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The Impact of the Brainstorming Method on Learning Interest in Christian Religious Education and Character Education among Grade VIII Students at SMP Negeri 4 Tarutung

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ABSTRACT

This study investigated the effect of the brainstorming method on students' learning interest in Christian Religious Education and Character Education (PAK) among Grade VIII students at SMP Negeri 4 Tarutung. Recognizing that many PAK classrooms remain teacher-centred, this research sought to determine whether brainstorming could foster greater engagement, curiosity, and moral reflection. A quantitative quasi-experimental design was employed using a Nonequivalent Control Group Design. Two intact classes were purposively selected: Class VIII-2 (n = 29) as the experimental group and Class VIII-4 (n = 28) as the control group. The experimental class received brainstorming-based instruction emphasizing open idea generation, non-judgmental discussion, and collaborative synthesis linked to biblical and ethical principles, while the control class followed conventional instruction. Learning interest was measured using a validated 17-item Likert questionnaire encompassing four dimensions: enjoyment, attention, attraction to content, and active involvement. Statistical analysis using the independent-samples t-test revealed a significant difference between groups, $t_{(55)} = 19.240 > t_{table} = 2.000$ ($p < 0.05$). The experimental group achieved a high N-Gain of 0.8045, compared to the control's 0.0279, indicating a strong educational effect. Observations confirmed that brainstorming increased students' confidence, participation, and ability to connect faith-based lessons to real-life contexts. The findings demonstrate that brainstorming enhances learning interest by fostering psychological safety, collaboration, and relevance. Pedagogically, this method transforms PAK classrooms into dialogical communities where students learn through inquiry and shared reflection. The study recommends broader implementation of brainstorming in Christian education to nurture both intellectual curiosity and spiritual growth.

Keywords: *Brainstorming Method, Christian Religious Education, Character Education*

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INTRODUCTION

Learning interest has long been identified as one of the most decisive factors influencing student engagement, motivation, and academic success. It represents the internal enthusiasm that drives learners to participate actively, explore deeply, and sustain attention throughout the learning process. In the field of Christian Religious Education and Character Education (*PAK*), learning interest carries even greater significance because it not only enhances intellectual understanding but also fosters the development of moral reasoning, empathy, and spiritual maturity. When students are genuinely interested in learning, they approach religious and moral content not as mere academic material to be memorized but as a set of values to be reflected upon and applied in daily life. Thus, learning interest functions as both a cognitive and affective bridge linking knowledge with lived Christian ethics (Slameto, 2013). Classroom realities in many Indonesian schools-including those teaching PAK-often reveal limited levels of student interest and participation. Conventional teacher-centred instruction, which relies heavily on lecturing and rote repetition, tends to position students as passive recipients rather than active participants in meaning-making. In such environments, students seldom feel personally connected to the learning process. They may memorize biblical facts or moral lessons for assessment purposes but rarely engage in deeper reflection or question the relevance of those teachings to their lived experiences (Sudjana, 2010). The outcome is a gap between cognitive mastery and moral internalization-a challenge that educators in Christian schools must urgently address. Educational research has consistently shown that methods promoting active involvement, creativity, and collaboration yield stronger engagement outcomes. In this regard, brainstorming emerges as a particularly promising strategy. First introduced by Alex Osborn (1953) as a structured process of generating ideas within an open and non-judgmental environment, brainstorming encourages learners to think freely, suspend premature criticism, and build on one another's contributions. Within education, this method has been found to cultivate curiosity, improve problem-solving skills, and increase students' willingness to participate in group discussions (Istarani, 2014). When adapted to PAK, brainstorming offers an innovative way to help students explore biblical teachings, ethical dilemmas, and personal faith questions collaboratively, thereby transforming learning into a shared spiritual inquiry rather than an isolated cognitive task. In religious education, the brainstorming method aligns closely with the dialogical and communal nature of Christian pedagogy. Christianity emphasizes fellowship (*koinonia*), mutual edification, and the search for truth within community. In a brainstorming setting, students collectively interpret scriptural messages and moral concepts, echoing the Pauline vision that "each member belongs to all the others" (Romans 12:5). Such dialogical learning mirrors early Christian traditions where believers gathered to discuss Scripture and discern moral guidance together. Through brainstorming, therefore, students do not merely learn about faith-they practice faith in action by listening, sharing, and constructing understanding together (Knight, 2006). The affective climate fostered by brainstorming-characterized by openness, respect, and acceptance-can counteract fear of failure or judgment, common barriers to student participation. According to Djaali (2013), learning interest increases when students feel psychologically safe to express their ideas without ridicule or penalty. In brainstorming

sessions, all ideas are initially accepted, promoting inclusivity and encouraging even reticent students to contribute. This process builds confidence and belonging, vital components of sustained engagement. For PAK learners, it also models the Christian virtues of humility, empathy, and mutual respect, reinforcing moral learning through social practice. The use of brainstorming in PAK resonates with constructivist learning theory, which posits that knowledge is actively constructed through interaction between learners' prior understanding and new experiences (Vygotsky, 1978). By inviting students to generate and discuss ideas, brainstorming situates them as co-creators of knowledge rather than passive consumers. It also reflects social learning theory (Bandura, 1986), emphasizing that learning occurs within social contexts through observation, imitation, and dialogue. The process of sharing interpretations of biblical texts or moral issues allows students to internalize not only cognitive insights but also social and spiritual attitudes modeled by peers. In this sense, brainstorming operationalizes Christian education's holistic vision: forming minds, shaping hearts, and nurturing communal faith. Brainstorming offers a pedagogical pathway to bridge theory with daily life applications. During brainstorming sessions, students might discuss contemporary moral issues-such as environmental care, honesty, or respect for diversity-relating them to scriptural principles. This integrative approach helps students perceive Christian teachings as living truths relevant to modern challenges, thereby enhancing both learning interest and moral understanding (Roestiyah, 2012). Teachers serve as facilitators rather than lecturers, guiding students to connect ideas, reflect critically, and anchor conclusions in biblical wisdom.

This study therefore investigated the impact of the brainstorming method on Grade VIII students' learning interest in Christian Religious Education and Character Education at SMP Negeri 4 Tarutung. The investigation builds upon classroom-based empirical evidence and aims to determine whether brainstorming can significantly increase student interest compared to conventional approaches. Specifically, it examines how brainstorming influences indicators such as enjoyment, attention, attraction to lesson content, and active participation. The research draws on data from an experimental application of brainstorming in PAK lessons, as reported in the attached study. The expectation, grounded in prior theoretical and empirical work (Ginting & Faldina, 2021; Rahmawati, 2019), is that brainstorming would promote higher engagement by fostering creativity, collaboration, and emotional connection to learning content. This inquiry situates the brainstorming method within the broader mission of Christian education-to cultivate learners who are not only knowledgeable but also reflective, compassionate, and faithful. By transforming the classroom into a space of shared exploration, brainstorming embodies the biblical call to "reason together" (Isaiah 1:18) and to grow in wisdom through community. In doing so, it not only revitalizes students' learning interest but also reinforces the moral and spiritual aims of PAK itself.

METHODS

This study employed a quantitative quasi-experimental approach using a Nonequivalent Control Group Design to compare the effect of the brainstorming method with conventional instruction on students' learning interest. The research was conducted at SMP Negeri 4 Tarutung during the 2025/2026 academic year. The population comprised

all Grade VIII Protestant Christian students (N = 115) distributed across four intact classes. Two intact classes were selected through purposive sampling. Class VIII-2 served as the experimental group (n = 29) and Class VIII-4 served as the control group (n = 28). Class VIII-2 was chosen deliberately because prior observation and baseline measures indicated lower initial learning interest, making it an appropriate target for the instructional intervention. Learning interest was operationalized and measured with a 17-item Likert-type questionnaire specifically developed for this study. Items were designed to capture four dimensions of interest: enjoyment of lessons, sustained attention, attraction to the content, and active involvement in classroom tasks. Prior to the main intervention the instrument underwent trialing and validation procedures to establish construct validity and internal consistency; only after these psychometric checks was the questionnaire used for pretest and posttest measurement. The experimental condition implemented a structured brainstorming sequence integrated into regular Christian Religious Education and Character Education lessons. Each instructional episode in the experimental class followed core brainstorming principles: (1) generation of ideas in an open, non-evaluative atmosphere; (2) recording of contributions without immediate critique to preserve flow and quantity; (3) collaborative refinement and grouping of ideas; and (4) pedagogical facilitation by the teacher to relate student-generated ideas to biblical teachings and character themes. The control class continued with the school's ordinary, teacher-centered instructional practices during the same content unit. Both groups completed the validated learning-interest questionnaire immediately before the instructional sequence (pretest) and immediately after its completion (posttest). Class observations and field notes supplemented questionnaire data to provide contextual information on student behavior during lessons. Quantitative analysis focused on measuring change and comparing gains between groups. For each participant the N-Gain score (normalized gain) was calculated to express improvement relative to the maximum possible gain. Group distributions were examined for normality and homogeneity of variances to ensure assumptions for parametric testing were met. The primary comparative test was an independent-samples t-test ($\alpha = 0.05$) applied to group gain scores to evaluate the statistical significance of observed differences. Where appropriate, descriptive statistics (means, standard deviations) and item-level analyses were reported to illuminate which aspects of learning interest showed the largest changes. Instrument validation and trialing preceded hypothesis testing, and analytic assumptions (normality and homogeneity) were verified prior to performing the t-test. Triangulation with classroom observations helped contextualize questionnaire results and mitigate some limits of self-report measures. Limitations inherent to the nonequivalent control-group design-such as nonrandom assignment-are acknowledged and discussed in the study's limitations.

RESULT AND DISCUSSION

The primary objective of this research was to determine the impact of the brainstorming method on students' learning interest in *Christian Religious Education and Character Education* (PAK) among Grade VIII learners at SMP Negeri 4 Tarutung. Data were analyzed quantitatively using descriptive and inferential statistics to measure the difference in students' interest levels before and after the intervention. Complementary qualitative observations provided contextual understanding of classroom dynamics and student

participation. Table 1 summarizes the pretest and posttest mean scores, absolute gains, and N-Gain values for both the experimental and control groups.

Table 1. Descriptive Results of Pretest–Posttest Scores

Group	n	Pretest Mean	Posttest Mean	Absolute Gain	N-Gain Mean	N-Gain Category
Experimental (VIII-2)	29	50	65	15	0.8045	High
Control (VIII-4)	28	51	53	2	0.0279	Low

The experimental class achieved a posttest mean of 65, representing an absolute increase of 15 points from the pretest mean of 50. In contrast, the control class increased only 2 points (from 51 to 53). The average normalized gain (N-Gain) of 0.8045 for the experimental group fell within the *high* improvement category, while the control group's 0.0279 was classified as *low*. Inferential analysis reinforced these descriptive patterns. The independent-samples *t*-test produced $t_{(55)} = 19.240$, which far exceeded the critical value $t(0.05; df = 55) = 2.000$. Thus, the null hypothesis (no difference between groups) was rejected in favor of the alternative hypothesis, confirming a statistically significant effect of the brainstorming method on learning interest ($p < 0.05$). Detailed inspection of the 17 questionnaire items revealed the most pronounced gains in three domains: *attraction to material*, *willingness to express ideas*, and *active group participation*. During brainstorming sessions, students showed increased enthusiasm to contribute, confidence to share opinions, and readiness to relate lessons to their experiences. These tendencies were confirmed through classroom observation notes and teacher reflections. Observers noted that students in the experimental class exhibited higher spontaneity in asking questions, applauded each other's contributions, and often related discussions to ethical and biblical applications in daily life-for example, drawing parallels between environmental stewardship and Genesis 2:15. Such qualitative evidence provided behavioral confirmation of the statistical trends, indicating that the increase in scores represented authentic engagement rather than mere response bias. The clear statistical superiority of the experimental group demonstrates that brainstorming substantially enhanced students' learning interest in PAK. The *t*-test result of 19.240, with significance below 0.05, shows that the observed difference was unlikely due to chance. The N-Gain score of 0.8045 further indicates a large effect size and meaningful educational improvement (Hake, 1998). According to Sugiyono (2021), a learning intervention can be considered effective when the mean gain exceeds 0.70 and produces observable behavioral change. The present findings meet both criteria. Students who participated in brainstorming not only achieved higher posttest scores but also demonstrated visible enthusiasm, attentiveness, and initiative. Such convergence between statistical evidence and qualitative observation strengthens the reliability of the conclusion. The increase in learning interest may be explained through several complementary mechanisms, each grounded in established educational theory. First, brainstorming created psychological safety within the classroom. Because the technique prohibits premature criticism of ideas, students felt free to voice their opinions without fear of judgment. This open climate reduced anxiety-a key inhibitor of classroom participation-and fostered a sense of

belonging (Johnson & Johnson, 2009). The non-evaluative environment corresponded to Maslow's hierarchy of needs, where feelings of security and acceptance enable higher-order motivation. Second, brainstorming encouraged collaborative scaffolding. As students built upon each other's contributions, they experienced social interdependence that increased engagement and attention. Vygotsky (1978) emphasized that learning is a socially mediated process; individuals develop understanding through interaction within the *zone of proximal development*. The group discussions inherent in brainstorming exemplified this principle by allowing stronger students to model enthusiasm and reasoning strategies for peers, thereby raising the collective level of learning interest. Third, the method promoted relevance and meaning-making. Linking student-generated ideas to biblical narratives and ethical themes helped learners see the connection between religious lessons and their daily experiences. This alignment is consistent with constructivist perspectives that emphasize contextualized, experience-based learning (Bruner, 1961). When students perceive lesson content as personally meaningful, intrinsic motivation naturally increases (Deci & Ryan, 2000). The results align with cognitive and affective theories of learning motivation. Slameto (2013) argues that interest arises when learners experience pleasure and personal involvement in the learning process. Brainstorming fulfills both criteria by creating enjoyable, participatory sessions. Similarly, Djaali (2013) notes that curiosity and satisfaction are central components of sustained attention. The observed behavioral improvements-question-asking, active collaboration, and voluntary participation—demonstrate these components at work.

From a Christian educational perspective, brainstorming also embodies the theological ideal of dialogical faith formation. Learning in PAK is not limited to acquiring doctrinal knowledge but involves shaping the moral conscience and spiritual discernment of students. The proverb *"As iron sharpens iron, so one person sharpens another"* (Proverbs 27:17) captures the essence of collaborative reflection. By sharing ideas in a supportive environment, students collectively construct faith understanding. This process reflects the constructivist view that truth and meaning are co-created through dialogue (Knight, 2006). The most visible behavioral changes during the brainstorming intervention included: students paid closer attention during peers' presentations, indicating respect and intellectual curiosity, nearly all members contributed ideas at least once per session, compared with fewer than half in pre-intervention lessons, groups displayed spontaneous teamwork, dividing tasks and encouraging quiet members to speak, students related lesson topics-such as honesty, compassion, and environmental responsibility-to concrete experiences at home and in school. These behaviors correspond with Arends' (2012) concept of *active learning dispositions*, where learners develop enduring patterns of curiosity, initiative, and social cooperation. The rise in posttest scores for "active involvement" confirms that brainstorming did not simply entertain students but genuinely changed their learning orientation. The findings corroborate a growing body of empirical evidence supporting brainstorming as a catalyst for motivation and engagement. Ginting and Faldina (2021) found similar gains in vocational students' interest after applying brainstorming in moral-education contexts, while Rahmawati (2019) demonstrated that learner-centered strategies directly enhance curiosity and attention. The present study extends these insights to Christian Religious Education, confirming that brainstorming is effective not only in secular subjects but also in faith-

based curricula. International research further substantiates the observed effects. According to Osborn (1953), brainstorming increases the quantity and originality of ideas, leading to deeper cognitive processing. Runco (2014) later observed that the social dimension of idea sharing enhances self-efficacy and commitment to learning tasks. When students believe their contributions matter, they invest more energy and emotional engagement in learning—an outcome mirrored in this study's classroom observations. Within PAK, brainstorming supports three pedagogical aims: cognitive comprehension of Scripture, affective growth in faith values, and moral application in daily behavior. By allowing students to generate interpretations of biblical passages or ethical cases, the method transforms traditional catechesis into participatory reflection. Knight (2006) and Palmer (1998) argue that true Christian education should unite knowledge with personal encounter and community dialogue. The brainstorming process operationalizes this ideal by transforming abstract doctrines into lived understanding. When students discussed environmental destruction, they brainstormed causes and moral responsibilities, eventually linking their conclusions to the biblical command in Genesis 2:15 to "work and take care" of creation. This step from idea generation to scriptural synthesis demonstrated the integration of cognitive and moral learning. The enjoyment students expressed in connecting faith to real-life issues illustrates how brainstorming nurtures both intellectual curiosity and spiritual maturity.

Although statistical tests confirmed the significance of the difference between groups, educational researchers caution that significance alone does not capture *meaningfulness*. Following Cohen (1988), the magnitude of difference (effect size) must also be considered. The N-Gain of 0.8045 corresponds to a large effect, indicating that brainstorming produced not only statistically reliable but educationally meaningful improvement. The consistency between quantitative and observational data suggests strong internal validity. Sugiyono (2021) emphasizes triangulation as a method of confirming quantitative results with qualitative evidence. Here, observed enthusiasm and interactional energy during lessons substantiated the numerical gains, indicating that the measured improvement reflected genuine change in interest rather than transient mood. The implications of these findings extend beyond the immediate classroom. Brainstorming proved effective because it transformed the teacher's role from knowledge transmitter to facilitator. This shift aligns with Indonesia's *Kurikulum Merdeka*, which emphasizes student-centered learning and the development of independent, reflective learners. Teachers of PAK can adapt the brainstorming framework to thematic units that invite ethical reasoning-such as justice, stewardship, or honesty. The technique can begin with an open-ended question, progress to free idea generation, and conclude with theological synthesis guided by the teacher. When teachers adopt this pattern consistently, they cultivate a classroom culture where questioning, creativity, and collaboration become normative aspects of faith learning. Professional-development programs should therefore include workshops on brainstorming facilitation skills: framing stimulating questions, moderating discussions, and integrating students' ideas into lesson objectives. As Arikunto (2010) notes, the success of any learning model depends heavily on the teacher's skill in managing classroom interaction. Institutional support-adequate time, materials, and flexible assessment criteria-is also essential. Evaluations should measure not only factual recall but also the processes of idea generation, teamwork, and

reflective reasoning (Roestiyah, 2012). The effectiveness of brainstorming can be further explained using self-determination theory (Deci & Ryan, 2000), which identifies three psychological needs: autonomy, competence, and relatedness. The brainstorming process satisfies each. Autonomy is fostered through freedom to contribute ideas; competence develops as students refine their reasoning and see their ideas valued; relatedness emerges through collaboration. These fulfilled needs lead to intrinsic motivation, which in turn sustains learning interest. The data also align with expectancy-value theory, which holds that students' motivation depends on their expectation of success and the value they assign to the task (Eccles & Wigfield, 2002). Brainstorming increases both: by lowering evaluative pressure, it raises expectancy of success, and by connecting lessons to personal and spiritual values, it heightens task value. This dual reinforcement explains the substantial rise in learning-interest indicators. Learning interest in PAK cannot be separated from moral formation. The active participation cultivated by brainstorming encourages virtues such as respect, patience, and empathy. When students listen to diverse viewpoints, they practice humility; when they refine ideas collaboratively, they learn cooperation. These interpersonal skills correspond to the goals of character education (*Pendidikan Karakter*), which seeks to form responsible and caring individuals (Kemendikbud, 2020). Brainstorming thus serves a dual pedagogical and moral function: it stimulates intellectual curiosity while simultaneously developing the dispositions essential for Christian living. As Palmer (1998) observed, authentic education engages the whole person-mind, heart, and spirit. The quasi-experimental design lacked random assignment, so unmeasured differences between classes may have influenced outcomes. The sample size (n = 57) was relatively small, and the intervention lasted only several sessions; long-term effects remain unknown. The reliance on self-report questionnaires may introduce social-desirability bias, as students could have overstated their interest to please the teacher. To strengthen future studies, researchers should employ randomized or matched-control designs, include larger and more diverse samples, and triangulate data using multiple instruments such as teacher logs, peer assessments, or video-based behavioral coding. Longitudinal studies would help determine whether increased learning interest translates into sustained achievement or deeper moral engagement over time. As Cohen et al. (2018) advise, pre-experimental and quasi-experimental designs are valuable for generating initial evidence that can later be validated by more rigorous methodologies. The collective evidence from statistical tests, classroom observations, and theoretical alignment converges on a clear conclusion: the brainstorming method significantly enhances students' learning interest in Christian Religious Education and Character Education. The process fosters psychological safety, social collaboration, and meaning-making-three conditions consistently linked to intrinsic motivation and faith formation. Brainstorming transforms the PAK classroom into a dialogical community where learners co-construct understanding and internalize Christian values through reflective engagement. Beyond numerical gains, the method revitalizes the spirit of Christian pedagogy by embodying a participatory theology of learning-where inquiry, dialogue, and love of truth intersect.

CONCLUSION

This study provides strong empirical evidence that the brainstorming method exerts a positive and statistically significant influence on students' learning interest in Christian Religious Education and Character Education (PAK) at SMP Negeri 4 Tarutung. Through a quasi-experimental approach, the findings revealed a substantial rise in both quantitative and behavioral indicators of engagement. The high N-Gain value (0.8045) and the significant t-test result ($t_{(55)} = 19.240$, $p < 0.05$) confirm that students who learned through brainstorming experienced meaningful educational improvement compared with those who received conventional instruction. These gains were reflected not only in numerical data but also in qualitative classroom observations showing increased curiosity, participation, and collaborative learning. Students in the experimental group demonstrated greater attentiveness, readiness to ask questions, and stronger ability to connect lesson themes with biblical and moral contexts. The results suggest that brainstorming succeeds because it transforms learning from a teacher-centred monologue into a dynamic exchange of ideas rooted in mutual respect and shared reflection. This process cultivates a sense of psychological safety that encourages risk-taking, fosters cooperative learning, and promotes deeper comprehension. More importantly, within the framework of Christian education, brainstorming enables students to engage faith as an active inquiry rather than passive acceptance-mirroring the biblical invitation to "reason together" (Isaiah 1:18). Such dialogical participation fosters both intellectual curiosity and moral discernment, uniting cognitive growth with spiritual formation. In practical terms, this study underscores the need for teachers and educational leaders to integrate brainstorming into PAK lesson design. Schools should create supportive conditions-through professional development, flexible scheduling, and assessment systems that value process as well as outcomes-to sustain student-centred and participatory learning. By embedding brainstorming in classroom practice, teachers empower students to express ideas freely, reflect critically, and apply Christian values to real-life situations. While the results are compelling, they are not exhaustive. The study's scope was limited by sample size, duration, and nonrandom class selection. Future research should extend this investigation across larger populations and longer timelines, employing mixed-method or randomized designs to strengthen validity and generalizability. Even so, the present findings affirm that brainstorming represents a viable, faith-consistent pedagogical model capable of revitalizing Christian education-transforming classrooms into communities of dialogue, discovery, and spiritual growth where learning becomes both intellectually meaningful and theologically alive.

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