

## Development of *The For See Four Si* Method To Improve Pedagogical Competence of Early Childhood Teachers in The Mapanget District Manado City

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### ABSTRACT

This study aims to develop the For See Four Si method to improve the pedagogical competence of Early Childhood Education (PAUD) teachers in the PKG, Mapanget District, Manado City. This study uses the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development model. The research location was conducted at the PKG, Mapanget District, Manado City, involving PAUD teachers as samples in the study. Data were obtained through interviews, observations, expert validation tests, feasibility and effectiveness tests in the field. The results of the analysis showed that many teachers experienced obstacles in integrating ICT in learning, which impacted the effectiveness of teaching. After the implementation of the For See Four Si Method, a significant increase was found in the pedagogical competence of teachers, especially in the aspects of curriculum preparation, ICT use, and learning evaluation. The results of the study showed that the pedagogical competence of PAUD teachers in general had an average score of 60.23. This indicates that PAUD teachers have a basic understanding of pedagogical competence, but there is still room for improvement, especially in the aspects of mastery of learning theory, curriculum development, and ICT use. And the results of the summary of the assessment or validation carried out by experts produced an overall average score of 88% with the category Very Suitable for use in improving the pedagogical abilities of PAUD Teachers.

**Keywords:** *The For See Four Si Method: Pedagogical Competence Of Early Childhood Education Teachers*

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### INTRODUCTION

The era of Society 5.0 emphasizes the integration of advanced technologies such as artificial intelligence, the Internet of Things, and big data to create more human-centered and inclusive solutions. Modern technology provides a wide range of tools and methods that enrich children's learning experiences, enabling more dynamic and personalized interactions. Educational applications, digital devices, and online platforms facilitate more interactive and engaging learning environments for early childhood learners. By effectively utilizing ICT, the learning process can become more adaptive to individual children's needs, increase children's engagement, and support the development of essential foundational skills and knowledge in early childhood.

Early childhood education is an effort to develop children's basic behavior and skills optimally. As stated in Chapter 1, Article 1, No. 14 of the National Education System Law No. 20 of 2003, early childhood education aims to support the physical and spiritual

growth and development of children so that they are ready to continue to higher levels of education.

In line with this, Sujiono (2012) defines the goal of early childhood education as the development of various children's potentials from an early age as preparation for life and adaptation to their environment. Furthermore, Trianto (2011) explains that the purpose of early childhood education is to develop children's diverse potentials from an early age so they are ready to face life and adapt to their surroundings (Shofia & Dadan, 2021).

Teachers play a crucial role in children's growth and development. Their role includes fostering moral values and personality traits that children can imitate, helping them become individuals with good character. However, teachers must also equip themselves with the necessary knowledge and skills to create appropriate learning experiences that stimulate children effectively. Referring to the Republic of Indonesia Law No. 14 of 2005, Article 1 Paragraph 1, teachers are defined as professional educators whose main duties include educating, teaching, guiding, directing, training, assessing, and evaluating learners in formal education pathways across primary and secondary education levels, including early childhood education. This policy direction relates to the development of ECE concepts, the professional preparation of ECE teachers, optimal child development based on their potential, and the provision of adequate facilities and infrastructure.

According to the Regulation of the Minister of National Education of the Republic of Indonesia No. 16 of 2007 on Academic Qualification Standards and Teacher Competencies, teachers must possess pedagogical, personal, professional, and social competencies, which are obtained through professional education. These four competencies are integrated into teacher performance (Roehyadi, 2014). Law No. 14 of 2005 on Teachers and Lecturers states that pedagogical competence is "the ability to manage learning for students." Essentially, competence refers to an individual's ability to perform a task. The Ministry of National Education (2004:9) defines "learning management competence" as the learning process, including the ability to plan teaching programs, conduct learning interactions, manage learning, and evaluate learning outcomes (Rohman, 2020).

1. According to Slamet PH (2006), pedagogical competence consists of:  
sub-competencies that contribute to the development of the curriculum related to the subject taught
2. developing subject curricula based on competency standards and basic competencies;
3. planning learning implementation plans (RPP) based on the developed curriculum
4. classroom management and learning design;
5. implementing learning that encourages change (active, creative, innovative, experimental, effective, and engaging);
6. authentic assessment of student learning outcomes;
7. providing instruction in various aspects such as academic, personality, talents, interests, and career guidance;
8. improving professionalism as a teacher (Sagala, 2009).

Challenges in integrating ICT remain an issue for ECE teachers today, where teachers must be capable of utilizing information and communication technology to conduct educational development activities and play an essential role in children's

developmental stages. ECE teachers must be able to stimulate children's learning development to enhance their developmental achievements according to their stages and improve their digital skills. In terms of pedagogical competence, ECE teachers must understand their learners, design learning according to their needs, implement learning following planned designs, and evaluate learning outcomes to prepare meaningful subsequent learning that meets children's needs.

Teachers' pedagogical competence—particularly in using ICT—significantly influences the quality of the teaching and learning process. Although many ECE teachers have been introduced to and have used technology, there remains a substantial need to strengthen their competence in optimizing digital tools and media to improve children's learning outcomes. However, identifying the level of need for ICT competency development among ECE teachers is necessary as an initial step. One method that can be used to identify ICT competency development needs is the For See Four Si method.

The For See Four Si method is a structured approach used to identify problems or challenges, find solutions, and apply those solutions as responses to the issues faced. The method involves two key roles: the coach and the coachee. The phrase "For See Four Si" is taken from English, and if translated into Indonesian, it means "Untuk Melihat Empat Si." The Four Si refers to four systematic steps, each ending with the suffix "-si." These four steps are used to identify and formulate solutions to existing problems. The four Si are:

1. Komunika-si (Communication)
2. Disku-si (Discussion)
3. Solu-si (Solution)
4. Aplika-si (Application)

In the Communication stage, activities include expressing and clarifying emerging problems. The Discussion stage involves listening to the coachee's or teacher's explanations about the causes of the problems. In the Solution stage, the coach and coachee collaboratively formulate potential solutions to address the challenges. The final stage is Application, where the agreed-upon solutions are implemented together. After completing all four stages, reflection and follow-up planning are conducted.

Based on the problem description above, the researcher was motivated to conduct this study as part of the effort to support early childhood education development. Therefore, this research is titled: "Development of the For See Four Si Method to Improve the Pedagogical Competence of Early Childhood Teachers in the PKG PAUD of Mapanget District, Manado City."

## **RESEARCH METHODS**

The research method employed in this study is a research and development (R&D) design using the ADDIE model development cycle. According to Mills & Gay in Nelson Ang (2018), development research is a process of examining learning needs to develop appropriate products that meet those needs. Development research is an educational development model that produces new product designs and procedures based on research findings, which undergo systematic field testing, evaluation, and revision until they meet feasible, effective, and high-quality criteria (Sugiyono, 2019).

In the field of education, R&D is conducted to develop effective products that can be utilized in schools. The purpose of development research is to investigate learning needs

by developing products through feasibility and effectiveness testing. Development research is a method used to produce specific products through feasibility and effectiveness evaluation (Sugiyono, 2019).

The data analysis technique used in this study applies a mixed-method research approach with a convergent parallel design that integrates both qualitative and quantitative analyses. Mixed-method research aims to refine pre-existing products so they become more relevant and suitable for solving problems within a research site or educational institution, resulting in innovative development products (Sugiyono, 2019).

The qualitative approach was conducted through interviews and field notes to fulfill data needs during the needs analysis stage. Interviews and field observations were carried out comprehensively and authentically. After completing the feasibility test involving expert judgment, interview analysis, field notes, and product development trials, a quantitative approach was conducted to test the product's effectiveness using a pre-experimental one-group pretest–posttest design. This method was used to accurately confirm the effectiveness of the Bakastif play tool in large-group settings.

The ADDIE model in development research serves as a procedural framework for instructional design within an instructional systems category (Sugiyono, 2019). The model is visually constructed to demonstrate the processes undertaken to stakeholders, illustrating the procedures employed during research so instructional guidance can be easily understood by product users. The implementation process consists of five stages:

1. Analyze
2. Design
3. Develop
4. Implement
5. Evaluate

## **A. Population and Sampling Techniques**

### **1. Research Population**

A research population is the generalization area consisting of objects or subjects that possess specific characteristics and qualities determined by the researcher to be studied (Sugiyono, 2014). The population of this study consists of PAUD teachers (Gugus PAUD) in the Early Childhood Education Working Group (PKG PAUD) of Mapanget District, Manado City, comprising 30 PAUD service institutions.

### **2. Sample**

A sample is a portion of the population that reflects certain characteristics and quantities with the aim of drawing representative conclusions (Sugiyono, 2014). The sample of this research includes all PAUD clusters (Gugus PAUD) in Mapanget District, Manado City, consisting of 30 PAUD service institutions.

## **B. Development Procedure**

The research design refers to the objectives of research and development, namely identifying needs, developing, and validating products. Therefore, this study adopts the ADDIE research and development model developed by Robert Maribe Branch. The ADDIE stages and their implementation in this study are illustrated in the following diagram:

**Tabel Prosedur ADDIE**

	<i>Analyze</i>	<i>Design</i>	<i>Develop</i>	<i>Implement</i>	<i>Evaluate</i>
<b>Concept</b>	Identify the probable causes for a performance gap	Verify the desired performances and appropriate testing methods	Generate and validate the learning resources	Prepare the learning environment and engage the students	Assess the quality of the instructional products and processes, both before and after implementation
<b>Common Procedures</b>	<ol style="list-style-type: none"> <li>1. Validate the performance gap</li> <li>2. Determine instructional goals</li> <li>3. Confirm the intended audience</li> <li>4. Identify required resources</li> <li>5. Determine potential delivery systems (including cost estimate)</li> <li>6. Compose a project management plan</li> </ol>	<ol style="list-style-type: none"> <li>7. Conduct a task inventory</li> <li>8. Compose performance objectives</li> <li>9. Generate testing strategies</li> <li>10. Calculate return on investment</li> </ol>	<ol style="list-style-type: none"> <li>11. Generate content</li> <li>12. Select or develop supporting media</li> <li>13. Develop guidance for the student</li> <li>14. Develop guidance for the teacher</li> <li>15. Conduct formative revisions</li> <li>16. Conduct a Pilot Test</li> </ol>	<ol style="list-style-type: none"> <li>17. Prepare the teacher</li> <li>18. Prepare the student</li> </ol>	<ol style="list-style-type: none"> <li>19. Determine evaluation criteria</li> <li>20. Select evaluation tools</li> <li>21. Conduct evaluations</li> </ol>
	<i>Analysis Summary</i>	<i>Design Brief</i>	<i>Learning Resources</i>	<i>Implementation Strategy</i>	<i>Evaluation Plan</i>

**C. Research Instruments**

This study utilized several instruments to collect the necessary data for developing the pedagogical competencies of early childhood education (ECE) teachers. The statements in the questionnaire reflect the pedagogical competencies of PAUD teachers, aligned with the Minister of National Education Regulation (Permendiknas) No. 16 of 2007 on Teacher Competency Standards, particularly pedagogical competencies, which include:

1. Mastering the characteristics of learners from physical, moral, social, cultural, emotional, and intellectual aspects
2. Mastering learning theories and principles of educational instruction
3. Developing curricula related to the field of development being taught
4. Implementing educational developmental activities
5. Utilizing information and communication technology for educational development activities
6. Facilitating the development of learners’ potential to actualize their abilities
7. Communicating effectively, empathetically, and politely with learners
8. Conducting assessment and evaluation of the learning process and outcomes
9. Utilizing assessment and evaluation results for learning improvement
10. Carrying out reflective actions to enhance the quality of learning.

**D. Data Analysis Techniques**

The product feasibility analysis was conducted during the development phase and the implementation phase prior to the large-group trial. Instruments for PAUD expert validation and IT expert validation were used as the basis for determining feasibility from a theoretical standpoint. The researcher analyzed the final draft based on the total score obtained from expert evaluations through media observation using the feasibility assessment instrument.

A product is considered feasible for small-scale trials when the quantitative feasibility score reaches the minimum required standard. Scores were first converted into percentages using the formula from Riduwan (2013), as follows:

$$NP = \frac{nx 100}{N}$$

Description:

NP = percentage score

n = total score obtained

N = total possible score

The resulting percentage was then classified to draw conclusions using the criteria below:

**Table: Feasibility Percentage Classification**

Percentage	Criteria	Classification
0–20%	Very poor	Very unfeasible
20.1–40%	Poor	Unfeasible
40.1–60%	Fair	Less feasible
60.1–80%	Good	Feasible
80.1–100%	Very good	Highly feasible

Source: Fundamentals of Statistics, 2013

#### E. Effectiveness Test Data Analysis

The data analysis techniques used in this research and development study consist of qualitative and quantitative analysis. At this stage, the results of observations, interviews, and field notes are presented using qualitative descriptive methods, which are then interpreted to clarify the existing problems. This process strengthens the background and rationale of the research.

During the product development phase, data in the form of improvement suggestions from observers were reduced, presented, and analyzed to draw conclusions that served as the basis for revisions. Subsequently, the research data were analyzed using quantitative descriptive statistics with a pre-experimental one-group pretest–posttest design.

The statistical analysis was conducted using the formula for the difference between two means for dependent samples, based on Kadir (2019), as follows:

$$t\sigma = \frac{[Y1 - Y2]}{\sqrt{S_{y1}^2 + S_{y2}^2 - 2r_{y1y2}S_{y1}S_{y2}}}$$

The results of  $t_o$  (t-observed) or  $t_{hitung}$  will be compared with the t-table value as part of a one-tailed t-test, which will determine whether there is a significant improvement between the conditions before and after the use of the method.

## RESULTS AND DISCUSSION

### A. Results of Needs Analysis

#### 1. Method Feasibility

The feasibility test of the *For See Four Si* Method was conducted through expert evaluation as part of the formative evaluation process, which included theoretical assessments and empirical evaluations through interview data and field notes.

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60.1–80%	Good	Feasible
80.1–100%	Very good	Highly feasible

#### 2. Theoretical Test

The following table presents the summary of expert validation results:

**Table. Expert Evaluation Results**

Expert	Score
Curriculum and Early Childhood Education Expert	88%
Pedagogical Expert	88%
Average Score	88%

Based on the expert assessment results, the overall average score was 88%, falling into the Highly Feasible category for use in improving the pedagogical competencies of early childhood education teachers.

#### 3. Empirical Test

The *For See Four Si* Method was empirically tested on eight PAUD teachers from two schools, serving as the empirical trial process to confirm the feasibility of the developed method. Research findings derived from field notes were then processed and verified.

## DISCUSSION

Based on the needs analysis conducted through interviews and questionnaires, it was found that the pedagogical competence of PAUD teachers in the Mapanget Subdistrict PAUD Cluster still requires improvement, particularly in the use of information and communication technology (ICT) in planning and implementing learning. For instance, the majority of teachers experienced difficulties in designing ICT-based learning, which is one of the essential components in pedagogical competency development, as mandated by

Government Regulation No. 16 of 2007 on Teacher Qualification and Competency Standards.

The questionnaire distributed to teachers showed that the average pedagogical competency score was **60.23**. This indicates that while PAUD teachers possess a basic understanding of pedagogical competencies, there remains significant room for improvement, especially in mastering learning theories, curriculum development, and ICT utilization.

Based on expert evaluations, the *For See Four Si* Method was deemed highly feasible for use, following several minor revisions. The evaluation process involved reviewing the initial draft and refining it based on input from early childhood curriculum experts and information technology specialists. This validation ensures that the developed model aligns with the needs of PAUD teachers and is relevant for improving their pedagogical competencies.

The feasibility test conducted by experts resulted in an average score of **88%**, placing the *For See Four Si* Method in the **Highly Feasible** category for implementation. This demonstrates that the developed method possesses high quality and is well-accepted by experts in curriculum and technology.

Furthermore, the empirical test conducted through field trials with PAUD teachers from two PAUD institutions also yielded positive results. Data collected through interviews and field notes revealed that this method effectively helped PAUD teachers address challenges in teaching and developing their pedagogical competencies. Teachers' pedagogical competency scores improved after implementing the method, especially in curriculum development and the use of ICT.

## CONCLUSION

Based on the research findings, it can be concluded that the *For See Four Si* Method is proven to be effective and feasible for improving the pedagogical competencies of PAUD teachers. This method, consisting of four main stages—**Komunika-si (Communication)**, **Disku-si (Discussion)**, **Solu-si (Solution)**, and **Aplika-si (Application)**—provides a systematic and structured approach to identifying, analyzing, and addressing problems faced by teachers in the teaching process.

Through the **Komunika-si** stage, the problems encountered by teachers are clearly and thoroughly identified, allowing the root causes to be determined. The **Disku-si** stage facilitates open dialogue between coach and coachee, enabling deeper understanding of the issues and collaborative solution-seeking. The **Solu-si** stage allows appropriate solutions to be formulated and practically implemented. Finally, the **Aplika-si** stage provides space for evaluation and reflection to ensure that the implemented solutions effectively enhance the pedagogical competencies of PAUD teachers.

Overall, this study demonstrates that the *For See Four Si* Method successfully enhances PAUD teachers' pedagogical skills, particularly in classroom management, communication with children, and the use of developmentally appropriate learning strategies.

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