

## Enhancing the Pedagogical Competence of ECE Teachers through the Creation of Comprehensive Game Tools

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**Abstract:** The ability of Early Childhood Education (ECE) teachers to create instructional materials constitutes one of their pedagogical competencies. This competence entails overseeing the development process, which consists of planning, executing, and evaluating the development process and its outcomes. This article aims to describe the procedure involved in the conception and development of comprehensive game tools (CGT) to enhance the pedagogical competence of ECE teachers. This community service instructs and equips teachers in developing CGTs, conducted in a blended method within six weeks. Specifics of offline materials consist of the following: 1) activity schedule, 2) understanding of the nature of CGTs, 3) product development, 4) revision of results, and 5) product evaluation. Online resources provide instruction on 1) developing and creating designs and 2) constructing comprehensive game tools. Thirty teachers from PAUD Katuk and Asyifa Islamic Kindergarten - South Jakarta were participants. The final product is comprised of 5 CGTs, and the teachers' ability to design and develop CGT is enhanced. Suggestion: CGT development should be conducted under intensive supervision.

**Keywords:** comprehensive game tools; development; enhancement; kindergarten teachers; pedagogical competence

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### INTRODUCTION

Formal and informal ECE teachers are expected to possess four fundamental competencies: professional and pedagogical. The ECE teachers' understanding of these competencies may impact their ability to facilitate learning (Sum & Taran, 2020). An expectation of pedagogical competence

should be that teachers direct their learning. This process entails the following abilities: planning, executing, and evaluating. Planning skills consist of designing instructional materials, methods, and evaluation instruments to implement learning. This competence may strengthen or weaken over time according to teachers' circumstances,

aspirations, and preparedness to enhance their competencies (Rumpoko & Diana, 2022; Tatminingsih et al., 2022).

The primary concern of these ECE teachers pertains to their ability to conceptualize and develop educational resources, with a particular emphasis on game-based learning tools. Teachers frequently fail to priorities enhancing their planning abilities despite the abundance of learning materials, lesson plans, and other resources presently accessible across multiple platforms in both physical and digital formats. This availability satisfies teachers who do not strive to enhance their instructional planning abilities. Numerous endeavors are undertaken to enhance teachers' competencies through intensive training and mentoring programs (Haryandi et al., 2023; Manurung et al., 2023; Tari et al., 2023).

PAUD Katuk and Asyifa Islamic Kindergarten in the South Jakarta region do not utilize document tools for learning (e.g., lesson plans, assessment instruments, and child development reports) or administration (e.g., finance, correspondence, and other documentation), according to a needs analysis conducted in October-November 2021. Teachers also utilise prefabricated learning materials

(purchased from toy stores) without understanding how to employ them to effectively promote children's development. Teachers have also constructed playground equipment without regard for instructional purposes. As a result, both ECEs require support in the following areas: 1) effectively overseeing the administrative and learning documents of the ECE organization and 2) conceptualizing and producing instructional resources, including games and aides that adhere to the appropriate developmental phases.

This article describes CGT development activities that utilise community service to enhance teachers' pedagogical competence.

### METHOD

The execution of this community service utilized the Asset Based Community Development (ABCD) approach, with a particular focus on human resources, namely the partner members' abilities, zeal, perseverance, and vitality (Selasi et al., 2021; Ahmad, 2007). The procedure was executed using a hybrid approach that combines offline and online components. The depicted activity's implementation can be observed in Figure 1.

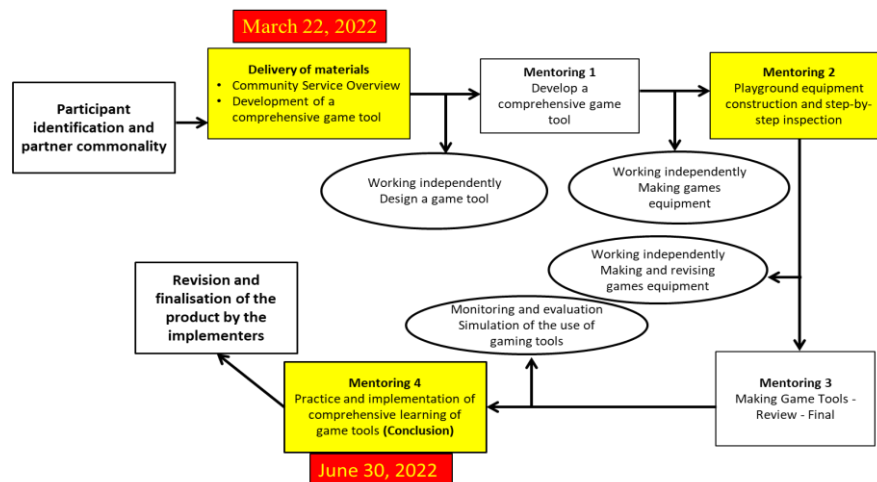


Figure 1 Lecturer community service framework Two ECE institutions, specifically PAUD Katuk and Asyifa Islamic

Kindergarten, are partners in this Community service. Pondok Pinang Village is situated in Kebayoran Lama, South Jakarta. The head of PAUD Katuk is Mrs. Eliyus Liantina and the head of Asyifa Islamic Kindergarten is Mrs. Husmalayanti, S.Pd.. The teaching staff comprises 22 individuals, with five teachers of PAUD Katuk and 17 of Asyifa Islamic Kindergarten. To evaluate the ability of teachers to develop and construct CGTs, participants in this community service procedure were administered pre-tests and post-tests. The test comprises 35 items, each representing a different area of knowledge: children's development (10 indicators), the concept of game (13 indicators), and the development of game tools incorporating learning design (12 indicators). The pre-test and post-test instruments were administered as questionnaires comprising the following details: a rating of strongly disagree (score of 1), disagree (score of 2), agree (score of 3), and strongly agree (score of 4) on a scale of 1 to 4. A minimum score of 35 was achieved, while the maximum score attained was 140.

The individuals responsible for carrying out this community service were Lecturers of Early Childhood Education Teacher Program at Universitas Terbuka, holding a master's degree or higher in the field of ECE.

The activities of this community service are detailed as follows.

1) Perception of equality in the presence of partners. This preliminary activity aims to organize and reach a consensus on an offline timetable, identify and divide working groups, and communicate the objectives and products to the participants. During this activity, the participants were administered questionnaires and pre-tests that assessed their knowledge and pedagogical abilities.

2) Material delivery (the offline activity, date of this event was March 22, 2022.) The material learning are a) An overview of this community service:

describes the rationale and foundation for implementing community service, outlines the process by which facilitators (lecturers) direct participants (teachers), and outlines the phases involved in developing CGT products for Early childhood learning. b) Essential principles, phases, tactics of CGT development, and the prescribed formats the teacher must fulfil.

3) The initial mentoring is conducted independently by each facilitator. Some groups had an online schedule, while others had an offline one. This task is completed after the participants in each group have autonomously composed their CGT after the second meeting. After the group had completed a manuscript, the facilitator conducted a comprehensive review and provided detailed feedback.

4) The second mentoring was conducted online. Each facilitator evaluates the group's initial CGT draft. The facilitator reviewed the following: the form of the APK, the rules or procedures of gameplay, the materials to be utilized in the development of the APK, and any supplementary CGT components, including Children's Worksheets if required.

5) The fifth activity was carried out offline. PAUD Katuk was attended by all participants or representatives of each group, carrying their respective CGT prototypes. They demonstrated and presented how to utilize the CGT that they had developed. Every facilitator provided a comprehensive evaluation and set of comments for each group. The evaluation focused on the CGT and its gameplay mechanics. Moreover, each group was instructed to compose a written description of the CGT.

6). The facilitators managed the Process of IPR Registration Application

## **RESULTS AND DISCUSSION**

This community service was conducted alternately at PAUD Katuk and Asyifa Islamic Kindergarten. The location was determined by the consensus of

participants representing both academic institutions. A description of the outcomes of community service follows.

1) The participants were separated into five distinct groups following group division and perception equalization. Groups 3, 4, and 5 each comprised four to five Asyifa Islamic Kindergarten teachers, while Groups 1 and 2 each comprised two PAUD Katuk teachers. The Lecturers of Early Childhood Education Teacher Program assisted each group. Data was gathered through completed questionnaires and pre-test instruments prepared for analysis during this activity. Activities involving perception equalization are illustrated in Figure 2.



Figure 2 Equalising perceptions

2) The outcome of the second activity is the development of a shared understanding concerning the presented material, as demonstrated by the completion of the required forms in the preparation of the CGT design. Figure 3 illustrates the second activity.



Figure 3 Delivery of materials

3) The outcomes of the initial mentoring consist of CGT designs that are deemed complete and prepared for

implementation in physical games. The teachers then returned to work autonomously to implement the CGT in accordance with the blueprint they created.

4) The outcome of the second mentoring session consists of prototypes for CGTs. Figure 4 represents activities 3 and 4.



Figure 4 Process of group mentoring

5) The completed CGT is the outcome of the fifth activity. The facilitator delivered the CGT to groups that had completed it to be processed in preparation for submitting their Intellectual Property Rights (IPR) registration. Meanwhile, groups that remained imperfect had their final CGT submitted to the Universitas Terbuka once it had been deemed final. During this concluding session, participants were requested to re-complete the questionnaire and post-test via the G-form. Figure 5 illustrates how the final evaluation was executed.



Figure 5 The final evaluation

6) The process of applying for IPR registration is carried out by the Facilitator. The five APK products produced have successfully obtained IPR registration certificates. An example of an

IPR is shown in Figure 5.



Figure 6 An illustration of a published IPR certificate

Table 1 displays the outcomes of the pre-test and post-test administered to all participants during the initial and concluding meeting activities, respectively.

Table 1. Results of the pre-test and post-test

Teacher	Test		Enhancement Post-	
	Pre	Post	pre	%
1	35	100	65	46%
2	37	80	43	31%
3	48	76	28	20%
4	52	112	60	43%
5	70	100	30	21%
6	76	135	59	42%
7	85	90	5	4%
8	84	98	14	10%
9	90	96	6	4%
10	90	107	17	12%
11	90	140	50	36%
12	96	100	4	3%
13	98	100	2	1%
14	100	135	35	25%
15	100	140	40	29%
16	112	140	28	20%
17	126	139	13	9%

Community service products consist of five distinct categories of Comprehensive Game Tools (CGT), the design and functionality of which have been modified to suit the Institute's surroundings. Furthermore, the

curriculum of PAUD Katuk and Asyifa Islamic Kindergarten and the level and developmental objectives of ECE inform the development of the five CGTs. Additionally, the CGT is an implementation and extension of the principle of learning through play, as each APK comprises content and concepts and adheres to the tenets of early childhood education. This aligns with the principles and theory of early childhood development, which stipulate that learning should occur through play and that activities should be enjoyable (We & Fauziah, 2020), The educational process is conducted through engaging and ecologically sustainable media that is relevant to the child's environment (Fitri & Rakimahwati, 2021; Novitawati & Anggreani, 2021) and by implementing holistic integrative principles, and play individually or in groups in accordance with the theme (Tatminingsih, 2019). Furthermore, apart from fostering the intellectual growth of individual children, the APK generated by the teacher serves as a mechanism for ECE teachers to organize and oversee educational activities for their students. Pedagogical competence comprises this skill (Ani, 2021; Fidesrinur et al., 2017; Musanna, 2011; Noviana et al., 2019; Purnomo et al., 2018; Rohita & Fitria, 2020; Samsuri, 2019; Tari, 2020).

The pre-test and post-test outcomes similarly demonstrate the enhancement of teachers' pedagogical abilities. The mean scores on the pre-test and post-test indicated a 21% improvement in the pedagogical abilities of the teachers, with particular emphasis on their understanding of child development, the concept of games, and the creation of game tools. A minimum improvement score of 2 points (1%), while 65 points (46%) represented the maximum improvement. Additionally, Table 1 demonstrates that some teachers achieved poor scores (35 on the pre-test) but improved their performance by 65 points

(to 100) after completing the activity. While one participant achieved the maximum score (126) on the pre-test, the improvement was only 13 points on the post-test, resulting in a score of 139. In general, all community service participants reported enhancement in their understanding and competence regarding the established indicators.

Based on the outcomes observed in the developed products and the results of pre-test and post-test calculations, it can be concluded that the community service at PAUD Katuk and Asyifa Islamic Kindergarten has effectively enhanced and motivated the pedagogical competence of teachers, particularly regarding the development and construction of comprehensive game-based learning tools. This substantiates the results of a study which suggests that mentoring and intensive training of ECE teachers can enhance their competences, including the design and development of game tools. It is a component of the ability to plan, execute, and evaluate instructional materials and learning processes (Ani, 2021; Arafat & Rahman, 2023; Sum & Taran, 2020)

## CONCLUSION

The process of creating comprehensive game tools in community service is conducted in a methodical and structured manner by Lecturers of Early Childhood Education Teacher Program at Universitas Terbuka. This program serves as an alternative approach to enhancing the competencies of ECE Teachers, with a particular focus on pedagogical competence. It is possible that concurrent stimulation of personality and social competencies would be more advantageous alongside efforts to enhance the competencies. Furthermore, there is potential for further expansion of this activity by utilizing teachers who have participated in this community service as facilitators for other teachers throughout the two academic institutions.

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