

# Implementation of Collage Media Making Training to Improve Teachers' Pedagogical Skills in Early Childhood Islamic Education (PIAUD) in Gorontalo Regency

 Munirah<sup>1\*</sup>,  Hairuddin<sup>2</sup>,  Irmawati Duko Ishak<sup>3</sup>,  Nazar Husain Hadi Pranata Wibawa<sup>4</sup>

<sup>1,2</sup>IAIN Sultan Amai Gorontalo

<sup>3</sup>Universitas Muhamadiyah Gorontalo

<sup>4</sup>Universitas Negeri Surabaya

Indonesia

✉ [munirah@iaingorontalo.ac.id](mailto:munirah@iaingorontalo.ac.id)\*



## Article Information:

Received March 8, 2026

Revised May 12, 2026

Accepted May 31, 2026

## Keywords:

Collage Media; Early Childhood Education; Pedagogical Skills; Teacher Training; Thematic Learning

## Abstract

**Background:** Collage media creation training for Early Childhood Islamic Education (PIAUD) teachers in Gorontalo Regency was conducted to address the problem of teachers' low ability to design creative, effective, and contextual learning media. Based on an initial survey, 73% of teachers had never participated in collage training, 67% still relied on conventional media, and 58% did not understand media creation techniques.

**Objectives:** This community service activity aimed to improve teachers' pedagogical competence in integrating local culture-based collage media into learning.

**Methods:** The training involved 35 teachers as target partners and was implemented using the GOAD (Grouping, Observing, Analyzing, Designing, Doing) method through the preparation of teaching modules, collage media creation, group discussions, technical assistance, and learning simulations.

**Results:** The results of the activity showed a significant increase in the knowledge and skills of teachers in managing classes, marked by an increase in the average score from 62.4 (pretest) to 87.8 (posttest). In addition, more than 85% of participants gave the training a "very good" rating. Teachers became more capable of creating safe, aesthetic, and contextual collage media and implementing them effectively in the classroom.

**Conclusion:** This activity demonstrated that the training can improve teachers' pedagogical skills and thus support the quality of early childhood Islamic education.

## A. Introduction

Early Childhood Islamic Education plays a strategic role in building the foundation for children's cognitive, social, emotional, and motor development. During this phase, children tend to gain optimal learning experiences through concrete, contextual, and enjoyable activities. Therefore, teachers are required to organize creative, innovative, and adaptive learning processes to increase learning interest and optimize children's developmental potential. One effort that can be made is through optimizing the use of learning media in teaching and learning activities. Learning media serves as a means to transform abstract concepts into more concrete concepts, making them easier for young children to understand. This aligns with the characteristics of early childhood learning, which emphasizes direct experience and activity-based learning. Therefore, teachers need to be able to design and develop learning media that are creative and relevant to the material or theme being taught.

At this stage, children are experiencing rapid growth and development, so the various stimuli provided will influence the quality of their development in later life. Learning experiences gained from an early age

How to Cite : Munirah., Hairuddin., Ishak, I.D., & Wibawa, N.H.H.P. (2026). Implementation of Collage Media Making Training to Improve Teachers' Pedagogical Skill in Early Childhood Islamic Education (PIAUD) in Gorontalo Regency. *Aktual: Jurnal Pengabdian Kepada Masyarakat*, 4(2), 167-175  
<https://doi.org/10.58723/aktual.v4i2.612>

ISSN : 2987-6052

Published by : CV Media Inti Teknologi

significantly contribute to the development of thinking skills, language skills, problem-solving skills, emotional control, and social interaction skills. One approach teachers can take to achieve these goals is to use collage-based learning media. One form of media that can be developed to support children's learning is collage. This medium not only trains children's fine motor skills but also fosters creativity, imagination, and symbolic thinking (Ismaniar et al., 2023).

Many studies have shown that collage activities such as tearing, cutting, pasting, and arranging various materials significantly improve children's fine motor skills. Children become more skilled in controlling finger and hand movements, which is important for preparing for writing and daily activities (Adibah & Rocmah, 2024; Hasanah et al., 2025; Rahmah & Hasis, 2025). Collage provides a space for children to express themselves creatively, choosing materials, colors, and shapes according to their imagination, thereby improving aspects of creativity such as fluency, flexibility, originality, and visual expression (Hasibuan et al., 2024; Imron et al., 2025). Through collage, children learn to connect symbols, shapes, and meanings, thereby developing symbolic thinking and problem-solving skills. This activity also trains concentration, accuracy, and the ability to recognize colors and shapes (Lily et al., 2024). However, some early childhood education teachers lack the skills to design and effectively utilize collage media. This is due to limited knowledge, a lack of practical training, and limited opportunities for teachers to innovate in their teaching.

The results of initial observations and interviews with several Early Childhood Islamic Education (PIAUD) teachers in Gorontalo Regency indicate that most teachers still experience difficulties in developing creative and contextual learning media, especially collage media. This is due to the limitations of teacher capabilities caused by several factors, including: (1) lack of teacher motivation and creativity (Dewi et al., 2022); (2) limited time and resources in preparing varied teaching materials (Salma & Said, 2020); and (3) minimal training and professional mentoring related to the development of art-based media and handicrafts (Hasibuan et al., 2024). This condition has an impact on the low variety and innovation of learning media. Data shows that the main problem of PIAUD teachers in Gorontalo Regency lies in the aspect of the lack of training and technical understanding in making collage media. As many as 73% of teachers have never received special training, which has an impact on their low ability to integrate collage art activities into the learning process.

To address these issues, strategic efforts are needed through training in creating collage media designed in an applicable and contextual manner. This training is expected to improve teachers' competency in designing creative learning media, utilizing simple materials easily found in the surrounding environment, and integrating them into early childhood learning activities. Thus, this training not only enriches the classroom learning process but also serves as a means of empowering teachers to be more innovative in developing children's potential holistically. The implementation of this training in Gorontalo Regency is crucial as a concrete step in supporting the improvement of the quality of early childhood education, in line with curriculum demands that emphasize creativity-based learning and direct experience.

## B. Methods

This community service program is implemented through three main stages: preliminary, implementation, and evaluation, all based on a learning design approach. The preliminary stage involves observation and identification of partner needs to identify the challenges teachers face in developing collage learning media. This stage also involves coordination with the institution and the development of training activity plans tailored to the participants' needs.

**Implementation stage** focused on providing materials and practical training on creating collage-based learning media. Activities include delivering innovative learning concepts, introducing collage-making techniques and steps, and mentoring in designing learning media that are appropriate to the themes and characteristics of early childhood. In this stage, participants are given the opportunity to develop collage media directly using simple and contextual materials from the surrounding environment. The creation of training materials begins with the preparation of a module that serves as the main guide for participants. The module is systematically structured and contains several important components, namely an introduction to the principles of safe collage media design that are appropriate to children's developmental stages. In addition, the module also includes steps for creating collage media, accompanied by examples of Learning Implementation Plans (RPP) (Yulando et al., 2019). To facilitate understanding, the material is supplemented with images, practical guides, and participant worksheets. With this module, teachers receive

complete guidance from both theoretical and practical perspectives, so they can immediately implement the training results in teaching and learning activities at PIAUD (Atikah et al., 2023; Mutoharoh et al., 2025; Urmeneta et al., 2024).

The training implementation strategy for collage media development activities uses the GOADD (Grouping, Observing, Analyzing, Designing, Doing) method. The first stage, Grouping, begins with the formation of small groups consisting of four to five teachers. Group division takes into account the school background, teaching experience, and artistic skills of each participant to create diverse and complementary collaborations. The facilitator provides an explanation of the activity's objectives and encourages participants to share their initial experiences in using learning media. This stage serves to build teamwork and create a conducive and participatory training atmosphere.

The second stage is Observation, where participants are directed to observe various examples of collage media prepared by the facilitator. The media displays collage media made with various materials. In this stage, the facilitator demonstrates collage-making techniques suitable for early childhood, starting from selecting safe materials, attractive color combinations, and correct pasting techniques. Participants are encouraged to pay attention to the relationship between the visual appearance of the media and the aspects of the learning experience they wish to convey.

The next stage is analyzing, where participants dissect and discuss the components of the collage media they have observed. In group discussions, teachers examine the appropriateness of the theme to the children's age, the safety of the materials, ease of use, and the media's potential to foster curiosity. Participants also assess the strengths and weaknesses of the media examples. This stage emphasizes the importance of understanding the philosophical meaning behind each symbol, so that the resulting collage media is not only visually beautiful but also has educational and moral value.

The fourth stage is Designing (media design), where the teacher begins creating an initial draft or prototype of the collage media. The teacher sketches the final design, determines the materials to be used, and outlines the steps for its creation. The facilitator provides technical guidance on color composition, image proportions, and the design's suitability for the developmental level of early childhood. In addition to designing the media, participants are also asked to develop a lesson plan.

The Doing stage (creation and simulation) is the implementation of the design. Participants cut materials, arrange the pieces, and glue them together to form a complete collage. Upon completion, each group presents their work and conducts a learning simulation using the media. In this simulation, one teacher plays the role of teacher while the other participants play the role of students, creating a realistic learning environment. The facilitator and other participants provide feedback on the effectiveness of material delivery and teacher-student interactions. In the final stage, a comprehensive training evaluation is conducted to assess the success of the activity. The evaluation includes assessing the quality of the collage based on aesthetic aspects, theme suitability, technique, and safety for use by early childhood. In addition, participants complete a questionnaire to measure improvements in understanding of cultural literacy and technical skills in creating collage media. The facilitator also holds a reflection session and open discussion so that teachers can share experiences, challenges, and ideas for developing learning media in the future. The evaluation results are analyzed to develop recommendations and follow-up actions, so that the training activities do not stop as short-term programs, but can be sustainable and have a real impact on improving the quality of learning in PIAUD.

The final stage of the third community service implementation is evaluation. At this stage, the implementation of the training program is measured by distributing questionnaires to training participants. The questionnaires are used to determine participants' responses to the implementation of the activities, including the suitability of the material, clarity of delivery, benefits of the training, and the level of participant interest in the practice of making collage learning media. Furthermore, an evaluation is also conducted to determine the level of participant satisfaction with the training activities as a whole. The results of participant responses are then used as reflection material to improve the quality and effectiveness of the implementation of subsequent training programs. In addition, pre-tests and post-tests are also conducted to measure training participants' understanding of the concept of innovative learning media related to collage. Indicators measured include teachers' understanding of the basic concept of collage media, the benefits of collage media for early childhood development, and knowledge of the steps and

techniques for making it. Furthermore, instruments are also used to measure teachers' ability to select appropriate materials.

### C. Results and Discussion

The evaluation results showed that participants responded positively to the collage-based learning media training. Approximately 75% of participants considered the material presented relevant to the learning needs in Early Childhood Education and easy to understand and apply in teaching and learning activities. The training method, which combined material delivery and direct practice, was also considered capable of improving participants' understanding of collage media creation techniques. In addition, training participants showed high enthusiasm during the activity because the training provided new experiences in developing creative, simple, and contextual learning media. The practice of using materials easily found in the surrounding environment was considered to help training participants in creating learning media at an affordable cost. This positive response indicates that this training was able to change the perception of teachers from passive media users to innovative media creators, in line with the principle of teacher as designer (Mas et al., 2026).

Collage media creation training for teachers aligns with the mandate of Minister of Education and Culture Regulation No. 137 of 2014 concerning National Standards for Early Childhood Education, which emphasizes that PAUD teachers must possess pedagogical and professional competencies in designing meaningful learning in accordance with children's developmental stages. Teachers at the early childhood education level play a strategic role in preparing a conducive learning environment and stimulating all aspects of child development. Effective learning at an early age must be based on children's direct experience, exploration, and creativity (Jirattanawanna et al., 2024). In this context, collage media is one form of media that can integrate aspects of art, fine motor skills, and divergent thinking skills. The results of the post-training evaluation showed that 85% of participants experienced an increased understanding of the role of creative media in early childhood learning, and 82% stated that they were motivated to develop media independently.

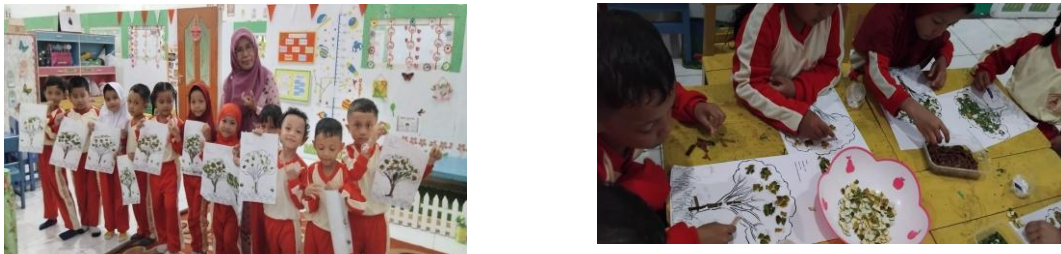
Specifically, this training activity is aimed at improving teachers' knowledge, skills, and application abilities in developing creative and contextual collage learning media. The knowledge aspect is focused on teachers' understanding of the basic concepts, functions, and benefits of collage media in supporting early childhood learning. Through the theory session, participants are introduced to the role of collage media as a learning tool that is not only aesthetic, but also educational, because it is able to stimulate aspects of children's fine motor, cognitive, social, and emotional development in an integrated manner. Teachers are encouraged to understand that collage media can be an effective learning aid in thematic learning, especially because of its flexible nature and easy to adapt to the theme of early childhood activities.

In addition to enhancing knowledge, this training also emphasizes practical skills in creating collage media based on simple, environmentally friendly materials. Participants are trained to utilize local resources easily found in the surrounding environment, such as dry leaves, seeds, scraps of cloth, and used paper. This training not only strengthens teachers' creativity but also instills values of environmental stewardship. The hands-on training process allows teachers to experiment with various techniques and materials, and develop media that suit children's learning needs. This approach aligns with the principle of learning by doing, which is believed to strengthen the transfer of knowledge into real-life skills. Furthermore, this activity is also aimed at integrating collage media into thematic learning for early childhood. Teachers are trained to adapt their collage work to learning themes such as nature, animals, professions, or geometric shapes, so that the resulting media is not only aesthetically pleasing but also relevant to learning objectives.

The pretest and posttest results showed an increase in the training participants' understanding of the concept of innovative collage-based learning media in Early Childhood Education. In the indicator of understanding the basic concept of collage media, the percentage of participants' understanding increased from 56% to 88%. Understanding of the benefits of collage media for early childhood development also increased from 61% to 91%. In addition, in the indicator of knowledge about the steps and techniques of making collages, the percentage of participants increased from 49% to 86%, while the ability to choose appropriate materials increased from 58% to 90%.

The increase in percentages across all indicators indicates that the training provided was effective in improving teachers' understanding and skills related to the development of collage learning media. The training method, which combined material delivery and direct practice, helped participants understand concepts more concretely and practically. In addition to enhancing theoretical knowledge, the training also provided participants with practical experience in utilizing simple, contextual materials as creative learning media. Thus, this training activity was able to encourage teachers to be more innovative in designing learning that was interesting, interactive, and appropriate to the characteristics of early childhood. These data indicate that a practice-based training approach has proven effective in strengthening teachers' conceptual understanding and application skills. Training that directly integrates theory and practice is more capable of improving teachers' professional competence than conventional, lecture-based training alone (Jirarattanawanna et al., 2024). Furthermore, the improvement in teachers' abilities in this training also supports the constructivism learning theory proposed by (Al-Mosawi, 2019), which emphasizes that the adult learning process (andragogy) will be more meaningful if it is based on direct experience, exploration, and active participant involvement in learning activities.

Learning simulations conducted at the final stage of the training demonstrated that teachers were able to effectively use collage media in teaching and learning activities. Children involved in the media trials appeared more enthusiastic and active in their learning. These results confirm that the collage media development training not only improved teacher competency but also positively impacted the overall quality of learning in early childhood education (ECE) settings (Septiani & Setiawan, 2024).



**Figure 1.** Collage training simulation activity in class

The implementation of collage media development training based on the GOAD (Grouping, Observing, Analyzing, Designing, Doing) method demonstrates a systematic, participatory, and applicable approach in improving the competence of PAUD teachers. The Grouping stage facilitates collaboration between teachers through the formation of heterogeneous groups based on experience and skills. This strategy is effective because collaborative-based learning encourages the exchange of experiences and collective problem-solving. The Observing stage, which focuses on observing various examples of collage media, provides a visual and conceptual foundation for teachers before producing their own designs. This approach aligns with the principles of model-based learning, where teachers need to obtain a concrete picture before developing independent work. Collage learning media is in accordance with the principles of developing learning strategies in early childhood education that emphasize direct experience, exploration, social interaction, and creativity. An interactive, play-based approach that is tailored to children's needs has proven to be most effective in supporting children's cognitive, social-emotional, language, and motor development. This method involves games, simulations, and exploratory activities that encourage children to learn actively and enjoyably. This strategy increases children's engagement, conceptual understanding, and motivation to learn (Soriano & Marquez, 2025; Zamzami et al., 2025), while the use of natural materials and everyday experiences helps children understand abstract concepts concretely, especially in mathematics and science learning (Lu & Rahman, 2025; Sudarti et al., 2025).

In the Analyzing stage, teachers not only identify examples of collage media superficially but also engage in a critical review process aimed at comprehensively understanding the quality, function, and educational value of the media. The analysis begins with the material safety aspect, where teachers assess whether the materials used such as paper, cloth, seeds, or natural materials are safe for young children, not easily swallowed, not sharp, and environmentally friendly. Next, teachers evaluate the suitability of the theme to the developmental characteristics of early childhood, ensuring that the content presented in the collage is able to stimulate curiosity, is relevant to children's daily experiences, and aligns with learning objectives.

In the aesthetic value aspect, teachers examine color composition, image proportions, and the harmony of visual elements to ensure the media offers a visual experience that is both interesting and easy for children to understand (Liando et al., 2022).

In the Designing stage, teachers begin a more complex creative process, namely designing a collage media prototype based on the results of observations and analysis in the previous stage. At this stage, teachers not only draw initial sketches but also select visual elements more carefully, such as determining a harmonious and attractive color composition for early childhood. Color composition is an important aspect because the right color can stimulate attention, strengthen visual meaning, and help children understand the objects or symbols displayed. In addition to color, teachers also consider proportion and layout, ensuring that the size and position of each element in the collage are in accordance with the principles of visual readability for early childhood, so that the media is easy to understand and does not cause excessive cognitive load (Hanafiah et al., 2023).

Another aspect that is highly considered is material safety, including ensuring that the materials used are non-hazardous, not easily swallowed, do not have sharp edges, and are made from environmentally friendly materials that are easily accessible to teachers. These considerations align with the principles of early childhood safety-based learning, where media must support exploration while maintaining children's physical safety. Furthermore, teachers adapt designs to the child's developmental stage, including motor, cognitive, and socio-emotional development. For example, designs for children aged 3-4 years should be simpler, with large shapes and contrasting colors, while those for children aged 5-6 years can be more detailed with elements that challenge fine motor coordination.

At this stage, the role of the facilitator becomes crucial as a technical and pedagogical companion. The facilitator helps teachers assess the suitability of the design in terms of aesthetics, functionality, appropriateness to the learning theme, and the relevance of the local culture to be integrated. Through this assistance, teachers receive constructive feedback on the selection of alternative materials, how to arrange collage elements, appropriate pasting techniques, and how to simplify image symbols for easy understanding by children. The interaction between the teacher and the facilitator allows the design process to run more systematically and directed, so that the resulting prototype is of better quality, mature, and ready to be implemented in actual learning activities. Thus, the Designing stage not only produces a visually creative collage media design but also ensures that the media has pedagogical value, is safe to use, and is effective in supporting learning objectives. This stage serves as an important bridge before teachers enter the actual creation process, so that the resulting media not only meets aesthetic aspects but is also suitable for use in the context of early childhood education (Sitepu et al., 2025).

The Doing phase is the implementation phase that puts all the knowledge, designs, and skills developed in the previous phase into practice. In this phase, teachers not only create collage media directly but also present their work and conduct learning simulations designed to closely mimic real-life classroom conditions. The media creation process involves technical skills, creativity, and the ability to select safe and developmentally appropriate materials. The presentation session encourages teachers to explain the pedagogical rationale behind the media, including its purpose, educational value, and potential use in various learning contexts (Grassinger et al., 2022).

Learning simulations are a central component of the Doing stage because they provide teachers with the opportunity to directly test the effectiveness of the media, particularly in terms of teacher-child interaction, instruction delivery, and time and activity management. At this stage, teachers can observe how collage media functions to facilitate a fun, interactive, and meaningful learning experience. The integration of art media into learning not only provides fine motor stimulation but also contributes significantly to children's social-emotional development (Adalim et al., 2025). Collage media, as a form of art media, plays a role in encouraging self-expression, collaboration between children, and increasing self-confidence when children succeed in creating meaningful visual works.

In addition to the benefits for children, the Doing phase also has a significant impact on teachers' professional development. The simulations and presentations open up space for critical reflection through feedback from facilitators and colleagues. Teachers can evaluate the clarity of instructions, the appropriateness of media to learning objectives, and the effectiveness of strategies used in creating a

conducive learning environment. This reflective process is a crucial element in developing pedagogical competence because it enables teachers to identify strengths and areas for improvement.

At the end of the stage, a comprehensive evaluation process is conducted as a crucial step to ensure that the entire training series achieves its stated objectives. This evaluation covers several key aspects, from the quality of the collage media produced by the teacher, the accuracy of the application of pedagogical principles, to the extent to which the teacher is able to integrate the media into authentic learning scenarios. Media quality is assessed by observing neatness, creativity, material suitability, safety of use, and the media's relevance to the learning theme and the child's developmental level. Thus, the evaluation focuses not only on aesthetic aspects but also on the pedagogical validity of the developed media.

Another aspect of the evaluation's focus is the achievement of training objectives, both in terms of improving teachers' technical skills in creating collage media and enhancing conceptual understanding of learning media. Teachers' mastery of learning steps, ability to explain the flow of activities coherently, and skills in managing interactions during classroom simulations are also important indicators. This evaluation helps map the extent to which teachers are able to translate learning plans into real-world practice and assess their readiness to apply them in a real classroom context.

Furthermore, the evaluation focused on developing teachers' reflective skills. Through open discussions, feedback from facilitators, and a review of the media and simulations, teachers were given the opportunity to identify strengths, weaknesses, and potential improvements in their teaching practices. This reflective ability is crucial because it forms the basis for continuous professional development. Teachers are expected to be able to review every pedagogical decision they make and understand its implications for children's learning experiences. Overall, the GOAD-based training strategy has proven relevant and effective for the professional development of early childhood education (ECE) teachers, particularly in the context of developing collage media. This approach not only improves teachers' technical skills in creating collage media but also strengthens the philosophical, cultural, and pedagogical understanding underlying its use. With comprehensive module development, interactive training, and comprehensive evaluation, this activity has significant potential to have a significant impact on improving the quality of learning in ECCE.

The results of this comprehensive evaluation were then used to develop follow-up recommendations aimed at strengthening the sustainability of the training program. Based on the evaluation results, several recommendations were developed to ensure the sustainability and optimization of training outcomes. First, post-training support should be strengthened through regular coaching and mentoring programs to provide teachers with support in implementing collage media in the classroom based on real-world contexts. Furthermore, providing comprehensive and easy-to-understand technical modules is crucial to facilitate teachers' independent media development. The development of communities of practice or study groups is also recommended as a forum for sharing experiences, ideas, and systematic reflection among teachers. In terms of learning implementation, schools are encouraged to integrate local culture-based media into the daily curriculum so that children receive authentic learning experiences rich in cultural values. Furthermore, schools are also expected to provide collage materials that are safe, child-friendly, and relevant to local culture to support the quality of the resulting media. Continuous evaluation of media implementation in the classroom is necessary to ensure its effectiveness on child development and identify areas for improvement. Finally, teachers' reflective capacity needs to be continuously strengthened through structured reflection activities to enable teachers to conduct independent assessments of their teaching practices and enhance the creativity and appropriateness of media use in learning.

#### **D. Conclusion**

Based on the results of the implementation of the activities, it can be concluded that the training on developing collage-based learning media has a positive impact on improving teachers' understanding and skills in designing innovative learning in Early Childhood Education. The improvement in pretest and posttest results for each indicator shows that the training approach that combines concept delivery and direct practice can strengthen teacher competencies, both theoretically and practically. Teachers not only understand the basic concept of collage media and its benefits for early childhood development, but also gain concrete experience in selecting materials and developing creative and contextual learning media. However, the results of the activities also indicate that the development of learning innovations in early childhood education institutions still faces several challenges, such as limited access to training, minimal

facilities, and low self-confidence among some teachers in implementing learning innovations. This condition indicates that improving teacher competency cannot be achieved through short-term training alone, but rather requires ongoing mentoring, institutional support, and strengthening a culture of innovation within the educational environment. Therefore, the development of collage-based learning media should be viewed not merely as a creative activity, but as part of a pedagogical strategy capable of creating meaningful, participatory learning that is in line with the developmental characteristics of early childhood. Therefore, the sustainability of similar programs is crucial to support the creation of quality early childhood education services that are more adaptive, innovative, and oriented towards the holistic developmental needs of children.

### E. Acknowledgment

The author would like to thank the Institute for Research and Community Service (LP2M) IAIN Sultan Amai Gorontalo for the financial support and facilitation provided so that this community service activity can be carried out well and achieve the expected goals.

### F. Author Contribution Statement

M served as the principal investigator, conducting the research activities at the school, including planning, data collection, and fieldwork. H, IDI, and NHHPW contributed to the writing, drafting, and refining of the article, as well as managing the publication process. All authors read, reviewed, and approved the final version of the manuscript.

### References

- Adalim, C., Dayawa, A.M., Del Socorro, C.M., & Bones, C. (2025). Effectiveness of Sponge-based Art Activities on Fine Motor Skills Development in Grade 2 Pupils. *Asian Journal of Education and Social Studies*. <https://doi.org/10.9734/ajess/2025/v5i1i82279>
- Adibah, S., & Rocmah, L. I. (2024). Collage Innovations Enhancing Preschool Fine Motor Skills Globally. *Indonesian Journal of Innovation Studies*, 25(2). <https://doi.org/10.21070/ijins.v25i2.1095>
- Al-Mosawi, A. (2019). Essential Training Knowledge for Physicians Working in the Field of Professional Training and Development, and Medical Schools' Instruction. *Research and Reviews on Healthcare Open Access Journal*, 4(3). <https://doi.org/10.32474/rrhoaj.2019.04.000187>
- Atikah, C., Rusdiyani, I., & Nurmahdiah, N. (2023). Pelatihan Bagi Guru PAUD Tentang Administrasi Pembelajaran Berdasarkan Kurikulum 2013. *Jurnal Pengabdian Pada Masyarakat*, 8(1), 196–203. <https://doi.org/10.30653/jppm.v8i1.210>
- Dewi, E. R. V., Hibana, & Ali, M. (2022). Loose Part: Finding Innovation in Learning Early Childhood Education. *Jurnal Ilmiah Tumbuh Kembang Anak Usia Dini*, 7(June), 53–66. <https://doi.org/10.14421/jga.2022.72-01>
- Grassinger, R., Bernhard, G., Müller, W., Schnebel, S., Stratmann, J., Weitzel, H., Aumann, A., Gaidetzka, M., Günther, V., Heiberger, L., Mustaca, M., Schmidt, C., & Visotschnig, M. (2022). Fostering Digital Media-Related Competences of Student Teachers. *SN Computer Science*, 3(4). <https://doi.org/10.1007/s42979-022-01135-8>
- Hanafiah, N. A., Mokodenseho, S., Dewi, R. A. P. K., Zahrudin, A., & Palayukan, H. (2023). Collage Media to Develop Fine Motor Skills in Early Childhood. *Bulletin of Early Childhood*, 2(1), 10. <https://doi.org/10.51278/bec.v2i1.711>
- Hasanah, U., Kamila, F., Wulandari, R., & Rahmawati, R. C. (2025). Enhancing Children's Creativity Through Art-Based Learning in Early Childhood: A Strategy to Stimulate Gross and Fine Motor Development. *NAK-KANAK: Journal of Child Research*, 2(1), 17–22. <https://doi.org/10.21107/njcr.v2i1.138>
- Hasibuan, S., Lubis, L. A., & Pohan, S. (2024). Promoting Media Literacy Among Early Childhood Education: A Case Study in Deli Serdang Regency, Indonesia. *RGSA - Revista de Gestão Social e Ambiental*, 18(5), 1–11. <https://doi.org/10.24857/rgsa.v18n5-136>
- Imron, M., Hairil, M., & Mahmudah, I. (2025). Collage Art Training as an Effort to Improve Visual Creativity of Early Childhood at MIN 2 Palangka Raya City. *NUSANTARA: Jurnal Pengabdian Kepada Masyarakat*, 5(2), 122–130. <https://doi.org/10.55606/nusantara.v5i2.4497>
- Ismaniar, I., Landa, K. S., Zaini, M., Utoyo, S., Hazizah, N., & Handrianto, C. (2023). Improving Fine Motor Skills of Children Using Eggshell Collage Media. *International Journal of Instruction*, 16(4), 597–614. <https://doi.org/10.29333/iji.2023.16434a>

- Jirattanawanna, N., Vattanaamorn, S., & Kwalamthan, W. (2024). The Provisions of Learning Experiences in the Early Childhood Development Centers against the COVID-19 Pandemic. *Qualitative Research in Education*, 13(1), 1–18. <https://doi.org/10.17583/qre.12376>
- Liando, N. V. F., Tatipang, D. P., Tamboto, G., Poluan, M. I., & Manuas, M. (2022). Pictures as a Learning Media in Teaching Vocabulary. *Jurnal Ilmiah Universitas Batanghari Jambi*, 22(3), 1944. <https://doi.org/10.33087/jiubj.v22i3.2832>
- Lily, N. M., Tabun, N. L., & Maarang, M. (2024). Implementation of Collage Techniques to Improve Cognitive and Fine Motor Skills in Children Aged 4-6 Years. *Abdi Masyarakat*, 6(2), 504–508. <https://doi.org/10.58258/abdi.v6i2.8185>
- Lu, H., & Rahman, M. N. A. (2025). Development of A STEM instructional model to foster approaches to learning in preschool children: a Fuzzy Delphi Method. *Asian Education and Development Studies*, 14(5). <https://doi.org/10.1108/AEDS-03-2025-0120>
- Mas, S. R., Haris, I., Aini, N., Hilumalo, S. P., & Djuma, L. (2026). Artificial Intelligence (AI) Integration Training in The Creation of Innovative Learning Media. *DEVOTIONIS*, 3(1), 14–19. <https://doi.org/10.59397/dvs.v3i1.200>
- Mutoharoh, M., Nadifah, R., Hadijah, H., Triyastati, S., Rumdanah, R., Hayati, W., Fatmawati, I., Khodanah, K., Mariyah, I., Fuadah, H., Islahiyah, I., Sulkhah, S., & Fatimah, E. (2025). Meningkatkan Kompetensi Profesional Melalui Pelatihan Penyusunan Modul Ajar Untuk Pendidik PAUD. *Abdimas Indonesian Journal*, 5(1), 253–260. <https://doi.org/10.59525/aij.v5i1.614>
- Rahmah, N., & Hasis, P. K. (2025). *Enhancing Fine Motor Skills Through Collage Activities Using Natural Materials in Kindergarten*. 4(June), 82–97. <https://doi.org/10.1108/aeds-03-2025-0120>
- Salma, S., & Said, H. (2020). Optimalisasi Guru dalam Membuat Media Pembelajaran untuk Mestimulasi Kemampuan Kognitif Anak Usia Dini. *JET: Journal of Education and Teaching*, 1(2), 67–74. <https://doi.org/10.51454/jet.v1i2.16>
- Septiani, A. A., & Setiawan, D. (2024). Developing Canva-Based Sitekol on Collage Topic for First-Grade Public Elementary School Students. *Journal of Integrated Elementary Education*, 4(2), 99–119. <https://doi.org/10.21580/jieed.v4i2.21977>
- Sitepu, J. M., Masitah, W., & Ginting, N. (2025). Development of Islamic-Based Vitruvius Design Learning Media to Improve Early Childhood Development in Kindergarten. *SCAFFOLDING Jurnal Pendidikan Islam Dan Multikulturalisme*, 7(3), 757–770. <https://doi.org/10.37680/scaffolding.v7i3.8013>
- Soriano, A. C., & Marquez, M. F. (2025). Methods of Teaching for Building Skill-Based on Early Years Foundation Stages of Kindergarten Learners. *EPRA International Journal of Multidisciplinary Research (IJMR)*, 11(7), 408–419. <https://doi.org/10.36713/epra2013>
- Sudarti, Sumardjoko, B., Harsono, Narimo, S., & Surono, Y. (2025). Utilizing Natural Materials in Early Mathematics Education: Applying Bruner's Theory to Early Childhood Learning in Surakarta. *Journal of Posth Umanism*, 5(3), 743–755. <https://doi.org/10.63332/joph.v5i3.783>
- Urmeneta, A., Romero, M., Petre, V., Aveau, G., Lepage, A., Collin, S., Alexandre, F., Comte, M.-H., Lagarrigue, A., Viéville, T., Durampart, M., Bonfils, P., Galy, I., Camponovo, J., Tressols, F., Boulord, C., Borgne, Y. Le, Corieri, P., Caucheteux, C., ... Girard, M.-A. (2024). Creative Applications of Artificial Intelligence in Education. In *Palgrave studies in creativity and culture*. <https://doi.org/10.1007/978-3-031-55272-4>
- Yulando, S., Sutopo, S., & Franklin, T. (2019). Electronic Module Design and Development: An Interactive Learning. *American Journal of Educational Research*, 7(10), 694–698. <https://doi.org/10.12691/education-7-10-4>
- Zamzami, Wahyuni, S., & Reswita. (2025). Enhancing Early Childhood Learning Quality: A Qualitative Study on Teachers' Strategies and Pedagogical Approaches in Indonesian Preschools. *Al-Ishlah: Jurnal Pendidikan*, 17, 858–869. <https://doi.org/10.35445/alishlah.v17i1.7219>

#### Copyright Holder

© Munirah., Hairuddin., Ishak, I.D., & Wibawa, N.H.H.P.

#### First publication right:

Jurnal Pengabdian Kepada Masyarakat

This article is licensed under:

