

The Effectiveness of Special Needs Children Identification Training for Early Childhood Education Teachers in Pasuruan Regency in Supporting Inclusive Learning

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ABSTRACT

Objective: This study aimed to determine the effectiveness of special needs children recognition training for early childhood education teachers who are members of the Cluster Activity Center organization in Pasuruan Regency. **Method:** This study employed an action research approach consisting of planning, implementation, observation, and reflection stages. The research subjects consisted of 75 early childhood education teachers from the Cluster Activity Center organization in Pasuruan Regency. Data were collected through questionnaires, observations, and interviews and were then analyzed using quantitative and qualitative descriptive methods. **Results:** The training results showed consistent improvement in both the conceptual understanding and practical abilities of early childhood education teachers in identifying children with special needs and designing inclusive learning strategies. In addition, the satisfaction survey results showed highly positive responses, with 37 participants reporting being very satisfied, 30 satisfied, and 8 moderately satisfied, while no respondents reported being dissatisfied. **Novelty:** Therefore, action research-based special needs children recognition training was effective in improving the competence of early childhood education teachers in identifying and assisting children with special needs more appropriately and systematically.

INTRODUCTION

Education is a fundamental factor in developing the quality of human resources, including children with special needs, to support their independence and social participation in community life [1]. The Convention on the Rights of the Child (CRC) and the Convention on the Rights of Persons with Disabilities (CRPD) affirm that children with disabilities have the same rights as other children, including rights related to health, nutrition, education, protection, and social services [2], [3]. The implementation of inclusive education in Indonesia began to be developed in 1990 as a form of the government's commitment to providing equal and equitable educational services for children with special needs. In efforts to realize inclusive education, teachers are required to possess the ability to understand and identify the diverse characteristics of students, particularly children with special needs [4], [5]. Difficulties in identifying children with special needs prevent teachers from providing optimal learning services [6]. Therefore, an adequate understanding of the characteristics and needs of children with special needs is an essential competency that teachers must possess to realize effective and high-quality inclusive learning [7].

Based on observations conducted at three Early Childhood Education institutions that are part of the Cluster Activity Center organization in Pasuruan Regency, it was found that some early childhood education teachers did not yet properly understand the characteristics of children with special needs. Interviews with the head of the Pasuruan Regency Early Childhood Education Cluster Activity Center, the head of the Purwosari District Early Childhood Education Cluster Activity Center, and members of the Pasuruan Early Childhood Education Cluster Activity Center indicated that several teachers did not understand the appropriate steps for identifying and providing optimal services to meet the needs of children with special needs in various early childhood education institutions in Pasuruan. Questionnaire results from 23 members of the Pasuruan Early Childhood Education Cluster Activity Center showed that 13 early childhood education institutions in Pasuruan Regency expected training on the recognition of children with special needs to support the implementation of inclusive education in early childhood education institutions. These findings are reinforced by Azizah et al. (2019), who stated that the implementation of inclusive education still faces numerous challenges, including limited teaching personnel, inadequate learning facilities, insufficient operational funding, limited teacher competence, and weaknesses in learning evaluation. In addition, teachers experience difficulties in determining efficient and effective learning strategies [8], resulting in less-than-optimal learning services in inclusive schools [9], [10]. Therefore, improving teachers' competence in understanding, identifying, and providing services for children with special needs is necessary to support the effectiveness of inclusive education.

Inclusive education is an educational system that provides opportunities for all students, including children with special needs, to learn together with typically developing students in the same educational environment without discrimination [11], [12]. Inclusive education is expected to provide learning services that correspond to the needs of each student [7]. Children with special needs are students whose characteristics differ from those of children in general, whether physically, mentally, or in terms of social behavior, because of limitations in thinking ability, hearing, vision, socialization, or mobility [13], [14]. Based on this definition, children categorized as having special needs include those with dyslexia or learning difficulties, Attention Deficit Hyperactivity Disorder or difficulty maintaining focus, autism or neurological disorders, speech delay, Down syndrome or physical and intellectual developmental delays, intellectual disabilities or below-average intellectual functioning, and hearing impairments [15]. Therefore, teachers' competence in understanding the characteristics and needs of children with special needs is an important factor in realizing inclusive educational services that correspond to the needs of each student.

Teachers' ability to recognize children with special needs is influenced by internal and external factors. Internal factors include teachers' knowledge, attitudes, motivation, and beliefs [16], which can support their understanding of the characteristics and needs of students in inclusive education [17]. In addition, teaching experience can strengthen

teachers' ability to conduct early identification of students who require special services [16]. Meanwhile, external factors include training, school support, collaboration with professionals, and the availability of adequate learning resources [10]. Therefore, based on these two factors, efforts are needed to strengthen competence through training on the recognition of children with special needs for teachers within the Pasuruan Cluster Activity Center organization so that they can establish effective and supportive inclusive education within the school environment.

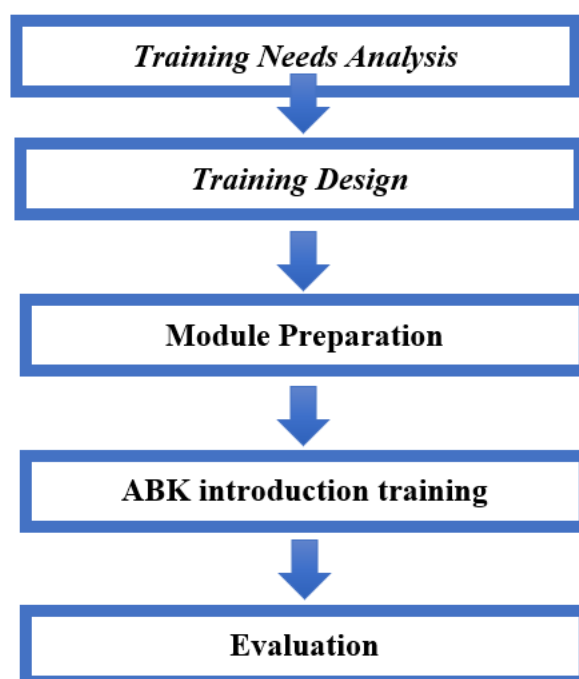
Training on the recognition of children with special needs for teachers of the Pasuruan Early Childhood Education Cluster Activity Center is an activity that helps teachers recognize children with special needs and develop their competence in identifying them. In addition, teachers acquire an understanding of the early signs of developmental barriers, learning needs, and assistance strategies for children with special needs [18], which supports their readiness to implement inclusive learning in the school environment [6]. Therefore, training on the recognition of children with special needs for teachers within the Pasuruan Cluster Activity Center is important for improving teachers' understanding and ability to conduct early identification, select appropriate learning strategies, and provide services that correspond to the needs of inclusive education implementation [19], [20].

Training on the recognition of children with special needs for teachers of the Pasuruan Early Childhood Education Cluster Activity Center is based on the Index for Inclusion concept, which explains that the development of inclusive education is carried out through the interconnectedness of inclusive cultures, policies, and practices that mutually support increased participation among all students by eliminating barriers to learning. Inclusive practices require teachers to understand and respond appropriately to students' needs [21]. This is reinforced by the findings of González-Afonso et al., who emphasized that the Index for Inclusion framework focuses on three main dimensions, namely presence, participation, and learning, which are used to identify and reduce barriers within the school context [22]. In addition, Sulistiyaningsih and Handayani stated that the implementation of inclusive education in Indonesia promotes equal access and nondiscriminatory educational services, as reflected in the Index for Inclusion concept [23]. Based on this concept, training on the recognition of children with special needs is important for early childhood education teachers to improve their understanding, sensitivity, and ability to identify and respond appropriately to students' needs. This training is expected to strengthen the implementation of inclusive education in educational institutions by reducing barriers to learning and increasing the participation, attendance, and learning achievement of all children.

RESEARCH METHOD

Conceptually, the introduction of Children with Special Needs (ABK) training activities for PAUD teachers of the Pasuruan Regency Cluster Activity Center (PKG) was

prepared by adapting the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model [24] through five stages, namely:



First, on April 17, 2026, it will be carried out Training Needs Analysis (TNA) in PAUD PKG teachers of Pasuruan Regency which is an important step in conducting data mining through observations, interviews, and questionnaires with the aim of identify competency gaps between actual conditions and expected conditions, and Determine training priorities that suit the needs of participants [25]. In this TNA process, it involves:

1. Ameeting with the chairman of PKG PAUD Pasuruan Regency, the chairman of PKG PAUD Purwosari District, and PAUD teachers who are members of PKG PAUD Pasuruan.
2. Conducting observations at 2 institutions, namely Miftahul Khoir II Martopuro Kindergarten and PKK 03 Sukodermo Kindergarten.
3. Distribute questionnaires to PAUD teachers who are members of the Pasuruan Regency Cluster Activity Center (PKG) organization.

Second, on April 24, 2026, a training design will be prepared based on the results of the Training Needs Analysis (TNA). This training design functions as a training design that contains the competencies that PAUD PKG teachers need to have in understanding the characteristics and identifying children with special needs (ABK). The development of competencies is focused on three main aspects, namely knowledge, skills, and attitudes, which are important components in supporting the implementation of inclusive education [26]. Thus, it is hoped that PAUD PKG teachers in Pasuruan Regency will have adequate competence in understanding the characteristics and identifying ABK appropriately as the basis for the implementation of inclusive education.

Third, on May 20, 2026, the preparation of a training module for the introduction of Children with Special Needs (ABK) will be prepared. The modules are prepared as a learning guide in training that includes various materials, skills, and competencies [27]. The material in the training module is arranged in stages, starting from the introduction of basic concepts, characteristics, and influencing factors related to Children with Special Needs (ABK), to inclusive learning strategies that can be applied according to the needs of students. Thus, this module is expected to be a reference for PAUD PKG Pasuruan teachers in holding training related to understanding, identifying, and providing appropriate services for Children with Special Needs (ABK) to support the implementation of inclusive education in the school environment.

Fourth, the introduction training for children with special needs (ABK) will be held on June 9, 2026 at the Regional Technical Implementation Unit (UPTD) Office of Purwosari District, Pasuruan Regency, involving 75 participants of Pasuruan Regency PKG PAUD teachers. This training consists of 5 (five) main sessions, namely:

1. First session: Ice Breaking, Pretest, introduction materials for Children with Special Needs (ABK), questions and answers, Posttest, and assessment trainer. Usage Pre-test and Post-test Aim to measure knowledge change after training [28].
2. Second session: energizers, instructions, case studies on the identification of the types and characteristics of ABK, discussion, feedback, and assessment of trainers. The use of case studies in training aims to train understanding, in-depth problem analysis, and critical thinking, as well as raise situations that have the potential to occur in real conditions [29].
3. Third session: energizer, instructions, puzzle map on inclusive concepts, discussion, questions and answers, feedback, and trainer assessments. The learning method using puzzles has effectiveness in supporting students' understanding of learning [30]
4. Fourth session: Energizer, instructions, Mapping inclusive learning strategies, discussions, questions and answers, Feedback, and assessment trainer. The application of Concept Mapping in the Problem Based Learning model helps students connect concepts based on real experiences and develop critical thinking skills through relevant problem-solving [31]
5. Fifth session: energizer, smart and meticulous to measure participants' skills in understanding and applying training materials, questions and answers, feedback, questions and answers, and trainer assessments. The smart and meticulous method provides benefits in improving learners' skills and supporting their active engagement through the use of diverse and engaging learning media [32].

Fifth, the training evaluation will be carried out on June 10, 2026 to find out the extent to which the training objectives have been achieved, assess the effectiveness of the implementation of the activity, and obtain an overview of increasing participants' knowledge and understanding related to the introduction of Children with Special Needs (ABK). This process is carried out by looking at the results of the evaluation of each session at the training on the introduction of Children with Special Needs (ABK) to

PAUD PKG teachers in Pasuruan Regency through the results of the pretest and posttest, observation results, quiz results, and the results of assessments on the implementation of the activity as a whole. The findings obtained are used to determine the program's contribution to strengthening participants' competencies as well as being the basis for improving similar activities in the future. In addition, the results obtained provide an overview of the success of the program in achieving the goals that have been set [33].

RESULT AND DISCUSSIONS

Results

1. First Session

Table 1. Results of the Paired Samples t-Test for Pre-Test and Post-Test Scores

Paired Samples T-Test

			statistic	df	p	Mean difference	SE difference	Effect Size	95% Confidence Interval	
									Lower	Upper
Pre-Test	Post-Test	Student's t	-5.34	74.0	<.001	-12.3	2.30	Cohen's d -0.616	-0.862	-0.367

Note. $H_0: \mu_{\text{Measure 1}} - \mu_{\text{Measure 2}} = 0$

Table 2. Descriptive Statistics for the Pre-Test and Post-Test Scores

Descriptions	N	Red	Median	SD	OR
Pre-Test	75	80.0	80	15.2	1.76
Post-Test	75	92.3	100	10.9	1.25

Based on the results of the analysis above, it shows that the average *pre-test* score of 80.0 (SD = 15.2) increased to 92.3 (SD = 10.9) in the *post-test* out of a total of 75 subjects, with an average difference of 12.3 points after the presentation of the material. The decrease in the standard deviation value in the *post-test* indicates that the score between subjects becomes more uniform than the *pre-test*. The results of the *Paired Samples T-Test* showed a value of $t (df = 74) = -5.34$ with $p < 0.001$, which means that there was a statistically significant difference between the *pre-test* and *post-test* scores. Thus, the provision of material in the training for the introduction of Children with Special Needs (ABK) to PAUD PKG teachers in Pasuruan Regency has proven to be effective in increasing the understanding of participants.

2. Second Session

Table 3. Descriptive Statistics for the Percentage Scores

Descriptions	Percentage
N	15
Missing	0

Red	0.911
Median	1.00
Standard deviation	0.198
Minimum	0.333
Maximum	1.00

Based on the results of the analysis of session 2 of the training regarding the case study of the identification of Children with Special Needs (ABK), there were 15 (N) groups that participated in session 2 of the training with an average value (*Mean*) of 0.911 or 91.1% (SD = 0.198 or 19.8%). A median and maximum value of 1.00 (100%) indicates that at least half of the group was able to complete the case study perfectly. Meanwhile, a minimum score of 0.333 (33.3%) showed that there was one group with the lowest achievement rate compared to the other group. Overall, most of the groups were able to complete the case study with a very high and relatively consistent success rate, as shown by an average completion percentage of 91.1%, although there was still one group with lower achievements.

3. Third Session

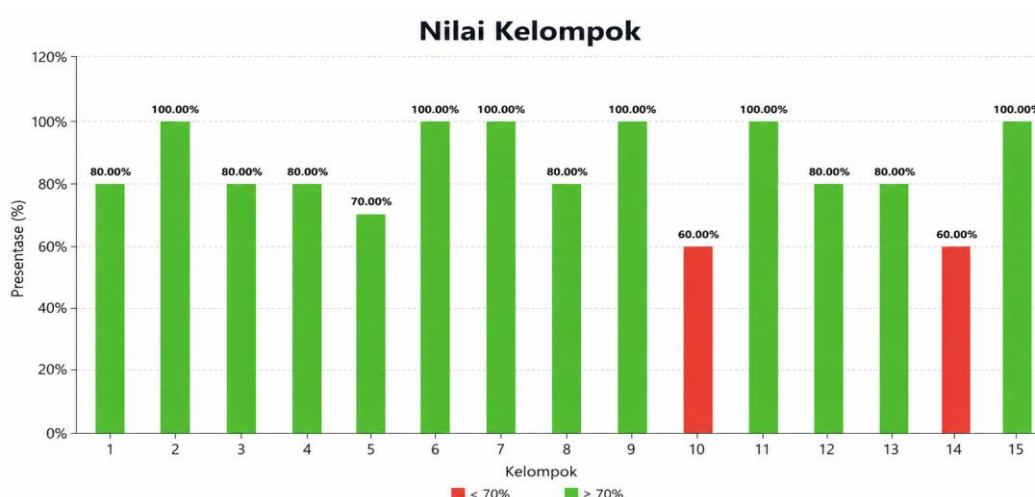


Figure 1. Percentage Scores of Student Groups

The results of the *puzzle map assessment* analysis in session 3 showed an average score of 84.67% from 15 groups. A total of 5 groups obtained a score of 100%, 6 groups 80%, 1 group of 70%, and 2 groups of 60%. These findings show that most of the participants have understood training materials related to inclusive education, inclusive classroom management, learning strategies for children with *Attention Deficit Hyperactivity Disorder* (ADHD), *speech delay*, and *autism*, as well as media use and the creation of an inclusive learning environment. However, there are still groups with lower attainments (60–70%) that indicate the need to strengthen understanding, especially in the implementation of learning strategies and the implementation of inclusive classes.

4. Fourth Session

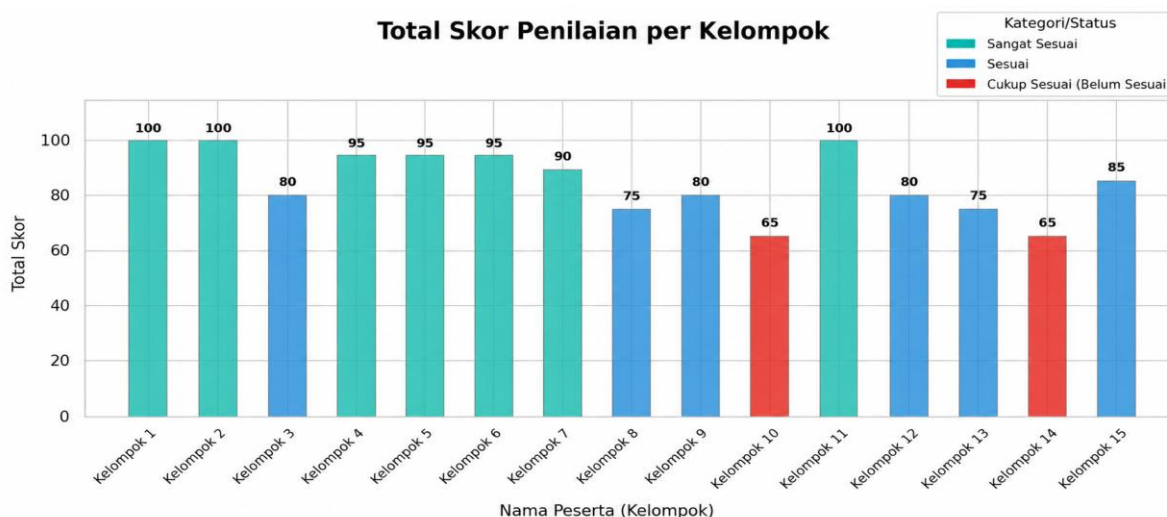


Figure 2. Total Assessment Scores and Categories for Each Student Group

Table 4. Descriptive Statistics of Assessment Scores Across Evaluation Criteria

	Identification of crew (0-25)	Inclusive Concepts (0-25)	Learning Strategies (0-25)	Environment & Media (0-25)	Total	Categories
N	15	15	15	15	15	15
Missing	0	0	0	0	0	0
Red	25.0	18.3	20.7	21.3	85.3	
Median	25	20	25	20	85	
Standard deviation	0.00	5.88	5.30	3.52	12.2	
Minimum	25	10	10	15	65	
Maximum	25	25	25	25	100	

Table 5. Frequency Distribution of Assessment Categories

Categories	Counts	% of Total	Cumulative %
Quite Appropriate	2	13.3%	13.3%
Highly Appropriate	7	46.7%	60.0%
Conform	6	40.0%	100.0%

The results of the analysis of 15 respondents in the *mapping* session showed that inclusive learning competencies were generally in the good category, with an average total score of 85.3 (SD = 12.2; range = 65–100). The Identification dimension obtained the

highest achievement ($M = 25.0$; $SD = 0.00$), which shows the respondent's excellent and consistent ability in identifying the characteristics of students with special needs. Environmental and Media Dimension ($M = 21.3$; Elementary = 3.52) and Learning strategies ($M = 20.7$; $SD = 5.30$) also showed good achievements, although there was still a variation in ability to design inclusive learning strategies. In contrast, the Inclusive Concept dimension had the lowest average ($M = 18.3$; $SD = 5.88$), so that it is the aspect that needs the most reinforcement. Overall, 86.7% of respondents were in the appropriate to very appropriate category, so it can be concluded that most of the participants have good competence in implementing inclusive learning, with the understanding of inclusive concepts as an aspect that still needs to be improved.

5. Fifth session



Figure 3. Group-Based Assessment Activity Conducted During Session 5

In session 5, the activity was carried out in groups with a total of 20 questions regarding the concept of inclusive learning, identification of the characteristics of Children with Special Needs (ABK), learning strategies, the use of learning media, and creating an inclusive learning environment. The value of the questions is divided into two categories, namely the first 15 questions worth 2 points and the last 5 questions worth 5 points, so this assessment structure encourages participants to stay focused and enthusiastic until the end of the game. Based on the results of the points, Group 6 appeared as the best group with the highest score of 23 points, followed by Group 1 with 10 points, Group 5 with 8 points, Group 3 with 6 points, and Group 7 with 4 points. Overall, the achievement of scores between groups indicated that participants had a good understanding of inclusive learning materials, although the differences in scores showed that there were still variations in the ability to apply concepts to learning situations.

6. Overall assessment of the training

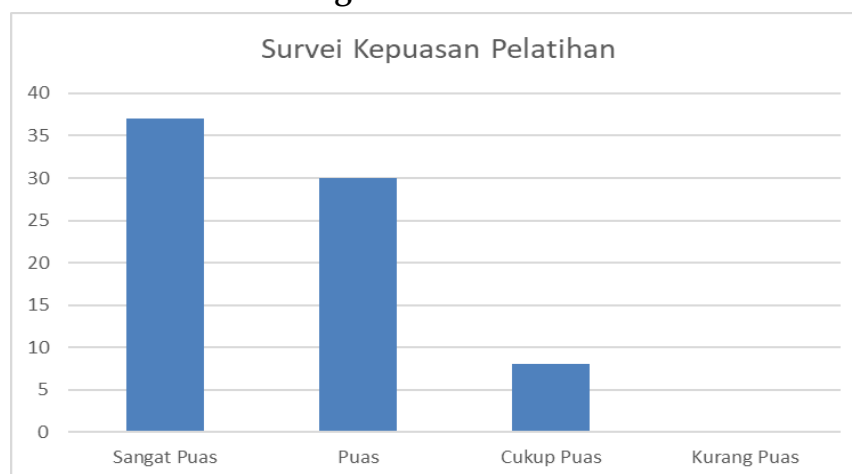


Figure 4. Participants' Satisfaction Levels with the Training Program

The results of the satisfaction survey showed that the training for the introduction of Children with Special Needs (ABK) received a very positive response. Most of the participants stated that they were very satisfied ($n = 37$) and satisfied ($n = 30$), while only 8 participants stated that they were quite satisfied, with no respondents choosing the dissatisfied category. These results show that the training has met the expectations of participants and was very well received overall.

Discussion

Overall, the series of training courses on the introduction of Children with Special Needs (ABK) from session 1 to session 5 showed consistent achievements, both in terms of conceptual understanding and the applicative ability of PAUD teachers in identifying and designing inclusive learning. This achievement is important considering that the pedagogic competence of inclusive PAUD teachers so far still needs continuous strengthening so that it does not only stop at theoretical understanding, but also manifests in daily learning practices [34]. Without this kind of training intervention, teachers' lack of understanding of the characteristics of ABK has the potential to hinder an effective learning process in the classroom [35]. The success of this training needs to be followed up with sustainable teacher capacity building, the provision of adaptive learning facilities and environments, as well as policy support and targeted program planning from PAUD institutions, so that the improvement of competencies that have been achieved can be maintained and applied consistently in inclusive learning practices [36]. Thus, increasing the training of educators on inclusive pedagogy and understanding of the diverse needs of children is one of the policies that needs to be prioritized [37].

Based on the results of the training in sessions 1 to 5, it shows an increase in the understanding and ability of PAUD PKG Pasuruan teachers in recognizing the definition, types, characteristics, and identifying Children with Special Needs (ABK). These findings are in line with research by Satwika et al. and Rafikayati et al., which showed that training on ABK identification significantly improves teachers' competence in recognizing

various types of ABK and carrying out the identification and assessment process [38], [39]. These competencies are the basis for teachers to determine learning services and strategies that are in accordance with the needs of each student in implementing inclusive education, because the identification process has the goal of classifying the needs of students in order to obtain appropriate educational services [40].

The results of the training in sessions 3 and 4 showed an increase in the competence of PAUD PKG Pasuruan teachers in understanding and implementing inclusive learning. This increase can be seen from the strengthening of the understanding of the concept of inclusive education through contextual experiences, which supports the connection between theory and practice as found by Kimhi & Nir [41]. In addition, participants also showed better ability to identify the characteristics of ABK and associate it with the management of the learning environment, the selection of media, and appropriate learning strategies, in line with Study et al. which emphasized that concept mapping helps with more structured organization and understanding [42], [43]. However, the application of this understanding in learning practice is still not optimal, so continuous strengthening is needed, especially in increasing teachers' readiness and willingness to implement changes in the classroom as emphasized by Donath et al. [44].

The results of the training in session 5 showed that participants were able to comprehensively understand the training material regarding the concept of inclusive education, identification of the characteristics of ABK, learning strategies, the use of learning media, and creating an inclusive learning environment. This increase in understanding is in line with the findings of Mahabbati et al. and Faizin et al., which emphasized that strengthening knowledge about ABK contributes to the readiness of PAUD teachers in implementing inclusive learning services and strategies and managing classrooms with diverse student characteristics appropriately [45], [46]. Thus, systematic and practice-oriented training contributes to improving the readiness, self-efficacy, and skills of teachers in implementing inclusive education [47].

The success of the implementation of inclusive education in Early Childhood Education (PAUD) institutions is highly dependent on teachers' skills in identifying and responding to the needs of children with special needs [48]. These skills cannot grow on their own, but require structured and continuous training in the introduction of Children with Special Needs (ABK), especially since the early childhood phase is a golden period (Golden Age) where early detection and intervention can minimize barriers to children's development in the future [49]. Without a fundamental understanding of the characteristics of ABK, the implementation of inclusion at the PAUD level tends to be only administrative without touching the essence of accommodative learning [50]. This condition emphasizes that the policy of continuously improving teachers' pedagogical competence is urgent to be implemented in order to create an equal and non-discriminatory learning environment [51]. Therefore, the integration of ABK introduction training into the PAUD teacher professional development program is an absolute prerequisite in creating a school ecosystem that is responsive to the diversity of students.

CONCLUSION

Fundamental Finding: Based on the elaboration of the results of the research related to the effectiveness of the introduction training for Children with Special Needs (ABK) that has been carried out on 75 Early Childhood Education (PAUD) teachers who are part of the Pasuruan Regency Task Force Activity Center (PKG) organization, it can be concluded that the ABK introduction training is proven to provide an increase in the knowledge and ability of participants to understand the concept of inclusive education, recognize the characteristics of ABK, identify ABK, and determine learning strategies and create adaptive learning environments and media in the implementation of inclusive education. The high level of participant satisfaction also shows that the training can be very well received and in accordance with the needs of teachers. **Implication:** Thus, this training is worthy of being used as an alternative to the competency development of PAUD teachers in supporting the effective implementation of inclusive education. ABK introduction training needs to be carried out on an ongoing basis to strengthen teachers' competence in identifying ABK and implementing inclusive learning. **Limitation:** However, the aspect of understanding the concept of inclusive education and the implementation of learning strategies still needs further strengthening. **Future Research:** Further research is recommended to evaluate the long-term impact of training in classroom learning practices. In addition, further research can expand the scope of the subject and the location of the research to test the generalization of the effectiveness of the training model.

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