

Exploring Lived Experience: The Integration of AI in Junior & Senior High Schools in Bandung

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Abstract: This study purpose to explore the lived experiences of students, teachers, and parents regarding the integration of Artificial Intelligence (AI) in junior and senior high school education across three model schools in Bandung, Indonesia. Employing a qualitative narrative inquiry design, data were collected through in-depth interviews with 18 informants, including teachers and students, who represent public, religious, and vocational school settings. The findings reveal that AI is experienced as a formative mirror, offering real-time feedback and encouraging skill development, but also evokes emotional contradictions, including anxiety, perfectionism, and spiritual dissonance. Teachers and parents were found to be essential mediators who reframed AI's presence through relational, ethical, and religious frameworks. In faith-based contexts, participants expressed concern over AI's inability to capture sincerity (*niat*) or foster moral reflection, underscoring its epistemological and spiritual limits. The study concludes that AI must be integrated through a culturally responsive, ethically anchored approach that balances digital efficiency with human meaning, emotional resonance, and pedagogical intentionality.

Keywords: *Artificial_Intelligence, Education, Ethical_Pedagogy, Narrative_Inquiry, Spiritual_Learning.*

A. Introduction

In recent years, the presence of Artificial Intelligence (AI) in the educational sphere has shifted from being an optional innovation to becoming an essential component of how schools operate and make decisions. This transformation is especially visible in urban educational hubs such as Bandung, where junior high schools are increasingly relying on AI technologies to handle the complexities of day-to-day school management. One of the clearest examples can be seen in the digitization of administrative systems: tasks such as archiving student records, generating academic information, and managing correspondence with parents, once managed manually, are now executed automatically through AI-powered document systems (Nazaretsky et al., 2022). These intelligent systems are not only capable of learning usage patterns, but also categorizing documents by relevance or urgency, and even predicting when certain reports need to be updated or submitted (Celik et al., 2022).

As such, they reduce bureaucratic delays and enhance procedural clarity, freeing administrators to focus more on strategic rather than clerical functions. Building on this administrative advancement, AI is now being used to assist principals and school financial officers in preparing more accurate and responsive school budgets. Through predictive analytics, AI can analyze historical spending patterns, assess market changes in educational supplies, and generate simulations for future budget allocations based on projected student enrollment (Singh & Hiran, 2022). This forward-looking approach makes school financial planning more proactive rather than reactive. Similarly, AI has improved the notoriously complex process of staff scheduling. Programs can now generate optimized timetables by taking into account multiple variables, including teacher workload, subject continuity, student grouping preferences, and even the physical proximity of classrooms, thereby minimizing transition time and maximizing instructional flow (Karataş & Çınaroğlu, 2025). These developments underscore

the growing influence of AI not just as a convenience but as a strategic tool for institutional efficiency and resilience (Khang, 2025).

Moreover, at the leadership level, AI plays an increasingly pivotal role in decision-making. School principals and management teams now benefit from AI-generated dashboards that consolidate academic performance data, flag anomalies in student attendance, and issue alerts for behavioral risks or potential dropouts (Bawaneh et al., 2025). With access to this real-time intelligence, school leaders are empowered to make timely and evidence-based decisions without sifting through voluminous spreadsheets or anecdotal reports. Importantly, while AI enhances precision and speed in leadership practices, it does not replace the human dimension of educational leadership. Instead, it acts as an enabler, offering clarity, reducing decision fatigue, and allowing school leaders to devote more attention to instructional supervision, stakeholder engagement, and visionary planning rather than administrative overload (Lee & Liu, 2004).

In Bandung's junior high schools, where student populations are expanding and public demand for accountability is intensifying, the adoption of AI tools has moved beyond being a luxury. It is increasingly viewed as a structural necessity. The shift toward AI is not simply a matter of following global technology trends—it reflects a deeper realization that educational institutions must be equipped to operate intelligently and adaptively in complex environments (Kaplan-Rakowski et al., 2023). In this context, AI is more than just a technical support system; it becomes a strategic partner in long-term school improvement, operational sustainability, and instructional innovation (Eager & Brunton, 2023). Schools that embrace AI with a clear vision and implementation plan are better positioned to meet the evolving needs of learners and the broader educational ecosystem (Airaj, 2024).

Beyond its role in management, one of the most remarkable consequences of AI integration in Bandung's classrooms has been the visible surge in student enthusiasm. AI-powered educational tools—such as interactive learning platforms, adaptive quizzes, virtual labs, and AI-assisted writing applications—have transformed the way students interact with learning (Zimmerman, 2018). In contrast to traditional, teacher-centered instruction that often relies on rote memorization and passive absorption, these technologies foster curiosity, autonomy, and responsiveness. Students are no longer mere recipients of information; they are active participants in digital learning environments that react intelligently to their performance and preferences (Kim & Lee, 2020).

This shift has turned learning into a dynamic experience—one that is both personalized and empowering (Ali, 2020). This enthusiasm is evident in several dimensions. In terms of volume, students are engaging with learning materials more frequently and voluntarily. Classroom observations and teacher feedback indicate that learners spend additional time outside school hours exploring AI-enhanced exercises, particularly those that include gamified feedback, digital rewards, or personalized learning paths (Popenici & Kerr, 2017). Whereas conventional worksheets often result in minimal repetition, AI platforms adjust difficulty levels in real-time and provide immediate feedback, encouraging persistent engagement. For instance, a student using an AI-based English chatbot might complete significantly more conversational exchanges weekly than with printed assignments, driven by the interactivity and enjoyment embedded in the platform (Baidoo-anu & Owusu Ansah, 2023).

Most significantly, students describe a newfound emotional connection to learning. Teachers observe that classrooms feel more energetic, collaborative, and forward-thinking. Far from viewing AI

as a cold or intimidating tool, students see it as a learning companion—something that supports them without judgment and encourages experimentation (Caleb Kimondo et al., 2023). Group activities have evolved as well: AI-enhanced simulations and dashboards have become shared interfaces for discussion, analysis, and decision-making. Additionally, as students begin to understand how AI algorithms function, they start asking more critical questions—not only about subject content, but about the technology itself. This cultivates both digital literacy and metacognitive awareness, as learners develop a clearer understanding of how they learn, and how technology supports—or shapes—that learning (Karataş & Çınaroğlu, 2025). Taken together, the integration of AI in Bandung’s junior high schools has elevated not only the quantity of student participation but also the quality of intellectual output and the depth of content mastery. In a context where traditional pedagogies often struggle to inspire sustained interest, AI emerges as a powerful driver of renewed academic energy.

The increased motivation, curiosity, and ownership exhibited by students suggest that AI, when meaningfully implemented, can reignite a culture of inquiry and exploration in classrooms (Díaz & Nussbaum, 2024). However, while quantitative data and system analytics may provide statistical indicators of engagement, they often fall short of revealing how students subjectively experience these transformations—emotionally, cognitively, and socially. Thus, there arises a pressing need for a more human-centered methodology to grasp the full contours of this phenomenon. In this regard, narrative interviewing emerges as a compelling methodological approach to delve deeper into the lived experiences of students navigating AI-enhanced classrooms. Unlike structured questionnaires or behaviorist observation tools, narrative interviews create space for students to articulate their encounters, hesitations, and breakthroughs in their own words. According to Anderson & Kirkpatrick (2016), narrative interviews allow

participants to construct meaning by recounting events and shaping them into coherent life stories. This process is not only informative but also ethically significant, as it positions students as co-authors of the research process rather than mere data points.

Moreover, narrative interviewing is particularly suitable for capturing how young learners interpret the shifting roles of teachers, digital interfaces, and their own sense of agency in learning environments increasingly influenced by AI. As Küsters (2022) emphasized, the narrative mode is crucial when exploring experiences that are temporally layered and emotionally nuanced, exactly the kind of complexity AI-infused classrooms present. When students reflect on their interactions with intelligent systems—ranging from praise by a virtual tutor to frustration with an algorithmic misjudgment—they do not simply recall actions, but reframe identity, motivation, and growth. In practice, narrative interviews also afford a level of methodological depth unmatched by standard survey techniques.

They are dialogical rather than interrogative, enabling researchers to follow the thematic logic of the interviewee rather than imposing a rigid question framework. De Fina (2021) argues that narrative inquiry, when approached from a narratives-as-practices perspective, allows the researcher to analyze not just the content of what is said, but also how it is said, when it is said, and in relation to what social and cultural assumptions. This is especially valuable in Indonesian classrooms, where student expressions may be shaped by local norms of modesty, respect, and indirectness—elements that require interpretive sensitivity.

Furthermore, the credibility and trustworthiness of narrative interviews have been widely recognized in contemporary social science. Josselson & Hammack (2021) contend that narrative analysis is essential for understanding how individuals navigate shifting social conditions and emerging institutional norms, such as

those posed by the adoption of AI in education. By collecting and interpreting these stories, researchers can map not only patterns of experience but also the diversity of interpretation, emotion, and reflection among students. This contributes to a more inclusive and grounded educational discourse, especially in contexts where digital innovation risks overshadowing the voices of learners themselves.

Finally, recent literature affirms that interviews, particularly narrative-based ones, remain one of the most flexible and powerful tools in social science research. As Knott et al. (2022) asserted, interviews offer rich, layered insights into social behavior, institutional transformations, and personal adaptation, making them indispensable when exploring new frontiers such as AI in education. They highlight how interviewing, when executed with reflexivity and ethical awareness, serves as both a method of data collection and a process of meaning-making.

While the quantifiable benefits of AI in Bandung's junior high schools are evident in both managerial efficiency and student engagement, these surface-level metrics do not fully capture the emotional, cognitive, and relational dimensions of AI-mediated learning. For researchers committed to understanding education not only as a system but also as a human experience, narrative interviewing provides a methodologically robust and ethically responsive pathway. It enables us to listen—to truly hear—how students are living through this educational transformation, and how their stories might guide more thoughtful, equitable, and human-centered AI integration in the classrooms of the future. This is the urgency of this research.

Artificial Intelligence (AI), in the context of education, can be broadly defined as a constellation of computational systems capable of performing tasks that traditionally require human cognition, such as perception, reasoning, learning, and decision-

making (Holmes & Tuomi, 2022; Woolf & Tumim, 1991). Within educational settings, AI refers not only to intelligent tutoring systems and adaptive learning platforms but also to more complex technologies, including natural language processing, data-driven feedback mechanisms, and generative tools that simulate human communication (Beck et al., 1996; Zimmerman, 2018). AI applications in schools have extended into administrative automation, student assessment, content generation, and even emotional recognition, thus transforming the structural and pedagogical framework of teaching and learning (Caleb Kimondo et al., 2023; Popenici & Kerr, 2017). Definitions of AI in education are continuously evolving, particularly as generative AI like ChatGPT introduces new layers of interactivity and epistemological questions surrounding authorship and authenticity (Baidoo-anu & Owusu Ansah, 2023).

The dimensions of AI in education span across technological, pedagogical, institutional, and ethical domains. Technologically, AI includes machine learning algorithms, predictive analytics, and intelligent agents that personalize learning and optimize outcomes (Almasri, 2024; Singh & Hiran, 2022). Pedagogically, AI reconfigures the teacher's role into that of a learning facilitator, enhancing classroom engagement and providing individualized support (Karataş & Çınaroğlu, 2025). At the institutional level, AI supports data-informed governance, budget efficiency, and digital infrastructure (Khang, 2024; Nazaretsky et al., 2022). Ethically, concerns arise around algorithmic bias, surveillance, and data privacy, urging stakeholders to uphold fairness and transparency (Airaj, 2024; Guilherme, 2019). As a consolidated framework, Celik et al. (2022) provides one of the most comprehensive reviews to date, proposing that any meaningful implementation of AI in education must be examined through these four interrelated dimensions to ensure both technical efficacy and pedagogical integrity.

Quality education occupies a foundational position within global and national education agendas, particularly through the framework of Sustainable Development Goal 4 (SDG 4), which envisions inclusive, equitable, and transformative education for all. Quality, in this sense, is not limited to formal access or enrollment rates but includes the availability of qualified teachers, relevant curriculum content, adequate learning resources, inclusive school environments, and measurable student competencies in both cognitive and non-cognitive domains. As Rulandari (2021) has been shown in her study of Indonesia's SDG implementation, initial strides in expanding participation have yet to be matched by significant gains in learning outcomes and pedagogical equity. This gap between access and impact has intensified calls for systemic interventions capable of addressing the complexity of educational ecosystems, where traditional reforms alone may no longer suffice. In this context, AI is emerging not merely as a technological trend but as a strategic tool to address inefficiencies, personalize instruction, and generate data-driven insights that support pedagogical refinement.

In the Indonesian context, the rationale for adopting AI is directly linked to long-standing structural problems that impede quality advancement. These include teacher shortages, uneven classroom resources, rigid curriculum delivery, and weak student assessment systems (Shaturaev, 2021). Despite increased public education financing, disconnection persists between funding priorities and real school-level needs (Shaturaev, 2022). Moreover, Madhakomala et al. (2022) note that Indonesia's prevailing educational model often relies heavily on teacher-centered instruction, limiting opportunities for student autonomy, inquiry, and adaptive feedback.

Here, AI is increasingly viewed as a solution to amplify teacher effectiveness, especially in contexts where professional development is inconsistent or infrastructure is limited. AI can offer

intelligent tutoring systems, real-time analytics, and formative assessment tools that adjust to each student's progress, thereby filling instructional gaps and enhancing differentiated learning (Pramana et al., 2021). Additionally, Shaturaev (2021) argues that superior policy and educational management must embrace innovation that is both scalable and sensitive to local realities—AI fits this vision by enabling schools to extend learning opportunities without being wholly dependent on human capital or centralized control. Therefore, the case for AI integration is not driven by novelty, but by necessity, grounded in the urgent need to transform static educational systems into responsive, inclusive, and forward-looking learning environments.

Bandung, the capital city of West Java, has long been regarded as a dynamic educational hub in Indonesia, home to a wide range of public and private schools, vocational institutions, and higher education centers. Its reputation as a center of innovation and civic development makes it a fertile ground for educational transformation. As highlighted by Nugroho et al. (2024) Bandung's international cooperation with Suwon, South Korea, through the Bandung–Suwon Sister City Partnership, has significantly influenced its educational reform agenda, particularly in areas of digital infrastructure, teacher training, and STEM-oriented learning environments. These transnational partnerships reflect Bandung's strategic ambition not only to improve access to education but to raise the standard of educational quality through collaboration, technology transfer, and global benchmarking. Amidst these citywide reforms, three schools have emerged as model institutions due to their integration of AI-enhanced learning, commitment to inclusive pedagogical practices, and institutional innovation.

First, SMP Negeri 2 Bandung has implemented adaptive e-learning platforms supported by AI-driven diagnostics that tailor instruction to individual student profiles. It was selected for this study because of its government-supported pilot program aligned with digital

transformation initiatives under the Ministry of Education. Second, Assalam Islamic Middle School, as studied by Nugraha et al. (2024), offers a unique blend of religious and environmental education supported by the Dick and Carey model of instructional design. Their integration of AI for Qur'anic learning and nature-based ethics places them at the intersection of tradition and innovation. Third, SMK Negeri 4 Bandung, a vocational school known for its applied science curriculum, was chosen for its collaboration with industry partners and the implementation of AI-based service quality monitoring systems (Zulvia & Susanti, 2022). These schools represent different educational strata-public, private religious, and vocational-providing a comprehensive landscape for studying how AI may be adapted across diverse learning ecosystems.

The choice of these institutions is further supported by Bandung's vibrant culture of community empowerment and educational experimentation. As documented by Mahadewi et al. (2022), the city's initiatives in public health education, volunteer engagement, and behavioral outreach underscore the active role of civil society in supporting school-based programs. Moreover, private educational institutions in Bandung demonstrate strong organizational citizenship behavior and staff engagement when empowered through clear psychological contracts and incentive structures (Warsito et al., 2021). Pramana et al. (2021) also underscore the importance of localized, school-level strategies-such as leadership empowerment, curriculum flexibility, and digital adaptation-in elevating educational quality in Indonesia. Bandung, through its urban governance, policy experimentation, and collaborative networks, serves as a microcosm of Indonesia's broader educational aspirations. Hence, the selection of these three schools is not incidental, but rooted in their contextual richness, programmatic innovation, and alignment with national and international quality frameworks. Their narratives offer valuable insights into how AI, quality education, and institutional agency intersect in real school environments. These schools thus serve not

only as sites of empirical research but also as living laboratories of transformation, where the aspirations of SDG 4 are translated into tangible educational practices.

B. Methods

Population and Sample

The present study adopts a qualitative design grounded in narrative inquiry, aiming to explore the lived experiences of students in junior high schools in Bandung who are exposed to AI-integrated learning environments. The choice of this approach is based on the relevance of the qualitative approach to understanding the contextual phenomenon and the experience of some entities (Bingham, 2023; Charli et al., 2022). The population of this research comprises students enrolled in three purposively selected schools in Bandung: SMP Negeri 2 Bandung, Assalam Islamic Middle School, and SMK Negeri 4 Bandung. These institutions represent diverse educational ecosystems—public, private, religious, and vocational—with distinct AI implementation profiles, making them ideal for capturing a rich tapestry of student narratives within the Bandung educational context. To align with the narrative methodology's emphasis on depth over breadth, a purposive sampling strategy was employed to ensure the inclusion of participants with direct and varied exposure to AI-assisted learning environments.

As Beedell (2021) explained, purposive sampling moves beyond randomization by engaging "active participants" who can meaningfully illuminate the research phenomenon. In educational studies, this strategy allows the researcher to "intentionally select information-rich cases" that contribute to theoretical insight and contextual depth (Canter, 2023). Specifically, the sample included 18 students from the three selected schools, balanced across gender, grade level, and academic performance categories to reflect a diversity of experiences with AI platforms. This sampling method is consistent with the logic of conceptual representativeness, which

seeks variation across socially and pedagogically relevant dimensions rather than statistical generalizability (Hing et al., 2021).

The selection of participants also took into account the narrative potential of the informants, particularly their capacity and willingness to articulate personal experiences in a coherent, reflective manner. As demonstrated in the narrative research Salendab & Akmad (2023) and Salendab & Laguda (2023), purposive sampling is particularly effective when participants are asked to recount experiential knowledge shaped by unique institutional or pedagogical conditions. The interviewees in this study were identified through teacher recommendations, classroom observations, and initial informal conversations to ensure that selected students were both information-rich and ethically suitable for in-depth narrative engagement. The sample size of 18 was determined in accordance with prevailing qualitative research standards, which suggest that saturation in narrative and phenomenological studies often occurs between 10 to 20 participants, depending on the complexity and heterogeneity of the phenomenon (Bekele & Ago, 2022).

This guidance aligns with Firouzkouhi et al. (2022), who argue that sample adequacy in qualitative research is not a function of quantity, but of the depth and variation of responses obtained. While some studies may justify smaller or larger samples based on research scope, the current number was deemed sufficient to reach thematic saturation while still allowing for narrative individuation—the preservation of each participant’s unique voice and contextual reality. Ultimately, this purposive and carefully curated sample supports the narrative objective of the study: to generate situated, reflective, and richly textured accounts of students’ experiences with AI in education. As Musungwa & Kowe (2022) noted in their own qualitative investigation, purposeful engagement with participants who are embedded in relevant

operational settings allows researchers to go beyond surface-level understanding and produce findings that are both contextually grounded and theoretically robust.

Narrative Interview

This study employed narrative interviews as the primary data collection method, chosen for their ability to elicit rich, contextual, and temporally structured accounts of students' lived experiences with AI-enhanced education. As Küsters (2022) articulated, narrative interviews are particularly suited for research that seeks to understand how individuals construct meaning around life events, social systems, or institutional practices. Unlike traditional structured interviews that emphasize information extraction, narrative interviews allow participants to guide the conversation, shape the chronology, and emphasize elements that hold subjective significance. In this research, this flexibility was essential in uncovering how students make sense of the integration of AI into their learning environments, and how these experiences interact with their perceptions of educational quality, autonomy, and motivation.

The interviews were conducted using a semi-structured narrative approach, influenced by the model of the structured narrative interview proposed by Moenandar et al. (2024). This model balances free narration with thematic scaffolding, ensuring that while students are invited to tell their stories in their own words, the interviews also maintain a degree of coherence across participants. Each session began with an open narrative prompt such as, "Can you tell me about a time when technology—especially AI—helped or challenged your learning process?" From there, follow-up questions were gently introduced to explore specific episodes, emotional responses, peer interactions, and reflections on teaching quality and classroom environment. This structure preserved narrative flow while enabling comparative analysis.

To further support the authenticity and comfort of the participants, elements of peer interviewing were integrated for select informants, especially among younger students who might have felt intimidated by an adult researcher. As described by Kess & Juutinen (2024), peer interviews can lower hierarchical pressure and elicit more spontaneous and emotionally nuanced narratives. In two of the three schools, students were invited to engage in co-reflective dialogues with trusted classmates, supported by the researcher's presence as a facilitator rather than a primary questioner. These peer-mediated sessions not only deepened the relational quality of the data but also surfaced collective insights about shared educational experiences. In line with Sabine Flick (2020) principles for qualitative interviewing, particular attention was paid to interview ethics, relational trust, and the interview setting.

All interviews were conducted in a quiet, familiar school space to reduce cognitive and emotional barriers. Audio recordings were used with informed consent, and each student was assured that their story would be anonymized and respected as a contribution to broader educational understanding, not as a performance to be judged. Interview durations ranged from 30 to 50 minutes, depending on the student's engagement level, narrative complexity, and comfort in self-expression. Field notes were also taken to capture non-verbal cues, pauses, and environmental context. Ultimately, the narrative interview method served as a dialogic and interpretive space in which students could reflect on their evolving educational realities in a technologically transforming landscape. It respected their subjectivity, empowered them as co-constructors of meaning, and aligned methodologically with the study's commitment to uncovering depth, complexity, and voice in educational research.

Data Analysis

The analysis of student narratives in this study followed a narrative-structured interpretive approach, designed to respect the temporal, emotional, and reflexive qualities embedded in participants' accounts of AI-integrated learning. The goal was not only to identify what students experienced, but also to examine how they constructed meaning through their stories—how events were sequenced, emphasized, emotionally colored, and socially framed. As Küsters (2022) asserts, narrative data are never neutral recitations of events; rather, they are complex acts of communication in which identity, power, memory, and institutional context intersect. Therefore, the analytical framework adopted in this study moved beyond mere coding and instead emphasized narrative configuration, thematic resonance, and the performative aspects of storytelling.

Following the model of the structured narrative interview proposed by Moenandar et al. (2024), each informant was initially analyzed along three interpretive axes: (1) temporal structure (i.e., how the student organized their story from beginning to end), (2) narrative focal points (the key episodes or turning points), and (3) affective markers (expressions of emotion, uncertainty, or personal significance). These features helped distinguish between routine classroom descriptions and moments that revealed deeper struggles, shifts in perception, or meaningful encounters with AI tools. This allowed the researcher to extract not just data but meaning trajectories—how students moved from confusion to clarity, from anxiety to confidence, or from dependence to self-directed learning.

In addition, inspired by Kess & Juutinen (2024) work on peer interviewing in narrative research, the analysis paid close attention to dialogic patterns that emerged when students shared their stories in co-constructed formats. These moments, where a student's reflection triggered affirmation, elaboration, or contrast from a peer, were treated as socially situated narrative events,

revealing how experiences with AI were collectively understood and interpreted within peer groups. Such dialogical sections were analyzed for shared language, common metaphors, or recurring dilemmas, helping to build thematic clusters around broader phenomena like trust in AI feedback, digital fatigue, or perceptions of fairness in AI scoring. To maintain analytical rigor and traceability, the study followed U. Flick (2021) five-phase process for qualitative data interpretation: (1) repeated close readings of the informants, (2) open memo-writing for preliminary themes, (3) identification of narrative sequences and turning points, (4) comparison across cases, and (5) synthesis into higher-order categories.

These phases were recursive rather than linear, allowing the researcher to refine interpretations iteratively as more narratives were reviewed. Emphasis was placed on thick description and within-case depth before proceeding to cross-case comparisons, to preserve the unique voice and context of each participant. Throughout the process, reflexivity was practiced by the researcher in order to remain aware of their own interpretive position and potential influence on meaning-making. As advocated by Küsters (2022), narrative analysis requires a sensitivity not only to the participants' expressions but also to the analyst's assumptions, background, and reading practices, which invariably shape how narratives are received and re-presented. In this study, analytic memos and interpretive logs were kept to document shifts in thematic understanding, emerging contradictions, and moments of conceptual resonance. In sum, data analysis in this research was guided by the conviction that student narratives are powerful epistemological sites, where technology, pedagogy, emotion, and agency intersect. The structured narrative analysis provided both a methodological discipline and interpretive openness, allowing the research to honor the integrity of lived experience while generating analytically robust insights into how AI is transforming the educational landscape in Bandung's junior high schools

C. Results and Discussion

Result

AI as a Formative Mirror

One of the most resonant metaphors that emerged across participant narratives was that of AI as a mirror—a reflective surface that does not simply instruct, but rather reveals. In this sense, AI was not understood as a teacher in the traditional humanistic sense, nor as a passive database, but rather as a responsive, diagnostic entity that exposed the learner’s current state of understanding and performance with unrelenting immediacy. This metaphor was first articulated by Ardi (Informant 1), a student at SMP Negeri 2 Bandung, who described the AI feedback system he encountered in his English class as a “teacher who doesn’t sleep.” For Ardi, the metaphor conveyed the perpetual presence and reliability of the AI tool—its ability to respond without delay, to correct without fatigue, and to provide consistency that sometimes surpassed human capacity. In his words, the AI system “pushes you” by offering instant critiques and prompting continuous revision, leading to greater effort, deeper engagement, and an emergent sense of academic ownership. This feedback loop transformed Ardi’s engagement from mere compliance to what he himself described as a challenge-response dynamic, signaling a shift toward intrinsic motivation.

A similar experience was recounted by Bayu (Informant 3), a vocational student from SMK Negeri 4 Bandung, who described his interactions with AI simulation tools in customer service training. His narrative highlighted how the AI platform did not merely grade his responses but measured tone modulation, service etiquette, and timing—elements traditionally observed by live instructors. He characterized the experience as “not school, but training”, underlining a powerful distinction between abstract learning and

embodied professional rehearsal. Bayu's narrative suggests that for skill-based domains, AI can replicate the precision of professional standards, and thus becomes a tool for identity development, helping students imagine themselves not as "learners" but as "practitioners in formation."

Yet, this mirror metaphor was not without its cracks. Zahra (Informant 8), a top-performing student from Assalam Islamic Middle School, expressed deep ambivalence despite earning a perfect AI score on her religious studies project. In a moment of quiet reflection, she noted that although the AI had commended her structure and coherence, she felt "hollow," explaining that the tool could "show [her] surface, but not [her] soul." For Zahra, the mirror that AI provided reflected only the linguistic and logical facets of her work—it failed to acknowledge her spiritual intention, sincerity of reflection, or internal struggle. Her narrative suggests that while AI may effectively support cognitive calibration, it remains ethically mute and emotionally indifferent. It cannot discern the depth of intention, nor recognize when a student is wrestling with spiritual questions. The function of AI as a mirror, then, is double-edged. On one hand, it equips learners with unprecedented access to formative feedback that is immediate, specific, and non-punitive. For students like Ardi and Bayu, this catalyzes performance improvement and builds confidence.

The AI offers a sense of autonomy and low-stakes iteration, encouraging learners to make mistakes and revise without fear of embarrassment. On the other hand, as Zahra's account vividly reveals, the same mirror can feel mechanistic, unable to validate the affective, spiritual, or ethical dimensions of learning that are especially salient in contexts like religious education or moral development.

Moreover, this "mirror" does not reflect evenly. Its algorithms are programmed to prioritize syntactic clarity, procedural accuracy,

and behavioral conformity—dimensions that may inadvertently exclude learners whose strength lies in emotional nuance, poetic reasoning, or context-specific judgment. The metaphor of the mirror, then, is not just descriptive—it is diagnostic. It tells us that AI can illuminate surface structure but is epistemically blind to the deeper layers of human knowing: empathy, conviction, ambivalence, and transcendence. From a pedagogical standpoint, the metaphor underscores the necessity of human interpretive mediation. As echoed in the narratives of both teachers and students, the AI's role as a diagnostic mirror becomes most beneficial when its reflections are interpreted through dialogue, mentorship, and ethical framing.

Without such human scaffolding, the AI's assessments—however accurate—risk becoming detached signals, devoid of moral texture or personalized resonance. The portrayal of AI as a formative mirror reveals a compelling paradox: it offers clarity without meaning, precision without presence. While it enhances technical fluency and self-monitoring, it cannot replace the teacher's role in cultivating value-centered reflection, nor can it substitute the interpersonal dimensions of trust, empathy, and affirmation. These limitations do not diminish the value of AI, but they situate it firmly as a complementary tool, powerful yet partial, capable of reflecting what is visible, but not what is vital.

Emotional Contradictions of Automation

While many participants acknowledged the functional advantages of AI integration—its speed, objectivity, and clarity—their emotional responses to it were far from uniform. Instead, the findings reveal a layered field of contradictory emotions, shaped by learners' self-concept, technological literacy, and the social meaning they attach to machine judgment. The affective spectrum ranged from empowered mastery to crippling insecurity, suggesting that the psychological terrain of AI-mediated learning is uneven,

unpredictable, and deeply personal. For students like Ardi (Informant 1), the emotional tone of using AI was one of curiosity and challenge. He described the AI's rapid feedback loop as something that "pushes you," fostering a playful and competitive spirit.

He likened the platform to a responsive coach, turning each revision into a form of self-betterment. Similarly, Bayu (Informant 3) reported that interacting with an AI "guest" in his hospitality training was "stressful, but exciting." He perceived this stress not as a deterrent, but as an entry point into authentic professional rehearsal, noting that failure within the AI space felt safer than failure in a real-world service encounter. For these students, the emotional charge of AI use became motivational, tethered to growth, pride, and the gamification of progress.

In sharp contrast, Dito (Informant 4), also from SMP Negeri 2 Bandung, narrated his encounter with AI as emotionally depleting and psychologically isolating. Receiving a low score and cold, impersonal feedback triggered a defensive emotional response, leading him to describe the AI as "a wall," not a guide. Dito confessed that the feedback felt "like the AI didn't like me," an anthropomorphic interpretation that reveals how algorithmic assessment can unintentionally take on the role of an emotional evaluator, especially when unmediated by human support. He expressed a longing not just for instructional clarity, but for empathic recognition—someone to say "Nice try" before pointing out an error.

Lacking this, he disengaged completely from AI use in writing, opting instead for handwritten submissions and peer review. His story serves as a critical counter-narrative, reminding us that for some learners, AI may not function as a neutral evaluator but as a symbol of failure, exposure, and silent judgment. Zahra's (Informant 8) emotional response was more complex. Despite her

fluency with AI tools and high achievement, she experienced what might be termed spiritual dissonance. She shared that a perfect AI-generated score left her feeling “hollow,” sparking an existential question: Was I writing to understand, or just to perform? Her story underscores a deeper emotional paradox: even positive feedback from AI can elicit dissatisfaction if it feels misaligned with one's values, intentions, or inner truth. In Zahra's case, the AI was not threatening, but its inability to register sincerity or *niat* (intention) diminished her sense of spiritual fulfillment. This reveals that emotional contradiction is not reserved only for struggling students—it can emerge just as intensely in high performers when algorithmic affirmation feels spiritually vacuous.

Even among adults, ambivalence was evident. Pak Rafi (Informant 7), a vocational teacher and digital literacy coordinator, articulated a unique kind of professional unease. While he valued the objectivity of AI in assessing students' customer service simulations, he admitted feeling displaced as a “sole observer,” stating that now “AI watches too.” This surveillance metaphor suggests not simply administrative efficiency, but a restructuring of authority, where the teacher's eye is no longer the primary lens. He reflected on the tension between data-driven rigor and “the space for grace”—that zone of educational care where not all mistakes need metrics, and not all feedback needs to be logged. His story illustrates that emotional contradictions are not limited to learners; teachers, too, are caught in the evolving web of accountability, automation, and interpretation.

What emerges from these narratives is a clear pattern: AI integration introduces a new affective architecture into the classroom—one in which students and teachers alike must emotionally negotiate their place within, or against, algorithmic systems. The same AI platform that triggers growth for one student may generate shame for another. This supports U. Flick (2021) assertion, that technological tools in education are never purely

instrumental; they carry implicit psychological, relational, and even moral implications, depending on how they are used, framed, and received.

These findings also challenge simplistic discourses that categorize AI in binary terms—as either empowering or dehumanizing. Instead, the data reveals a dynamic continuum, where AI operates as an emotionally charged presence that can amplify motivation, magnify insecurity, or displace human affirmation, depending on context and individual disposition. This underscores the need for emotional scaffolding: human actors—teachers, mentors, peers—who can mediate AI’s feedback, buffer its coldness, and re-humanize the learning journey. In conclusion, the emotional contradictions surrounding AI in education are not accidental—they are structurally embedded in how AI assesses, represents, and relates to human learners. Recognizing and addressing these contradictions is essential if AI is to be implemented ethically, inclusively, and effectively, rather than simply efficiently.

Teacher and Parent Mediation of Digital Meaning

While much of the discourse around AI in education centers on technology itself—its algorithms, speed, and data capabilities—the narratives in this study underscore a crucial insight: AI is always filtered through human relationships. Whether as protectors, interpreters, skeptics, or spiritual guides, teachers and parents occupy pivotal roles in shaping how AI is emotionally and epistemologically experienced by learners. These mediators are not just observers of educational change; they are co-constructors of digital meaning, navigating between the machine’s output and the learner’s evolving self-understanding.

This was especially evident in the voice of Ustadzah Lina (Informant 5), a senior Islamic Religious Education teacher at Assalam Islamic Middle School. At first, she admitted skepticism,

asking rhetorically, “What is this robot doing in my subject?” Yet her turning point came not through institutional directives, but through observing her students’ growing curiosity, sincerity, and initiative in using AI tools like Tafsir 360. She described one student who explored an ayat about environmental ethics using AI, arriving in class with “real questions, not copied from worksheets.” This moment shifted her view: AI was not displacing her authority—it was activating deeper student engagement.

Even so, her role remained essential. Lina did not relinquish her interpretive responsibility. She insisted that while the AI could deliver Qur’anic references and scholarly tafsir, “it cannot feel their confusion.” She emphasized the teacher’s task as a murabbi—not just a knowledge dispenser, but a moral educator who could see the soul behind the sentence. Her pedagogy evolved into a hybrid model: she permitted AI-assisted research but required students to explain their learning in reflective oral presentations. “AI can give language,” she said, “but only Allah gives hidayah.” Her narrative reveals a nuanced approach, where technological tools are welcomed, but never uncritically accepted, and are always subject to ethical re-contextualization within Islamic pedagogical traditions.

A parallel mediating role emerged in Pak Rafi’s account (Informant 7), though shaped by his position in a vocational, data-driven environment. As the digital literacy coordinator at SMK Negeri 4 Bandung, Rafi faced pressure to implement AI in service simulation modules. He appreciated the rigor of the AI tools, which tracked student voice tone, empathy markers, and service language in real-time. Yet, he expressed discomfort at what he called the “second observer” in his classroom “Now, I teach, but AI watches too.” This surveillance metaphor suggests a shift in pedagogical sovereignty, where the teacher is no longer the sole evaluator or interpreter of performance.

To address this, Rafi introduced “human debrief” sessions after each AI-scored simulation. He invited students to talk through their emotional responses to feedback: “Was that hesitation real? Did that tone reflect your personality or anxiety?” In doing so, he reclaimed space for emotional interpretation and restored teacher authority, not as a corrector, but as a listener and bridge. He acknowledged that AI offers technical precision, but cautioned that it lacks pedagogical grace, a concept he defined as the teacher’s ability to distinguish error from growth. These mediating efforts were echoed at the household level by Ibu Rina (Informant 6), a warung owner and mother of Bayu, a student in the same vocational school. Her narrative began with wonder—seeing her son interact fluently with an AI guest in a front-office simulation—and evolved into maternal pride: “He’s talking to a screen, but becoming a man.” For Rina, the AI was not threatening. It was, in her words, a “mirror of professionalism.” Yet she remained cautious. She asked, “Can the computer read feelings?” and worried that her son might grow too comfortable with machines and forget how to serve real people.

To mitigate this, she provided balance. While Bayu practiced with AI at school, she insisted he also serve customers at her warung. “Let the AI train his skills,” she said, “but let people shape his heart.” Her maternal mediation highlights that character education remains an intergenerational project, one that cannot be outsourced to digital systems, no matter how efficient or well-designed. Together, these narratives reveal that meaning is never passively absorbed from AI systems. It is constructed through relationships, anchored in values, and constantly reinterpreted. Teachers and parents do not simply react to technological shifts—they mediate, refract, and sometimes resist them in ways that honor the learner’s humanity, social context, and moral development. Their role is not peripheral, but central: they ensure that AI does not become a cold arbiter of performance, but a co-instructor guided by compassion, purpose, and wisdom. Without

these mediators, AI risks becoming either too powerful or too hollow, imposing metrics without meaning, or accelerating skill acquisition without cultivating ethical consciousness.

The Spiritual and Moral Limits of AI

Beyond cognitive outcomes and emotional responses, the narratives in this study illuminated a final and perhaps most profound concern: the epistemological and spiritual limitations of Artificial Intelligence in education. Participants—particularly from Assalam Islamic Middle School—repeatedly returned to questions not about how AI works, but whether AI is capable of understanding or honoring the spiritual intentions (*niat*) and moral frameworks that underpin truly transformative education. This theme emerged most powerfully in the narrative of Zahra (Informant 8), a high-achieving Grade 9 student whose account brought to the surface the existential ambivalence of machine-mediated learning. Having received a perfect AI-generated score for her project on Islamic ethical values in technology, Zahra confessed feeling “hollow,” as though the system had rewarded a performance stripped of sincerity. “The AI gave me 100,” she said, “but did I really understand what I wrote? Or did I just organize information beautifully?”.

This moment of self-questioning points not to technological failure, but to a deeper ontological dissonance—a gap between the appearance of learning and the substance of understanding. Zahra went further, drawing a clear line between feedback that is algorithmically excellent and learning that is spiritually nourishing. “I wrote for the system, not for Allah,” she reflected, reframing the issue not as one of content mastery but of sacred alignment. For Zahra, AI’s silence on intention—a fundamental component of Islamic education—rendered its feedback incomplete, and at times spiritually misleading. This observation aligns with what Josselson & Hammack (2021) is described as the moral domain of narrative

research, where participants reveal struggles not with tasks per se, but with what those tasks mean in the context of identity, belief, and purpose.

Her unease was not hers alone. Ustadzah Lina (Informant 5) expressed similar concerns, albeit from the vantage point of pedagogy. While acknowledging AI's role in expanding her students' access to Qur'anic commentary, she warned against its potential to simulate understanding without internalization. "AI can give language, but only Allah gives hidayah," she said, insisting that spiritual growth requires more than correct syntax—it requires presence, sincerity, and human guidance. Lina's approach was not anti-technological, but morally conditional. She positioned AI as a possible instrument of tafakkur (reflection), but one that must remain under the ethical supervision of teachers grounded in religious values.

Indeed, both Zahra and Lina's perspectives converge on a common critique: AI lacks spiritual discernment. It can measure complexity, coherence, and even tone—but it cannot detect humility, intention, or repentance. It offers no space for ambiguity, no language for reverence. And in subjects like Pendidikan Agama Islam, where the heart of learning is transformation, not merely the acquisition of information, this absence becomes pedagogically and spiritually significant. As Zahra eloquently concluded, "It shows my surface, but not my soul." Importantly, this theme of spiritual limitation is not an abstract critique of AI, but a call for ethical humility in its application. It reveals the necessity of maintaining moral boundaries around machine authority, especially in environments where values are not simply integrated into the curriculum but constitute the curriculum itself.

AI, in these contexts, must be deployed not as a replacement for divine or human wisdom, but as a supplement to processes that are irreducibly relational and transcendental. There is also a hidden

danger raised by this theme: that algorithmic perfection may be falsely equated with moral or spiritual success. As Zahra noted, the pursuit of a green progress bar can become its own form of idolatry—“We begin to worship the score instead of seeking meaning.” In such cases, the AI does not simply fail to capture spiritual depth—it may actively distract from it, replacing the slow, contemplative nature of religious inquiry with a fast, polished simulation of learning. This finding resonates with Küsters (2022), who warn that digital systems often reproduce efficiency at the cost of epistemic integrity, particularly in moral or sacred domains.

Nevertheless, the participants did not argue for removing AI from education. Rather, they advocated for its repositioning—not at the center of judgment, but at the periphery of reflection. AI, they suggest, is valuable insofar as it supports technical skill, clarifies conceptual structure, or facilitates access to resources. But it should never be granted moral authority, particularly in domains where the aim is to foster *akhlak*, *ikhlas*, or deep ethical contemplation. To summarize, the spiritual and moral limits of AI emerge not from its technological incapacity but from its ontological misalignment with human interiority. It can replicate cognition, but not conscience. It can structure arguments, but not awaken awe. In religious educational settings—and arguably in any context where meaning matters more than metrics—AI must be handled with epistemological restraint and ethical vigilance. Only then can it support, rather than erode, the sacred dimensions of learning.

Discussions

Integrating Artificial Intelligence (AI) into junior high school education in Bandung reveals a pedagogical and emotional landscape far more nuanced than current policy or technology discourse often assumes. While literature on AI in education has broadly celebrated its capacity to automate feedback, personalize learning, and enhance efficiency (Celik et al., 2022; Popenici & Kerr,

2017; Singh & Hiran, 2022). This study's findings show that these technical affordances are always filtered through human, cultural, emotional, and spiritual dimensions. In the context of religious and vocational schools in Indonesia, AI does not function as a neutral force of innovation, but as a contested mirror, reflecting progress for some, triggering anxiety or ethical reflection for others.

The first major theme—AI as a formative mirror—resonates with previous scholarship that defines AI as a tool for strengthening learner agency and metacognitive regulation. Lee & Liu (2004) and Almasri (2024), for example, argue that intelligent systems can enhance student autonomy by offering immediate, iterative feedback that scaffolds learning. This was echoed in Ardi's and Bayu's narratives, where AI's constant presence fostered self-monitoring, revision, and task ownership. However, what this study adds—especially through Zahra's reflection—is that such feedback, while accurate, can feel spiritually vacant if it lacks relational or ethical anchoring. Zahra's distinction between "writing for the system" and "writing for Allah" reveals that AI, as currently designed, addresses performance but not purpose. This affirms Díaz & Nussbaum (2024) the recent call for pedagogical intelligence—a framework that embeds spiritual, cultural, and emotional intelligence into the design of educational technologies.

In exploring the emotional contradictions of automation, the findings challenge the optimism of much of the existing literature. Zimmerman (2018) and Khang (2025) present AI as a motivator for learning, often enhancing engagement through gamification or adaptive response. While this was true for Bayu and Ardi, whose emotional responses ranged from enthusiasm to flow-like engagement, Dito's narrative reminds us that AI can also become a source of psychological discomfort, especially when feedback is experienced as cold, decontextualized, or unmediated. His feeling of being judged by "a red box" aligns with Kim & Lee (2020), who caution that students often anthropomorphize AI systems,

attributing social intentions to machines that lack empathy. This reinforces the idea that affective scaffolding is not optional; teachers must be prepared to humanize algorithmic interactions or risk deepening digital exclusion.

The role of teachers and parents as mediators in these responses is central and aligns closely with the frameworks proposed by Nazaretsky et al. (2022), who emphasize the need for trust-building, interpretive dialogue, and professional development in the ethical deployment of AI. Both Ustadzah Lina and Pak Rafi serve as interpretive anchors, translating the mechanical outputs of AI into morally resonant feedback loops. Their strategies—blending reflection with digital interaction, debriefing after simulations, and contextualizing AI within local pedagogical frameworks—confirm what Balacheff (1993) was earlier described as “real teaching” in the age of intelligent systems: not just managing data, but guiding human transformation. Moreover, Ibu Rina’s narrative expands the frame of mediation beyond the school, revealing that family-level meaning-making is equally critical to how AI is internalized or resisted by learners.

The final theme—the spiritual and moral limits of AI—offers a direct critique of techno-centric paradigms in AI research. While scholars like Baidoo-anu & Owusu Ansah (2023) have acknowledged the power of generative AI in promoting access and creativity, few have addressed the ontological disjunction between artificial systems and faith-based learning environments. Zahra’s and Lina’s narratives demonstrate that AI is not just epistemologically limited—it is spiritually mute. It cannot discern *niat* (intention), embody *hikmah* (wisdom), or recognize the sacred subtleties of *adab* (ethics). This dissonance is especially pronounced in Islamic education, where knowledge is not merely acquired but purified. The findings reinforce Guilherme et al. (2019) assertion that teacher-student relationships are at the heart of ethical education, and that AI must not replace but rather

support these relationships, particularly where moral formation is a central aim.

While much of the AI-in-education literature frames technology as a catalyst for quality, this study reveals that quality itself must be reconceptualized. As Rulandari (2021), Shaturaev (2021), and Pramana et al. (2021) have argued in the Indonesian context, educational quality cannot be measured by test scores or digital proficiency alone. It must also include student well-being, identity formation, and moral readiness. The narratives presented here suggest that AI may support such quality, but only when its use is ethically framed, relationally mediated, and spiritually grounded.

D. Conclusions

This study reveals that the integration of Artificial Intelligence (AI) into junior high schools in Bandung is far more than a technical upgrade—it is a pedagogical, emotional, and spiritual turning point that demands ethical attentiveness from educators, students, and families alike. While AI demonstrates clear potential as a formative tool for personalized feedback and skill development, its influence is always shaped by the cultural, relational, and moral scaffolding surrounding it.

The narratives show that AI can motivate and mirror growth, yet also provoke anxiety, detachment, and spiritual dissonance, particularly when human mediation is absent. Therefore, AI must be implemented not merely as an instrument of efficiency but as a partner in a larger educational project grounded in empathy, reflection, and intentionality. Only through such a holistic and humanized approach can AI contribute meaningfully to the realization of truly transformative and values-driven education.

The practical implication of this study is the utilization of AI in school activities with clear limitations. Especially, by considering

the moral and spiritual limits of AI. We also recommend that the policymaker promote the AI utilization to meet the learning in the age of 21st century and provide school graduates. However, every AI utilization must consider the effectiveness of AI functions based on the pedagogical approach.

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References

- Airaj, M. (2024). Ethical artificial intelligence for teaching-learning in higher education. *Education and Information Technologies*, 29(13), 17145–17167. <https://doi.org/10.1007/s10639-024-12545-x>
- Ali, I. (2020). The COVID-19 Pandemic: Making Sense of Rumor and Fear. *Medical Anthropology*, 39(5), 376–379. <https://doi.org/10.1080/01459740.2020.1745481>
- Almasri, F. (2024). Exploring the Impact of Artificial Intelligence in Teaching and Learning of Science: A Systematic Review of Empirical Research. *Research in Science Education*, 54(5), 977–997. <https://doi.org/10.1007/s11165-024-10176-3>
- Anderson, C., & Kirkpatrick, S. (2016). Narrative interviewing. *International Journal of Clinical Pharmacy*, 38(3), 631–634. <https://doi.org/10.1007/s11096-015-0222-0>
- Baidoo-anu, D., & Owusu Ansah, L. (2023). Education in the Era of Generative Artificial Intelligence (AI): Understanding the Potential Benefits of ChatGPT in Promoting Teaching and Learning-Education in the Era of Generative Artificial Intelligence (AI): Understanding the Potential Benefits of ChatGPT in Promoting Teaching and Learning. *Journal of AI*, 7(1), 52–62. <https://doi.org/10.61969/jai.1337500>
- Balacheff, N. (1993). *Artificial Intelligence and Real Teaching BT - Learning from Computers: Mathematics Education and Technology* (C. Keitel & K. Ruthven, Eds.; pp. 131–158). Springer Berlin Heidelberg.

- Bawaneh, A. K., Al-Salman, S. M., Ali Salem, T. M., & Altarawneh, A. F. (2025). AI Shaping the Future of Education: Science and Math Teachers' Satisfaction Level and Motivating Factors towards Integrating Artificial Intelligence in Teaching and Learning. *International Journal of Information and Education Technology*, 15(3), 496–509. <https://doi.org/10.18178/ijiet.2025.15.3.2261>
- Beck, A. T., Robert A., S., Roberta, B., & and Ranieri, W. F. (1996). Comparison of Beck Depression Inventories-IA and-II in Psychiatric Outpatients. *Journal of Personality Assessment*, 67(3), 588–597. https://doi.org/10.1207/s15327752jpa6703_13
- Beedell, A. (2021). From abstract concept to active participants: Reflections on a purposive sample. *Crossing Conceptual Boundaries*, 11(1), 8–17.
- Bingham, A. J. (2023). From Data Management to Actionable Findings: A Five-Phase Process of Qualitative Data Analysis. *International Journal of Qualitative Methods*, 22(April), 1–11. <https://doi.org/10.1177/16094069231183620>
- Caleb Kimondo, Lenny Wandeto, Dazzy Indimuli, & Azra Ercertin. (2023). The impact of A.I on teaching and learning. *London Journal of Social Sciences*, 6, 124–129. <https://doi.org/10.31039/ljss.2023.6.111>
- Canter, D. (2023). Should we treat building users as subjects or objects? In *Readings on the Psychology of Place* (pp. 35–49). Routledge.
- Celik, I., Dindar, M., Muukkonen, H., & Järvelä, S. (2022). The Promises and Challenges of Artificial Intelligence for Teachers: A Systematic Review of Research. *TechTrends*, 66(4), 616–630. <https://doi.org/10.1007/s11528-022-00715-y>
- Charli, M. S., Eshete, S. K., & Debela, K. L. (2022). Learning How Research Design Methods Work: A Review of Creswell's Research Design: Qualitative, Quantitative and Mixed Methods Approaches. *The Qualitative Report*, 27(12), 2956–2960. <https://doi.org/10.46743/2160-3715/2022.5901>
- De Fina, A. (2021). Doing narrative analysis from a narratives-as-practices perspective. *Narrative Inquiry*, 31(1), 49–71.
- Díaz, B., & Nussbaum, M. (2024). Artificial intelligence for teaching and learning in schools: The need for pedagogical intelligence. *Computers & Education*, 217, 105071. <https://doi.org/10.1016/j.compedu.2024.105071>

- Firouzkouhi, M., Abdollahimohammad, A., Rezaie-Kheikhaie, K., Mortazavi, H., Farzi, J., Masinaienezhad, N., & Hashemi-Bonjar, Z. (2022). Nurses' caring experiences in COVID-19 pandemic: A systematic review of qualitative research. *Health Sciences Review, 3*, 100030.
- Flick, Sabine. (2020). Theorising medical psychotherapy: Therapeutic practice between professionalisation and deprofessionalisation. *European Journal of Social Theory, 24*(2), 227–245. <https://doi.org/10.1177/1368431020960556>
- Flick, U. (2021). *Doing interview research: The essential how to guide*.
- Guilherme, A. (2019). AI and education: The importance of teacher and student relations. *AI & SOCIETY, 34*(1), 47–54. <https://doi.org/10.1007/s00146-017-0693-8>
- Guilherme, A., Henriques, F., Bedard, A. H., & Czech, M. P. (2019). Molecular pathways linking adipose innervation to insulin action in obesity and diabetes mellitus. *Nature Reviews Endocrinology, 15*(4), 207–225.
- Hing, N., Russell, A., Browne, M., Rockloff, M., Greer, N., Rawat, V., Stevens, M., Dowling, N., Merkouris, S., & King, D. (2021). *The second national study of interactive gambling in Australia (2019-20)*.
- Holmes, W., & Tuomi, I. (2022). State of the art and practice in AI in education. *European Journal of Education, 57*(4), 542–570. <https://doi.org/10.1111/ejed.12533>
- Josselson, R., & Hammack, P. L. (2021). *Essentials of narrative analysis*. American Psychological Association.
- Kaplan-Rakowski, R., Grotewold, K., Hartwick, P., & Papin, K. (2023). Generative AI and teachers' perspectives on its implementation in education. *Journal of Interactive Learning Research, 34*(2), 313–338.
- Karataş, Y. E., & Çınaroğlu, S. (2025). Global Outlook for Disability Adjusted Life Years: Brain and Central Nervous System Cancers. *Medical Records, 7*(1), 100–106. <https://doi.org/10.37990/medr.1536199>
- Kess, R., & Juutinen, J. (2024). *Peer Interviews as a Narrative Research Method BT - Narratives in Educational Research: Methodological Perspectives* (E. K. Hyry-Beihammer, O. Ylitapio-Mäntylä, & M. Uitto, Eds.; pp. 53–64). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-68350-3_4

- Khang, N. T. (2024). The impact of investment in the manufacturing and processing industry on economic growth in Vietnam. *Journal of Infrastructure, Policy and Development*, 8(15), 9371.
- Khang, N. T. (2025). The impact of investment in agricultural, forestry and fisheries on economic growth in Vietnam. *International Journal of Innovative Research and Scientific Studies*, 8(1), 753-761. <https://doi.org/10.53894/ijirss.v8i1.4420>
- Kim, J., & Lee, J. C. (2020). Effects of COVID-19 on preferences for private dining facilities in restaurants. *Journal of Hospitality and Tourism Management*, 45, 67-70. <https://doi.org/10.1016/j.jhtm.2020.07.008>
- Knott, E., Rao, A. H., Summers, K., & Teeger, C. (2022). Interviews in the social sciences. *Nature Reviews Methods Primers*, 2(1), 73. <https://doi.org/10.1038/s43586-022-00150-6>
- Küsters, I. (2022). *Narratives Interview BT - Handbuch Methoden der empirischen Sozialforschung* (N. Baur & J. Blasius, Eds.; pp. 893-900). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-37985-8_56
- Lee, Y.-R. J., & Liu, B. (2004). Cytoskeletal Motors in Arabidopsis. Sixty-One Kinesins and Seventeen Myosins. *Plant Physiology*, 136(4), 3877-3883. <https://doi.org/10.1104/pp.104.052621>
- Madhakomala, R., Hakim, M. A., & Syifauzuzrah, N. (2022). Problems of Education in Indonesia and Alternative Solutions. *International Journal of Business, Law, and Education*, 3(3), 135-144. <https://doi.org/10.56442/ijble.v3i3.64>
- Mahadewi, L., Surachman, S., Hadiwidjojo, D., & Indrawati, N. K. (2022). Contextualization of religion and entrepreneurial performance: A lens of buddhist small business entrepreneurs. *Frontiers in Psychology*, 13, 846082.
- Moenandar, S.-J., Basten, F., Taran, G., Panagoulia, A., Coughlan, G., & Duarte, J. (2024). The structured narrative interview. *Narrative Inquiry*, 2(April), 307-334. <https://doi.org/10.1075/ni.23079.moe>
- Musungwa, T., & Kowe, P. (2022). Effects of occupational health and safety management systems implementation in accident prevention at a Harare beverage company. *Cogent Engineering*, 9(1), 2124638. <https://doi.org/10.1080/23311916.2022.2124638>
- Nazaretsky, T., Ariely, M., Cukurova, M., & Alexandron, G. (2022). Teachers' trust in AI-powered educational technology and a

- professional development program to improve it. *British Journal of Educational Technology*, 53(4), 914-931.
<https://doi.org/10.1111/bjet.13232>
- Nugraha, M. S., Qodriani, S. H., & Dedih, U. (2024). Implementation Of The Dick And Carey Model In Improving Islamic Religious Education Learning At Assalam Middle School Bandung (Qur'anic Inspiration Material In Preserving Nature). *AL-WIJDÂN Journal of Islamic Education Studies*, 9(1), 52-63.
<https://doi.org/10.58788/alwijdn.v9i1.3550>
- Nugroho, M., Bachri, B. S., Izzati, U. A., Khamidi, A., & Hariyati, N. (2024). Factors Factors Affecting the Form of Teacher Recruitment in Schools. *Jurnal Indonesia Sosial Teknologi*, 5(6).
- Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning*, 12(1), 22.
<https://doi.org/10.1186/s41039-017-0062-8>
- Pramana, C., Chamidah, D., Suyatno, S., Renadi, F., & Syaharuddin, S. (2021). Strategies to Improved Education Quality in Indonesia: A Review. *Turkish Online Journal of Qualitative Inquiry (TOJQI)*, 12(3), 1977-1994.
- Rulandari, N. (2021). Study of Sustainable Development Goals (SDGS) Quality Education in Indonesia in the First Three Years. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(2), 2702-2708.
<https://doi.org/10.33258/birci.v4i2.1978>
- Salendab, F. A., & Akmad, S. P. (2023). A Personal Narrative Experience of Teachers Teaching Purposive Communication During the New Normal Education. *International Journal of Multidisciplinary: Applied Business and Education Research*, 4(5), 1590-1601.
- Salendab, F. A., & Laguda, J. L. (2023). Learning purposive communication: A personal narrative experience of non-teacher education students. *International Journal of Multidisciplinary: Applied Business and Education Research*, 4(5), 1682-1696.
- Shaturaev, J. (2021). A comparative analysis of public education system of Indonesia and Uzbekistan. *Bioscience Biotechnology Research Communications*, 14(5), 89-92.

- Shaturaev, J. (2022). Economies and management as a result of the fourth industrial revolution: An education perspective. *Indonesian Journal of Educational Research and Technology*, 3(1), 51–58.
- Singh, S. V., & Hiran, K. K. (2022). The impact of AI on teaching and learning in higher education technology. *Journal of Higher Education Theory & Practice*, 12(13).
- Warsito, B., Sumiyati, S., Yasin, H., & Faridah, H. (2021). Evaluation of river water quality by using hierarchical clustering analysis. *IOP Conference Series: Earth and Environmental Science*, 896(1), 12072. <https://doi.org/10.1088/1755-1315/896/1/012072>
- Woolf, L. J., & Tumim, S. (1991). *Prison Disturbances April 1990*. London: HM Stationery Office.
- Zimmerman, M. (2018). *Teaching AI: Exploring new frontiers for learning*. International society for technology in education.
- Zulvia, D., & Susanti, S. (2022). Pengaruh Opini Audit, Ukuran Perusahaan Dan Pprofitabilitas Terhadap Audit Delay Pada Sektor Industri Dasar Dan Kimia. *Jurnal Revenue: Jurnal Ilmiah Akuntansi*, 3(1), 220–232.