

Collage and Montage as Collaborative Experiential Learning: A Qualitative Description of Children's Creativity and Emotional Regulation and Pre-Service PG-PAUD Students' Facilitation Practices

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ABSTRACT

This study describes the implementation of experiential learning through collage and montage art activities in relation to creativity and emotional regulation in early childhood education. Employing a qualitative descriptive approach within Kolb's experiential learning framework, the research was conducted at an early childhood education center in Palangka Raya, Central Kalimantan, Indonesia. Twenty-one pre-service Early Childhood Teacher Education (PG-PAUD) university students served as facilitators for 40 preschool children aged 4–6 years. Data were collected through structured observation, semi-structured interviews, and documentation of artworks and reflective journals, then analyzed using Miles and Huberman's interactive model. Results indicate that locally sourced natural materials, including dried leaves and fabric scraps, facilitated concrete sensory experiences bridging tactile exploration and emotional expression. Observational findings were associated with behaviors reflecting children's fine motor coordination, divergent thinking, and capacity to externalize complex emotions through process-oriented artmaking. The collaborative facilitation process was associated with evidence of university students' pedagogical empathy, emotional attunement, and reflective teaching practices. These findings suggest that culturally grounded, art-based experiential learning, facilitated collaboratively by pre-service teachers, offers a promising contextual approach worth further investigation for supporting holistic development in early childhood education settings.

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1. Introduction

Early childhood education (ECE) serves as a foundational period for children's cognitive, affective, and psychomotor development. Within this stage, art-based

activities such as collage and montage function not merely as creative outlets but as powerful media for emotional expression, sensory exploration, and social interaction, all of which contribute to children's emotional regulation and self-awareness (Vecchi, 2010). Research consistently affirms that creative arts activities have a measurable positive impact on children's holistic development in early education, spanning cognitive, emotional, and social domains (Zaidah & Ariyati, 2024). Concurrently, emotions play a critical role in shaping how individuals engage within learning environments; in art education specifically, emotional experiences strongly influence creative processes, enabling learners to translate inner feelings into visual expression and making artistic practice a pathway toward emotional balance (González-Zamar & Abad-Segura, 2021). Art literacy-based activities have been shown to support verbal expression, emotional language, and symbolic thinking in children aged 4–6 years (Biber, 2025). Visual culture-based art learning has also showed effectiveness in developing higher-order thinking skills in early childhood settings (Alam et al., 2020), affirming that engagement with artistic materials goes beyond expression into cognitive development.

To support these developmental goals, scholars and practitioners have explored various pedagogical approaches. Experiential and interdisciplinary strategies have been widely recognized as effective in early childhood settings, with learning that combines artistic expression, movement, observation of nature, and sensory exploration found to enrich children's ability to connect different domains of knowledge and sustain flexible thinking (Samaniego et al., 2024; Kolb, 1984; Dewey, 1938). Nature-integrated and ecoprint-based art projects have demonstrated effectiveness in fostering creative thinking in young learners through hands-on material engagement (Jazariyah et al., 2023). Broader creative learning ecosystems that integrate arts, technology, and environmental exploration further support the development of imagination and aesthetic sensibility in early childhood (Meilani & Hanafiah, 2026). Collaborative project-based learning in kindergarten contexts has also been found to meaningfully foster creativity when structured around child-centered, facilitated exploration (Parwoto et al., 2024). Regarding creativity facilitation specifically, practical strategies including environmental support, open-ended tasks, and scaffolded guidance have been identified as key enablers of creative growth (Anjani, 2024; Fitriyah & Kurniawati, 2025). Research on creative development further indicates a dual-phase model: a first phase emphasizing fluency, flexibility, and motivation through exploratory activities, followed by an advanced phase focused on sustaining originality and elaboration through continued reflection, requiring consistent pedagogical support over time (Ponce-Delgado et al., 2024).

However, the existing body of literature reveals notable gaps. Prior studies on art-based learning in early childhood have predominantly investigated cognitive and fine-motor outcomes of single art media, such as the contribution of collage activities to fine motor development (Lubis et al., 2025) and the role of art activities in cognitive intelligence development (Setiawan et al., 2022); these studies did not examine emotional regulation and creativity as intertwined outcomes, and most relied on outcome description without attention to the facilitation process itself. Separately, research on university students in early childhood settings has examined teaching-assistance roles in relation to children's creativity (Andani et al., 2025), but has not addressed how the facilitators' own pedagogical competencies develop through that process, nor connected this to a specific experiential art medium. Methodologically, this leaves an underexamined intersection: how a structured experiential-learning cycle,

using collage and montage specifically, is enacted in practice by facilitators who are themselves still developing as educators.

Collage and montage are theoretically well suited to addressing this gap because, unlike more instructed art forms, their open-ended, process-oriented nature allows tactile sensory exploration and emotional expression to occur within the same activity, positioning them as media where creativity and emotional regulation can plausibly be observed together rather than in isolation. Pre-service PG-PAUD students constitute an important analytical dimension because, as facilitators who are themselves in training, their in-session decisions, responsiveness, and reflective practices are part of what shapes children's experience, while the facilitation process is simultaneously a site of their own professional learning, a reciprocal dynamic that trained-teacher-focused studies are not positioned to capture. The proposed conceptual link between creativity and emotional regulation in this study follows a tentative sequence: open-ended material exploration invites choice and experimentation, which in turn creates moments of emotional engagement (e.g., pride, frustration, surprise); these moments become occasions for reflection and expression when a facilitator responds to them; and repeated cycles of reflection and response are what may support children's adaptive, regulated engagement with subsequent creative risk-taking. This sequence is proposed as a working proposition to be examined against the observational data reported in Section 3, rather than as an established causal pathway.

Therefore, this research intends to address that gap by describing how PG-PAUD pre-service students, through hands-on art facilitation using collage and montage, design and implement experiential learning activities in relation to preschool children's creativity and emotional regulation. The objectives of this research are: (1) to describe the process of implementing experiential learning through collage and montage activities as a collaborative facilitation model; and (2) to describe the observed patterns associated with this approach in relation to children's creativity and emotional regulation in early childhood settings.

2. Method

This study employed a qualitative descriptive design to describe how experiential art-based collaboration between PG-PAUD students and early childhood learners relates to the observed development of creativity and emotional regulation in early childhood. The study involved two units of analysis observed concurrently within the same sessions: preschool children, whose creative and emotional behaviors during art-making were the primary object of observation, and PG-PAUD students, whose facilitation practices and reflective learning were examined as a secondary, embedded unit of analysis. The research was conducted at an early childhood education center in Palangka Raya, Central Kalimantan, Indonesia (NPSN 69898738), during the even semester of the 2024/2025 academic year across two sessions, each lasting approximately 45 minutes. Participants were selected through purposive sampling and consisted of 21 PG-PAUD students enrolled in the Art and Handcraft Development course, who served as facilitators in small groups of 2–3 students per group of 5 children, and 40 preschool children aged 4–6 years (23 children aged 4 years, 10 children aged 5 years, and 7 children aged 6 years; 17 boys and 23 girls) as the primary subjects of observation; none of the participating children had prior exposure to structured art activities, which was not used as a selection criterion. Art activities utilized process-oriented, locally available materials, specifically dried leaves, paper scraps, and fabric pieces, selected for their

sensory richness and capacity to bridge concrete tactile exploration with emotional expression, consistent with the atelier-based philosophy of engaging children meaningfully through natural materials (Vecchi, 2010).

The implementation was structured following Kolb's Experiential Learning Cycle (Kolb, 1984) across four sequential stages. In the first stage, Concrete Experience: all 40 children participated in hands-on collage and montage sessions directly engaging with dried leaves and other tactile materials, stimulating sensory awareness and creative engagement, reflecting the role of art activities in developing children's intelligence and creativity (Setiawan et al., 2022).

In the second stage, Reflective Observation: facilitators and researchers systematically documented behavioral, motoric, and emotional responses of all 40 children during the art-making process, alongside the 21 students' preliminary reflections on their facilitation experiences. Fine motor engagement observed during collage tasks was recorded as a key behavioral indicator, consistent with findings on how collage activities develop fine motor coordination in early childhood (Lubis et al., 2025; Gapur et al., 2022).

The third stage, Abstract Conceptualization: students collaboratively analyzed their observational data, identifying patterns in children's creative expression and emotional externalization, and connecting insights to pedagogical concepts addressed in their coursework. In the fourth stage, Active Experimentation: students refined and re-implemented their facilitation strategies based on reflective insights, producing an iterative cycle of pedagogical improvement in which emotional creativity was cultivated through art as a sustained practice (González-Zamar & Abad-Segura, 2021).

Data were collected from all 40 children and 21 PG-PAUD students through three techniques: structured observation using a behavioral checklist applied across all sessions, developed in reference to established instruments for early childhood developmental assessment (Jamin et al., 2025); semi-structured interviews conducted with PG-PAUD students and classroom teachers; and documentation of activity artifacts including children's completed artworks and facilitator reflection journals. As the study involved preschool-aged participants, institutional permission for the research was obtained in writing from FKIP UPR reference number 7685/UN24.3/KP/2025. Given the informal, community-based setting of the activities, parental/guardian consent was obtained verbally rather than through a signed form: parents and guardians were briefed on the purpose and procedures of the activities and gave verbal agreement for their child's participation, with age-appropriate verbal assent also sought from children themselves; this verbal consent process is reported as a limitation of the study's documentation rather than a fully auditable written consent trail. To protect children's identities in this article, photographs of children in Figures 1 and 2 have been edited so that children's faces are blurred; the two visible adult faces belong to PG-PAUD student facilitators who consented to their own image being used. Participant confidentiality in field notes and reflective journals was maintained by assigning each child and each PG-PAUD student a unique numeric participant code, which was used in place of names throughout data recording and analysis. Two sets of observational categories guided data collection: for children, the categories were creativity (fluency, flexibility, originality, and elaboration), fine motor coordination, and emotional regulation (emotional externalization, impulse control, and emotional responsiveness), operationalized with reference to divergent thinking dimensions (Runco & Acar, 2012) and emotional regulation indicators (Thümmeler et al., 2022); for PG-PAUD students, the

categories observed were pedagogical empathy and reflective teaching practices as collaborative facilitation themes. Data analysis followed Miles and Huberman's (1994) interactive model, comprising data reduction, data display, and conclusion drawing; coding of observation and interview data was conducted independently by members of the research team, with disagreements resolved through discussion until consensus was reached. Trustworthiness was addressed through source triangulation, cross-referencing data from students, classroom teachers, and researcher observations, complemented by researchers' reflexive field notes documenting their own assumptions and interpretive decisions during data collection and analysis.

3. Result and discussion

This study aimed to describe the process and observed patterns of implementing experiential learning through collage and montage activities as a collaborative model in relation to children's creativity and emotional regulation, facilitated by PG-PAUD university students. The findings are presented and discussed in relation to these objectives across three interconnected dimensions: creative development, emotional regulation, and pedagogical competency.

3.1. Creativity Development Through Experiential Art Activities

Collage and montage activities were associated with observable indicators of creative thinking among preschool children. As shown in Table 1, 29 of 40 children attempted new visual combinations using varied materials such as paper, fabric, and dried leaves, a behavior interpreted by the research team as reflecting curiosity and material experimentation. Children also exhibited pride in their compositions and engaged in autonomous decision-making when arranging and recomposing materials. These specific behaviors most directly correspond to the flexibility and elaboration dimensions of divergent thinking as operationalized in this study; they are reported as indicative rather than exhaustive evidence of the fluency, flexibility, originality, and elaboration dimensions described by Runco and Acar (2012), since a single observed behavior does not by itself establish all four dimensions simultaneously. A more fine-grained coding framework distinguishing which specific behaviors correspond to which dimension is identified as a direction for future refinement of this observation instrument.

Table 1. Indicators of Children's Creativity and Emotional Regulation During Collage–Montage Activities

Observed Aspect	Behavioral Indicators	Field Observation Example	Interpretative Notes
Creativity	Combining different materials (e.g., paper, fabric, leaves)	29 of 40 children attempted new visual combinations	Children displayed curiosity and innovative thinking
Emotional Regulation	Remaining calm when mistakes occurred	19 of 40 children resumed work after artwork damage	Persistence/recovery after a frustrating moment (not confirmed as

Social Interaction	Sharing tools and materials with peers	32 of 40 children collaborated in small groups	generalized emotional regulation) Indicator of social cooperation; tentative link to empathy
Focus and Engagement	Sustained attention throughout the activity	34 of 40 children concentrated for 20–30 minutes	Strengthened intrinsic motivation through creative play

A plausible, though not directly tested, explanation for this pattern is the open-ended, process-oriented nature of collage and montage, which allows children to explore without predefined outcomes; this observation is reported here descriptively, as the available literature on color cues and attention was derived from a different empirical context (video-lecture learning among older learners) and is not treated as a direct explanatory mechanism for preschool children's sustained focus during collage sessions. Independently of a specific mechanism, the observation that 34 of 40 children maintained focus for 20–30 minutes is consistent with broader evidence that creative pedagogy strategies centered on open-ended exploration and environmental stimulation are among the facilitators associated with early childhood creativity (Fitriyah & Kurniawati, 2025; Anjani, 2024), and that active investigation-based learning has been linked to gains in creative thinking behavior in young learners (Albar & Southcott, 2021).

Structured creative activities have also been found to enhance creative imagination and performance in preschool children (Kao et al., 2025). The present study extends beyond prior research by Setiawan et al. (2022), which documented art activities primarily as instruments for cognitive intelligence development, by describing how collage and montage were associated with observable divergent thinking behaviors in naturalistic, facilitated settings, a pattern also observed in process-oriented art activities such as finger painting, which have been associated with artistic expression and self-initiated behavior (Julaikah, 2025). The collaborative scaffolding by PG-PAUD students encouraging autonomy without dictating outcomes further distinguishes this model from more directive art instruction approaches documented in the literature.



Figure 1. Collaborative Process of PG-PAUD Students and Children During Collage Making

As shown in Figure 1, PG-PAUD students guided preschool children during collage-making activities, reflecting the core principle of experiential learning wherein children engage in hands-on exploration while facilitators scaffold creativity, encourage self-expression, and promote emotional balance through art-based play (Kolb, 1984).



Figure 2. Examples of Children's Collage and Montage Artworks

The artworks in Figure 2 offer illustrative examples of children's originality and material experimentation, which are broadly consistent with literature describing creative arts activities as having a positive and multidimensional association with early childhood development across cognitive, emotional, and expressive domains (Zaidah & Ariyati, 2024); this study's artwork documentation is descriptive rather than confirmatory of that broader claim. This focus on creative ideation also differs from the narrower scope reported by Lubis et al. (2025), whose study on collage activities focused predominantly on fine motor coordination outcomes.

3.2. Emotional Regulation Through Art-Based Expression

The second objective concerned patterns observed during collage and montage sessions in relation to emotional regulation. It is important to distinguish the specific behaviors recorded from the broader psychological construct of emotional regulation, which this qualitative descriptive design was not equipped to measure directly. Observational data revealed that 19 of 40 children calmly resumed their work after accidental artwork damage; this discrete behavior is interpreted cautiously as an indicator of persistence and recovery from a frustrating moment, rather than as direct evidence of generalized emotional regulation or impulse control. Separately, 32 of 40 children willingly shared tools and materials within small group settings; this behavior is interpreted primarily as evidence of social cooperation, and only tentatively as bearing on empathy, consistent with findings that structured art and play-based activities are associated with social and emotional skill development in young learners (Ramadhanti et al., 2025).

The scientific explanation for these outcomes lies in the nature of tactile, process-oriented art as an affective channel. When children engage with materials such as dried leaves and fabric scraps, the sensory experience provides a non-verbal medium through which complex emotions, joy, frustration, calmness, can be externalized and processed constructively. Art literacy-based activities have been specifically shown to develop emotional language and symbolic thinking as children translate felt experience into visual form (Biber, 2025). This aligns with Vecchi's (2010) atelier-based philosophy, in which natural materials serve as a bridge between sensory exploration and emotional meaning-making. Furthermore, the quality of adult-child interaction during sessions was a decisive factor; PG-PAUD students practiced emotionally responsive facilitation, adjusting their guidance in response to children's affective states.

This is consistent with Thümmeler et al. (2022), who identify adult emotional attunement and interaction quality as key determinants of emotion regulation development in early education. Collaborative observation and follow-up between educators has similarly been identified as essential for sustaining self-regulation development in early childhood (Rahman et al., 2025). The present study extends this line of work by describing instances in which pre-service students, rather than trained teachers, appeared to enact emotionally responsive facilitation when guided through a structured experiential learning framework, a dimension not addressed in Thümmeler et al.'s (2022) work; whether this reflects a generalizable capacity of pre-service facilitators remains an open question for future research.

The application of Kolb's (1984) cycle across four stages provided the structural mechanism through which emotional regulation was cultivated progressively. During Concrete Experience, all 40 children engaged directly with varied textures and natural materials including dried leaves and locally sourced fabric, connecting art making to their cultural and environmental surroundings. This cultural grounding aligns with evidence that embedding learning in locally relevant materials and contexts strengthens children's engagement and deepens developmental outcomes (Ramadhani et al., 2025).

The Reflective Observation stage prompted children to verbalize feelings about their artworks, transitioning spontaneous exploration into self-aware expression. Abstract Conceptualization emerged as children began associating colors with moods and identifying visual themes, a cognitive-affective integration process. Finally, in the Active Experimentation stage, facilitators' journals and researcher observations recorded instances in the second session of children showing more confidence, fewer visible frustration responses, and greater willingness to take creative risks compared

with the first session. For example, in the first session, one child (Child A) showed a strong emotional response after making an error in a drawing that did not match his or her intention: the child appeared frustrated, put down the drawing tools, and stated that the artwork could not be completed. After being guided by a facilitator to pause, take a breath, and consider the mistake as part of the creative process, the child resumed the activity. In the second session, when Child A encountered a similar mistake, he or she no longer abandoned the activity but instead paused, asked a facilitator for help, and then attempted to revise the part of the artwork considered unsatisfactory. This shift is interpreted as an instance of a previously introduced emotion-regulation strategy being tested and applied in a subsequent creative situation, illustrating the Active Experimentation stage as a movement from a spontaneous emotional reaction toward a more directed and adaptive response. This instance is reported as an illustrative qualitative observation from the two sessions rather than as a measured trajectory of change.

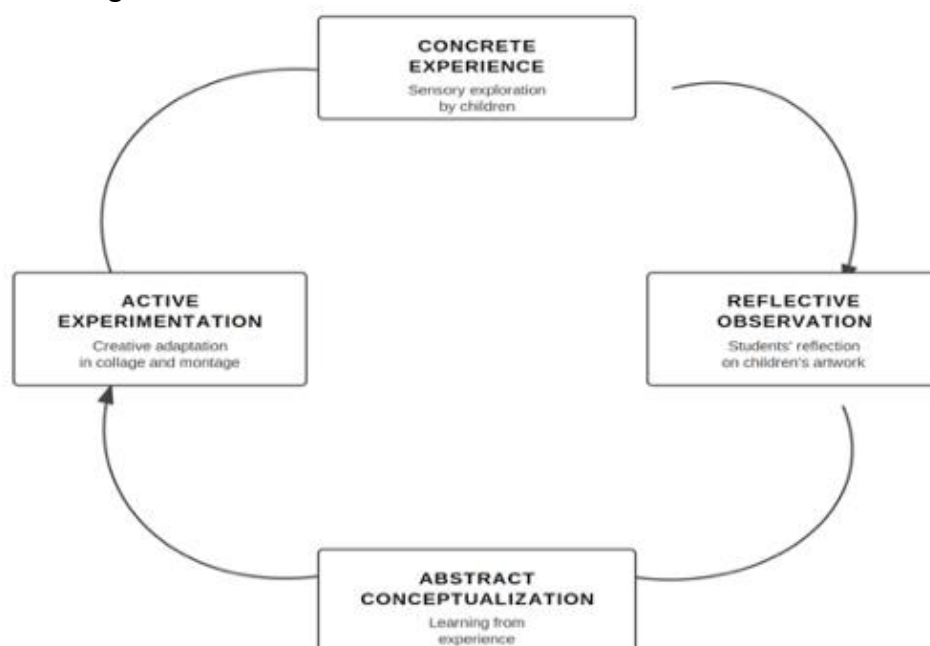


Figure 3. Experiential Learning Model in Early Childhood Art Education

As illustrated in Figure 3, the four stages of Kolb's cycle operated as an integrated, iterative framework, not a linear sequence in which sensory exploration, reflection, and creative adaptation reinforced one another continuously. This cyclical dynamic distinguishes experiential art learning from one-time art exposure, which prior studies have not fully operationalized in collaborative facilitation contexts.

3.3. Pedagogical Competency of PG-PAUD Students as Collaborative Facilitators

Beyond children's outcomes, this study documents observed indicators of pedagogical development among the 21 PG-PAUD university students in the context of the collaborative facilitation model. Students' reflective journals and interviews showed indications of empathy and reflective teaching practices across sessions. Their capacity to observe children's emotional cues, adapt scaffolding strategies, and engage in post-session reflection is consistent with what Goldstein and Winner (2012) identify as art's distinctive role in fostering empathy and emotional intelligence, not only in children but in those who facilitate artistic experiences.

This finding supported by evidence that pre-service students engaged in teaching assistance roles within early childhood settings develop meaningful competencies in scaffolding creativity and responding to children's developmental needs through direct facilitation experience (Andani et al., 2025). Teacher creativity is similarly strengthened through participation in purposefully designed pedagogical programs (Wahyuningsih et al., 2024), while collaborative facilitation models have been shown to produce measurable creativity outcomes for both children and their facilitators simultaneously (Parwoto et al., 2024). The reflective phases of Kolb's cycle thus served a dual function: supporting children's self-awareness while simultaneously developing students' humanistic and responsive pedagogical orientations.

This finding represents a meaningful contribution to the literature, as previous studies on art-based learning in early childhood (Setiawan et al., 2022; Lubis et al., 2025) have examined outcomes from the perspective of child development alone, leaving the professional formation of pre-service educators through art facilitation largely unexplored. The present study describes a collaborative model, in which 21 university students served as co-designers of learning experiences for 40 preschool children, as an approach to integrative art education that was associated with observed indicators of both children's creative and emotional engagement and students' pedagogical competencies; claims regarding its cost-effectiveness or comparative impact would require a dedicated cost and outcome analysis that falls outside the scope of this qualitative descriptive study.

4. Conclusion

This study describes how experiential learning through collage and montage art activities was implemented as a contextually grounded approach in relation to creativity and emotional regulation in early childhood. Guided by Kolb's Experiential Learning Cycle and implemented through collaborative facilitation by 21 PG-PAUD university students, the activities engaged 40 preschool children in Palangka Raya in direct interaction with locally sourced natural materials, reflection on their emotional responses, and behaviors interpreted as related to divergent thinking, self-regulatory attempts, and socio-emotional cooperation.

Findings suggest that the open-ended, process-oriented nature of collage and montage offered children a non-verbal medium associated with externalizing and responding to complex emotions, while the sensory richness of materials such as dried leaves was associated with sustained creative engagement and intrinsic motivation. Beyond children's outcomes, the collaborative facilitation process was associated with observed indicators of pedagogical development among pre-service educators, particularly in their capacity for emotional attunement, reflective observation, and adaptive scaffolding.

These findings contribute to the early childhood education literature by describing how art-based experiential learning, when embedded in a structured collaborative model, was associated with observed indicators of children's creative and emotional engagement and with reflective, empathetic teaching practices among university students.

These findings should be interpreted in light of several limitations. The study relied on a purposive, single-site sample of 40 children and 21 PG-PAUD students at one early childhood education center in Palangka Raya, which limits transferability to other cultural or institutional settings. The qualitative descriptive design, without a

comparison group or pre-test/post-test measurement, means that observed patterns cannot be interpreted as evidence of change caused by the intervention; moreover, the intervention consisted of only two sessions of approximately 45 minutes each, which substantially limits any inference about sustained effects beyond the observed sessions and means that findings should be read as observations of immediate, in-session behavior rather than of developmental change over time. Observational interpretations, particularly regarding emotional regulation, relied on behavioral proxies that may not fully capture the underlying psychological construct. Parental/guardian consent for children's participation was obtained verbally rather than through a signed form, which, while consistent with the informal community setting, limits the auditability of the consent process compared to written documentation. Future research is encouraged to employ mixed-method or longitudinal designs, ideally incorporating comparison conditions, validated measurement instruments, and written consent procedures, to further examine the sustained effects of such models across diverse early childhood contexts.

Conflicts of Interest: The authors declare that there is no conflict of interest regarding the publication of this article. This research was conducted for academic purposes only, with no financial, personal, or institutional relationships that could have inappropriately influenced the design, implementation, interpretation, or reporting of the findings presented in this study.

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