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Adaptive Strategies of Veteran Junior High School Teachers Facing AI Integration in English Teaching

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ABSTRAK

Kehadiran kecerdasan buatan (AI) generatif telah mengubah secara cepat tuntutan yang dihadapi guru di ruang kelas, namun pengalaman guru senior dengan akumulasi keahlian pedagogis yang panjang dalam merespons disrupsi ini belum banyak dikaji secara empiris. Penelitian kualitatif studi kasus ini bertujuan mengeksplorasi bagaimana guru senior sekolah menengah pertama (SMP) mempersepsi, mengatasi, dan beradaptasi secara pedagogis terhadap integrasi AI di kelas bahasa Inggris. Data dikumpulkan melalui wawancara semi-terstruktur terhadap empat guru bahasa Inggris SMP di Jawa Timur dengan pengalaman mengajar sekitar 15 hingga 28 tahun, kemudian dianalisis menggunakan analisis tematik enam-fase Braun dan Clarke. Hasil penelitian mengungkap lima pola yang saling berkaitan: guru mempersepsi AI secara simultan sebagai peluang dan tantangan, dengan rentang dari krisis identitas hingga kehati-hatian yang stabil; strategi mengatasi tantangan dilakukan melalui pembelajaran mandiri (trial-and-error) dan pertukaran timbal balik dengan kolega yang lebih muda; adaptasi paling matang memposisikan AI secara ketat sebagai alat persiapan sekaligus memindahkan penilaian ke performa lisan yang tahan terhadap AI; guru mengelola siswa yang cakap AI melalui kombinasi pendesainan ulang struktur pembelajaran dan supervisi langsung; dan pada seluruh partisipan, identitas profesional direkonstruksi di sekitar inti relasional dan pembentukan karakter yang dipandang tidak tergantikan oleh mesin. Penelitian ini berargumen bahwa guru senior bukan penerima pasif disrupsi teknologi, melainkan agen aktif yang memobilisasi keahlian pedagogis terakumulasi untuk membentuk ulang, bukan sekadar menyerap, tuntutan yang dibawa AI ke dalam praktik mereka.

ABSTRACT

The rapid diffusion of generative artificial intelligence (AI) has reshaped the demands teachers face in the classroom, yet how veteran teachers with substantial accumulated pedagogical experience respond to this disruption remains empirically underexplored. This qualitative case study explores how veteran junior high school teachers perceive, cope with, and pedagogically adapt to AI integration in their English classrooms. Data were drawn from semi-structured interviews with four junior high school English teachers in East Java, Indonesia, with approximately 15 to 28 years of teaching experience, analyzed using Braun and Clarke's six-phase thematic analysis. Findings reveal five interconnected patterns: teachers

perceive AI simultaneously as opportunity and challenge, ranging from acute identity crisis to steady caution; coping is achieved through trial-and-error self-teaching and reciprocal exchange with younger colleagues; the most developed adaptive response repositions AI strictly as a preparatory tool while relocating assessment to AI-resistant oral performance; teachers manage AI-savvy students through structural redesign and direct supervision; and across all participants, professional identity is reconstructed around a relational, character-forming core viewed as beyond machine reach. The study argues that veteran teachers are active agents who mobilize accumulated pedagogical expertise to reshape, rather than simply absorb, the demands AI places on their practice.

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1. INTRODUCTION

Artificial intelligence (AI) has moved from a mere curiosity in educational technology to a default feature of the contemporary classroom within a remarkably short span. The share of U.S. K-12 teachers reporting generative AI use for instructional or administrative work rose nearly twofold within a single school year, and teachers who use these tools at least weekly report saving close to six hours of preparation time per week (Gallup & Walton Family Foundation, 2025; Kaufman et al., 2025). Generative AI's capacity to produce fluent text compresses the distance between "having an idea" and "having a finished product" to a matter of seconds, unsettling long-standing assumptions about what a piece of student work actually demonstrates and, by extension, what is actually being assessed.

For teachers, the demand to integrate AI has arrived less as an invitation than as a fact already in motion. Students did not wait for institutional guidance before adopting these tools: teens' use of generative AI for schoolwork roughly doubled within a single year (Pew Research Center, 2024), while fewer than half of K-12 teachers aware of these tools report having integrated them meaningfully into classroom practice, with inadequate professional preparation repeatedly identified as the limiting factor (Cheah, Lu, & Kim, 2025). This second-order digital divide a divide in confidence, comfort, and perceived legitimacy rather than mere access (Hargittai, 2002; van Deursen & van Dijk, 2014, 2019; van Dijk, 2020) separates teachers specifically by career stage. Veteran teachers are frequently positioned, in both public discourse and academic literature, as the demographic least equipped to adapt to AI, a framing that treats age and experience as a deficit rather than a potential resource a pattern documented in recent qualitative work showing that senior-career instructors describe technology-adoption difficulties in explicitly relational and identity terms rather than purely technical ones (Anuar & Xing, 2026).

Infrastructural factors compound this divide further: a review focused specifically on infrastructure identifies technological gaps, socio-economic disparities, and uneven digital literacy as the central mechanisms through which AI-powered education can widen, rather than close, gaps absent deliberate policy intervention (Vesna, Sawale, Kaul, Pal, & Murthy, 2025). At the policy level, a 2025 UNESCO Institute for Lifelong Learning concept note calls for strengthening adult educators' digital competencies as a matter of global education policy, but does so from a position of aggregate advocacy rather than situated empirical evidence of how individual veteran teachers actually navigate this demand in their own classrooms (UNESCO Institute for Lifelong Learning, 2025). A

separate narrative review finds that disparities in teachers' digital readiness are shaped by the intersection of age, region, and educational level, with urban teachers and those with more recent training showing stronger digital readiness than their rural or longer-tenured counterparts (Anisah, Siti, & Holis, 2024) an important corrective against treating "veteran" and "rural" as interchangeable proxies for disadvantage.

Efforts to strengthen teachers' capacity for instructional digitalization have also drawn attention within the Indonesian context, as shown by the development of a learning management system (LMS) to improve junior high school teachers' digitalization competence (Hekmatyar & Winata, 2026), and by classroom action research demonstrating that the choice of appropriate instructional media is itself decisive for students' learning outcomes (Ristanti, Puspitoningrum, & Karimatussalamah, 2025). Both findings underscore that teacher readiness to integrate technology including AI is not merely a matter of tool availability, but of how teachers convert exposure to technology into effective pedagogical practice, an area that remains underexplored qualitatively among veteran teacher populations.

Adaptive Expertise Theory (Hatano & Inagaki, 1986) offers a relevant theoretical lens, distinguishing routine expertise efficient execution of familiar procedures from adaptive expertise, the capacity to flexibly reconstruct one's approach when familiar procedures no longer fit the problem at hand. Whether veteran teachers exhibit this adaptive flexibility in the specific context of AI disruption, or instead default to routine responses ill-suited to a genuinely novel technological condition, is the empirical question this study addresses.

This study examines veteran junior high school teachers in Indonesia who teach English a subject in which generative AI's core capability (fluent text production) intersects directly with the subject's core assessment target (student-produced language). The study is guided by three research questions: (1) How do veteran junior high school teachers perceive the demand for AI integration in teaching and learning? (2) What coping mechanisms and adaptive strategies do veteran junior high school teachers employ to address challenges associated with AI and digital technology? (3) How do veteran junior high school teachers adapt their pedagogical practices to sustain learning objectives and classroom effectiveness in AI-enhanced learning environments? This study contributes an empirically grounded counter-narrative to the deficit framing of veteran teachers in technological change, showing that the most consequential adaptive work veteran teachers perform is not technical skill acquisition but pedagogical redesign: relocating what is assessed, not merely learning what AI is.

2. METODE PENELITIAN

This study employs a qualitative case study design to explore in depth how veteran junior high school teachers experience and respond to the integration of artificial intelligence in their classrooms. The case study approach was chosen because the phenomenon under investigation the situated process by which experienced teachers reconcile established pedagogical practice with a new and continually evolving technology cannot be adequately captured by instruments designed to measure attitudes or adoption intentions at a single point in time.

The study was conducted in junior high schools, including madrasahs, in East Java, Indonesia, spanning Grades VII through IX. The participating schools shared a common context: the absence of any written institutional policy specifically governing students' use of AI, infrastructural dependence on personal mobile devices and unstable school Wi-Fi, and AI governance that, in practice, was left to each teacher's discretion.

Participants were four junior high school English teachers with teaching experience ranging from approximately 15 to 28 years, selected through purposive sampling on the criteria of substantial teaching experience and current teaching in a context where students' use of AI was demonstrably present.

Table 1. Participant Characteristics

Participant	Gender	Age	Years Teaching	Grade Levels	Subject
Eko	Male	55	~25 (since 2001)	Grades VII–IX	English
Ismawati	Female	55	~28	Grades VIII–IX	English
Usfa	Undisclosed	~40	~15–17	Grades VII–VIII	English
Ana Nurdiana	Female	41	~16–18	Grades VII–VIII	English

Source: Data processed by the researcher (2026)

Data were collected through semi-structured interviews conducted in Indonesian, using an interview protocol comprising twelve thematic sections covering participant background, professional history, technology and AI experience, school context, professional identity, perceptions of AI, experiences of the digital divide, coping mechanisms, pedagogical adaptation, management of AI-savvy students, and future-oriented reflection. The protocol combined fixed core questions with probes designed to elicit concrete incidents and emotional texture rather than abstract generalizations.

Data were analyzed using Braun and Clarke's (2006) six-phase thematic analysis: familiarization with the data, generation of initial codes, collation of codes into candidate themes, review and refinement of themes, final theme naming, and production of the analytic narrative. Credibility was supported through follow-up questions probing specific incidents; transferability was supported through thick description of each participant's institutional context, although the small sample size and concentration in a single regional-linguistic context (East Java, Indonesian-medium interviews) limit generalizability; dependability was supported through a consistent interview protocol; and confirmability was supported by grounding all analytic claims directly in participant transcripts.

Participants were informed of the study's purpose and voluntarily consented to participate; disclosure preferences, including one participant's choice not to disclose gender identity, were respected throughout data handling.

3. RESULTS AND DISCUSSION

The thematic analysis revealed five interconnected patterns in veteran teachers' experience of AI, summarized in Table 2 and elaborated below.

Table 2. Summary of Findings by Theme

Theme	Summary of Findings
Theme 1	Perceiving AI as both opportunity and challenge, ranging from identity crisis to low-friction acceptance.
Theme 2	Coping through self-directed trial-and-error, reciprocal collegial exchange, and risk-oriented supervision.
Theme 3	Pedagogy over technology: AI confined to the preparatory stage, assessment relocated to oral performance.
Theme 4	Managing AI-savvy students through structural redesign and peer support, or supervision/restriction.
Theme 5	Reconstruction of professional identity around a relational, character-forming core, independent of adaptation depth.

Source: Data processed by the researcher (2026)

Theme 1: Perceiving AI as Opportunity and Challenge. The four participants occupied distinct positions on a spectrum ranging from acute identity disruption to stable, low-friction acceptance, and this positioning did not correlate neatly with years of teaching experience. One participant

described anxiety specifically tied to professional relevance upon first encountering ChatGPT-generated text in late 2022 a worry over whether his role as an English teacher remained relevant if a machine could produce fluent text within seconds. This threat did not persist, however; it was resolved through a reframing incident (see Theme 3) that relocated AI's role to a bounded preparatory function. Another participant construed AI as a persistent learning challenge marked by ongoing vigilance ("you have to be selective") rather than a single resolved crisis. The remaining two participants reported almost no friction one through deliberate non-engagement, the other through confident adoption from first contact.

Theme 2: Coping with Technological Limitations. The dominant coping mode was self-directed trial-and-error combined with reciprocal exchange with younger colleagues through the subject-teacher deliberation forum (MGMP) younger colleagues provided technical orientation, while veteran teachers offered classroom-management and assessment strategies, making the exchange genuinely bidirectional rather than a simple deficit-filling of veteran teachers' gaps. Another participant relied more on supervision as the primary strategy, oriented toward managing the risk of misuse rather than building technical fluency through experimentation.

Theme 3: Pedagogy over Technology. The most developed finding is an "open upstream, locked downstream" framework: AI is freely permitted for brainstorming and drafting outside class hours (coordinated via WhatsApp Group), but entirely excluded from the moment of assessment, which is relocated wholesale to spontaneous oral performance presentation, debate, and question-and-answer without access to phones or notes. This shift was accompanied by a transparent reallocation of assessment weight (20% AI-assisted draft, 80% live oral performance) and was triggered by one concrete incident: a written assignment displayed fluency far beyond the student's actual ability, and when asked to explain his own vocabulary in front of the class, the student was unable to do so. Another participant showed a more partial version AI used to enrich practice materials without changing the assessment target while yet another's task and assessment design remained unaffected altogether.

Theme 4: Managing AI-Savvy Adolescents. Two management logics emerged: structural redesign paired with peer support (pairing confident students with anxious ones, turning AI drafts into an object of peer tutoring), as against vigilance and restriction without any structural redesign of the task itself. A notable cross-case pattern was non-punitive handling of students caught using AI beyond agreed limits: a persuasive private conversation affirming that what is valued highly is the courage to speak in one's own voice, not the sophistication of the machine an approach reported to strengthen, rather than damage, the teacher-student relationship.

Theme 5: Reconstructing Professional Identity. The most consistent finding is that all four participants, regardless of how deeply they engaged technically with AI, independently affirmed a relational and character-forming core to teaching that they positioned as categorically beyond machine reach from a calming gaze and smile that steadies an anxious student's heartbeat, to the claim that a teacher's role in guiding students' character cannot be replaced by any technology. The independence of this identity claim from the depth of technical adaptation is an important finding: the participant with the most minimal AI engagement voiced this claim just as strongly as the participant with the most developed adaptive strategy.

Taken together, these findings extend Adaptive Expertise Theory (Hatano & Inagaki, 1986) by suggesting that converting experience into adaptive expertise appears to require a specific disconfirming incident, rather than the accumulation of generic experience alone. The contrast between the structural-redesign response and the intensified-supervision response applied to an otherwise unchanged task empirically illustrates the difference between adaptive and routine expertise, and aligns with the concept of the disorienting dilemma in Mezirow's (1991) transformative learning theory although this synthesis is this study's own interpretive contribution and warrants further verification against the adaptive expertise literature specifically.

The Theme 5 findings also refine Teacher Professional Identity Theory (Beijaard, Meijer, & Verloop, 2004; Beijaard, Verloop, & Vermunt, 2000): the stability of relational identity operates independently of the depth of technical adaptation, indicating that this identity functions as a pre-existing, stable resource rather than a consequence of successful technological adaptation.

Compared with a mixed-methods survey of veteran EFL teachers in Vietnam that frames veteran teachers' emotional relationship to AI as "fear of missing out" (Trinh, Phan, Nguyen, & Le, 2025), this case-based study shows that the "age-related proficiency gap" found at the aggregate level actually resolves into at least three qualitatively distinct response types routine vigilance, structural redesign, and minimal engagement that do not simply array along a single deficit scale. These findings also complement AI-training intervention studies in the Global South (Rulyansah et al., 2025; Samuels, Fisher-Howe, & Haye, 2025; Srirevathi & Aravind, 2025; Xue, 2025) showing that structured training consistently raises teachers' confidence with AI: the present study suggests that a disconfirming classroom incident can itself be one trigger for adaptive expertise, standing alongside formal training rather than being simply superseded by it.

In line with the Indonesian context of teacher digital readiness reflected in the development of an LMS for junior high school instructional digitalization (Hekmatyar & Winata, 2026) and the importance of appropriate media selection for learning outcomes (Ristanti, Puspitoningrum, & Karimatussalamah, 2025), these findings affirm that readiness to integrate new technology, including AI, depends on teachers' capacity to diagnose and redesign assessment practice, not merely on technical mastery of the tool itself.

These findings are also relevant to the broader discourse on AI as a means of democratizing education and bridging the digital divide (Roy, 2026), and to the potential of AI-based professional learning communities as a vehicle for personalized teacher development (Arefian, 2026). The way teachers in this study mobilized long-formed pedagogical intuition to respond to on-the-ground realities that are not always ideal also resonates with reflective accounts from teachers in Côte d'Ivoire highlighting how the realities of instructional-program implementation in the field often diverge from their ideal design (Whitehead et al., 2025), underscoring the importance of centering teachers' own voices in designing AI-related professional development support.

4. CONCLUSION

This study examined how veteran junior high school English teachers in Indonesia perceive, cope with, and pedagogically adapt to the integration of artificial intelligence in their classrooms. Based on a thematic analysis of four in-depth accounts, the findings show that veteran teachers do not respond to AI disruption uniformly: perceptions range from acute identity threat to low-friction acceptance; coping strategies combine self-directed experimentation, reciprocal collegial exchange, and risk-oriented supervision in varying combinations; and pedagogical redesign, although fully realized in only one participant, demonstrates a specific and transferable mechanism relocating assessment to a dimension of learning that AI cannot reach. Amid this diversity, all four participants converged on one stable identity claim: the relational and character-forming function of teaching remains permanently beyond AI's reach, regardless of how each individually engaged with the technology.

Theoretically, this study refines Adaptive Expertise Theory by identifying the disconfirming incident as a triggering mechanism, and refines Teacher Professional Identity Theory by showing that identity stability can operate independently of successful technical adaptation. Practically, this study offers a transferable adaptive principle relocating assessment to a target the disrupting technology cannot reach along with a working example of non-punitive AI-use boundary enforcement that preserves the relationship with adolescent students.

This study is limited by its small sample (four participants) drawn from a single regional and linguistic context, uneven interview depth across participants, self-report data, concentration on

a single subject (English), and the absence of independent classroom observation. Future research is encouraged to broaden the sample across subjects, incorporate classroom observation and document analysis, and follow teachers longitudinally to test whether the disconfirming-incident mechanism recurs across subsequent waves of technological change.

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