Available online at: http://journal.uny-ip.site/index.php/jpip

Jurnal Penelitian Ilmu Pendidikan

Volume 19, Number 2, 245 – 256, 2026

Snack-Waste Collage Media to Improve Fine Motor Skills in Early Childhood

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Abstract

Fine motor competence is essential for children's readiness to write, manipulate learning materials, and perform daily tasks independently, yet classroom stimulation is often repetitive and underuses materials available in the surrounding environment. This study aimed to develop snack-waste collage media and examine its feasibility, practicality, and effectiveness in improving the fine motor skills of children aged five to six years at TK Hang Tuah, Bengkulu. The study employed a research and development design using the ADDIE model. The analysed assessment tables contained 18 Group B children; a classroom teacher and media and language validators contributed product appraisals. Data were collected through needs observation, expert-validation sheets, a teacher-response questionnaire, documentation, and pretest and posttest fine-motor assessment records. The media-expert score increased from 66.7% during the first validation to 95.8% after revision, while language validation was reported as 95.8%; conflicting teacher-response percentages prevented confirmation of a single practicality score. Recalculated tabulated scores increased from 52.55% to 88.66%, a gain of 36.11 percentage points, pending reconciliation with the original assessment sheets. The findings indicate that carefully cleaned and prepared snack packaging can provide attractive, economical, and environmentally meaningful collage material that supports hand-eye coordination, finger control, accuracy, and task completion in early childhood learning.

Keywords: collage media; snack waste; fine motor skills; early childhood; ADDIE

How to Cite (APA): Maryana, N., Zubaedi, & Iqbal, M. (2026). Snack-waste collage media to improve fine motor skills in early childhood. *Jurnal Penelitian Ilmu Pendidikan*, 19(2), 245-256. DOI: https://doi-reg.org/10.218891/jpip.20v19i2.139903

Received 25-08-2026; Received in revised form 26-09-2026; Accepted 11-10-2026

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INTRODUCTION

Early childhood education establishes the physical, cognitive, linguistic, social-emotional, moral, and artistic foundations that influence later learning. Fine motor development is particularly important because it enables children to coordinate the small muscles of the hands and fingers with visual information. These abilities are required when children grasp pencils, use scissors, fasten clothing, arrange small objects, apply glue, and complete other tasks that support independence and school readiness. Indonesian early childhood standards therefore include controlled hand movements, manipulation of objects, and eye-hand coordination among the expected developmental achievements of young children

(Kementerian Pendidikan dan Kebudayaan Republik Indonesia, 2014). Fine motor competence should not be treated as an isolated physical outcome. It is connected with attention, persistence, planning, self-confidence, and the child's ability to transform an idea into a visible product (Fatmawati, 2020; Hasanah, 2020).

The quality of fine motor stimulation depends on the learning experiences offered by teachers. Activities that are repeated without variation may allow children to practise familiar movements, but they can also reduce curiosity and restrict the range of muscular and perceptual demands encountered by the child. In many early childhood classrooms, fine motor work remains dominated by colouring, tracing, and copying. These activities have value, yet they do not always require children to select materials, estimate position, control adhesive, match shapes, or adjust finger pressure. Research on collage, weaving, cutting, and other manipulative art activities shows that varied materials can strengthen finger flexibility, visual-motor integration, and precision while maintaining children's interest (Arminawati et al., 2021; Kurniasih, 2020; Taniara et al., 2019).

Collage is particularly suitable for early childhood learning because it combines artistic expression with repeated fine motor actions. Children must pick up small pieces, rotate and position them, apply an appropriate amount of glue, press them onto a surface, and evaluate whether the arrangement follows a pattern or represents their own idea. This sequence trains the pincer grasp, bilateral coordination, control of force, spatial judgement, and persistence. Collage can also accommodate differences in ability because the size, texture, rigidity, and complexity of the pieces can be adjusted. Prior studies using pencil shavings, cotton, fabric scraps, natural materials, and discarded packaging have reported improvements in children's manipulation skills and engagement (Oktarina et al., 2020; Praptiwi & Widyastuti, 2022; Pura & Asnawati, 2019; Putri et al., 2021; Vaneza & Suryana, 2020).

The preliminary observation at TK Hang Tuah revealed a more specific instructional problem. Group B children were accustomed to drawing, colouring prepared pictures, and copying writing from the board. Collage activities were available only occasionally and were not always accompanied by systematic modelling or guidance. Several children used excessive glue, placed pieces irregularly, and had difficulty coordinating what they saw with the movement of their hands. Their products were often incomplete or insufficiently neat, while the learning process remained strongly directed by the teacher. These conditions suggested that the children needed an activity that preserved a clear learning structure but allowed more exploration, repeated finger movement, and independent decision-making.

Snack packaging waste was selected as the principal collage material because it was readily available around the school and children's homes. Its colours, printed patterns, gloss, stiffness, and varied textures differ from ordinary origami paper and create distinctive sensory demands. Flexible plastic must be pinched firmly, foil pieces can shift when glue is applied, and thicker packaging requires more controlled pressure. When prepared safely, these characteristics can enrich fine motor stimulation. The material also introduces an environmental dimension. Reusing clean packaging turns an object commonly discarded after consumption into an educational resource and gives teachers a concrete opportunity to discuss waste reduction, sorting, and responsible use of materials. Learning media made from reused objects can therefore combine pedagogical utility, affordability, and environmental awareness (Anwar et al., 2018; Aslindah & Suryani, 2021; Kustiawan, 2016).

Creative learning media should not merely look attractive. They must correspond to children's developmental level, communicate instructions clearly, avoid unsafe components, and make the intended learning actions possible. The effectiveness of a collage medium depends on the relationship between the pattern, the size of the pieces, the type of adhesive, the sequence of teacher guidance, and the amount of choice given to children. A product-development process is therefore needed to connect classroom problems with design decisions, expert feedback, revision, field implementation, and evaluation. The ADDIE

framework provides a systematic structure for this purpose through the stages of analysis, design, development, implementation, and evaluation. It is sufficiently flexible for educational media development while retaining explicit points for revision and evidence collection (Saltifa, 2020; Sugiyono, 2019).

Existing studies establish that collage can stimulate fine motor development, creativity, and engagement. However, many interventions use conventional paper, cotton, seeds, or ready-made decorative material, while fewer studies describe the systematic development of snack-packaging waste as a structured medium for five- to six-year-old children. Some reports emphasise the activity rather than the product-development process, and others do not integrate needs analysis, expert validation, teacher practicality, and pretest-posttest observation within one design. This creates a practical gap for teachers who need a usable model, not only evidence that collage is beneficial. A carefully designed product must show how discarded packaging is selected, cleaned, cut, organised, and combined with child-friendly patterns so that environmental material becomes a safe and purposeful learning resource (Amarullah, 2023; Rahayu, 2022; Rahmati, 2022).

This study developed snack-waste collage media for Group B children at TK Hang Tuah and evaluated three connected qualities. Feasibility concerned the suitability of the visual design, material preparation, instructions, safety, and developmental relevance. Practicality concerned the teacher's judgement of whether the medium could be prepared and used efficiently in classroom learning. Effectiveness was examined descriptively through changes in children's observed performance before and after implementation. The activity addressed finger flexibility, eye-hand coordination, placement accuracy, glue control, neatness, and task completion. These describe task demands; their correspondence to the six scored items requires confirmation. By bringing these dimensions together, the study sought to produce a classroom-ready medium that contributes to fine motor learning while modelling the educational reuse of everyday waste.

METHODS

Research Design and Context

The study used a research and development approach with the ADDIE model. This design was selected because the purpose was not only to describe children's initial ability but also to create, revise, and evaluate a learning product. The five ADDIE stages were treated as an iterative sequence. Analysis identified the learning problem and characteristics of available material. Design translated those findings into product specifications and assessment indicators. Development produced the prototype and incorporated expert recommendations. Implementation placed the revised medium in classroom learning. Evaluation examined feasibility, practicality, and descriptive changes in children's performance. Field activities were conducted at TK Hang Tuah, Bengkulu, from 12 March to 17 April 2026.

Participants and Sampling

The analysed pretest and posttest tables each contained 18 Group B children aged five to six years. One classroom teacher contributed a practicality appraisal. The product addressed the developmental needs of this classroom group. Other passages report 19 trial participants and 14 children in a practicality trial; whether these represent different stages is not established. Product appraisal involved a media expert and a language expert, while the classroom teacher assessed practicality. The analysis reported in this article uses the complete pretest and posttest observation tables, each of which contains 18 children. Individual names are omitted and results are presented in aggregate to protect participant privacy.

Product Development Procedure

During analysis, the researcher observed classroom routines, children's responses to existing fine motor activities, the availability of collage materials, and the teacher's instructional needs.

The findings were converted into product criteria: the medium had to be inexpensive, visually attractive, safe after preparation, easy to organise, compatible with common school glue, and capable of eliciting repeated pinching, placing, pressing, and adjusting movements. The analysis also indicated that flower patterns were familiar to the children and could provide both clear boundaries and space for colour selection.

The design stage produced flower-pattern worksheets, categories of clean snack packaging, sample colour combinations, and a simple implementation sequence. Packaging was washed or wiped, dried, inspected for sharp edges, and cut into manageable pieces. The prototype allowed children to select pieces and arrange them within the pattern rather than reproduce one fixed model. Instructions were written in short, direct sentences suitable for teacher explanation. The assessment plan included expert-validation indicators, a teacher-response instrument, and a six-indicator observation sheet for children's fine motor performance.

During development, the prototype was submitted for media and language validation. The first media review resulted in revisions to the shape and size of pieces, visual organisation, material safety, and clarity of use. The researcher then produced a second version with cleaner preparation, more consistent pieces, simplified instructions, and a more coherent display. Language feedback was used to reduce ambiguity and ensure that procedural statements could be communicated easily to young children. The revised product was implemented in the classroom after it reached a highly feasible category.

Implementation began with teacher explanation and modelling. Children identified the available colours and textures, selected pieces, applied glue, and placed the material on the flower pattern. The teacher and researcher provided support when needed but allowed children to make choices and correct misplaced pieces. Evaluation occurred throughout the process. Formative evaluation guided revision after expert review, while summative evaluation used the teacher response and the comparison of pretest and posttest fine motor observations.

Instruments and Data Collection

Data were obtained through observation, documentation, validation sheets, and a teacher-response questionnaire. The needs observation recorded the dominant classroom activities, difficulties shown during sticking tasks, and the availability of reusable packaging. The media-validation sheet examined visual quality, suitability of the material, technical usability, safety, durability, and relevance to fine motor stimulation. The language-validation sheet examined sentence clarity, simplicity of instructions, consistency of terms, and appropriateness for the learning context. The teacher-response questionnaire assessed ease of preparation, attractiveness, suitability for children, classroom manageability, and perceived usefulness.

Children's performance was summarised from the pretest and posttest assessment records. The reported calculation uses six items scored up to four points each, giving a maximum of 24 per child and 432 for 18 children. However, the instrument grids do not establish an unambiguous mapping between those six scored items and the task demands discussed here. Results are therefore presented only in aggregate, without separate estimates for finger flexibility, coordination, placement, glue control, neatness, or completion. Photographic documentation recorded the prototype, classroom process, and completed collage products.

Data Analysis

Validation, practicality, and performance scores were converted to percentages by dividing the obtained score by the maximum possible score and multiplying the result by 100. Expert percentages were interpreted using the reported feasibility categories. Conflicting teacher-response values were not combined into a single score. Child totals were recalculated from the listed individual scores; discrepancies with reported totals remain subject to verification against original assessment sheets. Pretest and posttest results were summarised as

aggregate achievement percentages. The change was calculated as the posttest percentage minus the pretest percentage and is reported as a percentage-point gain. Because the design did not include a control group or an inferential test, the results are interpreted descriptively and do not establish causal effects beyond the field context. Qualitative comments from validators and classroom observation were used to explain the revisions and the conditions under which the medium worked.

Ethical Considerations

The field activities were conducted with school authorisation. The article does not report children's names or individual scores, and the findings are presented at group level. Photographs are included only to document the learning process contained in the source thesis. The study did not report an institutional ethics approval number, so no such approval is claimed here. Future replication should formalise parental consent, image-use permission, and a documented protocol for cleaning and inspecting reused packaging before classroom use.

RESULTS AND DISCUSSION

Results

Needs Analysis and Product Requirements

The needs analysis showed that the classroom required more varied fine motor stimulation and a medium that could be prepared without expensive specialised material. Colouring and copying were common, while collage was used infrequently and without a consistent sequence of modelling, guided practice, and independent work. Children's difficulties were visible in excessive glue use, irregular placement, weak control of small pieces, and incomplete products. The teacher therefore needed a medium that would organise the task clearly while preserving opportunities for choice.

The product requirements derived from these observations were both pedagogical and technical. Pedagogically, the medium had to elicit repeated pincer grasp, finger adjustment, visual matching, and controlled pressing. It also had to retain children's attention and make success visible through a completed image. Technically, the packaging had to be clean, dry, free from sharp corners, small enough to manipulate, and compatible with available adhesive. A familiar flower pattern was selected because its bounded petals and leaves provided a manageable spatial structure. Different packaging colours could be assigned to separate parts or combined according to children's preferences. Table 1 summarises the main needs and their design implications.

Table 1. Needs analysis and product-design implications

Observed Need	Design Response	Intended Fine Motor Demand
Repetitive colouring and copying	Collage task with varied packaging pieces	Pinching, rotating, placing, and pressing
Excessive glue and irregular placement	Modelling and bounded flower pattern	Control of force and spatial accuracy
Limited and costly media options	Clean reusable snack packaging	Frequent practice with accessible materials
Low environmental use of waste	Sorting and reusing colours and textures	Manipulation combined with environmental awareness

Prototype Development and Revision

The first prototype consisted of printed flower outlines and prepared pieces of snack packaging grouped by colour and texture. The researcher demonstrated how discarded packaging could be transformed into decorative units rather than used as large, irregular fragments. The initial media validation produced a score of 16 out of 24, equivalent to 66.7%. This result indicated that the concept was promising but required revision before classroom use. The principal improvements concerned consistency of piece size, cleanliness and safety, visual

organisation, and the clarity of directions. The media results below follow the two listed validation reviews; a separate evaluation narrative mentions a third stage and 77.78%, so the full sequence requires verification.

The revised version used better-prepared pieces, clearer pattern boundaries, more deliberate colour grouping, and shorter procedural statements. Packaging with hard or sharp edges was excluded. Pieces were cut small enough to stimulate finger control but not so small that children could not handle them safely. The arrangement was also simplified so that the teacher could distribute material efficiently and children could see the available options. After revision, the media-expert score increased to 23 out of 24, or 95.8%, placing the product in the highly feasible category. The improvement between the first and second validation confirms the value of treating expert review as a design process rather than a final administrative judgement.

Language validation was reported as 95.8%, but the relevant total-score field is blank and the instrument descriptions differ in item count; this percentage could not be independently recalculated. The validator considered the revised instructions concise and understandable for classroom mediation. The product did not depend on children reading complex text. Instead, the wording supported teacher explanation and maintained consistent terms for selecting, applying glue, placing, pressing, and finishing. This was important because unclear instructions could shift children's attention away from motor practice and increase dependence on adult correction. The final product is illustrated in Figure 1.

Figure 1. Final flower collage produced from cleaned snack-packaging waste

Product Feasibility and Practicality

Teacher feedback was favourable, but a single practicality percentage could not be confirmed: the accounts report 95%, 95.8%, 95.88%, and 88.8%, while practitioner validation is separately reported as 97.5%. These figures cannot be treated as interchangeable. The teacher judged the materials easy to obtain, the pattern appropriate for Group B, and the activity attractive to children. The medium could be introduced using familiar classroom routines and common adhesive. Preparation required cleaning, drying, inspection, and cutting, but these steps could be completed before the lesson and did not require specialised equipment. The use of colour-grouped containers also reduced distribution time and helped children return unused pieces.

Practicality was strengthened by the balance between structure and choice. The flower outline gave children a clear endpoint, while the varied packaging allowed them to select colour and texture. The activity was therefore neither an unstructured craft task nor a mechanical copying exercise. Children could compare pieces, decide where each one should be placed, and make adjustments when a piece crossed a boundary or failed to adhere. This balance is

relevant to early childhood pedagogy because it supports autonomy without removing the scaffolding needed for successful completion. Table 2 presents the product-appraisal results.

Table 2. Summary of validation and teacher-response results

Assessment	Obtained Score	Maximum Score	Percentage
Media expert, stage 1	16	24	66.7%
Media expert, stage 2	23	24	95.8%
Language expert	Not verified	Not verified	95.8% reported
Classroom teacher response	Not verified	Not verified	Conflicting reports

Fine Motor Outcomes

Before implementation, the 18 children obtained an aggregate score of 227 from a maximum of 432, equivalent to 52.55%. The accompanying account described uneven performance during the activity; item-level changes cannot be calculated from the available totals. Several children could pick up pieces but had difficulty placing them precisely, regulating glue, or completing the pattern neatly. Others required repeated prompts to continue the task. These results were consistent with the initial classroom observation that fine motor activities had not provided sufficient variation or systematic practice.

Summing the 18 listed posttest scores gives 383 of 432, or 88.66%, rather than the reported total of 382 (88.43%). The recalculated increase from the pretest is 156 points, or 36.11 percentage points. These figures are provisional because the original assessment sheets have not been reconciled with the table. The narrative describes coordination, manipulation, and placement during collage work, but does not provide item-level data establishing gains in each skill or the proportion completing tasks with less assistance. Table 3 presents the recalculated aggregate results. *Recalculated from listed scores; pending verification against original records.

The classroom documentation illustrates task participation but does not resolve the numerical discrepancy. During implementation, children concentrated on selecting, placing, and pressing the pieces, often comparing colours and observing the progress of peers. The material created a visible accumulation of small successes, as each placed piece filled part of the flower. This sustained engagement is important because fine motor development depends on repeated action. The packaging pieces invited many repetitions without presenting the activity as drill. Figure 2 shows the classroom implementation.

Table 3. Aggregate fine motor performance before and after implementation

Measurement	n	Obtained Score	Maximum Score	Achievement
Pretest	18	227	432	52.55%
Posttest	18	383*	432	88.66%*
Change	18	+156*	—	+36.11 percentage points*

Figure 2. Group B children implementing the snack-waste collage activity

Discussion

The results indicate that snack-waste collage media can integrate fine motor stimulation, creative choice, and environmental learning in a single classroom activity. The recalculated increase from 52.55% to 88.66% suggests descriptive improvement within the tabulated group, pending reconciliation of the assessment records. It cannot by itself prove that the medium caused all observed change, because the study did not include a comparison group and the implementation occurred in one school. Nevertheless, the pattern is educationally meaningful when considered together with expert validation, teacher appraisal, and observation of children's task behaviour. The findings suggest that the design created conditions that made repeated, purposeful hand movements more likely.

The mechanical characteristics of snack packaging offer a possible explanation for the reported overall improvement. Ordinary paper collage primarily requires picking up and placing light pieces. Snack packaging introduces greater variation. Some pieces are glossy and can slide, some are flexible and bend under pressure, and others are relatively stiff. Children must adjust their grip and the force used to manipulate each type. This variation provides richer proprioceptive and tactile information than one uniform material. Similar benefits have been described in collage activities using pencil shavings, fabric scraps, cotton, and other textured materials, where manipulation of small components supports finger strength, coordination, and precision (Praptiwi & Widyastuti, 2022; Pura & Asnawati, 2019; Vaneza & Suryana, 2020).

Eye-hand coordination was stimulated throughout the activity. Children visually identified an empty area, selected a piece with an appropriate size or colour, moved it toward the pattern, and corrected its orientation before pressing it down. Each placement therefore linked perception with controlled movement. This sequence resembles the visual-motor demands children later encounter in writing, drawing within boundaries, assembling objects, and using classroom tools. Studies of collage and manipulative art activities consistently emphasise that the developmental value lies not only in the finished product but also in the sequence of grasping, positioning, and adjusting that produces it (Oktarina et al., 2020; Putri et al., 2021; Taniara et al., 2019).

Glue control and neatness are relevant task demands, but the aggregate scores do not establish separate gains in these areas. Excessive glue was one of the problems identified during the preliminary observation. In the revised activity, children observed modelling, used smaller collage units, and received feedback while completing multiple placements. These repeated opportunities could help children connect the amount of adhesive with the result. Too much glue made pieces slide and obscured the pattern, while an appropriate amount allowed immediate attachment. The product thus provided natural feedback. Children did not merely receive a verbal correction. They could see and feel the consequence of their own motor decisions.

The favourable qualitative teacher response is relevant, although its precise score remains unresolved, because a theoretically effective medium has limited value if it is difficult to prepare, distribute, or manage. Snack packaging is inexpensive and commonly available, but it requires a disciplined preparation protocol. Material must be collected selectively, cleaned, dried, checked for residual oil, and cut without sharp corners. The study's revisions increased practicality by standardising these steps and organising pieces before the lesson. Reused-material media can support learning and environmental awareness, but safety and preparation determine whether the idea is genuinely usable in an early childhood setting (Anwar et al., 2018; Aslindah & Suryani, 2021; Kustiawan, 2016).

The product also created an accessible form of environmental education. Young children may not yet understand abstract discussions of long-term waste accumulation, but they can experience the idea that a discarded object has another possible use. The transformation from packaging to flower collage makes reuse visible and concrete. Children can sort colours, compare material types, and participate in responsible collection under adult supervision. This experience should not be interpreted as suggesting that craft use alone solves plastic waste. Its educational contribution is to introduce a habit of examining materials before disposal and to connect classroom creativity with everyday environmental choices.

Creativity emerged through bounded decision-making. The pattern constrained the overall form, but children could choose colours, textures, and arrangements. Such a design is appropriate for learners who still need clear task structure. Completely open-ended art may overwhelm some children, while an overly prescriptive model reduces exploration. The developed collage medium occupied a productive middle position. It provided a recognisable flower and a sequence of actions, yet did not require every product to look identical. This balance aligns with views of creativity as the interaction of person, process, product, and environmental support rather than an isolated talent (Azis, 2019; Kasta, 2019; Rahayu, 2022).

The ADDIE process contributed to the quality of this balance. The first prototype received only 66.7% from the media expert, showing that the availability of an interesting material did not automatically produce a suitable learning medium. Revision was necessary to address safety, visual consistency, and instruction. The second media score of 95.8% demonstrates how systematic feedback can transform an initial craft idea into a more coherent educational product. Product development in early childhood education requires attention to the interaction between developmental goals and material details. Piece size, pattern complexity, wording, colour grouping, and teacher demonstration all influence whether children can perform the intended actions (Cahyaningrum, 2015; Kristanto & Haryanto, 2014; Mulyani, 2017).

The study extends prior collage work by combining a specific waste material with a full development sequence and three forms of evaluation. Earlier studies have established the value of collage for motor skills and creativity, but classroom adoption also depends on evidence that the medium is feasible and practical. In this study, expert validation examined design quality, teacher response addressed use in the actual setting, and children's assessment records provided a provisional aggregate outcome indicator. These complementary sources can inform classroom decisions, but conflicting scores and

incomplete instrument documentation limit confidence in the numerical findings. It also responds to the need for innovation that is grounded in a clearly described problem and evaluated against explicit criteria (Amarullah, 2023; Rahmati, 2022).

Several limitations must frame interpretation. First, the analysed tables contain 18 children from one kindergarten, although participant counts elsewhere differ, so the findings cannot be generalised to schools with different resources, teaching practices, or learner characteristics. Second, the pretest-posttest comparison was descriptive and did not control for maturation, repeated exposure, teacher assistance, or other learning activities during the study period. Third, observation involved behavioural ratings that may be influenced by assessor judgement. The six-item mapping, posttest total, teacher-response score, and complete validation sequence require verification against original records. Future studies should report inter-rater agreement, use a comparison group where feasible, and examine whether gains are retained in later writing, cutting, or self-care tasks. Fourth, the study focused on short-term classroom use. Repeated implementation is needed to determine the durability of the material, the time burden of preparation, and the risk that novelty diminishes.

Despite these limitations, the product has clear practical implications. Teachers can adapt the medium by varying pattern complexity, piece size, and the amount of choice according to children's developmental levels. Larger pieces and fewer sections can support children who are beginning to control grasp and placement. Smaller pieces, curved boundaries, and mixed textures can challenge children with stronger skills. The activity can also be integrated with language, mathematics, and environmental learning by naming colours, counting pieces, comparing texture, or discussing material categories. The essential condition is that curricular integration should not obscure the fine motor purpose. Children need sufficient time to manipulate the material, correct errors, and complete the task independently.

For school implementation, a reusable preparation system would improve sustainability. Clean packaging can be collected in cooperation with families, but adults should manage washing and final inspection. Pieces can be stored by colour or material type in labelled containers. Teachers should prepare a small number of sample arrangements without presenting one as the only correct result. Demonstration should focus on technique, including picking up one piece, applying limited glue, positioning it within a boundary, pressing briefly, and cleaning fingers before selecting another. This procedure preserves creative freedom while reducing avoidable difficulty and ensures that reused material remains safe and educationally purposeful.

CONCLUSION

The study produced snack-waste collage media through the analysis, design, development, implementation, and evaluation stages of ADDIE. The final product combined familiar flower patterns with cleaned and prepared pieces of snack packaging. Its design directed children toward repeated pinching, selecting, positioning, gluing, pressing, and correcting movements while allowing individual colour and texture choices. Expert feedback was essential to the development process. The media score increased from 66.7% in the first review to 95.8% after revision, and language appraisal was reported as 95.8%, with incomplete score documentation. Teacher feedback described the medium as attractive, manageable, economical, and appropriate for Group B learning, but conflicting percentages prevent confirmation of a single practicality score.

Recalculation of the listed individual scores gives aggregate achievement of 52.55% before implementation and 88.66% afterward, a provisional gain of 36.11 percentage points. The posttest total requires reconciliation with the original assessment sheets. Separate gains in the six task domains cannot be established from aggregate scores. These findings support the use of safely prepared snack packaging as a meaningful alternative collage material. The product contributes not only to motor practice but also to children's experience of reuse and material responsibility. Because the study involved one class and no comparison group, the

results should be understood as promising field evidence rather than definitive causal proof. Further research should use larger and more diverse samples, independent observers, controlled comparisons, and delayed assessment. Schools adopting the medium should establish clear procedures for collection, cleaning, inspection, storage, and permission for classroom documentation.

ACKNOWLEDGEMENT

The author thanks TK Hang Tuah, the participating classroom teacher and children, the media and language validators, and the Postgraduate Program of Universitas Islam Negeri Fatmawati Sukarno Bengkulu for supporting the development and field implementation of the learning medium.

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