

Optimization of differentiated learning through training on innovative learning activities using Loose Parts

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ABSTRACT

The new paradigm of the Merdeka Curriculum emphasizes the implementation of differentiated learning, aiming to provide enjoyable learning experiences tailored to students' knowledge levels and learning needs. This Community Service Program is designed to train early childhood education (PAUD) teachers to adapt and innovate in Differentiated Learning using Loose Parts. The program targets PAUD teachers at the Cluster Activity Center (PKG) in Jelbuk District, Jember Regency. The participating community comprises 17 PAUD institutions, with a total of 30 PAUD teachers involved. The program is conducted in three stages: socialization, training, and best practice mentoring. Methods employed include lectures, quizzes, and project-based activities. Based on participant satisfaction questionnaires, the results of this community service initiative reveal high satisfaction scores: 96.67 percent in the attitude aspect, 90 percent in the knowledge aspect, and 90 percent in the skills aspect. Furthermore, through best practice activities, teachers achieved optimal knowledge and skill transfer. This will enable them to innovate Differentiated Learning activities using Loose Parts, which can be implemented in the learning activities of their respective PAUD institutions.

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1. INTRODUCTION

Based on the development of a new paradigm in implementing the Merdeka Curriculum, learning aimed at students is expected to be centered on children's learning needs (Differentiated Learning) (Andini et al., 2024). Unfortunately, the essence of differentiated learning, which focuses on children's learning needs, has not been optimally implemented by PAUD teachers due to limitations in managing innovative learning activities (Sriandila et al., 2023). This issue is faced by PAUD teachers in Jelbuk Village, Jelbuk District, Jember Regency. Learning media still rely on Children's Activity Sheets (LKA). In classrooms, there are very few educational play tools available to facilitate student learning. Teachers also face difficulties in coming up with learning activity ideas due to limited information and resources in the institution.

If students are not optimally stimulated through differentiated learning by teachers, it will reduce children's engagement and learning motivation, hinder their development, and result in suboptimal potential achievement, leading to a gap in education quality (Hilmiyah et al., 2023). In fact, with the

implementation of the Merdeka Curriculum, teachers should have the flexibility to create engaging learning activities for children (Hasibuan et al., 2022; Murtinugraha et al., 2021). The Merdeka Curriculum serves as a foundation for teachers to think more creatively in realizing independent learning, as part of the challenge of 21st-century creative learning development (Murtinugraha et al., 2021).

This situation is experienced by almost all PAUD teachers under the supervision of the Cluster Activity Center (PKG) in Jelbuk District, Jember Regency. According to information obtained from several teachers, in addition to the institutions being located far from the city center, minimal development funding also hinders the procurement of facilities and infrastructure that support learning activities. A common issue is the limited knowledge of teachers regarding the proper management of learning media in PAUD settings (Umami & Afnida, 2023). Moreover, teachers rarely participate in training activities for self-development, despite the significant benefits such training offers in enhancing teachers' skills and knowledge (Eliza et al., 2022; Muin et al., 2023). This condition makes the implementation of this initial community service activity highly relevant.

To address these issues, it is necessary to conduct mentoring sessions by providing training on designing innovative learning activities that are engaging, simple, cost-effective, and efficient for optimal implementation in accordance with children's developmental stages. As an alternative solution, Loose Parts can serve as an easily accessible and adaptable learning medium. To achieve these objectives, educators must be able to create play settings that encourage children's growth and development (Marfuah et al., 2023). Loose Parts themselves refer to detachable materials that can be moved, reshaped, combined, and separated again, allowing for unrestricted creativity in their use (Muthmainah, 2023). Loose Parts consist of seven material components that are highly affordable, simple, and efficient, making them an excellent alternative for PAUD learning activities (Umami & Atika, 2023; Qomariyah & Qalbi, 2021).

Given the challenges faced by teachers, it is necessary to carry out a community service program at PKG Jelbuk District, Jember Regency. Previous studies have revealed that many teachers are enthusiastic about training programs for self-development in the era of the Merdeka Curriculum implementation (Budyawati et al., 2023; Husain et al., 2023). This community service activity can be conducted by providing counseling and mentoring sessions for PAUD teachers to create innovative differentiated learning activities using various Loose Parts media.

2. METHODS

This initial community service program aims to provide mentoring for PAUD teachers to optimize the implementation of differentiated learning through innovative activities using Loose Parts at the PAUD Cluster Activity Center (PKG) in Jelbuk District.

The target participants of this program are PAUD teachers, including teachers from Kindergarten (TK) institutions and Playgroup (KB) institutions within the PKG Cluster of Jelbuk District, Jember Regency. A total of 30 PAUD teachers from 17 PAUD institutions in Jelbuk District will participate in this mentoring program as PKG representatives. The delivery method for this activity is carried out through three approaches: 1) Lecture 2) Games 3) Hands-on practice (Project-based method). The overview of the implementation process for this community service program is illustrated in the following diagram (Figure 1).

Figure 1. Describes the flow of the stages of the PPP (Beginner Community Service Program) that are implemented. The details of the work procedures implemented in the community service program as shown in Figure 1.

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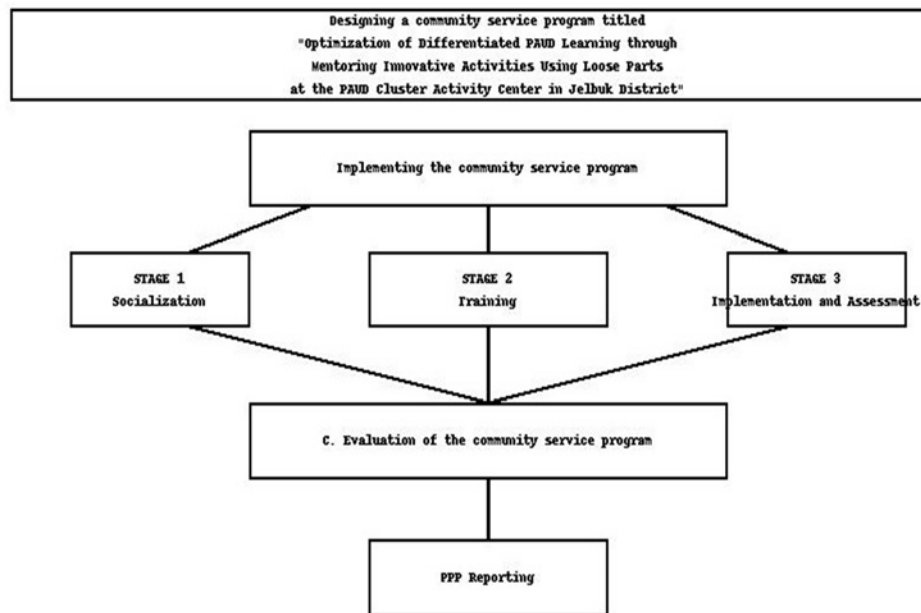


Figure 1. Flow of the beginner community service program

Program Planning/Design

The program planning phase begins with an initial observation to identify the challenges faced by PKG PAUD teachers in Jelbuk District. This process helps determine appropriate mentoring activities that can be effectively implemented. Following this, the community service team conducts a planning meeting, which includes a literature review, task assignments, scheduling from preparation to evaluation, defining activity outputs, and preparing the final report. Additionally, an activity guidebook is developed to facilitate the management of learning activities using Loose Parts, ensuring structured and effective implementation.

Table 1. Stages of activity implementation

Stages of Activity Implementation	Activity Description
Socialization	The socialization activity began with the provision of material related to differentiated learning innovations. The material provided was around the definition, urgency, various components, the concept of differentiated learning in PAUD, and examples of differentiated learning activity innovations.
Training	After the socialization activity, the next activity was to provide material and training related to activity innovations using Loose Parts media in PAUD Institutions. In this second stage, the material was more emphasized on the introduction of loose parts components, the application of the use of Loose Parts media in managing learning in PAUD. In detail, teachers were trained in compiling themes and sub-themes, topics, starting sentences, invitations, forming density, and arranging loose parts media.
Implementation and assessment	This third stage was carried out to test the understanding of PAUD teachers or PKM participants after receiving material and training in the form of implementing activities through direct practice and being evaluated regarding the implementation practices of participants. Furthermore, games were carried out to measure the knowledge and understanding of participants.

Implementation of the Program

The stages of program implementation are carried out in three stages to maximize program implementation. The detailed explanation related to the form of implementation of implementation activities at each stage is explained in the following Table 1.

Evaluation and Follow-Up

The evaluation of the activity was carried out after the implementation and assessment activities of the PKG partners of the PAUD cluster in Jelbuk District, Jember Regency, namely by filling out the instrument prepared by the community service team regarding the responses of the participants to the PKM activities carried out. The partner satisfaction index in participating in PKM activities is assessed based on the indicators in Table 2.

Table 2. PKM partner satisfaction index

Aspects	Indicators
Attitude	Approach and interaction with participants
Knowledge	Mastery of material and responsiveness in delivering material
Skills	Ability to provide best practice training methods and simulations

The PKM participant satisfaction index in Table 2 is measured using a Likert scale which functions to measure the level of suitability of the question/statement indicators according to the respondent's answers (Masyhud, 2014). The measurement scale as referred to be shown in Table 3.

Table 3. Level of satisfaction of PKM participants

Range	Category
1	Very unsatisfying
2	Not satisfactory
3	Somewhat satisfying
4	Satisfying
5	Very satisfactory

3. RESULTS AND DISCUSSION

Results

Based on the community service program flow, activities are carried out from the planning stage to evaluation. The initial phase of the program involves preparing materials and compiling a guidebook for managing learning activities using Loose Parts. The guidebook consists of 19 pages, containing: Definition of Loose Parts, Importance of using Loose Parts, Various Loose Parts components, Various Loose Parts components, Benefits of using Loose Parts, Implementation of learning using Loose Parts, Implementation of learning using Loose Parts, Practical usage examples, Techniques for formulating provocation sentences. The compiled guidebook presented in Figure 2.

Figure 1 represents the guidebook designed for participants to use as a reference in managing PAUD learning based on Loose Parts, making it easier for teachers to implement in practice. To ensure the authenticity of the book's composition, the guidebook has been officially recognized with an HKI certificate, registration number 000650541.

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During implementation, this community service activity was conducted over two face-to-face sessions on July 16–17, 2024, at the PGRI building in Jelbuk District, Jember Regency. Based on the implementation stages, the results of the activities carried out are described as follows:



Figure 2. Loose part-based PAUD learning management guidebook

Socialization stage

The socialization stage was carried out on Tuesday, July 16, 2024, from 09:00 to 13:00 WIB. The activity began with an opening ceremony attended by the PAUD Supervisor of Jelbuk District, who also delivered a speech. The next speech was given by the Head of PKG Jelbuk District. This was followed by the handover of the guidebook on managing learning using Loose Parts.

The material was presented by a team of lecturers, covering topics related to differentiated learning in PAUD institutions. This material aimed to enhance teachers' understanding of fulfilling the new paradigm of learning in the Merdeka Curriculum (Jannah & Rasyid, 2023). An overview of the first day's activities can be seen in Figure 3.



Figure 3. Implementation of socialization

Workshop stage

The workshop stage was conducted on the second day, July 17, 2024, at the PGRI building in Jelbuk District. The second material presentation was delivered by the beginner lecturer community service team, discussing technical aspects of managing innovative learning using Loose Parts.

This session referred to the Guidebook on Managing Learning with Loose Parts, which has been registered with HKI under Copyright Registration Number 000650541 (Umami, 2024). In this material, participants were introduced to: Definition of Loose Parts, Importance of using Loose Parts, Various Loose Parts components, Various Loose Parts components, Benefits of using Loose Parts, Implementation of learning using Loose Parts, Implementation of learning using Loose Parts, Practical usage examples, Techniques for formulating provocation sentences. The documentation of the activity is shown in Figure 4.



Figure 4. Workshop implementation

This activity took place from 10:00 WIB to 13:00 WIB. At the end of the session, to assess participants' understanding, a Loose Parts knowledge game was conducted using Kahoot.id. The game was enthusiastically participated in by the PKM attendees.

By considering both answer accuracy and response time, participants became more focused on answering each question. At the end of the activity, door prizes were awarded to the three participants with the highest number of correct and fastest answers as a form of appreciation. The implementation of the game and the awarding of door prizes are shown in Figure 5.



Figure 5. Game winners and distribution of door prizes

The image of the mentoring activity for teachers in designing play activities using Loose Parts aligns with the statement by Ndeot et al. (2022) that in conducting mentoring activities, it is essential to first deliver material covering the technical aspects of the mentoring process. This material also serves as a foundation for teachers to optimize the design of engaging Loose Parts learning activities to support the development of six child development aspects (Istim et al., 2022).

Implementation and Evaluation Stage

The next activity involved implementation and assessment. In this stage, participants applied best practices in innovative learning using Loose Parts media in groups. From the total participants, teachers were divided into five teams, each consisting of five to six members. The Loose Parts media had been prepared in advance by the PKM team to support the practical activities.

After the implementation, each participant received a certificate of participation as a form of appreciation, as shown in Figure 6. The awarding of rewards serves as recognition for teachers who participated in the mentoring activities (Husain et al., 2023).



Figure 6. Activity implementation stage

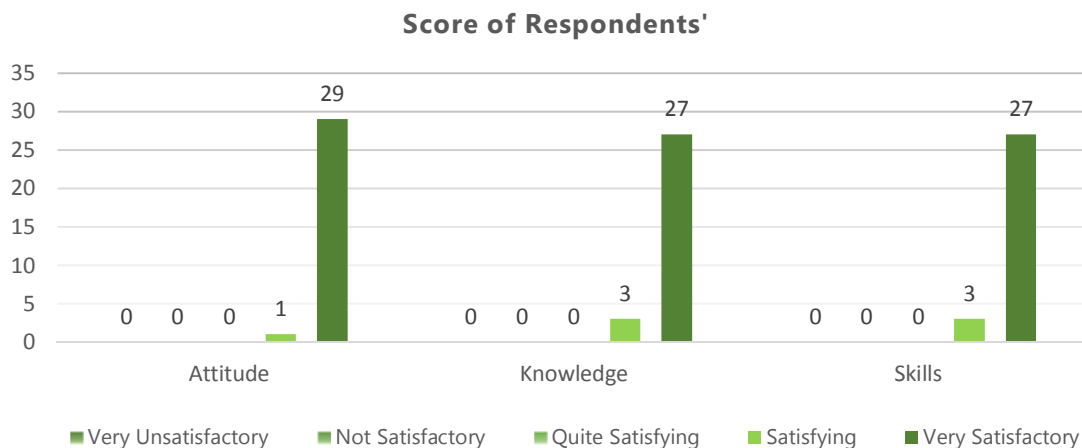


Figure 7. Average score of respondents' answers study

Based on the form that has been distributed, the evaluation results were obtained as shown in Figure 7. The diagram (Figure 7) illustrates the satisfaction levels of participants in the PKM activities, based on feedback from 30 participants. In the Attitude Aspect, which includes indicators of approach and interaction with participants, 96.67 percent rated it as Very Satisfactory, while the remaining participants rated it as Satisfactory. In the Knowledge Aspect, which assesses mastery of the material and responsiveness in delivering it, 90 percent of participants rated it as Very Satisfactory, while 10 percent rated it as Satisfactory. Similarly, in the Skills Aspect, which measures the ability to provide training methods and best practice simulations, 90 percent of participants rated it as Very Satisfactory, with 10 percent rating it as Satisfactory. Based on these responses, the service team hopes that

this community service activity will significantly contribute to preparing professional PAUD educators who continuously innovate in implementing the Merdeka Curriculum (Retnaningsih & Khairiyah, 2022). Additionally, this initiative aims to foster innovative and differentiated learning approaches to ensure high-quality education that aligns with children's learning needs.

Discussion

This community service program was conducted in the form of counseling and mentoring on differentiated learning innovations using loose parts. The PKM activity aligns with the partner's issue, namely the suboptimal ability of PAUD teachers in PKG Gugus institutions to create differentiated learning innovations using loose parts. This is supported by Umami & Afnida (2023), which states that a common problem is teachers' limited knowledge of managing appropriate learning media in PAUD. Differentiated learning requires teachers to have high innovation and creativity in designing learning activities in the era of the Merdeka Curriculum (Hasibuan et al., 2022; Murtinugraha et al., 2021). A lack of innovation in managing differentiated learning not only hinders the successful implementation of the Merdeka Curriculum but also affects students' interest and motivation to learn.

The introduction of loose parts as an alternative learning medium in this community service activity aims to: (1) Make it easier for teachers to procure materials due to their affordability; (2) Increase accessibility, as materials can be sourced from the environment or repurposed from used items; (3) Optimize storage space efficiency; (4) Ensure reusability for multiple activities.

As stated by Qomariyah and Qalbi (2021) also Umami and Atika (2023), loose parts is an accessible, simple, and efficient learning medium that serves as an alternative for PAUD learning activities. However, its implementation requires an approach that considers several factors: (1) loose parts material components: Teachers should utilize various components from the seven classified loose parts categories. The more components used, the better the implementation; (2) Teachers' ability to design learning devices & activities: Loose parts implementation is not just about using media but also about planning how it is applied in learning activities. Teachers need skills in breaking down themes and determining activity density; (3) Activity evaluation using assessments: Teachers should use stimulating questions and statements to enhance children's creativity and critical thinking. While conducting activities, teachers must monitor children's learning progress through provocative questions and statements. According to (Umami & Atika, 2023), the effective implementation of loose parts learning requires optimal teacher involvement from planning and execution to evaluation.

It is not enough to rely solely on the concept of differentiated learning and the use of innovative media. Therefore, teachers, as facilitators, play a crucial role in its implementation. Through the community service activities carried out, the approach given to teachers to achieve learning innovation in PAUD was conducted in three stages: socialization, workshops, and best practice mentoring. Based on the activities carried out, participants responded positively to the program.

The results of the pre-test and post-test conducted during the activities showed a significant increase in teachers' knowledge and skills. This indicates that teachers indeed require educational and counseling programs on innovative learning to remain adaptive to national policy developments, such as implementing the Merdeka Curriculum in their respective institutions (Retnaningsih & Khairiyah, 2022). This need is even greater for teachers in regions with limited access. The role of professionals is crucial in providing direct guidance to teachers, especially when activities are optimized through hands-on practice.

Previous research has shown that hands-on practice helps teachers directly understand and creatively apply the knowledge gained during mentoring (Anwar, 2021; Fatimah et al., 2022). It is hoped that similar community service programs can continue and consistently provide positive impacts for PAUD teachers, as the education sector must remain adaptive to students' learning needs. Additionally, cadre development is necessary for competent partners to transfer the knowledge and experience gained from the program to other PAUD teachers who have not yet been reached by this community service initiative.

4. CONCLUSION AND RECOMMENDATIONS

Based on the results and discussions of the community service program (PKM), several conclusions can be drawn. The program was successfully implemented through three stages: socialization, workshops, and practical implementation, with full participation from all partner members. The activities effectively enhanced participants' knowledge and skills, as reflected in the quiz scores on Kahoot and the practical implementation sessions. Additionally, participant evaluations indicated a *Highly Satisfactory* rating across three key aspects: Attitude, which measured approach and interaction with participants; Knowledge, which assessed subject mastery and responsiveness in material delivery; and Skills, which evaluated the ability to provide training methods and best practice simulations. Given the significant benefits of this program for PAUD teachers, the community service team hopes that this mentoring initiative—focused on optimizing differentiated learning—can continue in the future. Sustained implementation will further support teachers' knowledge and skills, ultimately contributing to the development of high-quality educational human resources.

Given the extensive material on differentiated learning innovation using Loose Parts, additional training time is necessary to provide more detailed explanations to participants regarding classroom management, Loose Parts invitation setup, and its density. This will help teachers optimize the implementation of differentiated learning. Furthermore, collaboration can be expanded by involving partners on a broader scale and conducting activities periodically, ensuring that the benefits of this innovation reach a wider audience.

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