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Integrating Local Story and Generative AI in a Narrative Writing Microlearning Model: Exploring Students' Digital Literacy And Character Development In Indonesian EFL Higher Education

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Abstract

This mixed-methods study examines the pedagogical integration of local story and Generative Artificial Intelligence (GenAI) within a structured six-phase narrative writing microlearning framework. Conducted with twenty-nine undergraduate English as a Foreign Language (EFL) students in East Java, Indonesia, the research evaluates the dual impact of this model on students' digital literacy and character development. Grounded in the Indonesian Ministry of Basic and Secondary Education's shift toward a Deep Learning approach (incorporating meaningful, mindful, and joyful learning) and the Outcome-Based Education (OBE) paradigm, the curriculum was designed to build measurable, career-ready competencies in L2 narrative composition, critical digital evaluation, and socio-ethical reflection. Quantitative data from student questionnaires and self-assessment checklists were triangulated with qualitative thematic analyses of observer logs, open-ended responses, and comparative examinations of student writing drafts. The quantitative analysis revealed high levels of student motivation, technical proficiency, and perceived relevance, validating the joyful and meaningful dimensions of the model. However, critical digital literacy items—specifically the capacity to reject irrelevant AI-generated feedback—registered lower scores, indicating a developmental gap in mindful learning that requires intentional, OBE-aligned academic scaffolding. Qualitative writing analysis demonstrated that this deep human-AI collaborative process enabled a transition from basic textual outputs to morally complex, localized cultural narratives. The paper concludes with a conceptual model for balanced human-AI pedagogical integration, addresses technological design limitations, and offers recommendations for contemporary language classrooms.

Keywords: *character education, critical digital literacy, deep learning approach, outcome-based education, story-based writing*

1. Introduction

Higher education institutions in Indonesia currently face a twofold imperative: the rapid integration of digital technologies and the compelling need for comprehensive character development consistent with national identity. The Indonesian Ministry of Basic and Secondary Education has recently shifted pedagogical discourse toward Deep Learning (Amanda et al., 2026; Prihantoro et al., 2025), an instructional paradigm built on three complementary pillars: meaningful learning, which connects classroom content to lived social realities; mindful learning, which fosters conscious self-regulation and reflective thinking; and joyful learning, which nurtures intrinsic motivation and psychologically safe learning environments. Rather than replacing the existing curriculum structure, this paradigm shift seeks to deepen the quality of classroom engagement and move higher education away from rote-oriented methodologies.

Aligned with the Deep Learning paradigm, Indonesian higher education has simultaneously adopted the Outcome-Based Education (OBE) framework, which mandates that writing courses move beyond passive language output toward demonstrable, career-ready competencies (Ali & Jamin, 2025; Yulhendri et al., 2025). Under OBE, curriculum design, instructional practice, and assessment must be aligned to produce graduates capable of critical examination of algorithmic inputs, ethical digital citizenship, and adaptive socio-cultural expression. These imperatives are particularly pressing given Indonesia's projected demand for at least nine million digital workers by 2030 (Gong et al., 2026; Sunengko et al., 2025), making directed and ethical mastery of digital technologies a non-negotiable professional outcome for university graduates. Narrative writing instruction in EFL classrooms is therefore a strategic site for enacting the Deep Learning and OBE visions, converting linguistic exercises into reflective, output-driven activities that promote critical voice and moral agency.

Within this landscape, traditional writing pedagogy in Indonesian universities faces systemic constraints, including high student-to-teacher ratios, absence of personalized feedback mechanisms, and the growing reliance on algorithmic tools that risks displacing student voice (Hendriwanto & De Costa, 2026; Sulyati & Kuswara, 2025; Sunengko et al., 2025). The proliferation of Generative AI (GenAI) platforms simultaneously introduces ethical and cognitive risks: passive reliance on automated systems can produce digital ghostwriting, uncritical acceptance of algorithmic bias, and erosion of original authorship—a phenomenon increasingly described as algorithmic colonialism (Amanda et al., 2026; Komalawati et al., 2026; Kusmana et al., 2020). Concurrently, the decline in appreciation for regional folklore among digital-native learners undermines the cultural grounding that character education requires (Santosa et al., 2022). Together, these pressures constitute a complex pedagogical challenge that current writing curricula have not adequately addressed.

Against this background, a preliminary need analysis was undertaken with the student cohort, complemented by semi-structured interviews with English writing lecturers. Students' diagnostic writing competence averaged between 60 and 70 out of 100 (Hendriwanto & De Costa, 2026; Sunengko et al., 2025), while their technical digital literacy scores were slightly lower, ranging from 50 to 65 (Sulyati & Kuswara, 2025). This quantitative baseline reveals that although students are everyday technology users, their formal digital and L2 writing outputs remain underdeveloped—a pattern consistent with broader Indonesian EFL research.

The diagnostic profile outlines four main instructional barriers to undergraduate writing development in AI-enhanced higher education. First, reliance on machine translation tools like

Google Translate leads to issues such as direct language transfer and grammatical inaccuracies; studies indicate that these tools do not significantly enhance writing quality. Recent evidence indicates that Google Translate did not significantly enhance essay quantity or reduce error frequency in Vietnamese higher education (Dao & Nguyen, 2025). Prominent issues included substitution and omission errors, alongside word-for-word, contextually inappropriate, and grammatically inaccurate translations. These problems are linked to direct L1 transfer and highlight the need for systematic human post-editing. Second, over-dependence on generative AI, such as ChatGPT, can result in reduced cognitive engagement and autonomy; systematic reviews suggest that while GenAI can enhance cognitive function in structured pedagogy, it may inhibit independent reasoning without proper guidance (Alubthane, 2026). Third, ethical concerns arise when students use AI primarily as a means to complete assignments, which can blur authorship and raise issues of academic integrity and accountability. García-lópez et al. (2025) identify academic integrity, authorship, transparency, misinformation, privacy, bias, and dependency as central ethical issues in AI-supported academic writing. Finally, insufficient digital prompt literacy limits students' ability to interact critically with generative AI, hindering their engagement and originality in writing. Improved prompt formulation is identified as a crucial skill for developing writing proficiency and disciplinary specificity. Plaatjies & Wyk (2025) argue that well-designed prompts can enhance students' engagement, critical thinking, and writing proficiency, whereas prompt formulation should be treated as a foundational academic and digital-literacy skill rather than a merely technical competence.

This early triangulation emphasizes the critical necessity for a structured teaching framework. Grounding writing instruction in regional folklore through an active, bite-sized microlearning handout is important to turn GenAI from an engine of academic bypass to an ethical, conscious instrument for critical self-regulation (Dayat & Kurniawati, 2026).

Therefore, this study investigates how a structured microlearning model might turn GenAI from a threat to academic integrity to a transformational instrument for deep, comprehensive, and ethical growth in Indonesian higher education. Specifically, this study addresses three main questions:

1. How is the feasibility and usability of the local story and AI-integrated narrative writing microlearning model realized in the Indonesian tertiary classroom under an OBE-aligned curriculum?
2. To what extent does this model improve students' digital literacy, particularly their ability to engage critically and mindfully with GenAI tools to meet professional outcomes?
3. How does the integration of local story within this technical environment foster students' character development, moral reflection, and meaningful learning?

2. Literature Review

This research is theoretically grounded in the convergence of four fundamental conceptual frameworks, initially referencing Cognitive Load Theory (Sweller, 1988), which posits that human working memory functions within limited capacity constraints. Conventional multi-phase writing assignments frequently inundate students with conflicting requirements for vocabulary recall, syntactic organization, theme elaboration, and moral assessment. Microlearning alleviates this cognitive burden by segmenting instruction into focused, concise units, thus reducing unnecessary cognitive friction (Melnikova et al., 2025; Prasittichok & Smithsarakarn, 2024). This tactical

diminishment liberates cognitive resources for profound schema formation and analytical contemplation (Ghafar et al., 2023). Ultimately, alleviating this cognitive load creates a relaxed, pleasurable emotional environment that promotes efficient language acquisition and the natural attainment of Course Learning Outcomes (Fakhlipi et al., 2025; Hidayah & Shofiya, 2026).

The second pillar is founded on Vygotsky (1978) Sociocultural Theory and the Zone of Proximal Development (ZPD), which defines learning as a socially facilitated process that transpires within the space between autonomous capability and supported success. This study utilizes the Zone of Proximal Development in a "multiply-mediated environment" where human educators and generative AI tools work as interactive scaffolding resources (Sunengko et al., 2025). Significant learning occurs when students connect technological mediation to local folklore, transforming classic narrative disputes into contextually pertinent contemporary difficulties, so rendering language acquisition truly meaningful and authentic (Dayat & Kurniawati, 2026).

Transcending basic operational tasks such as searching, copying, and pasting, Critical Digital Literacy (CDL) underscores the ethical, reflective, and evaluative aspects of digital utilization. In an Indonesian higher education context, conscious learning necessitates intentional and reflective interaction with educational resources, urging students to avoid passively embracing AI-generated recommendations (Sunengko et al., 2025). Students are encouraged to scrutinize algorithmic results, identify inherent biases, and assert deliberate control over their written communication. This corresponds with contemporary Indonesian studies indicating that university students require advanced skills to evaluate the credibility of sources, identify intrinsic biases, and contemplate their analytical methodologies while engaging with digital media (Ali & Jamin, 2025; Silvhiany et al., 2021).

Ultimately, the Outcome-Based Education (OBE) framework guarantees rigorous coherence among curriculum development, pedagogical execution, and empirical assessment of educational outcomes. In this framework, undergraduate students progress past only obtaining theoretical understanding of creative writing or digital technologies (Hakim et al., 2025; Komalawati et al., 2026). Conversely, they exhibit tangible skills in assimilating technological instruments, critically assessing machine-generated feedback, and expressing contextually relevant ethical considerations, thereby preparing graduates with competitive proficiencies suited for their prospective careers (Ali & Jamin, 2025).

3. Research Methodology

3.1. Research Design

This study employed a convergent parallel mixed-methods design (Creswell & Creswell, 2018), in which the quantitative and qualitative strands were collected and analyzed independently and simultaneously during the same intervention period, then integrated at the interpretation stage to produce a comprehensive assessment of the instructional model. The quantitative strand comprised Likert-scale perception surveys and digital literacy self-assessment checklists, while the qualitative strand comprised classroom observation logs, semi-structured open-ended responses, and text-based analyses of student narrative drafts. It is important to distinguish the convergent design for data collection and analysis from the sequential instructional phases, which describe the pedagogical intervention structure rather than the research design. Pre-intervention diagnostic data (writing competence scores and digital literacy profiles) were collected to establish a baseline against which post-intervention findings could be contextualized.

3.2. Participants of the Study

The study was conducted during the 2025/2026 academic year at a higher education institution in East Java, Indonesia. The research cohort consisted of 29 undergraduate EFL students enrolled in an intensive narrative writing course aligned to the OBE curriculum. Participants were selected through total population sampling, encompassing all students registered in the course section during that academic year. This sampling approach was adopted because the entire class formed the unit of instructional intervention, and including all enrolled students ensured the completeness of the performance portfolio data required for the OBE assessment analysis. This participant profile reflects a critical developmental juncture in Indonesia, where university students transition into professional domains demanding advanced linguistic competency alongside highly developed critical and ethical digital capacities.

3.3. Instruments

To effectively capture both quantitative trends and qualitative nuances as required by the convergent parallel design, this study utilized seven data collection instruments: a digital literacy profile questionnaire, lecturer interview guidelines, a microlearning interactive handout, a classroom observation sheet, a student perception survey, digital literacy and character development self-assessment checklists, and samples of students' narrative writing texts. To ensure content validity, all instruments were reviewed by two EFL teaching specialists and one educational technology expert prior to deployment; each reviewer assessed item alignment with the targeted CLOs and the construct definitions drawn from the theoretical framework. Face validity was established through a pilot administration with five students from a parallel class, and minor wording revisions were made to improve clarity before final deployment. The perception survey and checklists demonstrated adequate internal consistency, with Cronbach's alpha coefficients exceeding .70, confirming their reliability for descriptive analysis.

OBE Paradigm Integration: CLO Mapping

To ensure strict adherence to the Outcome-Based Education (OBE) framework, the microlearning program was designed around three clearly defined Course Learning Outcomes (CLOs), which were mapped directly to the Program Learning Outcomes (PLOs) of the English Education Department. Table 1 outlines this structural alignment, demonstrating how the classroom activities target specific, measurable student competencies.

Table 1. OBE Alignment Matrix: PLOs, CLOs, and Assessment Indicators

Course Learning Outcome (CLO)	Mapped PLO	OBE Assessment Indicator	Targeted Activity Phase
CLO 1: L2 Creative Expression	PLO 1: Advanced Communication	Student's final narrative draft shows plot structure, dialogue, and natural flow.	Phases 2 and 4
CLO 2: Mindful Technological Literacy	PLO 4: ICT & AI Competence	Student successfully accesses AI, writes prompts, and filters machine suggestions.	Phases 3 and 6
CLO 3: Reflexive Moral Analysis	PLO 2: Ethics & Character	Student identifies, logs, and discusses socio-moral values within local folklore.	Phases 4 and 5

The Microlearning Activity Structure

The instructional design was implemented through an interactive, six-stage microlearning handout based on the cultural story of Suro and Boyo. This design is consistent with recent evidence that microlearning can improve learner motivation, retention, and language-skill acquisition when content is delivered in concise, interactive segments. However, current research also cautions that microlearning should be integrated with opportunities for deeper reflection and higher-order learning rather than treated as a substitute for extended instruction (Ekizer & Asma, 2026). The use of a culturally grounded narrative further supports meaning-making, learner motivation, cultural identity, and collaborative engagement in language education (Handayani et al., 2026).

The classroom session progressed through six sequential operational phases.

Phase 1: Warm-Up and Visual Activation (5 minutes).

This phase was designed to establish a joyful and psychologically accessible entry into learning. Students observed a visual prompt depicting the Surabaya monument representing Suro, the shark, and Boyo, the crocodile. The instructor then facilitated a brief discussion to activate students' cultural schema by asking them to recall the basic elements of the traditional story and consider how the conflict might be reframed within a contemporary Indonesian school setting. The use of a familiar cultural artifact and a low-stakes oral exchange provided contextual support before students began writing. This approach is compatible with culturally responsive digital storytelling, in which local narratives support cultural identity, learner motivation, and meaning-making (Handayani et al., 2026).

Phase 2: Story Prompt and Quick Write (10 minutes).

This phase emphasized meaningful learning by requiring students to compose an initial five- to seven-sentence narrative directly in their handouts. Students adapted the traditional animal conflict into a contemporary interaction between students and were asked to identify the setting, the underlying cause of tension, and the eventual resolution. The activity connected the cultural source text with students' lived social experiences and created an authentic communicative purpose for writing. The concise task structure also reflects the principle of microlearning, which uses manageable learning units to reduce cognitive overload while maintaining learner attention and participation (Ekizer & Asma, 2026).

Phase 3: AI Feedback and Level Up (10 minutes).

This phase integrated joyful and mindful learning through guided interaction with a preferred generative-AI platform, such as ChatGPT, Claude, Gemini, or QuillBot. Students submitted their initial drafts using the standardized prompt: "How can I improve the dialogue and make the ending more meaningful?" The prompt directed the AI tool toward formative feedback rather than unrestricted text generation. Recent experimental evidence indicates that structured AI-feedback interventions can improve students' writing performance, particularly in organization and content development, although the effectiveness of such tools depends on how actively students engage with the feedback (K. Zhang, 2025). Accordingly, the activity should be understood as a feedback and revision scaffold, not as a mechanism for outsourcing authorship.

Phase 4: Reflection and Revision (10 minutes).

This phase focused on mindful learning and required students to revise their narratives in the worksheet after evaluating the AI suggestions. Students also completed structured reflection questions in their learning journals, identifying which suggestions they accepted, which ideas they rejected, and what moral values were represented by the characters. This procedure promoted metacognitive monitoring and positioned students as decision-makers in the revision process. Such a design is particularly important because AI feedback can support writing development only when learners interpret, evaluate, and apply suggestions rather than adopt them passively. Current guidance on ethical AI use emphasizes human agency, critical evaluation of AI output, and the development of learners' capacity to verify and justify decisions (UNESCO, 2023).

Phase 5: Class Discussion and Shared Values (10 minutes).

This phase emphasized meaningful learning through social interaction and shared interpretation. Selected students read their revised stories to the class, after which the instructor facilitated a discussion connecting the fictional conflicts with students' everyday experiences. The discussion highlighted communication, mutual respect, empathy, negotiation, and compromise as shared socio-cultural values. This collective audience interaction is consistent with recent findings that culturally informed storytelling, reflective discussion, and collaborative participation can strengthen motivation, communication, cultural identity, and meaning-making in language-learning contexts (Handayani et al., 2026).

Phase 6: Final Submission and Ethics Checklist (20 minutes).

In the final phase, students completed their narratives independently, reviewed their use of AI, filled out a digital-literacy and character-development checklist, and submitted the final drafts with an explicit disclosure of AI assistance. The checklist addressed whether students had verified the usefulness and accuracy of AI suggestions, retained responsibility for the final text, and disclosed the nature of the assistance received. This procedure operationalized CLO 2 by linking writing performance with academic integrity and responsible digital citizenship. Recent ethical frameworks recommend validation and source verification, transparency about AI assistance, direct acknowledgment of AI use, and continued human accountability in academic writing (UNESCO, 2023).

One methodological refinement is necessary: AI-detection results should not be treated as definitive evidence of misconduct. Recent research reports that available AI-text detectors do not achieve complete reliability and may produce both false positives and false negatives. Therefore, the ethics checklist should use detection tools only as one formative source of information, alongside students' drafts, revision history, oral explanation of writing decisions, and transparent disclosure of AI use (Erol et al., 2025). This approach is more consistent with a human-centered model of assessment and avoids equating an automated probability score with proof of authorship.

3.4. Data Analysis Techniques

The quantitative strand assessed twenty items across dimensions of student motivation, technical competency, ethical awareness, and curriculum design using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Descriptive statistics—means and standard deviations—were computed to characterize response distributions and compare them with pre-intervention baseline diagnostic scores, allowing for contextualized interpretation of post-intervention patterns

rather than isolated cross-sectional reporting. The qualitative strand employed inductive thematic coding across three independent rounds applied to open-ended student responses, observer notes, and student writing drafts (initial and final). Two researchers coded the data independently before comparing codes; inter-rater reliability reached 85% agreement, and remaining discrepancies were resolved through discussion and consensus. Four trustworthiness strategies were employed throughout: member checking (emerging themes were shared with three consenting students for verification), peer debriefing (coding decisions were reviewed with an external colleague not affiliated with the study), prolonged engagement (the researcher observed the full instructional cycle from need analysis to final submission), and thick description (student drafts and verbatim responses were analyzed in detail). Integration of the two strands occurred at the interpretation stage, where quantitative findings were used to corroborate, elaborate, or diverge from qualitative themes.

4. Results

4.1. Feasibility and Technical Usability of the Microlearning Model

The external expert's observational record indicated that the instructional plan achieved excellent operational accuracy. Out of the thirty-one instructional elements on the observation sheet, 100% were noted as effectively accomplished. The teacher carefully planned the transitions, taking students through schema activation, collaborative prompt production, and moral reflection. However, qualitative observer logs and open-ended student responses highlighted technical and ergonomic challenges throughout deployment. Several students had difficulty interacting with the digital worksheet layout on mobile devices, citing text boxes that were too limiting for lengthy writing activities. For example, Student 15 mentioned:

> *"While the microlearning handout is structured beautifully, it is quite uncomfortable to navigate on a mobile phone because the text is very small, and typing extensive stories on a handset remains a challenge."*

Furthermore, several students noted the lack of an auto-save capability, which caused data loss and visual annoyance when their mobile browsers refreshed. Student 4 commented:

> *"The layout is narrow on a phone, and because there is no autosave feature, if the page accidentally reloads, your entire draft is deleted, causing significant anxiety."*

4.2. Digital Literacy Dimensions and Critical AI Navigation

The student perception survey yielded highly favorable scores across multiple dimensions of digital integration and critical engagement. Table 2 compiles the quantitative descriptive statistics for the twenty survey items (N=29).

Table 2. Descriptive Statistics of Student Perceptions of the Microlearning-AI Model

Item	Questionnaire Statement	Mean	SD
Q1	The modern Suro and Boyo story-writing activity motivated me to learn language/writing.	4.86	0.35
Q2	I felt actively engaged during the activity (from warm-up to class discussion).	4.86	0.35
Q3	The use of East Java local folklore (Suro and Boyo) made me more enthusiastic about writing.	4.83	0.38

Q4	This activity helped me understand how to structure a good story (plot, conflict, resolution).	4.83	0.38
Q5	I feel more confident in writing short stories after participating in this activity.	4.69	0.47
Q6	The story prompt (Sura and Baya as classmates) was easy to understand and sparked my creativity.	4.79	0.41
Q7	This activity taught me how to use AI (ChatGPT/Quillbot/Claude/Gemini) effectively for writing.	4.93	0.26
Q8	I understand the difference between using AI as an assistant vs. copying completely without critical thinking.	4.55	0.51
Q9	I was more critical in evaluating and selecting the suggestions provided by AI.	4.52	0.51
Q10	This activity helped me understand the ethics of AI use in writing (avoiding plagiarism, disclosing AI help).	4.66	0.48
Q11	Writing the Suro and Boyo story helped me reflect on character values (empathy, honesty, responsibility, etc.).	4.83	0.38
Q12	I can identify positive values from the Suro and Boyo legend and apply them in daily life.	4.83	0.38
Q13	The class discussion about the character values of the story's figures was meaningful and relevant.	4.79	0.41
Q14	The microlearning format (short and structured steps in the handout) was easy to follow.	4.90	0.31
Q15	The use of AI writing tools in learning felt relevant to my generation's needs.	4.86	0.35
Q16	This learning model is more interesting than conventional methods (lecturing only).	4.90	0.31
Q17	After this activity, I am more aware of using digital technology (including AI) responsibly.	4.83	0.38
Q18	This activity encouraged me to more highly appreciate local cultural stories/folklore of East Java.	4.83	0.38
Q19	I feel more responsible and honest in the learning process after participating in this activity.	4.79	0.41
Q20	Overall, this Suro and Boyo Microlearning-AI activity is beneficial and I want to participate in other topics.	4.93	0.26

The metrics show that using AI tools was seen as highly relevant (mean = 4.86, SD = 0.35 for Q15) and effective for writing development (mean = 4.93, SD = 0.26 for Q7). More importantly, the model fostered strong critical awareness regarding copying content directly (mean = 4.55, SD = 0.51 for Q8) and evaluating AI output (mean = 4.52, SD = 0.51 for Q9), which are critical benchmarks for demonstrating digital outcomes under the department's OBE standards.

4.2.1. Self-Assessment Validation of Digital Literacy

To validate these perspectives, we examined the self-assessment checklist completed by the cohort (N=29). Table 3 presents the percentage of positive ("Yes") responses for the ten critical digital literacy items.

Table 3. Positive Response Rates for Student Digital Literacy Self-Assessments

Item	Critical Digital Literacy Self-Assessment Indicator	% "Yes"
DL1	I used AI writing tools independently to obtain writing suggestions.	96.55%
DL2	I accessed and used Google Docs or the designated digital platform effectively.	100.00%
DL3	I executed basic digital actions (copying, pasting, sharing, linking) smoothly.	100.00%
DL4	I evaluated AI suggestions based on clarity and accuracy before implementation.	100.00%
DL5	I ignored AI responses that were irrelevant or inappropriate for my narrative.	82.76%
DL6	I rewrote the generated content using my own voice and personal writing style.	93.10%
DL7	I utilized AI support for brainstorming or organizing initial story ideas.	93.10%
DL8	I avoided copying the AI responses completely to prevent digital plagiarism.	93.10%
DL9	I declared and explicitly acknowledged the use of AI assistance in my writing.	100.00%
DL10	I reflected on how the AI intervention influenced my specific narrative choices.	96.55%

The self-assessment data demonstrate a high level of operational capability: all of the students reported performing simple digital instructions and verifying the veracity of AI recommendations before employing them. Furthermore, all of the students revealed the use of AI in their work, demonstrating a strong dedication to academic integrity and ethical transparency, which is a vital graduate trait under Indonesian higher education's professional code.

However, the lowest positive response rate occurred in DL 5. (ignoring irrelevant or inappropriate AI suggestions, at 82.76 %). This underlines a critical developmental gap in mindful learning: despite their considerable proficiency with digital technologies, students nevertheless exhibit cognitive weakness when analyzing automated input. This difficulty in rejecting reasonable but incorrect AI ideas highlights the possibility of algorithmic conformity, in which students depend too heavily on AI recommendations rather than defending their own creative and contextual decisions.

4.3. Character Development, Folklore-Mediated Moral Reflection, and Narrative Evolution

The writing challenge was grounded in the regional legend of Suro and Boyo, which provided an appealing structure for moral reflection, allowing students to examine qualities such as empathy, honesty, and mutual respect via a recognizable narrative lens. This strategy immediately operationalized meaningful learning by tying classroom literacy to regional identity, cultural heritage, and ethics, therefore meeting the department's civic awareness and national identity end markers. Table 4 shows the student self-assessments for five major characteristics of character development, graded on a 4-point scale (1 = Developing, 4 = Exemplary).

Table 4. Descriptive Scores of Student Self-Assessments on Character Development

Item	Character Development Indicator	Mean	SD
Char1	Exhibited empathy by understanding characters' feelings and perspectives in the legend.	3.69	0.70
Char2	Demonstrated responsibility and diligence during the iterative human-AI revision process.	3.72	0.64
Char3	Handled narrative conflict respectfully, maintaining an objective and fair tone.	3.66	0.71
Char4	Upholding integrity by avoiding fabrication, ensuring honest representation of authorship.	3.72	0.64
Char5	Showed perseverance by completing multiple revision loops based on AI and peer feedback.	3.59	0.85

The high averages for accountability and integrity (Char2 and Char4, both 3.72) demonstrate a strong commitment to ethical academic activity. This view is supported by the students' unanimity declaration of AI usage, indicating that they absorbed the task's ethical expectations and displayed the desired emotional learning results in observable behavior. However, Char5 (demonstrating tenacity through numerous revision cycles) had the lowest mean (3.59) and the greatest diversity in answers (SD = 0.85). This variety indicates that, whereas some students breezed through numerous rounds of editing, others became fatigued during the iterative process. It appears that patience through numerous rewrite loops was the most difficult element of the assignment. This tendency is consistent with cognitive load studies, which shows that revision puts a strain on working memory and can cause tiredness when learners must constantly review and alter language, content, and structure.

When combined with our preliminary need analysis, the favorable results in integrity (Char4: 3.72) and responsibility (Char2: 3.72) indicate a significant pedagogical shift. Previously, lecturers stated that writing students showed a high level of ethical apathy, claiming that "as long as the assignment was finished, the ethics of AI did not matter." In Phase 6, the program effectively promoted active self-regulation by requiring clear transparency checks and digital literacy checklists. This transformed students' moral viewpoint from academic passivity to responsible digital citizenship.

Furthermore, our favorable findings in empathy and integrity are comparable to character education initiatives in Indonesian schools, in which reflective self-awareness sheets assisted students in translating theoretical principles into individualized actions. The use of Indonesian traditional cyber literature to impart moral values has been similarly confirmed, demonstrating that anchoring modern visual microlearning in regional history directly balances the waning interest in local tales induced by technology saturation.

4.3.1. Textual Evolution and Student Draft Progress: OBE Performance Portfolios

The qualitative impact of the microlearning model is best proven by comparing students' initial drafts to their final submissions. Under the OBE paradigm, the comparison of these drafts serves as a direct, physical evaluation of Course Learning Outcome 1 (L2 Creative Expression) and CLO 2. (Mindful Technological Literacy). Table 5 presents a thematic summary of these text-based transitions, emphasizing the various ways in which students used their allocated cultural prompts and AI suggestions to create high-quality narrative portfolios.

Table 5. Comparison of Selected Student Drafts and Narrative Transitions

Students' Code	Selected AI Tool	Initial Narrative Premise	Primary AI Suggestions Utilised	Resulting Theme & Character Values
St9	Claude	A brief statement of a physical altercation ("they got into a fight").	Structuring clear narrative transitions and deepening ending message.	Personal integrity, keeping promises, and mutual respect.
St7	ChatGPT	Two classmates fighting over team presentation leadership.	Shifting from interpersonal conflict to collaborative compromise.	Overcoming pride, respecting differences, and collaborative teamwork.
St27	Gemini	A cafeteria confrontation using animal territory metaphors.	Removing cartoonish metaphors to focus on realistic, grounded high school dialogue.	Boundaries, anti-greed, and peaceful conflict resolution.
St4	ChatGPT	Two classmates arguing over group project leadership.	Expanding the core conflict and clarifying narrative transitions.	Communication, dividing team duties fairly, and shared goals.
St4	Claude	A dispute over a cafeteria pizza slice ending in a hallway brawl.	Improving character dialogue and emphasizing permanent consequences.	Self-control, accountability, and avoiding greed.
St5	Claude	Two classmates arguing over access to the multimedia room.	Re-framing the dispute to highlight sharing shared resources.	Communication, splitting shared resources, and compromise.
St25	Claude	Classmates arguing about school dismissal times.	Shifting focus to an interaction between two siblings flying a kite.	Patience, anger management, and family coordination.
St20	Gemini	A dispute between best friends Sopo and Jarwo over a borrowed book.	Developing dramatic dialogue to emphasize the impact on their friendship.	Trust, responsibility, and keeping promises.
St3	ChatGPT	A physical confrontation over a school parking spot.	Integrating classic folklore elements into a modern campus setting.	Apologizing, keeping perspective, and respecting boundaries.
St14	Claude	A classroom group project argument resolved with cooperation.	Elaborating on character dialogue and revising the moral resolution.	Humility, responsibility, and cooperative problem-solving.
St11	ChatGPT	A high school rivalry over a girl that ends in a tragic accident.	Emphasizing the psychological impact of jealousy and pride.	Self-control, empathy, and the consequences of jealousy.

An in-depth investigation of these narrative transitions reveals three unique patterns of human-AI collaboration.

Case Study 1: Thematic Transformation from Action to Reflection (CLO 1 & CLO 3 Achieved)

Student 3 showed a notable change in narrative depth. Her original draft consisted of a single, nondescript statement: *"They got into a fight."* She used Claude to examine this draft and wanted advice on how to strengthen the conversation and make the ending more impactful. The end storyline shifted totally away from physical violence and toward a thoughtful resolution: *"They never crossed paths in anger again. Yet neither ever forgot the lesson they had learned: that strength without honesty destroys even the peace it once built."*

Case Study 2: Dialogue Refinement and Contextual Realism (CLO 1 & CLO 2 Achieved)

Student 27 concentrated on fostering true, spontaneous conversation. His first draft transformed the classic animal characters into high school counterparts using extremely explicit, animalistic metaphors: *"Your waters? This is the cafeteria, Sura. You rule the pool, but the land? The land belongs to us. Move your stuff before I move it for you*".

Working with Gemini, the student was encouraged to "remove the literal analogies" since terms like "in my waterways" were too ludicrous for a high school sporting rivalry. The student embraced this advice and refined the conversation to create realistic tension. *"Slowly rising from his chair, Baya bridged the physical chasm between them until the atmospheric tension became almost palpable. 'Evacuate your debris immediately,' Baya whispered, each syllable laced with an ominous, unwavering promise, 'or I shall personally orchestrate your eviction from this premises."*

Case Study 3: Shifting from Competitive Conflict to Compromise (CLO 3 Achieved)

Student 7 investigated the resolution of team-based disputes. Her first essay depicted two classmates, Sura and Baya, who started bickering in front of the class because they both wanted to manage a group project. Sura desired a creative, modern presentation, whilst Baya chose a simpler, more straightforward style.

Working using ChatGPT, the student sought recommendations for expanding the conflict and clarifying the moral of the narrative. The final text addressed the conflict by a collegial agreement, rather than crowning a winner: *"In the end, they apologized and decided to combine their strengths. Sura contributed his creativity, while Baya ensured that the group worked together effectively. Through this experience, they learned that true strength does not lie in winning arguments, but in respecting differences and choosing cooperation over pride."*

5. Discussion

The present study explored how a local story and AI-integrated narrative writing microlearning model operates across three dimensions: technical feasibility, digital literacy development, and character formation through cultural narrative. Each dimension is discussed below in relation to the three research questions, with reference to recent empirical literature and the theoretical framework underpinning the study.

With regard to RQ1 (feasibility and usability), the finding that 100% of instructional elements were observed as fully accomplished confirms the operational viability of the model in a real Indonesian classroom context. Nevertheless, the qualitative data revealed significant ergonomic

constraints when students accessed the microlearning handout on mobile devices, a finding that closely parallels (Monib et al., 2025), who argues that web-based microlearning designs must adapt fluidly to diverse digital-native usage patterns. Polat et al. (2023) similarly document interface accessibility gaps in existing mobile writing applications, while Strømman (2022) demonstrates that iPad-based writing environments generate both affordances and restrictions that learners actively navigate. These convergent findings from varied settings suggest that the limitation observed in this study is not context-specific but reflects a broader design challenge in mobile-first microlearning development.

Lolang & Pratama (2025) offer a partial solution, demonstrating that video based microlearning with interactive activities is more preferrable and can overcome layout constraints through platform-native spaced retrieval. In contrast, Parlakkılıç (2019) shows that responsive mobile learning architectures can retain structural richness without sacrificing usability when interface design decisions are made early in the development cycle. These comparisons suggest that future iterations of the present model should embed mobile-responsive frameworks and auto-save functions from the outset rather than retrofitting them. As recommended by Kohnke (2021), microlearning should have one objective each module, minimum texts, and be mobile responsive. Without such protections, technological friction elevates extrinsic cognitive load and disrupts the joyful, motivation-driven learning climate central to the Deep Learning paradigm, as confirmed by cognitive load research in digital learning environments (Yang et al., 2026; Zidi et al., 2025).

Addressing RQ2, the exceptionally high student assessments for AI relevance and effectiveness confirm that learners perceived GenAI as a valuable scaffold for writing development, particularly for rapid assistance with drafting, linguistic refinement, and idea generation. This is broadly consistent with Gilang Prakasa et al. (2025), whose systematic review of AI in EFL writing education found that AI tools improve surface-level language quality and student confidence but contribute less to coherence and deep thinking unless mediated by structured instructor guidance. A parallel finding emerges from Zheldibayeva et al. (2025), who document in a case study that AI-driven feedback most effectively supports writing growth when tightly integrated with specified learning objectives. Similarly, (Fontanilla et al., 2025) report that AI-assisted writing tools combined with peer feedback produce stronger discourse-level improvements than either AI or peer feedback alone, suggesting a complementary dynamic between technological and social scaffolding that the microlearning model partially replicates through its phased design. Dayat & Kurniawati (2026) further highlight that EFL learners benefit most from AI mediation when they maintain authorial agency—a pattern borne out in this study by the consistently high scores on items measuring critical use rather than passive consumption.

More significantly, the high scores on Q8 (avoiding direct copying) and Q9 (evaluating AI output) indicate that the intervention successfully foreground critical digital literacy over passive reliance, which marks a substantive departure from baseline diagnostic profiles where algorithmic over-reliance was the dominant pattern. Bo et al. (2025) argue in their scoping review of AI use in academic writing that ethical usage, source verification, and reflective judgment are precisely the capabilities that distinguish competent AI-assisted writers from dependent ones—and this study's data suggest that the structured ethics checklist in Phase 6 functioned as an effective mechanism for cultivating these habits. Sunengko et al. (2025) report a comparable shift in a mixed-methods study of Indonesian EFL students, finding that explicit CDL instruction produces measurable gains in students' ability to detect AI bias and assert authorial position. Albardía et al. (2025) reinforce

this by demonstrating that blended learning environments incorporating critical media literacy components yield stronger digital evaluative capacities than content-only digital instruction.

From an OBE perspective, these findings are particularly significant because they demonstrate empirical congruence between the instructional experience and the targeted graduate attributes: writing effectiveness, ethical awareness, and critical use of digital resources. N. Hakim et al. (2025) argue that OBE's distinguishing feature is the alignment between curriculum intent and measurable graduate-level evidence—precisely what the CLO-assessment mapping in this study operationalises. Ali & Jamin (2025) similarly note that OBE implementation in Indonesian higher education is most credible when learning outcomes can be triangulated across multiple evidence sources, a methodological strength of the present study's convergent design. Critically, the model went beyond helping students produce text; it cultivated the capacity to make principled decisions about accepting, revising, or rejecting AI suggestions—a meta-cognitive skill that recent AI literacy frameworks identify as essential for sustainable digital competence (Bo et al., 2025; Perkasa et al., 2025).

This trend resonates with current Indonesian higher education literature that considers AI literacy and ethical governance as crucial graduate qualities, while also contrasting with research revealing unresolved ambiguity, inconsistent institutional direction, and plagiarism risk (Syaifullah et al., 2025). In practical terms, this reflects the trend noted in Indonesian higher-education reviews, where AI is considered as most beneficial when students maintain human control rather than considering results as authoritative (Tarani et al., 2025).

It also resembles similar Indonesian EFL findings in which students saw AI as valuable for writing assistance while also being concerned about inauthentic voice and overdependence. Furthermore, the worry extends to algorithmic colonialingualism —the recolonisation of linguistic practices through AI systems that privilege dominant Western and English-language norms, thereby marginalising minoritised languages, varieties, and culturally situated ways of making meaning (Dovchin, 2025). Recent research shows that GenAI's training-data imbalances and algorithmic standardisation may reproduce dominant linguistic and rhetorical conventions, homogenise diverse Englishes, and frame non-dominant forms as deficient rather than legitimate linguistic resources (Lee et al., 2025; Ugwuanyi et al., 2025). As new research on GenAI bias reveals that model outputs may mimic dominant rhetorical patterns and culturally standardized speech, thereby diluting the local cultural subtlety desired in the prompt (Soge & Mbato, 2025; Y. Zhang et al., 2026; Zidi et al., 2025).

Additionally, it also aligns with other research from Indonesian EFL contexts, which show that students frequently regard GenAI as a beneficial partner for idea development and drafting, but they are concerned about cognitive dumping, skill disintegration, and less ownership of their work. According to a 2026 thorough study of GenAI in the language classroom, the key pedagogical dilemma is between supporting language output and the possibility of overdependence or decreased student agency (Lee et al., 2026; Rumapea et al., 2026; Santosa et al., 2022).

Furthermore, these findings are becoming increasingly relevant to contemporary investigations. Indonesian EFL learners may benefit from GenAI as a scaffold, but unguided use might reduce reflective control over style, logic, and personal expression, particularly when students accept produced content too rapidly. This makes the problem less about whether GenAI is

beneficial and more about how learners are trained to utilize it critically and iteratively (Haryanto et al., 2026; Trinovita et al., 2025; Waziana et al., 2025)

Crucially, in contrast to our preliminary diagnostic data (where baseline tech competence was relatively limited, ranging from 50 to 65), the microlearning model's organized, step-by-step coaching successfully alleviated technical fear. By dividing down the human-AI interaction into discrete checkpoints, the framework increased student assessment capacity in DL4 to 100%. Nonetheless, the lower result in DL5 (82.76 %) demonstrates that, when left unguided, tertiary learners struggle with the cognitive burden of critical editing (Black & Tomlinson, 2025; Nawal, 2018).

The findings, which contrast with the early diagnostic data, which suggested only modest baseline technical ability, imply that the microlearning approach successfully decreased technical anxiety through systematic, step-by-step instruction. The framework appears to have improved student evaluative ability in DL4 by segmenting human-AI interaction into discrete checkpoints, however the lower DL5 score suggests that unguided critical editing continues to impose significant cognitive load on tertiary learners. These findings highlight the ongoing need for professor mediation to ensure that students critically analyze, rather than mindlessly duplicate algorithmic output (Çiftci, 2025; Najmiah & Al-anbari, 2025; Werdiningsih et al., 2024; Zulianingrum, 2026)

In the domain of AI-supported education, such openness is vital since recent research demonstrates that ethical and emotional elements are central to responsible and successful learning using AI technologies (Deckker & Sumanasekara, 2025; Ilyas et al., 2025; Nawaz et al., 2025). The large disparity also implies that while some students dealt well with repeated editing, others likely encountered diminishing benefits and needed additional supervision to retain participation (Adarlo et al., 2025; Syafi'i et al., 2024; C. Zhang et al., 2025).

This significant transformation demonstrates how the structured writing prompt assisted the student in progressing from simple action steps to creating a sophisticated, theme tale about personal integrity and accountability, effectively exhibiting socio-cultural and character results. According to recent research, narrative-based teaching promotes moral reasoning, empathy, and value internalization by helping students to relate abstract ideas to real-world experiences. In this view, the student's performance reflects the learning of socio-cultural and character outcomes, rather than just development in language form (Rosyida et al., 2025; Valdez et al., 2024).

The revision demonstrates that targeted feedback can enhance students' linguistic readiness for competitive communication contexts by helping them recognize and correct clichés, leading to more engaging and realistic narrative dialogue. This improvement suggests that students' linguistic readiness for competitive communication contexts can be significantly improved when feedback is specific and supported by clear instructional guidance (Bonilla López et al., 2018; Kang & Han, 2015).

Addressing RQ3, the collaborative writing process grounded in the Suro and Boyo legend transformed a classical folklore conflict into a contemporary lesson on empathy, compromise, and mutual respect. This outcome resonates with Rosyida et al. (2025), who demonstrate that narrative-based character education produces measurable gains in students' moral reasoning, particularly when abstract ethical principles are anchored in familiar cultural contexts. Valdes Alppy et al. (2024) similarly report, in a systematic review of narrative use in character education, that

culturally grounded stories activate deeper emotional engagement with value-laden content than decontextualized moral instruction. Kusmana et al. (2020) specifically document the role of Indonesian folklore in scaffolding character education within language classrooms, validating the use of the Suro and Boyo legend as a moral anchor in this study. Beyond moral reflection, the process of iterative narrative revision fostered soft-skill competencies, including communication, teamwork, adaptability, and problem-solving—attributes. Grama et al. (2024) and Poláková et al. (2023) identify them as essential to twenty-first-century workplace competitiveness. This convergence between language learning, cultural identity, and professional competency development represents the model's most distinctive pedagogical contribution.

Pedagogical Implications and Theoretical Integration

The findings of this study suggest a balanced paradigm of human-AI collaboration in Indonesian writing classes, based on the three fundamental pillars of deep learning and grounded in the OBE framework. GenAI technologies, backed by a structured microlearning framework, can successfully reduce extrinsic cognitive load (joyful learning), allowing students to focus on higher-order abilities such as conversation timing, theme resonance, and moral reflection (meaningful learning). This educational shift is modelled in Figure 2, illustrating the balance between learner control, AI-mediated suggestions, and critical reflection.

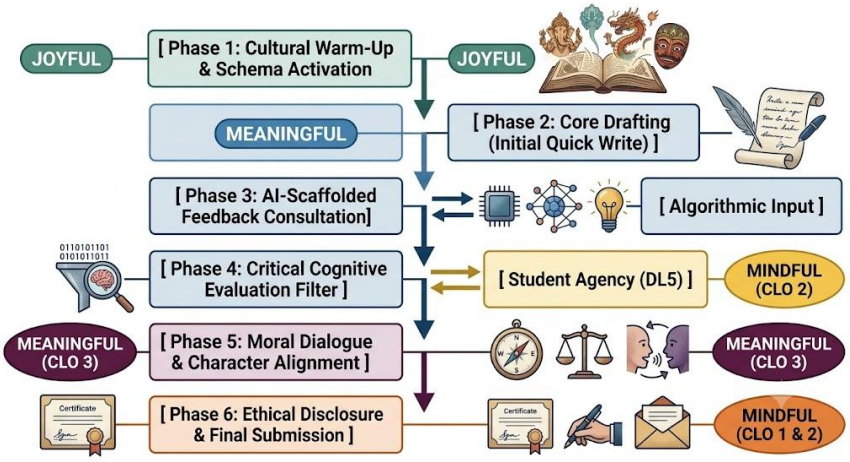


Figure 1. Instructional Shift Model

This framework emphasizes that the model's performance is dependent on the student's role as a critical, conscious filter. This study, conducted in an Indonesian tertiary setting, emphasizes the significance of establishing critical digital literacy (CDL)-oriented writing education to help learners engage with GenAI critically, ethically, and reflexively. The lower result on self-assessment item DL5 (82.76 %) suggests that Indonesian educators must actively help students gain the courage to question and reject AI advice when appropriate, limiting algorithmic obedience and cultivating real intellectual freedom.Without this supervision, automated programs may perpetuate prejudices or Eurocentric norms that contradict local values, or simply obscure the student's real voice. The OBE approach regularly assesses student development via these multi-phase portfolios, ensuring that graduates have the strong, autonomous critical thinking and ethical digital abilities needed to stand out in the global labor market.

6. Conclusion

This study shows that the Local Story and AI-Integrated Narrative Writing Microlearning Model effectively implements the Deep Learning methodology and the Outcome-Based Education (OBE) paradigm in Indonesian higher education. By merging East Javanese folklore with generative AI technologies, the model successfully enhances students' digital writing abilities while also encouraging character development, cultural appreciation, and cognitive depth. Quantitative and qualitative triangulation reveal that students valued the course's organized style and utilized AI as a creative collaborator to generate sophisticated, ethically conscious narratives. However, the study highlighted significant technological and pedagogical problems. Many Indonesian students experienced visual fatigue and usability concerns while viewing handouts on mobile displays, emphasizing the necessity for mobile-responsive digital interfaces. Furthermore, the absence of an auto-save feature raised concerns regarding data loss during browser reloads. Pedagogically, the lower ratings in critical assessment (DL5) and writing stamina (Char5) suggest that Indonesian tertiary students require continual support to critically examine AI comments and remain motivated during multi-stage revisions.

Based on these empirical findings, language instructors in higher education—particularly within the Indonesian context—should focus on three primary strategic areas to refine their pedagogical practices. First, educators need to prioritize responsive digital design to foster joyful learning. To lower writing anxiety and sustain an engaging classroom atmosphere, instructional handouts and digital resources should be fully optimized for mobile devices, incorporating flexible text fields and continuous auto-saving features. This design approach creates a low-stakes, accessible entry point that allows students to focus on creative expression without technical frustration.

Second, instructors must systematically integrate Critical Digital Literacy (CDL) to encourage mindful learning and ensure alignment with Outcome-Based Education (OBE) frameworks. Rather than treating Generative AI tools merely as shortcut utilities for drafting, writing instruction should explicitly guide students to critically evaluate, refine, or deliberately reject AI-generated suggestions. This practice ensures that learners preserve their personal voice, unique perspective, and national identity, ultimately developing into discerning, ethically grounded digital citizens who take full agency over their academic work.

Finally, language teaching should leverage local cultural heritage as a moral anchor to facilitate meaningful learning. Utilizing prompts derived from regional folklore—such as traditional Indonesian tales—provides an effective scaffold for character education. By connecting language skill development directly to shared community values and contemporary social issues, instructors help students bridge local wisdom with real-world reflection, driving the deeper cognitive and affective engagement required in modern higher education.

Future research should examine the long-term impact of this model across diverse genres of writing and larger student cohorts across different provinces in Indonesia, ensuring that technology serves as a tool to enhance, rather than replace, human critical thinking and cultural identity, thereby securing the global competitiveness of future graduates.

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