

Humanizing AI in English Education for Society 5.0: Narrative Reconstructions of Teacher and Learner Digital Identities

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Abstract: Generative AI is widely used in English learning, yet how teachers and learners narrate it as part of their evolving digital identities remains under-researched. This study explores (1) teachers' and students' narratives of AI-mediated English learning, (2) how these narratives reflect digital-identity transformation, and (3) pedagogical principles for humanizing AI. This qualitative narrative inquiry involved five English educators and 15 students from secondary and higher education in Indonesia. Data were collected from interviews, reflective narratives, and anonymized learning artifacts, and analyzed using deductive-inductive narrative thematic analysis. Analysis identified five themes: (1) a shift from apprehension to pedagogical negotiation; (2) reconstruction of learner agency through reflective engagement; (3) reconfiguration of teacher identity from corrector to ethical mediator; (4) emergence of collaborative digital learning identities; and (5) counter-narratives exposing tensions around dependence, authorship, and diminished human interaction, underpinning the proposed Humanized AI-Mediated Digital Learning Identity (HADLI) framework. Generative AI neither humanizes nor dehumanizes English education; its value is co-constructed through teacher facilitation, learner reflection, and ethical transparency, with implications for teacher education, curriculum, and AI policy under Society 5.0.

Keywords: humanizing AI, english education, digital learning identity, narrative inquiry, Society 5.0.

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■ INTRODUCTION

Artificial intelligence is now deeply integrated into contemporary English education. The widespread availability of apps for grammar checking, automated writing feedback, translation, pronunciation training, vocabulary enhancement, chatbot interaction, and adaptive learning has led to a significant increase in language practice opportunities, particularly for English as a Foreign Language (EFL) learners who continue to have limited exposure to authentic communication beyond the classroom (Jeon, 2022; Wang et al., 2023; Wiboolyasarini et al., 2024; Yang & Kyun, 2022). However, this broadening raises fundamental ethical, pedagogical, and interpersonal concerns.

Educational technologies contain inherent ideological biases that affect how students are characterized, assessed, governed, and situated within institutional frameworks (Heath et al., 2022; Rahm, 2021; Tshuma, 2021). AI can aid students to speak, write, edit, and translate. Still, it can also foster dependence, diminish learner agency, obscure authorship, and mechanize language output, thereby threatening the social basis of classroom learning.

The technical and pedagogical benefits of AI in education have been extensively studied, encompassing student performance, automated assessment, implementation, teacher training, and adaptive learning (Çelik et al., 2024; Crompton et al., 2022; Kashif et al., 2025). Generative AI

in English education has been extensively examined in AI-assisted writing, automated feedback, chatbot interactions, speaking practice, and students' perceptions of AI tools (Jeon, 2022; Mekheimer, 2025; Wang, 2024; Xiao et al., 2025; Zou et al., 2024). Additional elements, such as customization, concept development, and communication, have also been considered (Ayeni et al., 2024; Creely, 2024; Kristiawan et al., 2024; Yang, 2025; Yuensook et al., 2025). However, much of the literature treats AI as a tool for increasing task efficiency and efficacy. Much less attention has been paid to how educators and learners collaboratively construct their relationships with AI in relation to developing identities, responsibilities, and professional obligations. This disparity has important analytical implications, as AI might reinforce linguistic bias by marginalizing multilingual or local communication styles in favor of dominant native-speaker standards (Baumgarten & Tieber, 2025; Pawar, 2026).

This study sits at the intersection of three conceptual domains: the humanization of AI under the Society 5.0 framework, narrative identity theory, and the notion of digital learning identity. Each domain corresponds to a different but related aspect of the topic under investigation. The core analytical framework is digital learning identity, defined as a dynamic process in which students and educators interpret, state, negotiate, and reconstruct their identities in digitally mediated learning atmospheres (Darvin & Norton, 2021). Identities in AI-assisted English language learning are co-constructed through the interaction of human agency, algorithmic feedback, platform affordances, institutional norms, and ethical considerations. For instance, a student who uses AI to check grammar may gain confidence in communicating but lose confidence in their own linguistic judgment; a teacher who uses AI in writing pedagogy may shift from a role of linguistic

corrector to that of ethical mediator and critical facilitator.

The methodological rationale for using participants' narratives as the main unit of analysis is grounded in narrative identity theory (McAdams, 2019). Narrative inquiry is particularly helpful for investigating teacher and student perceptions of their AI-mediated experiences through narratives of apprehension, adaptation, resistance, confidence, dependence, negotiation, and transformation – processes that quantitative data alone cannot expose (Gavidia & Adu, 2022; Weiss & Johnson-Koenke, 2023). Narratives not only reflect experiences but also shape identity, as individuals construct accounts of their current and evolving selves in relation to their circumstances (Bloom et al., 2020).

From the perspective of humanizing AI, this identity-building process is embedded in a deliberately normative framework. Educational strategies to humanize AI need to focus on human agency, moral responsibility, empathy, creativity, and relational learning (Airaj, 2024; Amini et al., 2025). This perspective is especially relevant for AI-mediated environments where features that reduce writing anxiety and increase practice opportunities may also encourage passive acceptance of the algorithmic results, blur the line between assistance and academic outsourcing, and weaken learner voice. Therefore, humanization is a pedagogical achievement that requires teacher mediation, ethical transparency, and reflective classroom practices rather than being an inherent characteristic of AI (Hummel, 2025; Mudra et al., 2022; Xing et al., 2026).

This human-centric approach aligns with the Society 5.0 paradigm, which advocates a human-centered approach to technological advancement, emphasizing digital innovation to improve well-being, social interaction, and co-creation rather than focusing on automation or efficiency (Atay et al., 2025; Gobinath, 2024). Introducing

Society 5.0 to English education raises the question of how to incorporate AI in a way that preserves agency, ethical judgment, creativity, interpersonal dialogue, and human relationships. This study focuses on that question.

Another theory is post-digital pedagogy (Lackoviæ et al., 2024; Erstad & Silseth, 2023). In this milieu, AI is central to English education, situated in a wider post-digital context in which drafting, revising, translation, questioning, and discussion are interwoven with machine output. Thus, the use of AI is not remarkable, but part of the ordinary educational experience in ways that require a critical rather than purely technical pedagogical approach.

The research is also informed by Ou et al.'s (2024) post-humanist view that AI has instructional value only when human agents consider, interpret, and direct it. This position supports a conditional, reflective approach to integrating AI that avoids naive technological determinism or technophobic rejection and highlights the importance of human judgment as integral to its instructional value.

Consistent with the above-mentioned theoretical framework, this study explores three related research questions:

- RQ1. How do English teachers and learners describe their experiences of AI-assisted English learning in the Indonesian EFL contexts?
- RQ2. How do these stories depict the reformation of digital learning identities in AI-mediated teaching and learning?
- RQ3. What are the pedagogical principles for humanizing AI in the context of Society 5.0 that can be derived from the participants' meaning-making processes?

This work contributes to the convergence of English education, AI pedagogy, and identity research by reconceptualizing AI as an identity-

forming environment, designed pedagogically for educational value rather than a tool.

■ METHOD

Research Design

The study used a narrative inquiry design (Connelly & Clandinin, 2012, operationalized in Gavidia & Adu, 2022) to explore how English teachers or lecturers and students interpret AI-mediated English learning and reconstruct their digital learning identities. The decision to conduct narrative inquiry was motivated by the study's focus on lived experience, meaning-making, identity negotiation, personal-professional transformation, and the social and spatial contexts of human–AI interaction, which are not conducive to aggregative methodologies. Participants' accounts were not viewed as clear renditions of behavior but rather as narrative constructions through which they made sense of agency, authorship, teacher presence, learner confidence, ethical responsibility, and digital engagement (Weiss & Johnson-Koenke, 2023). Society 5.0 provided a critical space for examining the impact of AI-based English learning on human agency, teacher engagement, ethical decision-making, learner expression, and relational learning.

Research Context and Participants

The data were collected in anonymized Indonesian EFL contexts spanning secondary and higher education institutions in May 2026. These two contexts were purposively selected because they represent distinct infrastructural and policy conditions for AI-assisted English learning, allowing the study to examine whether patterns of digital identity reconstruction were context-specific or transferable across institutional settings. Twenty participants were selected through purposive sampling. Five English teachers or lecturers (labeled T1–T5) and 15 students (labeled S1–S15) were involved. Purposive

sampling was suitable as the study targeted detailed narratives of AI-assisted English learning rather than statistically representative data. Table

1 summarizes the role, educational context, and data sources associated with each participant code.

Table 1. Participant grouping and data sources

Code	Role	Education Context	Main Data Sources	Context Description
T1	Lecturer	Higher education EFL	Interview, reflective account, artifact	AI-assisted English teaching and assignment redesign
T2	Teacher	Secondary EFL	Interview, reflective account	Classroom guidance and monitoring of students' AI use
T3	Lecturer	Higher education EFL	Interview, reflective account, artifact	Ethical dimensions of AI use in English learning
T4	Teacher	Secondary EFL	Interview, reflective account	AI as learning support and classroom management issues
T5	Lecturer	Higher education EFL	Interview, reflective account, artifact	Humanizing AI and the reconstitution of teacher mediation
S1–S15	Students	Secondary and higher education EFL	Interviews, reflective accounts for all 15; artefacts from nine higher-education students only (S2, S3, S5, S8, S9, S11, S12, S14, S15 — see Data Sources and Data Collection for inclusion criteria)	AI-assisted English learning experiences across contexts

As Table 1 shows, the two teacher-lecturer contexts (T1, T3, T5 in higher education and T2, T4 in secondary education) and the pooled student group draw on overlapping but not identical data sources. This distinction matters for how the infrastructural contrast below is interpreted. A brief overview of the technological infrastructure in each setting helps to contextualize this comparison. Students at vocational schools in West Java, Indonesia, brought their own smartphones to access AI tools as the main way to do so under a BYOD (bring-your-own-device) policy. While Wi-Fi was available in the school, it was not consistently available in all classrooms. As a result, students often used AI on their own initiative outside school hours rather than during lessons. At this level, English educators

reported that institutional guidance on AI use was mostly informal departmental discussions, and that there was no formal AI policy at the time of data collection.

In contrast, the higher education institution is a private university in the Bandung metropolitan area, where students have controlled access to digital learning platforms, including AI-powered writing tools integrated into the university's learning management system, and a Wi-Fi infrastructure considered adequate for the simultaneous use of Wi-Fi in the lecture halls and communal study areas. In this setting, lecturers reported improved access to professional development resources on AI in education, and the institution had developed initial policies for using AI in academic work. However, the

implementation and enforcement of those guidelines varied considerably across departments. The infrastructural discrepancies are analytically important because they affect the degree to which participants' use of AI was autonomous or institutionally directed, a distinction visible in the findings and one that impacts identity negotiation at each level of education.

Teachers needed to teach English or related subjects, supervise or support students' use of AI, and be ready to evaluate AI's impact on their professional practice. Students were considered eligible if they were studying English at the secondary or tertiary level, had used AI technologies to study English, and were willing to share their experiences in a narrative form. As a minimum requirement for AI use, during purposive screening, student participants were required to have experience using at least one AI tool (e.g., generative language applications such as ChatGPT, Grammarly, Google Translate, or similar services) regularly for English learning purposes at least once a week for a minimum of

three months before recruitment to ensure that the participants had sufficient experiential depth to generate analytically meaningful stories. This threshold distinguished habitual, reflective engagement with AI, which is likely to produce substantial identity-related narratives, from incidental or irregular engagement, which would not provide experiential basis for narrative inquiry.

Participants who used AI tools sparingly or for one task (e.g., one translation exercise) were excluded. All student participants were at least 18 years old, and secondary education students were selected from final-year vocational or adult education programs, where students are generally 18 years of age or older, ensuring full legal capacity for informed consent without guardian involvement. Exclusion criteria were a lack of expertise in AI technologies, unwillingness to be interviewed, or refusal to consent to the use of anonymized data. Table 2 details each participant's anonymized context, AI tools used, experience and frequency of AI use, interview duration, and narrative focus.

Table 2. Anonymized respondent identifiers, roles, and interview parameters

Code	Role	Anonymized Context	Interview Duration	Narrative Focus
T1	Lecturer	Higher education EFL context	30 minutes	Initial concerns about AI and assignment redesign
T2	Teacher	Secondary EFL context	18 minutes	Changing role of the teacher
T3	Lecturer	Higher education EFL context	28 minutes	Ethical use of AI
T4	Teacher	Secondary EFL context	32 minutes	AI as a learning companion
T5	Lecturer	Higher education EFL context	30 minutes	Humanizing AI in the classroom
S1	Student	Secondary EFL learner	18 minutes	First experience using AI
S2	Student	Higher education EFL learner	20 minutes	AI support in writing
S3	Student	Higher education EFL learner	22 minutes	Learning confidence
S4	Student	Secondary EFL learner	18 minutes	Ease of understanding texts
S5	Student	Higher education EFL learner	21 minutes	Risk of dependency
S6	Student	Higher education EFL learner	24 minutes	Grammar correction
S7	Student	Secondary EFL learner	25 minutes	Speaking and pronunciation

S8	Student	Higher education EFL learner	16 minutes	Generating writing ideas
S9	Student	Higher education EFL learner	20 minutes	Rechecking AI-generated responses
S10	Student	Secondary EFL learner	15 minutes	Role of the teacher/lecturer
S11	Student	Higher education EFL learner	19 minutes	Paraphrasing and academic honesty
S12	Student	Higher education EFL learner	16 minutes	Digital learner identity
S13	Student	Secondary EFL learner	23 minutes	Conversation practice
S14	Student	Higher education EFL learner	22 minutes	AI as a learning companion
S15	Student	Higher education EFL learner	24 minutes	Expectations for AI use

Taken together, Table 2 shows that experience with AI tools ranged from approximately six months to more than two years, and that usage frequency varied from once a week

to almost daily, a spread that later helps explain why participants' narratives of agency and dependency (Themes 2 and 5) differed in intensity rather than in kind.

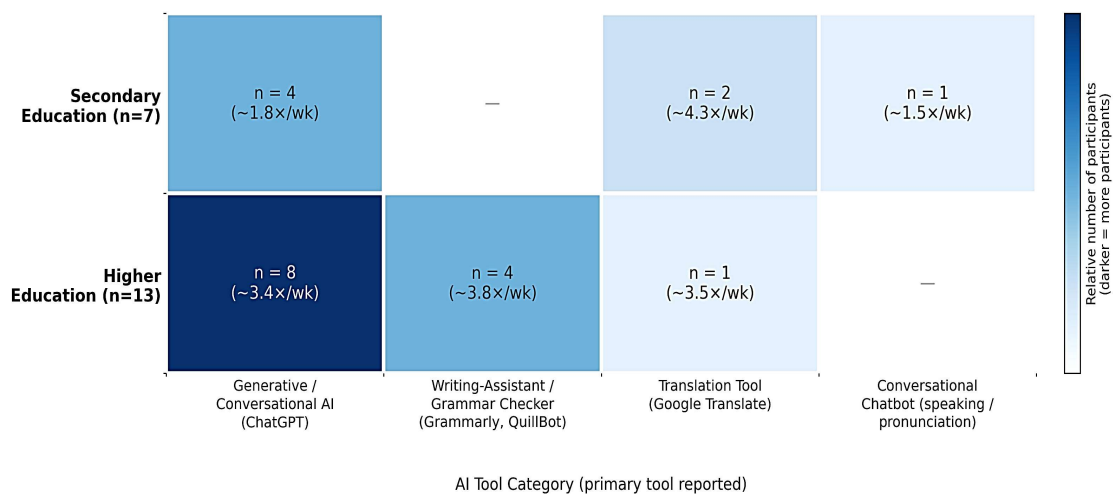


Figure 1. Distribution of primary AI-Tool category and mean weekly use frequency, by educational level

Rather than reproducing the full per-participant AI-tool, experience, and frequency descriptors in tabular form, Figure 1 condenses this profile into a visual matrix that groups participants' primary AI-tool category and mean weekly use frequency by educational level, making the contrast between secondary and higher-education participants immediately legible. As Figure 1 shows, higher-education participants (n = 13) cluster heavily around generative/

conversational tools such as ChatGPT (n = 8, used approximately 3.4 times per week on average) and writing-assistant tools such as Grammarly or QuillBot (n = 4, approximately 3.8 times per week), whereas secondary-education participants (n = 7) are more evenly spread across generative tools (n = 4, approximately 1.8 times per week), translation tools (n = 2, approximately 4.3 times per week), and chatbot-based speaking practice (n = 1). This pattern of

more frequent, more concentrated use of generative and writing-assistant tools in higher education, versus lower-frequency, more translation- and speech-oriented use in secondary education, later helps explain why participants' narratives of agency and dependency (Themes 2 and 5) differed in intensity rather than in kind across the two educational levels. The study retains the full per-participant AI-tool, experience, and frequency descriptors underlying Figure 1 in the study's audit trail.

Data Sources and Data Collection

Data were gathered from three complementary sources: semi-structured interviews, reflective narratives following the interviews, and anonymous digital learning artifacts. Triangulation across different sources was vital to mitigate the limitations of self-report data and to frame participants' narratives as evidence of authentic AI-mediated activity. Nonetheless, while semi-structured interviews offer a useful relational space for the initial development of narratives, it is widely acknowledged within narrative inquiry that the immediate interactional context of an interview can restrict the depth and richness of retrospective accounts, especially when it comes to emotionally charged and epistemically complex issues such as identity and technology (Clandinin & Connelly, 2000; Gavidia & Adu, 2022). Thus, the post-interview reflective narratives and digital learning artifacts were not treated as supplementary data sources but as epistemically primary means of attaining narrative depth.

The reflective narratives established a temporally distant and structurally organized context in which participants could revisit, revise, and enrich the accounts generated during the interview, facilitating a more intentional and analytically rich mode of self-narration. The digital artifacts served as concrete anchors for narrative building: analyzing the traces of participants' AI-

mediated activities allowed the examination to focus not only on participants' verbal renditions of their experiences, but also on how these experiences were enacted, modified, and negotiated in practice. This triangulation approach is echoed in Riessman's (2008) statement that the depth of narrative, which distinguishes qualitative depth from the simple descriptive self-report, depends on the researcher's ability to move back and forth between the narrated (what participants tell) and the experienced (what the artefactual record reveals), rather than on a single form of evidence.

Primary data were collected through semi-structured interviews. Twenty individuals were interviewed online in one session of 15 to 32 minutes. Interviews were conducted in Indonesian, English, or a combination of both, depending on participants' language preference. All interviews were audio-recorded and later transcribed verbatim with documented consent. Transcripts were subsequently subjected to light editing for readability: filler words and repetitions were removed, while the meaning and sentence structure were preserved in accordance with the original recordings. The interview guidance investigated participants' first contact with AI tools, the types of AI tools and the purposes for which they used them, the benefits and risks they perceived, changes in teaching approaches, ethical considerations, the teacher-student relationship, and perceived changes in identity.

All 20 participants completed post-interview written reflections consisting of three structured prompts about AI use, perceived agency, and ethical challenges. Such thoughts allowed participants to elaborate on aspects of their experience that were not adequately addressed in the interview proper. Digital learning artifacts were then collected from 12 participants who provided disclosure consent (three teachers/lecturers and nine students). Artefact eligibility required two additional, operationally defined

conditions beyond the general study consent already described: (a) explicit supplementary disclosure consent, sought separately from the interview and reflective-account consent, permitting the research team to retain and analyse a tangible trace of the participant's AI-mediated activity; and (b) the existence of such a trace in an exportable, textually analysable form (e.g., a saved draft, a downloadable prompt-and-response log, or a screenshot record) generated using the participant's primary AI tool during the three-month qualifying period. Eight participants did not meet the second condition and were consequently excluded from artifact collection while remaining full participants in the interview and reflective-narrative components: two secondary-level teachers (T2, T4), whose classroom guidance role did not itself generate a personal AI-interaction trace, and six students. Five of the six excluded students (S1, S4, S7, S10, S13) were secondary-level participants whose AI use was mediated through personal smartphones under the BYOD policy described above and relied primarily on ephemeral, non-exportable interactions, spoken pronunciation drills, one-off translation look-ups, or unsaved chatbot exchanges that left no retrievable textual trace suitable for triangulation. The sixth (S6) was a higher-education participant who used Grammarly only for isolated grammar spot-checks rather than for saving or exporting complete drafts, and who declined the supplementary disclosure consent, citing the ongoing, unfinished status of her coursework. This distinction between interview/reflective-account eligibility (met by all 20 participants) and the additional artifact-eligibility criteria (met by 12) is what Table 1 summarizes, and it is this operational definition, rather than an arbitrary selection, that determines which participants' triangulation included a documentary anchor. They included AI-assisted writing drafts, prompt-and-response interaction logs, screenshots of

grammatical feedback, translation outputs, paraphrase results, pronunciation practice records, and chatbot interaction excerpts. The artifacts were not used to evaluate AI performance as such, but to contextualize narrative accounts by providing material evidence of how people utilized, modified, accepted, rejected, or reflected on AI-generated outputs.

A concrete illustration clarifies how this triangulation was operationalized in practice. In her interview, Student 12 (higher education) claimed that using AI to rewrite her essay prompted her lecturer to ask her to explain the changes, which shifted her attention from the correct answer to the underlying revision process. Her accompanying digital artifact, a tracked-changes draft with visible AI-suggested edits and her own subsequent annotations, corroborated this account: the AI-suggested phrasing was retained in some sentences but overwritten with the student's own wording in others, particularly where the AI output altered her intended meaning. This convergence between the narrated account (agency exercised through explanation) and the artefactual trace (agency exercised through selective revision) strengthened confidence in coding this excerpt under Theme 4. In other cases, triangulation surfaced contradictions rather than confirmation: one participant reported in an interview that she rarely used AI suggestions verbatim, yet her submitted interaction log showed several AI-generated sentences retained without modification. Rather than discarding either source, the analytic team treated this discrepancy itself as data, coding it as evidence of a gap between participants' self-perceived agency and their documented practice, discussed further under Theme 5. In this way, the analysis moved iteratively between the narrated and the enacted record, using convergence to strengthen thematic claims and divergence to identify counter-narratives, rather than treating any single data source as authoritative.

Data Analysis

Data were analyzed using narrative thematic analysis (Gavidia & Adu, 2022), an approach that integrates the interpretive orientation of narrative inquiry with the systematic coding procedures of thematic analysis. This approach was applied to participants' narratives about AI-assisted English learning, focusing on how they constructed meaning, assigned roles, narrated conflicts, and expressed identity positions.

The analysis followed five stages. First, all interview transcripts, reflective narratives, and digital artifacts were systematically organized and analyzed, providing a comprehensive overview of the dataset and contextual evidence to support and verify the interview results. In the next phase, we developed narrative profiles for each participant describing their AI usage story, initial expectations, doubts and adjustments, ethical considerations, and perceived identity changes.

In the third stage, preliminary cycle coding produced meaningful units on patterns of AI utilization, agency, dependency, authorship, teacher mediation, ethical reflection, confidence, and identity negotiation. The coding process was both deductive and inductive. Deductive codes were derived from the theoretical framework (narrative identity, digital learning identity, ethical transparency, reflective agency, and dialogic mediation), and inductive coding allowed tensions and unexpected patterns to emerge from the data. Society 5.0 was not itself one of these deductive codes and was not used to code individual narrative units: its macro-societal indicators, such as cyber-physical space integration or cross-border social problem-solving, describe a level of analysis above what a classroom-level interview and artifact corpus can evidence. Society 5.0 is instead engaged in the Introduction and Discussion as the normative policy horizon that motivates why classroom-level, post-digital pedagogical patterns are worth documenting; the

coding and thematic categories reported in Findings operate at the post-digital-pedagogy level and should be read as such.

In the fourth stage, the codes were synthesized into overarching narrative categories, and comparative analyses were conducted between educators' and students' narratives and between secondary and higher education contexts. Coding was manual and was done in Microsoft Excel and Google Sheets. Each row of the spreadsheet was a discrete narrative unit, thematic excerpt, turn, or passage, and not a single sentence or decontextualized phrase. In the process, three procedural safeguards were introduced to maintain the narrative integrity of the individual accounts. Initially, each row was directly connected to its source transcript so the researcher could re-experience the full contextual framework of any coded unit and avoid the disintegration of meaning that often occurs with fine-grained, line-by-line coding. One column recorded the chronological positioning of each unit within the participant's overall narrative arc (e.g., "initial encounter with AI", "moment of critical reflection", "revised practice"), thus preserving the temporal and causal links between narrative episodes during analysis and preventing their reduction into thematic categories with no narrative coherence. Third, individual participants had a discrete, color-coded worksheet that supported the structural integrity of individual narratives and enabled comparisons across participants on a master summary sheet.

This methodology adheres to Riessman's (2008) admonition that narrative analysis requires the analyst to be accountable for the whole narrative, not just its parts. Two peer debriefers, with expertise in qualitative research and English education and AI in education and educational technology, respectively, served as critical discussants rather than independent coders. In accordance with the interpretivist epistemology of narrative inquiry, statistics for inter-rater

reliability, such as Cohen's kappa, were intentionally not calculated, as they rely on a positivist assumption of singular, verifiable meanings that are incompatible with the narrative approach used in this study (Gavidia & Adu, 2022). Interpretive claims were questioned, the limits of classifications were explored, and consistency of data extracts, narrative categories, and analytical themes were assessed. Their feedback has improved the accuracy of code labels, the specificity of categories, and the consistency of snippets and themes. The fifth and final stage focused on theme development through cross-participant and cross-contextual synthesis, illustrating the convergent themes and counter-narratives. The debriefing followed a structured, three-step protocol rather than open-ended discussion. First, each debriefer independently reviewed a randomly selected 20% subsample

of coded excerpts against the emerging codebook and noted disagreements or ambiguous labels. Second, the research team convened two structured debriefing sessions (approximately 90 minutes each) in which flagged excerpts were discussed line by line, and the debriefers were asked to justify alternative readings rather than vote on a preferred code. Third, all revisions to code labels, category boundaries, or theme definitions resulting from these sessions were logged in a decision trail, along with the rationale for each change, so the evolution of the coding scheme could be audited independently of the researchers' original judgments. Table 3 illustrates this process with representative excerpts, showing how a raw data excerpt was progressively moved from an initial code to a narrative category and, finally, to one of the five themes reported below.

Table 3. Example of coding process (representative extract)

Data Excerpt	Initial Code	Narrative Category	Theme
<i>"At first, I was worried that the students might just copy the answers generated by AI. So, I modified the format of the assignment."</i> (T1)	Concern of copying, pedagogical redesign	AI worry & pedagogical control	Theme 1: From AI Apprehension to Pedagogical Negotiation
<i>"Now I'm mostly using AI for comparison, rather than to find a definitive answer."</i> (S1)	Comparing AI use; learner judgment	Reflective AI engagement	Theme 2: Reconstituting learner agency
<i>"My role has changed. Previously, I primarily focused on correcting language mistakes. Now, I frequently encourage students to assess AI-generated answers."</i> (T5)	Shifting teacher role: evaluation of AI output	Teacher mediation and professional identity	Theme 3: Teacher Identity as Ethical Mediator
<i>"I used to feel quite weak in English. Now I still feel I am learning, but I already have a tool I can rely on."</i> (S3)	Changed learner self-perception; confidence	Digital learner identity reconstitution	Theme 4: Toward Collaborative Digital Learning Identity
<i>"I often look to AI before I try to think for myself."</i> (S5)	AI-first habit; reduced cognitive effort	Dependency and constrained agency	Theme 5: Counter-Narratives and Tensions
<i>"AI sometimes struggles to accurately capture the data provided... because of the lack of spontaneous two-way interaction."</i> (S14)	AI limitations; social presence deficit	Loss of intersubjective dialogue	Theme 5: Counter-Narratives and Tensions

As the last row of Table 3 indicates, not every excerpt confirmed the emerging positive account of AI-mediated learning; some, such as S14's comment on the limits of AI-mediated dialogue, were coded directly into Theme 5, which is discussed later.

Researcher Positionality

The researchers understood AI not as a neutral solution or an intrinsic threat but as a pedagogically constructed, morally interpreted, and human-mediated entity with educational significance. A risk inherent in this stance was the potential for over-interpreting the constructive elements within participants' narratives. To guard against this risk, reflexive memos were used throughout the data collection, coding, theme development, and interpretation, recording interpretive choices, analytical uncertainties, and potential confirmation bias. The analysis also intentionally centered on negative and ambivalent accounts, particularly regarding AI dependence, decreased social interaction, academic dishonesty, superficial engagement, and the potential demise of learner voice, to minimize the risk of a biased, overly positive interpretation of the findings.

Trustworthiness

Trustworthiness was assessed using four criteria suggested by Lincoln and Guba (1985). Triangulation of semi-structured interviews, reflective accounts, and anonymized learning artifacts increased the credibility of the findings, and member checking with six participants (two educators and four students) reviewed narrative summaries to ensure the interpretations accurately reflected intended meanings. This subsample was not selected arbitrarily: it was purposively constructed to include at least one participant contributing to each of the five themes, with priority given to participants whose narratives anchored the Theme 5 counter-narratives (S5,

S11, and S15 were each included specifically because their accounts of independent-thought displacement, blurred authorship, and non-transferable confidence were the most consequential and the most likely to be misread if summarized inaccurately). The remaining 14 participants' narrative interpretations were not left unvalidated; they were checked through three complementary mechanisms rather than direct member checking. First, every claim attributed to a non-member-checked participant was cross-anchored against at least one other data source for the same individual: the reflective account against the interview and, for the twelve participants with artifacts, the artifact against both, so no interpretation rested on a single, unverified narrative account. Second, the randomly selected 20% audited subsample described under Data Analysis was deliberately stratified rather than drawn purely at random: it was constructed to guarantee inclusion of excerpts from at least 11 of the 14 non-member-checked participants and all coded excerpts feeding into Theme 5, so that the theme carrying the greatest interpretive risk received the heaviest independent scrutiny. Third, as a transparency measure rather than a positivist reliability claim (consistent with the interpretivist stance already noted, which precluded calculating Cohen's kappa), the initial round of that audited subsample showed the lead researcher and the two peer debriefers converging on the same code or theme assignment for approximately 83% of excerpts before discussion; the remaining excerpts were resolved through the structured debriefing sessions and decision trail described above, and no unresolved disagreement was left standing in the reported themes. This descriptive convergence figure is reported here as an audit-trail indicator of coding stability, not as evidence of a single verifiable meaning, and it complements rather than replaces the member-checking and triangulation evidence reported above. Transferability was supported by a detailed

description of the research context, participant demographics, AI tools used, educational backgrounds, experience, and frequency of AI usage, and the pedagogical conditions for AI-mediated learning. To enhance trustworthiness, we developed an audit trail of all processes from recruitment to interpretation. Reflexive memo writing and peer debriefing were used to ensure confirmability.

Ethics Considerations

This was a qualitative study of minimal risk and did not require institutional review board clearance. However, institutional permission was obtained from the relevant academic unit within the School of Applied Science at Telkom University. All participants were fully informed about the study's goal, the voluntary nature of participation, the data collection processes, and the possibility to withdraw at any time without penalty. All 20 participants provided written informed consent before interviews and the collection of reflective accounts or learning artifacts. All participants were aged 18 years or more. To maintain confidentiality, participants were coded as T1–T5 for teachers and lecturers and S1–S15 for students. Transcripts, reflective accounts, and digital artifacts were anonymized by removing personally identifiable information such as names, institutional affiliation, course identifier, geographic location, and email addresses. The digital data were stored in password-protected, encrypted repositories accessible only to the research team. Signed consent forms, which contained participants' names, were stored separately from the anonymized data files to prevent re-identification. Data will be held for five years after publication, and then securely destroyed; the full dataset will not be made publicly available due to its personal and potentially identifiable nature; only anonymized extracts will be published here. Anonymization of the digital artifacts required

particular care because the analytically relevant content, such as revision traces and the type of AI feedback received, often coexisted with identifying details within the same file. Rather than removing entire artifacts or redacting them wholesale, the research team anonymized at the level of individual elements: usernames, email addresses, institutional platform branding, file names, and identifiable timestamps were deleted or replaced with generic placeholders, while the substantive material needed for analysis, including the sequence of AI suggestions, the participant's edits, and the surrounding prompt-response exchange, was preserved intact. Screenshots were manually reviewed and cropped or blurred to remove interface elements that could reveal institutional identity (e.g., account avatars, class codes) without obscuring the feedback content itself. Two members of the research team cross-checked a subsample of anonymized artifacts against the originals to confirm that no analytically important context was lost.

■ RESULT AND DISCUSSION

The findings are presented under five interrelated themes that capture educators' and students' discourse about their experiences with AI-mediated English learning (RQ1) and how these narratives reflect the reformation of digital learning identities (RQ2). Participants presented AI in their narratives as a pedagogical, ethical, and identity-forming entity, not a neutral instrument. Meaning was co-constructed through classroom mediation, learner reflection, and changing self-perceptions of participants as digital English educators and learners. AI was not seen as a replacement for teachers, nor an unequivocally powerful resource. The analysis of each issue exposes analytically different patterns between the contexts of secondary and higher education in which they are found.

Figure 2 summarizes how the five themes relate to one another. Pedagogical negotiation

(Theme 1) functions as the initial catalyst that shapes the emergence of learner agency (Theme 2) and teacher identity (Theme 3), which together give rise to a collaborative digital learning identity

(Theme 4), while counter-narratives (Theme 5) operate as cross-cutting tensions that continuously influence and challenge each stage of this process rather constituting a separate developmental stage

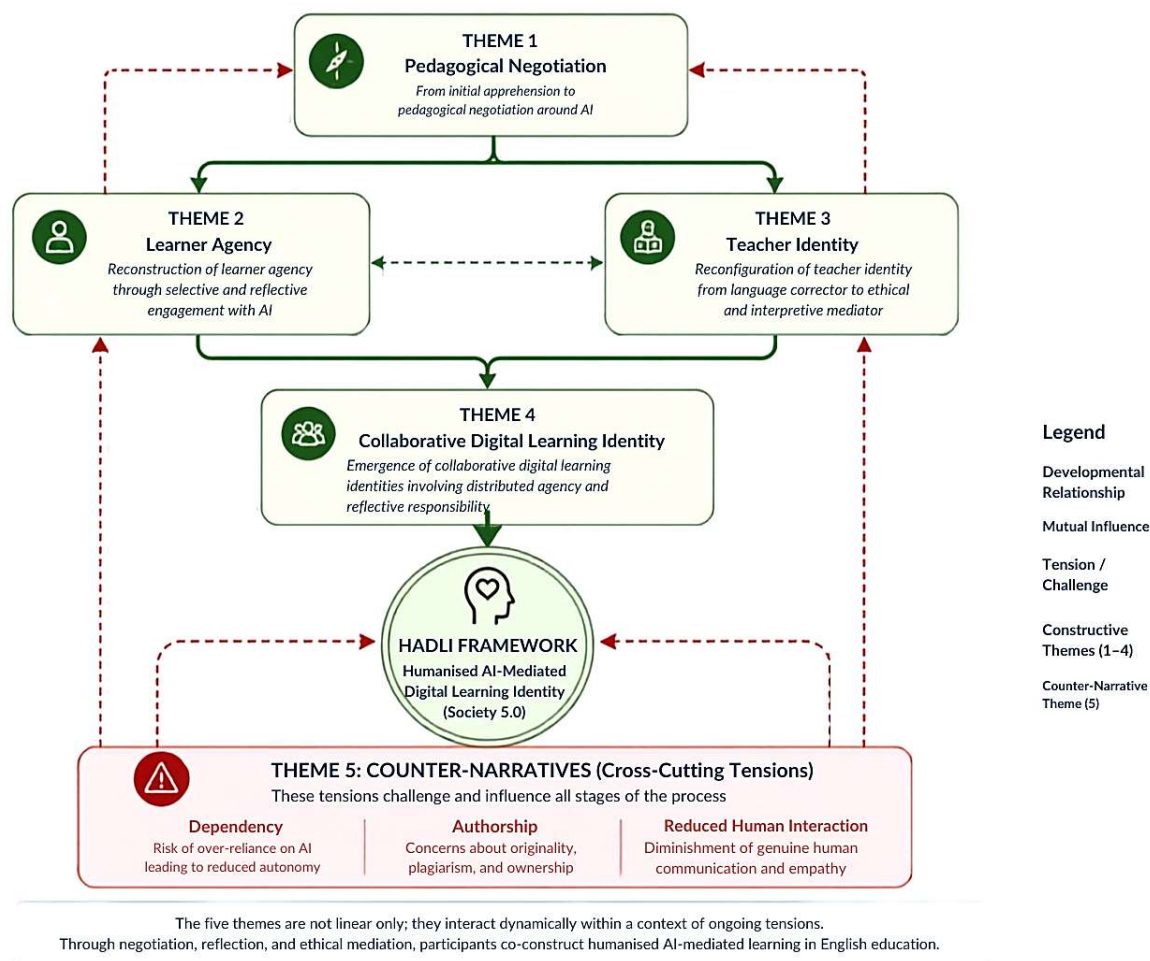


Figure 2. Thematic map illustrating the relationships among the five narrative themes and the HADLI framework

As Figure 2 shows, the solid arrows trace the developmental pathway from Theme 1 through Themes 2 and 3 to Theme 4, which converges into the proposed HADLI framework at the center of the diagram. In contrast, the dashed arrows indicate the cross-cutting tensions that Theme 5's counter-narratives introduce at each stage of this process rather than as a separate, later stage. The five themes are presented below, in order.

Theme 1: From AI Apprehension to Pedagogical Negotiation

The first theme captures participants' concerns about AI and how they negotiate its place in their English language learning practices. Teachers initially feared AI might limit independent work and academic integrity and hinder students' creativity. However, these concerns did not lead to a wholesale rejection of AI. The participants adopted new pedagogical approaches to

promote more open, responsible, and reflective use of AI, a phenomenon seen across both secondary and tertiary education, with ethical clarification being particularly important for university teachers.

Teacher 1 (higher education) pointed out a transition from a reactive regulatory approach to proactive redesign:

“At first, I was worried that the students might just copy the answers generated by AI. So, I modified the format of the assignment so they had to submit their final work along with an explanation of their thought process and which sections were aided by AI.” (T1, Interview, May 2026)

The statement shows a departure from preventive measures to a creative educational approach. Artificial intelligence was not prohibited, but its use was included in the assessment criteria by requiring students to demonstrate their reasoning process. AI thus represented a strong constructive impulse for the ethical design of tasks aligned with critical educational theories emphasizing the pedagogical responsibility of technology integration (Heath et al., 2022; Rahm, 2021).

Teacher 3 (higher education) expressed this viewpoint by stressing the need for ongoing pedagogical supervision:

“I see AI as a tool, not a replacement for teachers, but one that requires pedagogical oversight. Students can engage with AI superficially and uncritically, absent the authority of the teacher.” (T3, Interview, May 2026)

This statement shifts the focus from plagiarism to the degree of cognitive involvement. AI can produce grammatically correct text without the fundamental linguistic understanding that comes from real language acquisition. Hence, the teacher’s role is to guide students’ exploration,

investigation, validation, and contextualization of AI-generated knowledge, in line with post-humanist perspectives that view AI as a mediational tool requiring human interpretive supervision (Ou et al., 2024).

Initial uncertainty was comparable across the two educational levels. Student 2 (higher education) shared her first experience of writing with AI as follows:

“I was helped when I first used ChatGPT for a writing assignment, but I was worried that the text would not be true to my own ideas. The teacher explained the boundaries of using AI. I know AI can help me, but I still have to write according to my own ideas.” (S2, Interview, May 2026)

The statement suggests that students were not passive recipients of AI. Their concern with ownership suggests an awareness of authorship and textual voice, which was later refined and enhanced through instructional assistance. This narrative suggests that responsible AI use is not simply an individual disposition but a pedagogically cultivated competence. Student 9 (higher education) was quite direct in expressing the ambivalent feelings of dependency:

“AI makes me more independent, but I also worry it could make me lazy. I rely too much on AI for making phrases, which can degrade my ability to think on my own.” (S9, Interview, May 2026)

This statement illustrates the productive tension at the core of AI-mediated activity, where AI provides the illusion of independence but also limits cognitive development. Theme 1 indicates that human–AI collaboration in English education begins through negotiation, with teachers negotiating task design and ethical boundaries, students negotiating authorship and intellectual contribution, and both negotiating the appropriate level of AI-assisted engagement.

Theme 2: Reconstructing Learner Agency through Reflective AI Engagement

The second theme explores how students redefined their learning agency through AI-assisted English practice. Students used AI for many things, including writing, revising, translating, checking grammar, exploring vocabulary, training pronunciation, and preparing for speaking. Importantly, the rise of learner agency was not a consequence of AI automation itself but a product of students' choices and their critical, reflective engagement with AI. This difference carries profound implications for the educational integration of AI.

Student 1 (secondary education) described a developmental shift in how they positioned AI relative to their own judgment:

"At the beginning, I was just using AI for looking up the meaning of words and correcting grammar. Then, over time, I found that AI's answers didn't always reflect what I wanted to say. Now I use AI more as a comparison, not as the final answer." (S1, Interview, May 2026)

This account shows that judgment constitutes AI-supported agency. The student neither rejected AI nor ceded it unquestioned authority; instead, comparative evaluation of AI output against personal communicative intention became the medium through which agency was enacted. This approach aligns with Darvin and Norton's (2021) theorization of learner investment as a dynamic, identity-constituting act, here extended to engagement in the critical negotiation of algorithmic output. Student 4 (secondary education) described AI's function as a writing scaffold:

"AI makes it easier for me to start writing in English. Usually, I feel confused about how to write the first sentence. With AI, I can see an example, then I revise it again so that it fits my own language style." (S4, Interview, May 2026)

The phrase "it fits my own language style" has significant analytical implications. The student is not passively taking text from AI; rather, they actively reinterpret it to create their own linguistic identity. This exemplifies the complex interconnection between the learner and the tool in post-digital educational contexts (Lackovič et al., 2024), where AI output serves as a basis for personal interpretation rather than a finished work.

Student 7 (secondary education) expressed a similar opinion on vocabulary learning:

"AI helps me find better words. However, I don't just take any recommendation from AI and implement it right away. Most of the time I pick the words that best match the context of my sentence." (S7, Interview, May 2026)

This selective, context-dependent decision-making problematizes the belief that AI necessarily produces passive learners. When pedagogically supported, critical language awareness in the form of active selection of AI ideas and contextual adjustment of these suggestions can develop deeper engagement with lexical appropriateness and communicative aim.

Student 6 (higher education) described the role of AI in managing speaking anxiety:

"When I practice speaking, I feel more confident because I can use the pronunciation application beforehand, and I can listen to my own pronunciation mistakes before speaking in class." (S6, Interview, May 2026)

AI here functions as a low-affective-risk rehearsal space, reducing the social exposure of speaking practice whilst preserving its formative function. This is particularly salient in EFL environments because fear of public error often bounds communicative involvement.

Student 8 (higher education) described the change in the sequence of teacher-student interaction via AI as follows:

"In the past, I waited for the teacher to correct my grammar. Now, I can check

it first using an application. When I meet the teacher, I can ask about the parts that I still do not really understand.” (S8, Interview, May 2026)

This transition from passive correction to prepared consultation transforms teacher-student conversation from one-way remediation to student-initiated inquiry. Theme 2: AI-supported learner agency as an achievement of thoughtful, selective, and critical interaction with algorithmic input. Theme 2 finds that AI-supported learner agency is not an outcome of automation across secondary and higher education participants.

Theme 3: Teacher Identity as Ethical Mediator, Not Technological Substitute

The third theme is the restoration of teacher professional identity in AI-mediated English instruction. No teacher or lecturer participants spoke of displacement or professional diminishment by AI. However, all five indicated an intentional reframing of their responsibilities, from the principal language correctors and knowledge transmitters to ethical mediators, learning designers, dialogic facilitators, and critical evaluators of AI-generated content. This reconstitution was evident across both educational levels, though the articulation of ethical mediator functions was particularly pronounced among university lecturers. Teacher 5 (higher education) explained this shift in role clearly:

“My role has changed. Previously, I used to spend most of my time correcting language errors. Now, I often ask students to assess AI-generated answers, contrast the word choices, and to consider if the expressions reflect their intended meaning.” (T5, Interview, May 2026)

The narrative transitions from technical corrections to interpretative instruction. While AI can verify basic grammar, the teacher has a special role in eliciting critical thinking about meaning,

purpose, tone, and the suitability of communication. This transition aligns with the findings of Rushton et al. (2023), who claim that teachers’ professional identity is constantly being redefined in response to changing educational contexts. The partial automation of language correction by AI highlights the value of functions that an algorithmic system cannot perform: contextualization, pragmatic interpretation, relational responsiveness, and ethical judgment.

Teacher 2 (secondary education) repeatedly emphasized the importance of linguistic reasoning:

“AI helps students, but the teacher is irreplaceable. We should encourage students to move beyond looking for answers and instead understand the fundamental logic and linguistic structures that made the answers possible.” (T2, Interview, May 2026)

This narrative portrays teachers as mediators between technological tools and language understanding. This role implies pedagogical contextualization, continuous reflection on individual learners’ developmental trajectories, and engagement with the social and pragmatic aspects of language use beyond grammatical correctness.

Teacher 1 (higher education) described the potential of AI to change classroom conversations:

“AI can enhance dialogic English classrooms when it is used properly. Students can present AI-generated responses in the classroom, and we can collectively discuss whether the answers are correct, too broad, or should be modified.” (T1, Interview, May 2026)

This approach of turning AI-generated writing into a topic for collective classroom analysis is a major step forward in education. Instead of confining AI to the private, pre-submission phase of writing, the teacher uses it

as an instrument for collective analytical discussion, in line with the post-digital pedagogy statement that digital tools are objects of critical inquiry, not neutral instruments (Kerruish, 2024; Lackoviæ et al., 2024).

Teacher 4 (secondary education) grounded this ethical mediator function in the preservation of humanistic values:

“Engaging with AI must retain a human element. From my perspective, the human element is integrity, the cognitive processes, the relationship with the educator, and the courage of students to be able to articulate their understanding and confusion.” (T4, Interview, May 2026)

This statement humanizes AI through pedagogical practices such as open communication, transparent reasoning, and relational openness in education. Students also supported the view that teacher expertise matters, especially in communicative appropriateness, which goes beyond the capabilities of algorithmic results.

Student 10 (secondary education) identified pragmatic and contextual interpretation as a domain beyond AI’s adequate reach:

“I think that AI helps learning English, especially to translate and get example sentences. However, I still need the teacher to explain which sentences are polite, formal, or appropriate for some situations.” (S10, Interview, May 2026)

This excerpt supports a constitutive constraint on AI that bounds the scope of teacher identity: the transformation of grammatical accuracy into communicative appropriateness – a distinction that lies at the heart of communicative language teaching, and one that requires contextual, relational, and cultural judgment that algorithmic systems are unable to reliably deliver.

Theme 4: Promoting Collaborative Digital Learning Identity

The fourth theme shows how the relational dynamics of teacher–student–AI interaction recreated the digital learning identity. The participants’ narratives show that digital learning identity was not formed by AI use alone, but through co-agency, shared accountability, mutual reflection, emotional support, and post-digital engagement in learning communities.

Student 11 (higher education) described a clear transformation in learner self-perception:

“I feel that my identity as a learner has changed. I used to feel weak in English. Now I think that I can learn progressively since AI helps me to identify my mistakes before the lecturer corrects them.” (S11, Interview, May 2026)

This trajectory moves from deficiency to a developmental process involving a redefined learner identity, in which AI serves as a formative mirror for self-correction and confidence before institutional intervention. Most importantly, the lecturer is a validating character in the student’s narrative, indicating that identity reconstruction is rather human-mediated than technological; it relies on the interaction between human-mediated and algorithmically mediated feedback.

Student 12 (higher education) offered the most analytical account of collaborative identity formation:

“The most impressive thing was when I used AI to rewrite my essay, and the lecturer asked me to explain the changes I made. Then, I realized that it wasn’t just about producing the correct text, but also understanding the method used to make it” (S12, Interview, May 2026)

This narrative illustrates the pedagogical process of developing a collaborative digital learning identity. The AI provided the

technological framework for revision, but the lecturer turned that revision into a metacognitive learning experience by asking the student to explain the rationale for their choices. Identity was constructed through the elucidation of process, rather than the acquisition of the correct answer, thus extending Darvin and Norton's (2021) theory of identity investment to include AI-mediated revision as a domain of identity formation. Student 14 (higher education) admitted the pros and cons of AI-mediated identity formation:

"The study timetable is a lot more flexible, and I can get honest feedback without the fear of judgment from others. However, AI sometimes struggles to capture the data provided accurately. Moreover, the atmosphere is still different because of the lack of spontaneous two-way interaction typical of real discussions." (S14, Interview, May 2026)

The pedagogical value of the emotional safety in AI-assisted correction, i.e., receiving feedback without social judgment, is therefore considerable in emotionally charged language learning contexts. However, this same nature produces an experiential deficit: it lacks the spontaneous intersubjective negotiation marked by authentic communicative development. This tension is sharpened by Student 15 (higher education):

"The drawback is the lack of social interaction. In fact, even if we can talk smoothly with AI, actual conversations with humans might not feel as smooth because of the lack of real-life interaction, which can make us nervous or lack confidence." (S15, Interview, May 2026)

The distinction between AI-aided fluency and socially grounded communicative competence has important implications for developing language identity. If fluency is developed apart from the emotional, relational,

and spontaneous dimensions of human interaction, learners can become technically proficient but communicatively unprepared. Together, the stories indicate that, for authentic growth, developing a collaborative digital learning identity should blend AI-assisted and human communicative experiences.

Theme 5: Counter-Narratives and Tensions in Human–AI Collaboration

The fifth theme explores counter-narratives that complicate the dominant positive narratives about AI-assisted learning discussed in Themes 1-4. These counter-narratives are analytically significant: they highlight the affective dimensions of human–AI collaborations that simple pedagogical optimism does not easily capture, and they identify situations in which humanizing AI is challenging or ineffective. The main counter-narrative was one about dependency. Student 5 (higher education) highlighted this issue well:

"I often look to AI before I try to think for myself. I understand that I sometimes depend too much on it because AI is faster than finding answers myself." (S5, Interview, May 2026)

This is a serious problem because relying on AI instead of using one's own cognitive abilities is a major obstacle to developing independent linguistic skills. If AI is treated as the main resource, rather than a complementary tool, then its potential to foster productive cognitive engagement, which is crucial for improving language acquisition, will be diminished. This trend was confirmed by Teacher 2 (secondary education):

"Some students just simply accept the first answer from AI directly without verifying its accuracy or relevance." (T2, Interview, May 2026)

The assertion that interrogation ends with the first AI output implies a radically different form of passive acceptance. Therefore, it is not an

absolute fact that the more you use AI, the more you rely on it. However, learners interact with AI differently – AI may function as a source of authority or as an imperfect tool for critical interrogation.

Another contrasting narrative concerns authorship and authenticity – Student 11 (higher education) directly expressed this conflict:

“Sometimes I wonder if my writing really belongs to me when AI enhances it excessively. The language is correct, but it does not always reflect my personal style.” (S11, Interview, May 2026)

This is a major theme of threat to identity. If the learner’s emerging voice is replaced with AI-generated language, the very identity reconstruction that AI aids purportedly may be subverted. Learner digital identity cannot be reconstructed in ways that erode authentic self-expression, a paradox that pedagogical design must actively address.

Another narrative contrasts with and explores the decline in social learning. Student 13 (secondary education) highlighted the lack of interpersonal interaction when practicing solely with AI:

“Practicing English with AI is completely different from practicing with my friends or teachers. The AI cannot understand my intentions, so my conversations are not natural.” (S13, Interview, May 2026)

This account raises a question concerning the intersubjective aspects of language learning that AI cannot replicate: the negotiation of social meaning, the recognition of communicative breakdowns, the emotional dimensions of interpersonal interaction, and the cultural co-construction of understanding. These dimensions are particularly sensitive for students in secondary education, indicating a developmental stage in which relationships with peers and teachers are central to constructing learning identities.

The counter-narratives from Theme 5 collectively illustrate that agency, self-confidence, and identity formation are not inherent properties of AI-assisted English learning. AI is simultaneously empowering and constraining, enabling and dependency-fostering, confidence-building and voice-diminishing. This finding speaks directly to RQ3: humanizing AI is not achieved simply by adopting technologies strategically, but requires ongoing, reflective pedagogical engagement that actively manages these tensions.

Taken together, and as Figure 2 illustrates, the five themes form an integrated process of digital learning identity reconstruction rather than five independent categories. Pedagogical negotiation (Theme 1) functions as the point of departure from which teachers and learners move toward negotiated, ethically informed engagement with AI; this negotiation in turn establishes the conditions under which learners develop reflective agency (Theme 2) while teachers simultaneously reconstruct their professional identities as ethical mediators and learning facilitators (Theme 3). The interaction between these two processes culminates in the emergence of a collaborative digital learning identity (Theme 4), marked by shared responsibility, distributed agency, and reflective engagement with AI. Theme 5’s counter-narratives are not a terminal stage in this sequence but cross-cutting tensions around dependency, authorship, and diminished human interaction that continually challenge and reshape the other four themes, requiring ongoing negotiation, reflection, and mediation. This integrated pattern across the five themes provides the empirical basis for the Humanized AI-Mediated Digital Learning Identity (HADLI) framework developed in the Discussion below.

The five themes collectively show that AI does not inherently humanize or dehumanize English instruction. Pedagogical mediation, ethical transparency, learner reflexivity, and relational

classroom practices together shape the educational significance of AI. This finding answers all three research questions: educators' and learners' descriptions of AI-mediated learning characterize it as a process of negotiation and identity formation (RQ1); these reports reveal recursive, relational, and sometimes problematic processes of digital identity reconstruction (RQ2); and they point to specific pedagogical conditions that facilitate AI integration to be human-centered within a Society 5.0 context (RQ3).

Read against the literature, this pattern is better understood as a structural reconfiguration of teacher professional identity than as a discrete finding to be recapped. Because AI partially automates routine language correction, professional value shifts to capacities that remain irreducibly human: contextualization, pragmatic interpretation, relational responsiveness, and ethical judgment. This reading extends Rushton et al.'s (2023) claim that teacher identity responds dynamically to structural changes in educational conditions, and it aligns with frameworks that hold educational technology accountable to human significance and relational practice (Heath et al., 2022; Rahm, 2021; Tshuma, 2021), as well as with humanising-AI perspectives that position teachers as critical mediators between technological and human learning (Airaj, 2024; Amini et al., 2025; Hummel, 2025).

The results also further develop current theories of learner identity investment. According to Darvin and Norton (2021), investment is defined as the learner's engagement with the target language as a means of identity formation and the accrual of symbolic capital. The present analysis indicates that this investment now necessarily involves engagement with AI-generated language, an element of identity labor not foreseen by the initial investment framework. Students are engaging with language in a way that involves not just language learning but critical appraisal and selective interaction with algorithmically generated language. Access to

tools is not sufficient to confer agency in AI-mediated environments; rather, it shapes the inclination to explore them. This finding challenges instrumentalist views of AI as an inherently empowering resource, and resonates with post-humanist perspectives that see AI as a mediational instrument reliant on human interpretive oversight (Ou et al., 2024).

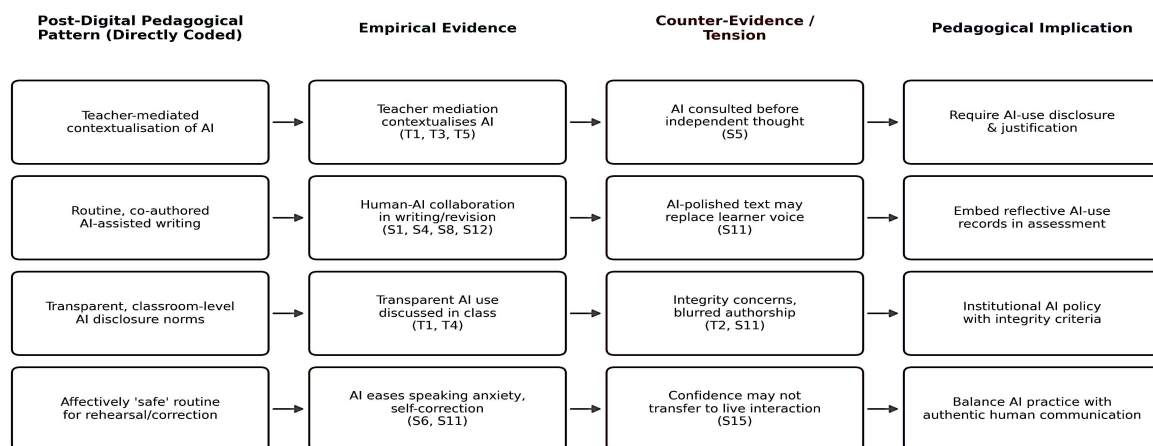
The post-digital perspective (Lackoviæ et al., 2024; Erstad & Silseth, 2023; Kerruish, 2024) emphasizes the relational aspect of these findings. Participants did not consider AI an external entity in classroom life but rather part of daily practices of drafting, revising, preparing for presentations, translating, and conducting pre-class inquiries. The classroom was not a space of digital versus human learning, but a hybrid space of ongoing interconnections between texts, technologies, emotions, relationships, and identities. AI outputs were not end-products but instructional artifacts, to be examined, discussed, and critically analyzed. The shift of AI output from a personal tool to a classroom artifact is a major educational advance, with obvious implications for task design and institutional AI policy.

The counter-narratives in Theme 5 are analytically indispensable to this discussion. Dependency, voice displacement, and the attenuation of social connection are not leftover problems to be fixed by technology; they are fundamental elements of human-AI interaction that cut across educational levels and cannot be addressed by increasingly advanced AI alone. These tensions reflect what critical data studies scholars have identified as the constitutive non-neutrality of AI systems: algorithmic tools encode particular assumptions about language, correctness, and communicative norms that privilege dominant linguistic repertoires and may marginalize multilingual learners' emergent competences (Baumgarten & Tieber, 2025; Pawar, 2026). From a critical algorithm studies perspective, the dependency and voice-displacement patterns identified in Themes 2 and

5 are not accidental but structurally conditioned by the design logics of AI tools that optimize for standardized output rather than learner voice (Rahm, 2021; Tshuma, 2021). This analysis underscores that humanizing AI in English education is not only a pedagogical but also a political and ethical challenge requiring institutional governance beyond the individual classroom. The counter-narratives expose a structural asymmetry at the heart of the human–AI collaboration: AI is infinitely available, affectively non-judgmental, and technically consistent, attributes that render it attractive but also potentially habit-forming in ways detrimental to the cognitive and affective engagement necessary for language learning. The upshot is not that AI should be withdrawn, but that instructional design needs to purposefully fight these tendencies through activities that require

disclosure, justification, peer interaction, and the exercise of autonomous judgment.

The normative environment in which these findings are embedded is the broader framework of Society 5.0. Atay et al. (2025) and Gobinath (2024) suggest that the human-centered vision of Society 5.0 demands institutional frameworks that embed human wellbeing, social involvement, and co-creation at the core of digital innovation. The study suggests that human-centered AI should be integrated into English education when students keep their individual voice, teachers maintain their pedagogical authority, and AI is used in reflective and dialogic methodologies. Thus, Society 5.0 is not merely a policy or technical framework, but a pedagogical commitment supported by strong institutional support and curriculum development.



Note: Columns 1–2 are directly evidenced by coded interview/artefact data. Society 5.0 is invoked here as the normative policy horizon that gives these classroom-level patterns their broader significance, not as a directly measured construct — macro-level Society 5.0 indicators (e.g., cyber-physical space integration, cross-border problem-solving) lie outside the scope of a single-institution classroom narrative study.

Figure 3. Relational model linking post-digital pedagogical patterns, empirical evidence, tensions, and pedagogical implications, with society 5.0 as the normative policy horizon

Figure 3 develops this connection further, with counter-evidence and pedagogical consequences. It is important to be precise about what the data do and do not show. The four post-digital pedagogical patterns in the figure's left-hand column, teacher-mediated contextualization, routine AI-assisted co-authorship, transparent

classroom disclosure, and AI-supported rehearsal of speaking or correction, are directly grounded in coded interview and artifact excerpts; they describe how AI became an unremarkable, everyday feature of classroom practice, which is the analytic claim this study is positioned to make. Society 5.0's macro-societal indicators, such as

integration across cyber-physical space or the resolution of social problems that cross institutional or national boundaries, are not observable at the level of individual classroom narratives and are not claimed here as findings. Society 5.0 instead functions in this discussion as the normative policy horizon that explains why these classroom-level, post-digital patterns matter beyond the individual lesson: if human-centred digitalisation at the societal level is the goal, then the pedagogical negotiation, ethical mediation, and reflective agency documented here are the classroom-level precursors that such a goal presupposes. The counter-narratives in Theme 5 moderate this picture by showing where the post-digital pattern breaks down into dependency, voice displacement, or diminished human interaction, which is itself a manifestation of the complexity inherent in human–AI collaboration and a boundary condition on how far a single-institution classroom study can speak to Society 5.0's broader human-centered vision, rather than a limitation to be explained away.

The HADLI Framework: A Theoretical Contribution

This study's main theoretical contribution is the Humanized AI-Mediated Digital Learning Identity (HADLI) framework. Grounded in cross-narrative analysis of the five themes, HADLI conceptualizes digital learning identity reconstruction as a recursive, relational, and ethically conditioned process comprising five interdependent components: (1) AI Mediation: the types, frequency, and purposes of AI engagement that provide the material conditions for identity work; (2) Narrative Meaning-Making: the storied constructions through which participants make sense of AI use in relation to their roles, values, and trajectories; (3) Teacher Guidance and Ethical Mediation: the pedagogical conditions established by teachers that render AI use reflective, transparent, and educationally

purposeful; (4) Learner Reflexivity and Critical Agency, the disposition to interrogate, compare, select, and reject AI outputs rather than accepting them uncritically, and (5) Ethical and Dialogic Decision-Making, the relational and institutional processes through which AI use is regulated, disclosed, discussed, and evaluated within the community.

HADLI differs from existing digital identity systems in two major ways. First, it explicitly considers AI mediation as an inherent part of identity labor, rather than an external force on identity, as part of the environment that shapes identity. This contrasts with the investment paradigm presented by Darvin & Norton (2021), which theorizes identity in relation to human social relations and symbolic capital without considering the algorithmic aspects of contemporary learning environments. Secondly, HADLI highlights the recursive and non-linear aspects of identity construction: learners and educators are not simply taking on new identities via AI, but rather oscillating between empowerment and dependence, confidence and uncertainty, agency and outsourcing, requiring ongoing pedagogical support rather than a single orientation. Table 4 below shows HADLI's position relative to two other frameworks related to digital identity and artificial intelligence in education. Unlike AI-TPACK frameworks (Mishra & Koehler, 2006, as adopted in the AI-literacy literature), which emphasize teacher technological knowledge, HADLI foregrounds the relational and narrative aspects of teacher and learner identity and treats algorithmic mediation as a co-constitutive, rather than purely technical, element. HADLI holds a normative, ethically grounded, human-centered perspective consistent with the tenets of Society 5.0, which emphasizes co-creation and well-being, unlike sociomaterial approaches (Ou et al., 2024) that prioritize posthumanist assemblages of human and nonhuman entities. HADLI should be viewed as an emerging heuristic framework

using this dataset, not as a fully formalized theory that requires more empirical work across diverse contexts to test and improve its transferability.

These reciprocal relationships are not incidental but constitutive of the framework: Learner Reflexivity and Critical Agency (component 4) directly reshapes Narrative Meaning-Making (component 2), as when a student's growing willingness to question AI output changes the very story they tell about their own competence; Teacher Guidance and Ethical Mediation (component 3) recalibrates AI

Mediation (component 1) by altering which tools, tasks, and disclosure norms are considered legitimate; and Ethical and Dialogic Decision-Making (component 5) feeds back into Learner Reflexivity (component 4) once institutional or classroom norms are collectively renegotiated. Figure 4 depicts HADLI as a cycle rather than a sequence, with solid arrows representing the primary developmental pathway most frequently observed in participants' narratives and dashed arrows representing the reciprocal feedback pathways that recur across the dataset.

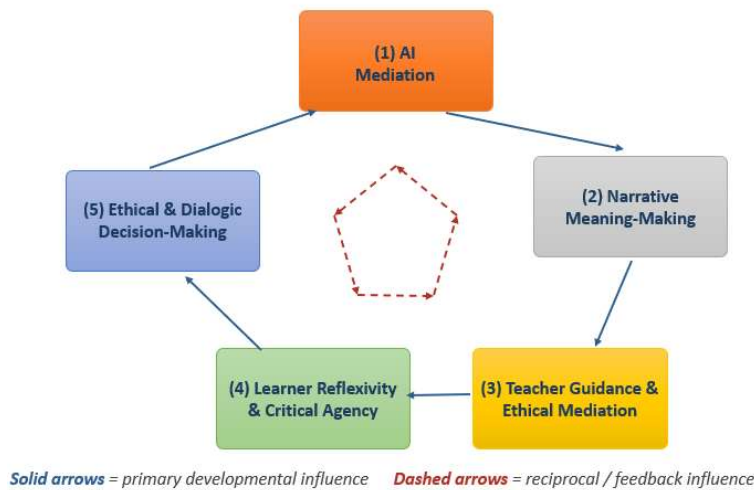


Figure 4. The HADLI framework as a recursive cycle of five interdependent components

HADLI builds on post-digital pedagogy (Lacković et al., 2024) to show that the post-digital condition of English education is not just a description of integrating digital tools, but a normative challenge that requires pedagogical responses that actively preserve human agency, relational learning, and ethical accountability. This

approach informs three connected academic discussions: artificial intelligence in education, digital learning identity, and humanizing pedagogy in Society 5.0 contexts.

As Table 4 summarizes, HADLI's distinguishing contribution relative to AI-TPACK and sociomaterial/post-humanist approaches is

Table 4. Comparative positioning of HADLI relative to existing frameworks

Framework	Core Focus	View of AI/Technology	Distinguishing Feature Relative to HADLI
AI-TPACK (Mishra & Koehler, 2006, as adapted in AI-literacy research)	Teachers' technological, pedagogical, and content knowledge integration	AI/technology as a tool requiring technical-pedagogical competence	Emphasizes teacher cognitive/technical competence; HADLI foregrounds relational and narrative identity processes instead

Sociomaterial / post-humanist approaches (Ou et al., 2024)	Human–nonhuman assemblages in academic communication	AI as a co-constitutive, material-discursive actor	Decentres human agency within human–AI assemblages; HADLI instead retains a normative, human-centered ethical stance aligned with Society 5.0
HADLI (this study)	Recursive, relational, and ethically conditioned digital learning identity reconstruction	AI as a co-constitutive mediator requiring human interpretive and ethical oversight	Integrates narrative identity theory with a humanizing, Society 5.0-aligned ethical orientation.

its combination of narrative identity theory with a normative, Society 5.0-aligned ethical stance, a positioning that carries direct consequences for practice, set out next.

Practical Implications

This study has clear and actionable practical implications. The findings support a pedagogical shift for classroom teachers and lecturers towards AI-integrated practice that requires students to make their use of AI visible, justify their decisions, and engage critically with algorithmic output. Assessment tasks could include AI disclosure requirements, reflective AI-use logs, and comparative analysis exercises in which students compare their own writing with AI-generated alternatives – thereby changing AI from a private shortcut into a pedagogically valuable learning resource.

The findings imply that curriculum creators should integrate AI into activities that foster critical language awareness, communicative appropriateness, and identity-forming reflection, rather than merely functional skills. To address the social interaction deficit reported in Theme 5, purposeful maintenance of communicative activities that include spontaneous human interaction, in addition to AI-supported practice, is required.

For teacher education programs, the rebuilt teacher identity articulated in Theme 3 has immediate implications for the curriculum. Future

and current teachers need not only AI literacy, the technical skill to use and assess AI tools, but also ethical-pedagogical literacy, the capacity to design tasks that make AI use transparent and accountable, to foster critical classroom discussion of AI-generated content, and to retain pedagogical authority in AI-mediated environments. Professional development in institutions should handle both elements in an integrated way.

The results argue against broad bans and uncritical advocacy of AI for institutional policy. Institutions should articulate clear acceptable-use policies, clarify expectations for academic integrity in the context of AI aid, and help teachers develop pedagogical techniques that protect learner agency and voice. The fundamental policy conclusion is that learners need critical AI literacy – the ability to question and contextualize algorithmic output, not passive reliance on technology.

Limitations and Future Research

Various limits to the scope of this study also suggest possible future research directions. The study is based on a relatively small sample of context-specific narratives from Indonesian EFL contexts, and the findings are not statistically generalizable. However, they give conceptual and interpretive insights relevant to the qualitative design. The reliance on participant-reported experiences rather than extensive classroom

observation suggests that retrospective interpretation may have influenced certain reports in ways that prospective data collection could not fully control. Since this study focused on meaning-making rather than measurable learning outcomes, it cannot examine the influence of AI use on competency, fluency, or academic success. This limitation could be addressed in future mixed-methods research.

There are many possibilities for further investigation. Comparative studies may investigate whether the patterns of identity reconstruction achieved by HADLI are applicable in other country contexts, institutional cultures, or language education systems. Longitudinal studies could monitor the evolution of AI-mediated identity reconstruction over time as participants gain experience with AI and pedagogical expertise. Approaches combining narrative inquiry, classroom discourse analysis, interactional data, and learning analytics in a mixed-methods manner would allow simultaneous recording of subjective meaning and contextual practice. Given the importance of the humanizing processes of AI presented here, future research should consider teachers' professional development for AI-mediated teaching.

■ CONCLUSION

The research highlights that English teaching with educationally advantageous human–AI collaboration is feasible only when steered by human discernment, ethical clarity, reflective engagement, and ongoing pedagogical development. The results of the three research questions reveal the perception of AI-mediated English learning by educators and learners as a complex, negotiated process of initial trepidation, adaptive repositioning and ongoing tensions regarding dependency, authorship and social interaction (RQ1); that these stories are indicative of recursive, relational and ethically inflected processes of digital learning identity

reconstruction, expressed in five interconnected themes and operationalized through the HADLI framework (RQ2); and that pedagogical principles for humanising AI include task transparency, disclosure of AI use, comparative critical engagement with algorithmic results, maintenance of authentic human communicative interaction and teacher-led ethical dialogue (RQ3).

The main theoretical contribution is the Humanized AI-Mediated Digital Learning Identity (HADLI) framework. This framework contributes to scholarship on digital identity by making AI mediation a key component of identity formation and by clarifying the recursive, relational, and ethically nuanced aspects of that process. HADLI responds to three intertwined scholarly topics – AI in education, digital learning identity, and humanizing pedagogy – and offers a conceptual basis for further empirical and theoretical investigation.

In practice, English education should evolve from technology adoption to human-centric AI integration in Society 5.0. Emphasizing reflective activities, dialogic engagement, critical AI literacy, and teacher-mediated ethical practice as fundamental pedagogical prerequisites for AI to effectively facilitate responsible learning and identity development, rather than as supplementary considerations. The important point of this study is not whether AI should be included in English teaching; it is already there. The question is whether it comes on terms that safeguard student voice, teacher presence, and the human relationships that make learning intellectually rigorous and ethically accountable.

■ AUTHOR CONTRIBUTIONS

1. Pikir Wisnu Wijayanto: Conceptualization, Methodology, Investigation (data collection, interviews, reflective narratives), Formal Analysis, Writing – Original Draft, Project Administration.

2. Dodi Mulyadi: Investigation (co-facilitation of interviews and artifact collection), Data Curation, Formal Analysis (coding and peer debriefing coordination), Writing Review & Editing.
3. Yahdi Siradj: Supervision, Methodology (validation of narrative thematic analysis procedure), Writing – Review & Editing, Visualization (thematic maps, Figures 1–4).

All authors read and approved the final manuscript and take responsibility for the integrity of the data and the accuracy of the data analysis.

■ DECLARATION OF GENERATIVE AI USAGE IN THE WRITING PROCESS

During the preparation of this manuscript, the author(s) used the following generative AI tools to support manuscript preparation, all during the revision stage (July–August 2026): Claude (Anthropic, Claude Sonnet) for restructuring support, including consolidating the Introduction and Literature Review into a single, more concise Introduction section in line with the journal's article structure requirements; ChatGPT (OpenAI) for language polishing and improving the clarity and consistency of academic English; and Grammarly for grammar and style checking.

AI assistance for citation and reference-list formatting followed APA style conventions; however, the author(s) independently verified the accuracy, completeness, and existence of every cited source against the original publications before submission, since generative AI tools are known to occasionally produce inaccurate or fabricated references. No citation, reference, or reported finding was generated, added, or altered by AI without this verification.

The AI tools were not used to collect or analyze data, generate findings, or produce the study's interpretations or conclusions. All research questions, methodological decisions, data collection, thematic analysis, interpretation of

findings, and conclusions are the original work of the author(s). All AI-assisted language revisions and restructuring were reviewed, edited, and approved by the author(s), who take full responsibility for the accuracy, originality, and scientific integrity of the final manuscript, including all citations and reported findings.

Consistent with the journal's policy on the ethical use of generative AI and with COPE guidance, the AI tools are not listed as authors and have not been assigned any authorship credit, accountability, or corresponding responsibility. No confidential or identifiable participant data were submitted to any AI tool; all excerpts processed during manuscript preparation had already been de-identified using the participant codes (T1–T5, S1–S15) reported in the Methodology.

■ CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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■ REFERENCES

- Airaj, M. (2024). Ethical artificial intelligence for teaching-learning in higher education. *Education and Information Technologies*, 29, 17145–17167. <https://doi.org/10.1007/s10639-024-12545-x>
- Amini, M., Wang, Q., Amini, D., Ravindran, L., Lin, D. T. A., Ganapathy, M., & Singh, M. K. A. (2025). The significance of a humanistic approach and moral development in English language classrooms. *Discover Education*, 4(1), 238. <https://doi.org/10.1007/s44217-025-00691-4>
- Atay, S., Müftüoğlu, C. T., Gülmez, N., & Pahin,

- M. (2025). Society 5.0 and human-centered technology: Redefining talent management in the digital age. *Sustainable Futures*, 9, 100733. <https://doi.org/10.1016/j.sft.2025.100733>
- Ayeni, A. O., Ovbiye, R. E., Onayemi, A. S., & Ojede, K. E. (2024). AI-driven adaptive learning platforms: Enhancing educational outcomes for students with special needs through user-centric, tailored digital tools. *World Journal of Advanced Research and Reviews*, 22(3), 2253–2265. <https://doi.org/10.30574/wjarr.2024.22.3.0843>
- Baumgarten, S., & Tieber, M. (2025). *The Routledge handbook of translation technology and society*. Routledge. <https://doi.org/10.4324/9781003271314>
- Bloom, M., Colbert, A. E., & Nielsen, J. (2020). Stories of calling: How called professionals construct narrative identities. *Administrative Science Quarterly*, 66, 298–338. <https://doi.org/10.1177/0001839220949502>
- Çelik, I., Gedrimiene, E., Siklander, S., & Muukkonen, H. (2024). The affordances of artificial intelligence-based tools for supporting 21st-century skills: A systematic review of empirical research in higher education. *Australasian Journal of Educational Technology*, 40(3), 19–38. <https://doi.org/10.14742/ajet.9069>
- Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research*. Jossey-Bass.
- Connelly, F. M., & Clandinin, D. J. (2006). Narrative inquiry. In J. L. Green, G. Camilli, & P. B. Elmore (Eds.), *Handbook of complementary methods in education research* (pp. 477–487). Routledge.
- Creely, E. (2024). Exploring the role of generative AI in enhancing language learning: Opportunities and challenges. *International Journal of Changes in Education*, 1(3), 158–167. <https://doi.org/10.47852/bonviewijce42022495>
- Crompton, H., Jones, M. V., & Burke, D. (2022). Affordances and challenges of artificial intelligence in K-12 education: A systematic review. *Journal of Research on Technology in Education*, 56(3), 248–268. <https://doi.org/10.1080/15391523.2022.2121344>
- Darvin, R., & Norton, B. (2021). Investment and motivation in language learning: What's the difference? *Language Teaching*, 56(1), 29–40. <https://doi.org/10.1017/S0261444821000057>
- Erstad, O., & Silseth, K. (2023). Rethinking the boundaries of learning in a digital age. *Learning, Media and Technology*, 48(4), 557–565. <https://doi.org/10.1080/17439884.2023.2260977>
- Gavidia, L. P. A., & Adu, J. (2022). Critical narrative inquiry: An examination of a methodological approach. *International Journal of Qualitative Methods*, 21, Article 16094069221081594. <https://doi.org/10.1177/16094069221081594>
- Gobinath, T. (2024). Society 5.0: The next revolution in human progress. *Shanlax International Journal of Arts, Science and Humanities*, 11(3), 61–68. <https://doi.org/10.34293/sijash.v11i3.6898>
- Heath, M., Asim, S., Milman, N., & Henderson, J. (2022). Confronting tools of the oppressor: Framing just technology integration in educational technology and teacher education. *Contemporary Issues in Technology and Teacher Education*, 22(4), 754–777. <https://citejournal.org/volume-22/issue-4-22/current-practice/confronting-tools-of-the-oppressor-framing-just-technology-integration-in-educational-technology-and-teacher-education/>
- Hummel, S. (2025). Ethical and responsible AI

- in education: Situated ethics for democratic learning. *Education Sciences*, 15(12), 1594. <https://doi.org/10.3390/educsci15121594>
- Jeon, J.-B. (2022). Exploring AI chatbot affordances in the EFL classroom: Young learners' experiences and perspectives. *Computer Assisted Language Learning*, 37(1-2), 1–26. <https://doi.org/10.1080/09588221.2021.2021241>
- Kashif, M., Ammar, M., Sellami, A., Chiu, T. K. F., Abbasi, S. A., & Ahmad, Z. (2025). Teachers' perspectives on AI integration in K-12 education: Challenges, opportunities, and preliminary assessment model: A systematic review. *Computers in the Schools*, 1–27. <https://doi.org/10.1080/07380569.2025.2602507>
- Kerruish, E. (2024). Postdigital teaching of critical thinking in higher education: Non-instrumentalised sociality and interactivity. *Postdigital Science and Education*. Advance online publication. <https://doi.org/10.1007/s42438-024-00456-6>
- Kristiawan, D., Bashar, K., & Pradana, D. A. (2024). Artificial intelligence in English language learning: A systematic review of AI tools, applications, and pedagogical outcomes. *The Art of Teaching English as a Foreign Language (TATEFL)*, 5(2), 207–218. <https://doi.org/10.36663/tatefl.v5i2.912>
- Lackoviæ, N., Olteanu, A., & Campbell, C. (2024). Postdigital literacies in everyday life and pedagogic practices. *Postdigital Science and Education*, 6, 796–820. <https://doi.org/10.1007/s42438-024-00500-5>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage.
- McAdams, D. (2019). First we invented stories, then they changed us: The evolution of narrative identity. *Evolutionary Studies in Imaginative Culture*, 3, 1–18. <https://doi.org/10.26613/esic.3.1.110>
- Mekheimer, M. (2025). Generative AI-assisted feedback and EFL writing: A study on proficiency, revision frequency, and writing quality. *Discover Education*, 4(1), 170. <https://doi.org/10.1007/s44217-025-00602-7>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Mudra, H., Mukminin, A. F., Hidayat, M., Marzulina, L., Harto, K., Holandyah, M., & Erlina, D. (2022). EFL learners' pedagogical views on the online social networks in EFL classrooms. *Journal of Language Teaching and Research*, 13(1), 110–118. <https://doi.org/10.17507/jltr.1301.13>
- Ou, A. W., Stöhr, C., & Malmström, H. (2024). Academic communication with AI-powered language tools in higher education: From a post-humanist perspective. *System*, 121, 103225. <https://doi.org/10.1016/j.system.2024.103225>
- Pawar, R. (2026). AI, algorithms, and linguistic bias: How technology shapes language use in the digital age. *Frontiers in Social Sciences Research*, 2(2), 35–44. <https://doi.org/10.24113/em0kjk03>
- Rahm, L. (2021). Educational imaginaries: Governance at the intersection of technology and education. *Journal of Education Policy*, 38(1), 46–68. <https://doi.org/10.1080/02680939.2021.1970233>
- Riessman, C. K. (2008). *Narrative methods for the human sciences*. Sage.
- Rushton, E., Rawlings Smith, E., Steadman, S., & Towers, E. (2023). Understanding

- teacher identity in teachers' professional lives: A systematic review of the literature. *Review of Education*, 11(2), e3417. <https://doi.org/10.1002/rev3.3417>
- Tshuma, N. (2021). The vulnerable insider: Navigating power, positionality, and being in educational technology research. *Learning, Media and Technology*, 46(2), 218–229. <https://doi.org/10.1080/17439884.2021.1867572>
- Wang, C. (2024). Exploring students' generative AI-assisted writing processes: Perceptions and experiences from native and nonnative English speakers. *Technology, Knowledge and Learning*, 30(3), 1825–1846. <https://doi.org/10.1007/s10758-024-09744-3>
- Wang, X., Liu, Q., Pang, H., Tan, S., Lei, J., Wallace, M. P., & Li, L. (2023). What matters in AI-supported learning: A study of human-AI interactions in language learning using cluster analysis and epistemic network analysis. *Computers & Education*, 194, 104703. <https://doi.org/10.1016/j.compedu.2022.104703>
- Weiss, C. R., & Johnson-Koenke, R. (2023). Narrative inquiry as a caring and relational research approach: Adopting an evolving paradigm. *Qualitative Health Research*, 33(5), 388–399. <https://doi.org/10.1177/10497323231158619>
- Wiboolyasar, W., Wiboolyasar, K., Suwanwihok, K., Jinowat, N., & Muenjanchoey, R. (2024). Synergizing collaborative writing and AI feedback: An investigation into enhancing L2 writing proficiency in wiki-based environments. *Computers and Education: Artificial Intelligence*, 6, 100228. <https://doi.org/10.1016/j.caeai.2024.100228>
- Xiao, F., Zhu, S., & Xin, W. (2025). Exploring the landscape of generative AI (ChatGPT)-powered writing instruction in English as a foreign language education: A scoping review. *ECNU Review of Education*, 9(1), 20965311241310881. <https://doi.org/10.1177/20965311241310881>
- Xing, Y., Huang, W.-B., & Wang, Y. (2026). Reconfiguring global LIS education: AI integration, pedagogical roles and epistemic challenges. *The Electronic Library*, 44(1), 4–26. <https://doi.org/10.1108/el-06-2025-0214>
- Yang, A. (2025). Generative AI chatbots: The future of grammar and spelling correction in English learning. *International Journal of Information and Communication Technology*, 26(22), 72–87. <https://doi.org/10.1504/ijict.2025.10071754>
- Yang, H., & Kyun, S. (2022). The current research trend of artificial intelligence in language learning: A systematic empirical literature review from an activity theory perspective. *Australasian Journal of Educational Technology*, 38(5), 180–210. <https://doi.org/10.14742/ajet.7492>
- Yuensook, T., Jantakoon, T., & Limpinan, P. (2025). AI-driven adaptive learning systems in higher education: A systematic review. *Journal of Education and Learning*, 15(2), 117–132. <https://doi.org/10.5539/jel.v15n2p117>
- Zou, B., Liviero, S. Q., Zhang, W., Du, Y., & Xing, P. (2024). Exploring EFL learners' perceived promise and limitations of using an artificial intelligence speech evaluation system for speaking practice. *System*, 126, 103497. <https://doi.org/10.1016/j.system.2024.103497>