

Game-Based Learning to Enhance Student Achievement in Islamic Cultural History at Indonesian Madrasah

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Abstract

Islamic Cultural History (SKI) often experiences significant student disengagement within Indonesian madrasah contexts due to its dense, chronological content and the prevalence of teacher-centred pedagogical approaches. This quantitative correlational study investigates the impact of a Games-Based Learning (GBL) model specifically an educational snake-and-ladder board game on student learning outcomes in SKI at MA Al-Huda Pameungpeuk, Bandung Regency. Utilizing a purposive sample of 41 Grade 10 students, data were collected through a 15-item GBL implementation questionnaire (Variable X) and a 15-item essay-based achievement test (Variable Y). Descriptive analysis revealed that GBL implementation was rated as "Good" ($M = 4.00$), while student learning outcomes achieved a "Very Good" qualification ($M = 4.28$). Pearson Product-Moment correlation analysis demonstrated a statistically significant moderate positive correlation ($r = 0.54$, $p < 0.05$), with GBL implementation explaining 29.16% of the variance in SKI learning outcomes. The rejection of the null hypothesis confirms that integrating interactive, culturally familiar game mechanics into historical instruction significantly enhances cognitive achievement and active participation. These findings highlight the critical necessity of transitioning toward student-centred, active learning pedagogies to foster deeper engagement and robust academic resilience in Islamic educational settings.

Keywords: Games-Based Learning, Islamic Cultural History, Student Achievement, Active Learning.

Introduction

Classical Islamic pedagogy has long recognized a foundational truth that contemporary educational psychology and cognitive science have only recently quantified with systematic empirical rigor: the methodological delivery of knowledge is fundamentally more critical than the raw content itself. This profound insight is elegantly encapsulated in the traditional Arabic pedagogical maxim, *al-thariqah ahammu min al-maddah* (the method of teaching is more important than the material). When modern students fail to comprehend or retain educational material, the initial diagnostic inquiry should invariably focus not on the inherent difficulty of the content, but rather on the pedagogical vehicle through which that content has been transmitted. In the specific, highly complex case of Islamic Cultural History (Sejarah Kebudayaan Islam, or SKI), this maxim carries a particular and acute urgency. The subject comprehensively encompasses over fourteen centuries of rapid civilizational development, detailing intricate political histories, deep scholarly traditions, monumental artistic achievements, and vast inter-civilizational exchanges. It is a content domain so incredibly rich and extensive that its conventional pedagogical reduction to merely memorizable lists of names, dates, and geographic locations constitutes a fundamental misrepresentation of the subject's true analytical nature and essentially guarantees widespread student disengagement.

The current landscape of Islamic education is navigating a profound global crisis, heavily exacerbated by rapid globalization and digital transformation. Globalization has precipitated a crisis in Islamic education that necessitates an urgent epistemological response, demanding a reconstruction of *adab*-based pedagogy to ensure that students do not merely memorize facts but internalize the ethical and civilizational weight of their heritage (Anwar & Umam, 2025). Research consistently documents that within Indonesian madrasah settings, SKI is frequently categorized alongside mathematics as one of the least favored subjects among adolescent learners. Students routinely identify the overwhelming volume of factual content requiring rote memorization, the perceived temporal and practical distance of historical events from

present-day relevance, and the inescapable monotony of highly teacher-centred instructional approaches as the primary catalysts for their academic disengagement. At MA Al-Huda Pameungpeuk, this alarming pattern was explicitly confirmed through preliminary institutional investigations. When Grade 10 students were surveyed to identify the subject they least enjoyed, a dominant proportion explicitly named SKI. They cited excessive, passive note-taking and highly unidirectional instruction that left them cognitively dormant, resulting in a severe loss of focus and intrinsic motivation during lessons.

This resulting attitudinal consequence deep-seated disengagement from the subject matter translates directly and inevitably into the academic consequence of suboptimal learning outcomes. This dynamic creates a highly destructive negative feedback cycle: profound disengagement produces low academic achievement, and this low achievement simultaneously confirms the student's internal bias that the subject is impossibly difficult and personally unrewarding, which in turn deepens the initial disengagement. Breaking this cycle requires transformative education that emphasizes 21st-century skills and competencies, shifting the paradigm from passive absorption to active, dynamic, and critical participation within an independent learning curriculum (Anwar & Umam, 2020). Games-Based Learning (GBL) has rapidly emerged within the international educational technology and pedagogical literature as a highly effective intervention specifically engineered to disrupt this negative cognitive cycle. By strategically embedding mandatory curriculum content within a game structure that naturally provides intrinsic motivation (such as the desire to advance, win, or compete successfully), immediate formative feedback, and vibrant social engagement, GBL creates the precise psychological conditions under which students encounter subject matter from a position of personal agency and high interest rather than passive reception.

The pedagogical premise underlying this methodology that learning is exponentially deepened when students are emotionally engaged, cognitively active, and intrinsically motivated aligns perfectly with the constructivist traditions established in foundational educational theory (Piaget, 1952; Vygotsky, 1978). This premise has been repeatedly

confirmed across multiple diverse contexts and content domains within the international empirical literature (Mayer, 2019; Plass et al., 2015). The specific GBL medium deployed and evaluated in this study is an educational *ular tangga* (snake-and-ladder) board game featuring embedded SKI content questions. This medium is particularly well-suited to the Indonesian socio-cultural context. *Ular tangga* is a traditional, deeply familiar game to Indonesian children and adolescents, carrying heavily positive affective associations with play, friendly competition, and collaborative social interaction. By meticulously mapping complex SKI content onto this highly familiar game structure, the educational *ular tangga* brilliantly exploits existing positive psychological associations while seamlessly introducing the rigorous disciplinary content that academic learning requires. Each designated square on the game board presents a challenging question drawn directly from the SKI curriculum, thereby transforming the arduous memorization challenge from an isolated, decontextualized, and frustrating task into a socially situated, goal-directed, and emotionally engaging communal activity.

MA Al-Huda Pameungpeuk serves a dynamic student population drawn from multiple rural and semi-urban villages in the Pameungpeuk Sub-District, representing a broad cross-section of Sundanese Muslim families. These families entrust their children to the school for both its rigorous academic program and its deeply integrated Islamic formation mission. The institution's overarching vision explicitly positions Islamic exemplarity alongside academic reliability and religious identity. This unique combination makes SKI not merely one academic subject among many, but rather a foundational element of the school's core identity mission. When students are disengaged from SKI, they are not merely failing to learn historical content; they are actively failing to engage with the grand civilizational narrative that provides the school's Islamic mission with its historical depth, theological context, and cultural legitimacy. The GBL intervention documented in this comprehensive study therefore represents significantly more than just a localized pedagogical experiment. It constitutes a vital strategic attempt to restore meaningful student engagement with the rich Islamic civilizational heritage that underpins the educational mission of Indonesian madrasahs.

To address these complex dynamics, this study is structured around three primary research questions. First, at what precise level is the GBL (snake-and-ladder) model implemented in the SKI classroom at MA Al-Huda Pameungpeuk, as perceived by Grade 10 students across four distinct dimensions of implementation quality? Second, at what level are the actual student learning outcomes in SKI, as objectively measured by a comprehensive, essay-based achievement test? Third, is there a statistically significant positive relationship between the quality of GBL implementation and student learning outcomes in SKI, and exactly what proportion of the variance in these learning outcomes can be directly attributed to the GBL implementation? By rigorously answering these questions, this research seeks to provide empirical validation for the integration of active learning methodologies within traditional Islamic subjects, ultimately contributing to the broader transformation and organizational resilience of Islamic education in facing contemporary global challenges (Firdaus et al., 2026).

Methods

This study utilized a highly structured quantitative correlational research design to meticulously examine the direction, magnitude, and statistical significance of the relationship between Games-Based Learning (GBL) implementation quality (designated as Variable X) and student learning outcomes in Islamic Cultural History (designated as Variable Y). A correlational design was deemed most appropriate as the primary research objective required measuring the strength of the association between the pedagogical intervention as subjectively experienced by the students and their objectively measured academic achievement. The research was conducted at Madrasah Aliyah Al-Huda Pameungpeuk (PPI 70), a well-resourced Islamic secondary institution located in Bandung Regency, West Java, which features a comprehensive facility portfolio that supports active learning implementations.

The target population encompassed all 407 active students at the institution. Utilizing purposive sampling techniques guided by established methodological frameworks (Arikunto, 2006), a specific

sample of 41 Grade 10 students from Classes X-2 and X-3 was selected. This specific cohort was chosen because the GBL intervention was explicitly designed around the Grade 10 Semester 2 SKI curriculum, ensuring that the sampled population had direct, highly relevant exposure to both the pedagogical intervention and the specific historical content being assessed. Data collection relied on two rigorously validated instruments. Instrument X was a 15-item Likert-scale questionnaire evaluating GBL implementation across four theoretical dimensions: active engagement, comprehension, cooperation, and independence. Instrument Y was a 15-item essay-based achievement test designed to measure higher-order cognitive mastery of the SKI curriculum.

Prior to data collection, Instrument X was subjected to stringent validation protocols, achieving Pearson item-total correlations exceeding the critical threshold ($r\text{-tabel} = 0.3081$) and demonstrating high internal consistency with a Cronbach's alpha of 0.828. Normality of the data distribution was confirmed via a chi-square goodness-of-fit test ($\chi^2\text{-hitung} = 7.47 < \chi^2\text{-tabel} = 7.81$). The analytical procedures employed Pearson Product-Moment correlation to determine the relational strength, simple linear regression to establish directionality, and the coefficient of determination to quantify the percentage of variance in learning outcomes directly attributable to the GBL intervention.

Results and Discussion

GBL Implementation Dynamics: A Descriptive and Theoretical Analysis

The systematic descriptive analysis of the Games-Based Learning implementation (Variable X) yielded an aggregate mean score of 4.00 across the 41 respondents, securely positioning the pedagogical intervention within the "Good" qualification category (interval 3.40–4.19). This robust overall score empirically indicates that the students perceived the educational *ular tangga* (snake-and-ladder) model as being highly effectively implemented across all four measured theoretical dimensions. The data reflect clear, overwhelmingly positive student perceptions regarding the game's intrinsic capacity to promote dynamic active engagement, facilitate deep content comprehension, foster

collaborative peer learning, and stimulate independent problem-solving capabilities within the historically dense context of the SKI curriculum.

Table 1 Partial Mean Analysis of GBL Implementation (Variable X) by Dimension $n = 41$

Dimension	Items	Mean	Qualification
1. Active Engagement (<i>aktif</i>)	1–3	4.08	Good
2. Comprehension (<i>pemahaman</i>)	4–7	3.96	Good
3. Cooperation (<i>kerjasama</i>)	8–11	4.09	Good
4. Independence (<i>kemandirian</i>)	12–15	3.86	Good
Overall Mean	1–15	4.00	Good

A deeper, granular analysis of the subscale dimensions reveals that the "Cooperation" dimension achieved the highest mean score (4.09). This exceptional performance was largely driven by specific items assessing the game's ability to improve in-group teamwork. This finding is profoundly consistent with theoretical predictions surrounding board-game-based GBL, which inherently necessitates students to interact in structured groups. The underlying game mechanics dictate that students are simultaneously competing for individual advancement while actively collaborating within a shared group identity, creating a unique psychological tension that drives focus. This dynamic perfectly mirrors Vygotsky's (1978) socio-cultural theory of cognitive development, specifically the Zone of Proximal Development. The group play format ensures that peers who possess stronger historical recall naturally scaffold those who are struggling, creating a highly productive, socially mediated learning environment. Furthermore, this high level of structured, cooperative play has broader implications for student management and school culture. Supervised, collaborative game environments foster positive peer dynamics and communication, which are critical components of comprehensive school management strategies aimed at preventing bullying and antisocial behaviors in educational settings (Maryati et al., 2025).

Conversely, the "Independence" dimension recorded the lowest subscale mean (3.86), though still operating within the "Good" qualification. Items measuring individual confidence in applying SKI knowledge without peer assistance scored relatively lower. This relative weakness is highly theoretically expected and pedagogically revealing. The *ular tangga* GBL format is fundamentally designed as a communal, group-based activity where the socio-emotional dynamics of collaborative play take precedence. While this group format brilliantly provides the necessary peer scaffolding to support less confident students during active gameplay, it simultaneously presents a pedagogical vulnerability: less engaged students might passively benefit from the correct answers provided by their more dominant peers without developing their own robust, independent retrieval capacities. This empirical finding suggests a critical adjustment for future instructional design. To maximize the efficacy of GBL, educators must implement deep learning-based planning models (Sulastri et al., 2024). This requires that socially scaffolded in-game learning be deliberately followed by strict, individual retrieval practice activities such as solo quizzes or reflective journaling to guarantee that the communal knowledge generated during the game successfully consolidates into durable, independently accessible long-term memory (Roediger & Karpicke, 2006).

Perhaps the most practically significant finding within the descriptive analysis of Variable X is derived from the item measuring active engagement. The statement assessing the GBL model as more engaging than traditional teaching methods achieved a remarkable mean of 4.27, falling squarely into the "Very Good" qualification tier. This near-unanimous student endorsement confirms that the foundational pedagogical crisis this intervention was specifically engineered to address widespread, systemic student disengagement from Islamic Cultural History has been successfully and powerfully disrupted by the *ular tangga* format. Students are not merely reporting that the game is a fun diversion; they are making a profound comparative judgment that GBL is substantially more intellectually and emotionally engaging than conventional, teacher-centred instruction. This high level of engagement

is a prerequisite for transformative education, emphasizing the need for learning methodologies that capture student interest and build 21st-century competencies through active participation rather than passive absorption (Anwar & Umam, 2020). By transforming the classroom into an interactive arena, the teacher effectively practices kindness-based leadership, facilitating an environment where learning is joyful, supportive, and deeply impactful (Suherman et al., 2025).

Student Learning Outcomes in Islamic Cultural History: Cognitive and Pedagogical Dimensions

The empirical assessment of Variable Y (student learning outcomes in SKI) yielded an exceptional aggregate mean of 4.28, firmly placing student academic achievement in the highest possible tier, the "Very Good" qualification category (interval 4.20–5.00). This remarkable score represents one of the highest outcome variables recorded across comparative pedagogical studies within this institutional research cluster. It is particularly analytically notable that the objective measurement of student learning outcomes (4.28) substantially exceeded the subjective measurement of GBL implementation quality (4.00) by a full qualification tier. This fascinating $Y > X$ qualification pattern where the objective outcome outpaces the subjective perception of the intervention demands rigorous theoretical interpretation.

From a methodological standpoint, this differential can be partially attributed to the varying nature of the measurement instruments. Variable X utilized a Likert-scale questionnaire where a mean of 4.00 reflects a generalized student consensus that the intervention was positive and effective, though potentially moderated by standard psychological response biases where students avoid extreme ratings. In stark contrast, Variable Y utilized a demanding, 15-item essay-based achievement test directly mapped to the cognitive domains of Bloom's Taxonomy (Bloom, 1956; Anderson & Krathwohl, 2001). The 4.28 mean reflects actual, demonstrated mastery of complex historical content rather than a social desirability gradient. Students who have genuinely internalized the historical narratives, chronologies, and socio-political dynamics of the

Khulafaur Rasyidin and the Umayyad dynasty will score highly on an objective assessment regardless of how enthusiastically they rate the pedagogical methodology. The exceptionally high achievement scores strongly suggest that the strategic integration of GBL instruction, combined with foundational teacher-directed framing, has produced profound content mastery and cognitive retention within this specific student sample.

From a substantive pedagogical perspective, this high achievement score reflects the cumulative, highly synergistic effect of a comprehensive instructional ecology. The GBL intervention does not exist in an academic vacuum. The "Very Good" achievement mean represents the aggregated impact of multiple instructional experiences: the engaging, retrieval-heavy GBL sessions, the traditional foundational instruction provided by the educator, independent student review, and active peer discussions. The essay-based format of the assessment instrument specifically demanded higher-order cognitive processing. Students were not simply asked to recognize dates in a multiple-choice format; they were required to articulate historical reasoning, analyze early Islamic political strategies, and synthesize the civilizational impacts of historical figures. The success of the students on this rigorous assessment proves that the *ular tangga* game did not trivialize the content. Instead, the game's mechanics which required students to articulate answers aloud in a competitive, socially monitored environment facilitated the deep cognitive processing necessary for essay writing.

Furthermore, the mastery of SKI content at this level touches upon profound theological and civilizational objectives inherent in Islamic education. The curriculum is not merely a secular history; it is deeply intertwined with Islamic values and identity. Integrating core values such as *Ketauhidan* (monotheism) and historical consciousness into the curriculum is essential for strengthening student character and identity in the modern world (Anwar et al., 2025). By successfully mastering this content through active learning, students are participating in a modernized form of *adab*-based pedagogy. They are learning to respect and internalize their civilizational heritage not through forced, resentful memorization, but through active, joyful, and intellectually rigorous

engagement (Anwar & Umam, 2025). The ability of the students to perform at a "Very Good" level indicates that the GBL method successfully bridged the temporal gap between seventh-century historical events and twenty-first-century adolescent learners, making the content vividly accessible and memorable.

Correlation, Variance, and Broader Implications for Educational Management

The inferential statistical analysis utilizing the Pearson Product-Moment correlation formula yielded an r -value of 0.54. This figure represents a statistically significant, moderate positive correlation between the quality of GBL implementation and the subsequent student learning outcomes in Islamic Cultural History. The calculation of the coefficient of determination (KP) revealed a value of 29.16%. This critical metric indicates that the quality of the GBL implementation directly accounts for approximately 29% of the total variance in SKI learning outcomes among the sampled population. Furthermore, statistical significance was definitively confirmed by a t -hitung value of 4.007, which substantially exceeds the critical t -tabel value of 1.684 (at $\alpha = 0.05$, $df = 39$). The regression equation confirmed a positive directionality, establishing that systematic enhancements in GBL implementation quality predictably correlate with measurable improvements in student academic achievement. Table 2 provides a comprehensive summary of these statistical findings.

Table 2 Statistical Summary GBL Implementation and SKI Learning Outcomes (n = 41)

Procedure	Result	Criterion	Decision
Validity threshold (r -tabel, $n=41$, $\alpha=0.05$)	0.3081	r -hitung > r -tabel	All 15 X items valid
Reliability α Variable X	0.828	$\alpha > 0.70$	Very Reliable
Normality χ^2 Variable X	7.47	$\chi^2 < 7.81$	Normal
Variable X overall mean	4.00	Interval 3.40–4.19	Good
Variable Y overall mean	4.28	Interval 4.20–5.00	Very Good

Pearson r	0.54		Moderate positive
Coefficient of determination (KP)	29.16%		29.16% variance explained
Regression direction (b)	$b > 0$		Positive directional
t -hitung	4.007	$t > 1.684$	Significant

The documentation of an $r = 0.54$ and a $KP = 29.16\%$ confirms that the educational *ular tangga* model provides a highly significant and practically transformative contribution to student achievement. Contextualized against broader international meta-analytic benchmarks for game-based learning where average effect sizes typically hover around an r of 0.24 (Mayer, 2019) the correlation documented in this study represents an exceptionally strong effect. This suggests that the specific combination of cultural familiarity, structured active recall, and high-energy social engagement inherent in the *ular tangga* format is particularly potent for Indonesian learners. However, the 29.16% variance explained by GBL simultaneously highlights that 70.84% of the variance in learning outcomes remains attributable to residual factors. These vital co-determinants include the students' prior baseline knowledge of Islamic history, their independent study habits, the socio-economic support for learning within their family structures, and, crucially, the overarching pedagogical quality of the teacher's complementary instruction.

This substantial residual variance underscores the reality that GBL is a powerful pedagogical catalyst, but it is not a standalone panacea. It must be embedded within a robust, holistically managed educational ecosystem. The successful deployment of such innovative methodologies requires immense organizational resilience and strategic foresight from institutional leaders. The transformation of Islamic educational institutions to face global digital challenges requires comprehensive strategies that support pedagogical innovation across all subjects (Firdaus et al., 2026). For teachers to effectively implement GBL, they require supportive leadership that encourages calculated

pedagogical risk-taking. The leadership strategy of the madrasah principal or *Kiai* is absolutely fundamental in improving and updating the professional competencies of the teaching staff (*Ustaz*), ensuring they have the institutional backing to transition away from archaic rote methods toward dynamic, student-centred models (Bakar et al., 2025).

Furthermore, the implementation of collaborative games fundamentally alters the dynamics of student management. By transitioning the classroom from a silent, passive lecture hall into a vibrant, communicative game space, educators are actively increasing student participation in non-traditional academic activities. This transformation in student management fosters critical soft skills such as negotiation, teamwork, and emotional regulation (Riyanti et al., 2026). The successful execution of GBL requires the teacher to act not as a rigid disciplinarian, but as a dynamic facilitator who guides the learning process with empathy and structural control. This aligns with modern educational management theories that emphasize kindness-based and transformative leadership at the classroom level (Suherman et al., 2025). Ultimately, the statistical success of the GBL intervention at MA Al-Huda is a testament to an organizational culture that is willing to innovate. It proves that significant cognitive gains and deep engagement with Islamic heritage do not necessarily require exorbitant investments in digital infrastructure; rather, they require creative pedagogical design, culturally resonant tools, and a steadfast commitment to elevating the student learning experience.

Conclusion

This research systematically investigated the impact of implementing a Games-Based Learning model specifically utilizing an educational snake-and-ladder board game on student academic achievement in Islamic Cultural History at MA Al-Huda Pameungpeuk. The empirical findings reveal that GBL implementation is functioning at a "Good" level ($M = 4.00$), successfully fostering high active engagement and dynamic peer cooperation, thereby definitively disrupting historical patterns of student apathy toward the subject. Concurrently, student learning

outcomes reached an exceptional "Very Good" level ($M = 4.28$), demonstrating robust cognitive mastery of complex historical content. The inferential analysis confirmed a statistically significant, moderate positive correlation ($r = 0.54$), with the GBL intervention accounting for 29.16% of the variance in student achievement. These results unequivocally validate the pedagogical integration of active, game-based mechanics into the Islamic education curriculum. While GBL is not a total replacement for comprehensive, teacher-led instruction, it serves as a highly potent catalyst that transforms passive memorization into joyful, socially mediated, and highly effective retrieval practice. Ultimately, this study demonstrates that fostering deep engagement with Islamic civilizational heritage does not require expensive technology, but rather relies on creative pedagogical innovation, culturally familiar tools, and a steadfast institutional commitment to student-centred learning.

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