (Ardianingsih et al., 2023), in line with the findings of Kaboski et al. (2017) about the positive correlation between resilience and the learning abilities of children with ASD (Kaboski et al., 2017).

## **CONCLUSION**

The needs analysis shows that the majority of children with ASD at TK AL-IMAN have low to moderate levels of resilience, with difficulties in emotional regulation, adapting to changes, and establishing social interactions. Teachers require more systematic guidance in implementing the Learning Interaction Support method, while parents find it challenging to support their children's emotional and social development at home. The existing curriculum does not yet have specific modules to enhance the resilience of children with ASD.

The developed module demonstrates a very good level of feasibility based on expert validation with an average score of 81.5 out of a maximum score of 100. The experts assessed that the module has good content relevance, an appealing design, appropriate language usage, and sufficient usability for field implementation. There was a significant improvement in the resilience level of children with ASD after using the module. The pre-test results indicated that 83.3% of the children were in the low category and 16.7% in the

medium category. After the module implementation, the post-test results showed an increase of 31.17%.

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