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Imbalance in Teacher Readiness Between Technological Self-Efficacy and Ethical Awareness in the Era of AI Humanification

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Abstract

The development of Generative Artificial Intelligence (GenAI) has transformed assessment practices in English as a Foreign Language (EFL) learning, particularly through the emergence of AI humanification, where the boundaries between authentic student writing and AI-generated text become increasingly blurred. This study aims to analyze secondary school English teachers' readiness in addressing these challenges. This research employed a sequential explanatory mixed-method design involving 23 EFL teachers from nine senior high schools in Buleleng Regency, selected through purposive sampling. Data were collected using a modified Readiness Artificial Intelligence Scale (RAIS) questionnaire and semi-structured interviews. Quantitative data were analyzed using descriptive statistics, while qualitative data were analyzed using thematic analysis. The findings reveal a structural imbalance in teacher readiness. While teachers demonstrate high levels of technological self-efficacy in using AI, their ability to detect AI misuse and verify student authenticity remains limited. Teachers adopt adaptive strategies such as restricting device use, implementing oral verification, and repositioning AI as a supportive tool rather than a substitute. These findings imply that teacher readiness is multidimensional and develops unevenly, highlighting the need for assessment redesign, ethical governance, and institutional support to maintain academic integrity in AI-mediated learning environments.

Keywords: *AI Humanification, Academic Integrity, Authentic Assessment, EFL, Teacher Readiness.*

Introduction

The paradigm of education has been changed by the presence of AI in the world of education, especially in teaching English as a Foreign Language (EFL) (Özkan et al., 2024). Generative AI (GenAI) is capable of mimicking the cognitive complexity of humans in text creation, making it more than just an additional tool (Al-Dahoud et al., 2024). However, the phenomenon of "Humanification" poses detrimental challenges and threatens academic values. This phenomenon relates to the ability of artificial intelligence algorithms to generate content that closely resembles human language style, thought structure, and emotional nuances (Kundu, 2021). This creates ambiguities that are difficult to resolve both by the naked eye and conventional plagiarism detection tools (Mishra et al., 2025).

The emergence of AI humanification marks a critical shift in how knowledge production and authorship are understood in educational contexts (Askari, 2025). Unlike earlier digital tools that functioned primarily as supportive technologies, GenAI actively participates in meaning-making processes by generating ideas, structuring arguments, and refining language output (Panmei et al, 2025). This shift challenges traditional assumptions about learning authenticity, particularly

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in language education, where writing is both a cognitive and expressive activity. In EFL classrooms, writing tasks have long been regarded as reliable indicators of students' language proficiency, creativity, and critical thinking. The increasing sophistication of AI-generated texts, therefore, raises fundamental questions regarding the validity of these indicators. From a theoretical perspective, constructivist learning theory emphasizes that knowledge is constructed through active cognitive engagement.

When students rely excessively on AI-generated content, the learning process risks becoming superficial, as essential stages of idea formulation, linguistic negotiation, and reflective thinking may be bypassed. Consequently, the humanification of AI does not merely pose a technical problem, but also a pedagogical and ethical one, as it potentially alters the nature of learning itself. In current education, the main focus of discussion is how teachers are prepared to deal with AI technology. Previous studies have shown that teachers generally have positive perceptions of the potential of AI (Cahyadi, 2024; Darmawan et al., 2024). However, they are also concerned about a decline in student cognitive engagement. The rapid advancement of Generative AI has outpaced the technical detection capabilities of educational institutions, leading to a "crisis of confidence" in the assessment of writing skills (Cotton et al., 2024).

The main problem is no longer the explicit use of AI, but rather its undetected use, which can mimic a student's personal voice (Sullivan et al., 2023). This phenomenon is further reinforced by the systematic use of humanized AI, which can undermine critical thinking skills through "cognitive outsourcing" in the absence of adequate ethical preparation (Calles, 2025). This predicts that if teachers do not immediately switch to assessment methods that are more resistant to AI manipulation, conventional text-based assessment will become irrelevant. Despite the growing body of literature on AI in education, most existing studies predominantly focus on teachers' perceptions, attitudes, and general readiness toward AI adoption. While these studies provide valuable insights into teachers' awareness and concerns, they often overlook how teachers practically respond to AI-related challenges in assessment contexts.

In particular, limited attention has been given to how teachers adapt assessment strategies when AI-generated outputs closely resemble students' authentic work. Moreover, prior research tends to emphasize higher education settings, where academic integrity policies and technological resources are relatively more established. Secondary education contexts, especially in developing regions, remain underrepresented in empirical investigations. This imbalance creates a gap in understanding how teachers at the secondary school level cope with AI humanification under constraints such as limited institutional support, lack of formal guidelines, and uneven access to detection technologies.

This challenge is truly felt by teachers in secondary schools in Buleleng Regency. There is very little difference between assignments created by AI and those created originally by students, according to field data. Because it is difficult to distinguish genuine creativity from these humanized texts, authentic assessment becomes vulnerable. This is particularly important for tasks that require high creativity, such as narrative texts. AI now has the ability to create coherent narratives, incorporate humanistic elements, and make it difficult to distinguish itself as a machine product. This situation shows that AI detection tools often give false results or false negatives thus teachers must be more sensitive in their teaching.

In narrative writing tasks, originality, voice, and personal expression are essential components of assessment. However, AI-generated narratives increasingly demonstrate stylistic sophistication, emotional coherence, and narrative flow that rival student-produced

texts. This condition places teachers in a dilemma: penalizing students risks injustice, while accepting AI-assisted work risks undermining learning objectives. As a result, teachers are compelled to rely on intuition and experience rather than objective assessment criteria, which may compromise assessment reliability and fairness. The absence of clear institutional policies regarding AI use in secondary schools further intensifies this problem. Without structured guidelines, teachers are left to independently determine acceptable and unacceptable uses of AI, leading to inconsistencies in assessment practices. This situation highlights the need to explore teachers' lived experiences and coping strategies when dealing with AI humanification in real classroom contexts.

Teacher readiness is crucial for addressing these changes. Readiness refers to the ability to adapt to digital change ethically and innovatively, rather than merely possessing technical skills (Lynch et al, 2016). In the context of artificial intelligence, technological self-efficacy and ethical awareness are identified as two key components of readiness within the Readiness Artificial Intelligence Scale (RAIS) framework (Ramazanoglu et al, 2025). However, the facts on the ground show that there is a gap. Although teachers have the ability to use technology, their ability to identify the misuse of AI is still low due to the complexity of "humanizing" the text.

This discrepancy indicates a clear gap between theoretical models of teacher readiness and the empirical realities faced by teachers. Existing frameworks adequately describe what readiness should entail, yet they provide limited insight into how readiness manifests in practical assessment decisions. Particularly lacking are studies that investigate how teachers translate ethical awareness and technological knowledge into concrete assessment strategies when confronting AI-humanized student work. Furthermore, little research has explored readiness as a dynamic and adaptive process rather than a fixed set of competencies. In rapidly evolving AI environments, teacher readiness must be continuously negotiated and redefined, especially in relation to assessment authenticity and student creativity.

The purpose of this study is to determine how English teachers in secondary schools find ways to overcome assessment challenges in the era of AI humanization. The main issue raised is how teachers' readiness, both technically and pedagogically, affects maintaining authentic student tasks. This research is expected to contribute to educational policy regarding the ethical limits of AI use in schools through qualitative analysis that will reveal the defensive strategies used by teachers, such as returning to "analog pedagogy" methods or collecting digital devices to stimulate student creativity before working with AI.

Based on the identified gaps, this study addresses the following research question: how do English teachers' levels of readiness influence their strategies for maintaining authentic assessment in the presence of AI-humanized texts? The objective of this research is to explore teachers' perceptions, experiences, and pedagogical responses to AI-related assessment challenges, particularly in narrative writing tasks. The novelty of this study lies in its focus on teachers' defensive and adaptive assessment strategies rather than on technological detection tools alone. By examining how teachers consciously redesign assessment practices and learning environments to preserve authenticity, this research offers original empirical insights into sustainable assessment approaches in AI-integrated EFL classrooms, particularly at the secondary school level.

Method

This study used a sequential explanatory mixed-method design. In this design, the researcher first collects and analyzes quantitative (numerical) data. Then, qualitative (textual)

data are collected and analyzed to interpret the quantitative results obtained in the first stage (Wolff et al., 2019). 23 teachers from 9 senior high schools in Buleleng District are involved. The selection of a sequential explanatory mixed-method design was considered appropriate for addressing the research objectives, as this study seeks not only to measure teachers' readiness toward artificial intelligence but also to understand how such readiness is enacted in real assessment practices. Quantitative data provide an overview of teachers' readiness levels, while qualitative data allow for deeper exploration of teachers' reasoning, strategies, and experiences when facing AI-humanized student work. By integrating both types of data, this design enables a more comprehensive understanding of the phenomenon under investigation.

Purposive sampling is used to ensure that certain types of cases that are potentially included in the study become part of the final sample in the research study (Campbell et al., 2020). The criteria for sampling quantitative and qualitative data are presented in tables 1 and 2. Purposive sampling was chosen to ensure that participants possessed relevant experience and contextual knowledge related to the use of Generative AI in EFL teaching. This technique was deemed suitable because the study focuses on a specific group of teachers who are directly exposed to AI-related assessment challenges. By applying clear inclusion and exclusion criteria, the sampling process ensured that the data collected were both relevant and information-rich, thereby supporting the credibility of the findings.

Table 1. Sampling Criteria for Quantitative Data Collection

No	Inclusion	Exclusion
1	Teachers who teach English as a Foreign Language.	Teachers who do not teach English as a Foreign Language.
2	EFL teachers at a senior high school in Buleleng District.	EFL teachers outside at a senior high school in Buleleng District.
3	Teachers who have experience using Generative AI in their learning process.	Teachers who never used Generative AI in their learning process.
4	Teachers who are willing to participate in this study.	Teachers who are not willing to participate in this study.

Table 1 presents the inclusion and exclusion criteria applied during the quantitative phase of data collection. These criteria ensured that only teachers who were actively involved in EFL instruction, had prior experience using Generative AI, and were teaching in senior high schools within Buleleng District were included. The exclusion criteria were designed to eliminate participants whose teaching context or technological experience did not align with the focus of the study. This careful selection process helped ensure that the quantitative data accurately reflected the readiness levels of teachers who are directly affected by AI integration in EFL classrooms.

Table 2. Sampling Criteria for Qualitative Data Collection

No	Inclusion	Exclusion
1	Teachers who teach English as a Foreign Language.	Teachers who do not teach English as a Foreign Language.
2	EFL teachers at a senior high school in Buleleng District.	EFL teachers outside at a senior high school in Buleleng District.
3	Teachers who have experience using Generative AI in their learning process.	Teachers who never used Generative AI in their learning process.
4	Teachers who have filled out the questionnaire.	Teachers who have not filled out the questionnaire.
5	Teachers who are willing to participate in this study.	Teachers who are not willing to participate in this study.

Table 2 outlines the sampling criteria for the qualitative phase of the study. In addition to meeting the general criteria applied in the quantitative phase, participants in the qualitative stage were required to have completed the questionnaire. This requirement ensured continuity between the two phases of data collection and allowed qualitative findings to be used to explain and elaborate on the quantitative results. The criteria also ensured that interview participants possessed sufficient experience and willingness to provide in-depth reflections on their assessment practices and ethical considerations related to AI usage.

The main instrument used in this study was the Readiness Artificial Intelligence Scale (RAIS) developed by (Susanti et al, 2022). This instrument has been modified to be relevant to the context of English language teaching in Indonesia. The RAIS questionnaire measures three main dimensions of readiness, namely technology self-efficacy, student interaction, and ethical awareness, which consist of 19 five-point Likert scale statements and 7 open-ended questions. In addition to the questionnaire, a semi-structured interview guide was also developed based on the RAIS dimensions to explore teachers' ethical reasoning and practical experiences in dealing with AI content that resembles human writing.

The modification of the RAIS instrument involved contextual adaptation to ensure clarity and relevance for Indonesian EFL teachers. The Likert-scale items were retained to capture measurable aspects of readiness, while open-ended questions and interviews were employed to gain deeper insights into teachers' ethical awareness and pedagogical decision-making. The use of both structured and semi-structured instruments enabled the study to collect complementary data that reflect both measurable readiness levels and nuanced professional experiences. The validity and reliability of the instrument were established prior to data collection. Content validity was ensured through expert judgment, in which the adapted RAIS items were reviewed by experts in English language education and educational technology to confirm their relevance and clarity within the Indonesian EFL context.

Construct validity was maintained by aligning the instrument dimensions with the theoretical framework of AI readiness, particularly technological self-efficacy, student interaction, and ethical awareness. The reliability of the instrument was assessed using internal consistency analysis. The results indicated that the instrument achieved an acceptable level of reliability, suggesting that the items consistently measured the intended constructs. To enhance the credibility and trustworthiness of the findings, data triangulation was explicitly applied. This study employed methodological triangulation by integrating quantitative data from questionnaires, qualitative data from open-ended responses, and in-depth interview data. The triangulation process allowed for cross-validation of findings across different data sources, ensuring consistency and reducing potential bias. Additionally, convergence between quantitative trends and qualitative insights was examined to strengthen the overall interpretation of teacher readiness in the context of AI humanification.

Data collection was conducted in stages through an online survey using Google Forms in the quantitative phase, followed by in-depth interviews via the Zoom platform in the qualitative phase. Data analysis was conducted coherently in accordance with the research design. Quantitative data were analyzed using descriptive frequency distributions to provide an accurate picture of the central tendency and distribution of ordinal data on the Likert scale. Meanwhile, qualitative data from interviews and open-ended responses were analyzed using the thematic analysis technique (Nabila et al, 2025). This process included data familiarization, initial coding, theme search and review, and final theme definition representing teachers' strategies in navigating academic integrity challenges in the AI era.

The data collection procedures were conducted sequentially to maintain alignment with the research design. Quantitative data were collected first to establish an overall profile of teacher readiness, which then informed the selection and focus of qualitative interviews. This orderly procedure allows the study to be replicated by future researchers following similar stages. The analytical process was conducted systematically to ensure transparency, rigor, and trustworthiness in both quantitative and qualitative findings.

Results

This section presents the results obtained from both quantitative and qualitative data analysis. The quantitative results provide an overview of EFL teachers' readiness across three dimensions, while the qualitative findings are used to explain and clarify patterns identified in the numerical data. The presentation of results follows a logical sequence, beginning with frequency analysis and followed by teachers' perspectives derived from interview excerpts.

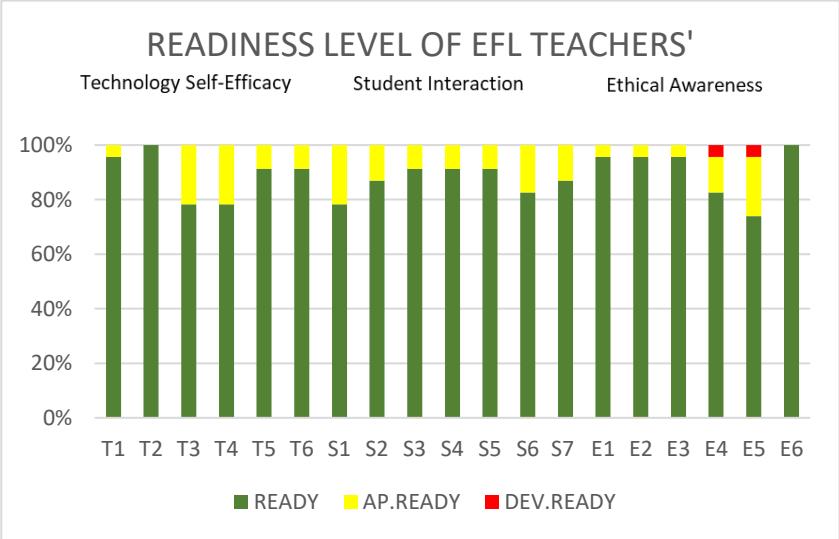

Figure 1. Frequency Analysis of EFL Teachers' Readiness

Figure 1 presents the frequency distribution of EFL teachers' readiness across three dimensions: Technology Self-Efficacy, Student Interaction, and Ethical Awareness. The figure illustrates how teachers are distributed across readiness categories for each indicator, providing a quantitative overview of areas in which teachers demonstrate strong readiness as well as areas that remain challenging. This visual representation serves as the primary quantitative evidence for identifying discrepancies among readiness dimensions.

The three main dimensions of teacher readiness are shown in the following Figure 1: Technology Self-Efficacy, Student Interaction, and Ethical Awareness. There is a contradiction in this data. On the one hand, most teachers (91%) received high scores on the aspect of using AI as an administrative and instructional tool (T5). On the other hand, this table shows a low number of responses for the indicator of AI-based cheating detection capabilities (E4). This statistical discrepancy indicates that teachers' technical readiness is not commensurate with their ability to verify the integrity of students' digital work.

These quantitative results form the basis for further investigation into why teachers have difficulty with detection. The interview findings indicate that the emergence of the humanification phenomenon is the main obstacle contributing to the low detection scores presented in the figure above. To strengthen the interpretation of the findings, data triangulation was conducted by comparing quantitative results with qualitative interview data, as presented in Table 3.

Table 3. Data Triangulation of Teacher Readiness Findings

Data Source	Key Findings	Evidence/Excerpt
Quantitative Data	High technological self-efficacy (T5: 91%)	Frequency analysis results
Quantitative Data	Low AI misuse detection ability (E4)	Low ethical awareness score
Interview (P1)	Difficulty distinguishing AI and student work	"There is very little difference..."
Interview (P1)	Use of analog pedagogy strategy	Limiting device use in writing
Interview (Q3)	AI used as assistant, not replacement	"AI should be used to help us…"
Interpretation	Shift to verification strategies	Oral validation methods

As noted by P1: *"What's more, now that AI can be humanized, it can be made to look very similar to our writing as humans... there is very little difference between students who do their assignments with the help of AI and those who don't."*. In creative tasks such as narrative writing, this difficulty in identification is particularly significant. Teachers feel that their own technical abilities are threatened because AI can generate coherent and natural stories. To overcome this, teachers use an "analog pedagogy" approach and limit the use of digital devices in the early stages of writing. P1 explained this defensive strategy: *"This narrative text contains many stories, so it requires a lot of creativity from students. So in class, I ask students to put away their cell phones. I ask them to try to work on it themselves first, and once they come up with ideas, then I will give them back their cell phones."*

In addition to restricting devices, teachers are also beginning to shift their focus to verification methods to maintain academic integrity. As a form of validation, teachers are turning to hands-on classroom practice or oral tests because text-based final results are highly vulnerable to AI manipulation that is difficult to detect. In terms of transparency and ethics, there is an opinion that AI should continue to be used as an assistant, not a substitute for teachers: *"But when it comes to grading, it's still up to the teacher to decide. So as an assistant, not as a job or a replacement for us... I don't think AI should be used to replace us, but to help us." Said Q3.*

The quantitative results show variation across the three readiness dimensions in addition to the detection problem. While most participants consistently exhibit high levels of preparation in Technology Self-Efficacy, there is greater variation in Student Interaction and Ethical Awareness. When it comes to tracking students' usage of AI and encouraging responsible participation, a number of teachers specifically fit into the "Approaching Ready" category. According to this, pedagogical management of AI-mediated learning is still less consistent even when teachers are comfortable using AI technologies.

This discrepancy is further clarified by interview data. A few of participants clarified that since generative AI became widely accessible, student behavior has changed dramatically. Teachers have noticed that pupils frequently rely on AI for idea formulation and entire text production in addition to language correction. Classroom dynamics are impacted by this change, particularly in writing-focused classes. According to one of the teacher, students now frequently "skip the thinking process" and ask AI for finished drafts before attempting their own formulation. Teachers' capacity to track students' real cognitive development is weakened by such procedures, which also limit opportunities for formative input. Teachers also expressed anxiety about tackling suspected misuse of AI. Many choose to use indirect tactics, including asking students to explain their written work or replicate portions of their material in class, rather than making direct accusations. This method avoids conflict while serving as a useful verification instrument. Teachers did admit, though, that this method takes a lot of effort and is challenging to use regularly in big courses. Because of this, verification efforts rely more on the discretion of individual teachers than on formal institutional processes.

The majority of teachers concurred that, in terms of ethical awareness, AI ought to be viewed as an aid rather than a replacement for student work or instructor authority. However, the interviews show that there are currently no well-defined ethical standards for the use of AI in schools. Instructors mainly rely on their own principles and unwritten agreements with students. As a result, policies are applied inconsistently in classrooms. While some teachers forbid device use during writing assignments, others permit controlled AI use for brainstorming. When combined, the quantitative and qualitative results show a consistent disparity: increasing technological confidence coexists with difficulties in verification and changing ethical ambiguity. The information demonstrates that readiness does not evolve consistently across dimensions. These findings demonstrate that opposition to AI integration is not the main obstacle. Instead, it involves managing the conflict between maintaining genuine student authorship and adjusting to new technologies. How this discrepancy mirrors larger trends found in recent studies on AI-mediated schooling is covered in the next section.

Discussion

The study's findings demonstrate an obvious gap in teachers' preparedness to react to AI humanification. Although the majority of teachers are quite confident in their capacity to use AI as a teaching and administrative tool, they are still not very good at spotting student work that has been mediated by AI and preserving the integrity of assessments (Fleckenstein et al., 2024). A larger body of recent studies emphasizing the multifaceted character of teacher preparedness for AI integration is consistent with this systematic disparity (Meylani, 2024).

An increasing amount of research highlights that technological competence by itself does not ensure pedagogical or ethical readiness. For instance, in addition to technological and pedagogical competencies, evaluating teachers' generative artificial intelligence competencies highlights risk and ethical awareness as separate and occasionally underdeveloped elements of AI readiness (Chiu et al., 2024). The study's poor ethical vigilance performance aligns with this new framework, indicating that teachers may be comfortable using tools but may not have the means to verify student authorship (Muhammadi et al, 2026). This challenge reflects broader concerns in the academic integrity literature, which argues that generative AI disrupts traditional assumptions of authorship, originality, and accountability, thereby complicating educators' ability to make reliable ethical judgments based solely on textual output (Hill et al, 2025).

Recent empirical study has demonstrated the challenge of differentiating student writing from AI-generated content (Waltzer et al., 2024). Participants' performance was noticeably poorer than chance when detecting machine-produced writing, according to a mixed-methods study on humans' ability to detect AI-generated language. This suggests that human detection capacity has fundamental limits. This result is consistent with teachers' reports that there is "very little difference" between authentic and AI-assisted works, particularly when it comes to creative assignments like narrative writing (Eaton, 2025). Similar findings have been reported across disciplines, indicating that even trained educators struggle to reliably distinguish AI-generated texts from human-authored writing, particularly in tasks emphasizing fluency, coherence, and creativity (Matthews et al, 2023).

In order to promote creativity and integrity in the GenAI era, studies also emphasize the necessity of reconsidering evaluation design (Fleckenstein et al., 2024). Higher-order thinking, creativity, and reflection tasks are less likely to be automated and are more likely to produce genuine student work, according to redesign frameworks like the AICAI model (Peters et al, 2025). By purposefully modifying task conditions to emphasize student cognitive involvement,

teachers' defensive techniques in this study such as restricting gadget use during initial idea generation can be interpreted as proto-practices in line with these guidelines.

Additionally, there are larger institutional gaps in AI policy and professional development when it comes to managing academic integrity through the use of individual teacher judgment. Only a small percentage of schools had explicit AI policies; the majority relied on ad hoc procedures and individual attitudes toward technology adoption, according to a study on preparing science instructors for generative AI integration (Kim, 2025). This is in line with the current discovery that the majority of instructors' methods for raising ethical awareness are informal and teacher-dependent (Somabut et al., 2025). Policy-oriented studies similarly report that institutional responses to generative AI in education remain fragmented, with governance frameworks lagging behind classroom-level adoption and leaving ethical responsibility largely to individual educators (Barus et al., 2025).

These trends imply that teacher preparedness for the AI era needs to be viewed as a set of competences, with adaptability in assessment and ethical verification playing a key role. It is not enough to place too much emphasis on detecting technology, as several studies show. Detection technologies are frequently unreliable, prone to false positives and negatives, and inadequately equipped to handle the nuances of humanized AI output (Pérez-Pérez et al., 2026). Rather, educators and institutions are encouraged to implement robust evaluation methods that prioritize genuine cognitive effort and reduce the impact of GenAI abuse.

All things considered, the imbalance seen in this study, with high technological confidence coexisting with low readiness for authenticity verification, reflects larger patterns found in recent studies (López-Meri et al., 2024). Clear institutional regulations, professional development centered on the ethical application of AI, and assessment reform frameworks that better match learning objectives in an AI-infused classroom are all necessary to address this mismatch. A more accurate basis for future teacher preparation and policy development in educational systems navigating AI humanification is provided by seeing readiness as multifaceted rather than homogenous. Beyond confirming the imbalance between technological self-efficacy and ethical awareness, the findings of this study also reveal that teacher readiness is shaped by contextual constraints rather than individual resistance.

The qualitative data indicate that teachers' limited verification capacity is not caused by unwillingness to uphold academic integrity, but by the structural difficulty of distinguishing AI-humanized texts from authentic student writing. This supports the claim that readiness gaps are not merely personal deficits but are influenced by broader technological and institutional conditions (Prakoso et al., 2025). When related to initial expectations, the results partially confirm prior assumptions that teachers who are technologically confident would be more capable of managing AI-related risks. However, the findings challenge this assumption by demonstrating that high technical competence does not automatically translate into effective assessment governance. This divergence suggests that readiness frameworks must move beyond linear models in which technical mastery is assumed to precede ethical and pedagogical competence (Shardey et al., 2025).

The findings of this study both support and extend existing theoretical perspectives on AI readiness. While the RAIS framework conceptualizes readiness as a multidimensional construct, the present study empirically demonstrates that these dimensions may develop unevenly and even contradict one another in practice (Ramazanoglu et al, 2025). In this context, ethical awareness and verification literacy appear to lag behind technological confidence, indicating that readiness is not a synchronized process but a fragmented one.

Moreover, the reliance on individual teacher judgment observed in this study highlights a critical institutional gap. Previous research has emphasized the role of policy and governance in shaping ethical technology use in education (Dragomir, 2025). The absence of formal AI guidelines in secondary schools, as reported by participants, reinforces the argument that individual readiness alone is insufficient to sustain academic integrity in AI-mediated learning environments. Without institutional alignment, teachers are compelled to rely on informal strategies that may vary widely in effectiveness and consistency.

The defensive pedagogical strategies identified in this study, such as analog pedagogy and oral verification, can be interpreted as adaptive responses rather than regression to traditional methods. These strategies align with emerging scholarship that advocates for process-oriented and cognitively transparent assessment designs in the age of generative AI (Chapman et al., 2024). Rather than rejecting AI outright, teachers are negotiating new boundaries between human creativity and machine assistance. Finally, the imbalance identified in this study reflects a broader transformation in the nature of assessment itself. As AI continues to humanize its outputs, assessment practices that focus solely on final written products become increasingly vulnerable. The findings suggest that sustainable assessment in AI-infused classrooms requires a shift toward learning processes that foreground reasoning, reflection, and authorship transparency. This perspective reinforces recent calls in the literature to redefine assessment validity in technologically augmented learning contexts (Kemp et al., 2023).

Conclusion

This study confirms that teacher readiness in the era of AI humanification is multidimensional and uneven. The findings show that while the majority of teachers demonstrate high technological self-efficacy, with 91% indicating confidence in using AI tools, their ability to detect AI-generated student work and maintain academic integrity remains relatively low. This confirms the research objective that teacher readiness influences strategies for maintaining authentic assessment. The results indicate a structural imbalance between technical competence and ethical verification. In response, teachers adopt adaptive strategies, such as limiting device use during early writing stages, implementing oral verification, and positioning AI as a supportive tool rather than a replacement for student thinking. These findings imply that readiness extends beyond technical skills and requires ethical awareness and assessment adaptation.

From a practical perspective, this study highlights the need for structured professional development focusing on ethical AI use and assessment redesign. Institutional policies are also necessary to ensure consistent standards and reduce reliance on individual teacher judgment. However, this study is limited by its small sample size and focus on a single regional context, which may affect the generalizability of the findings. Future research is recommended to examine broader educational contexts and explore the long-term development of teacher readiness in response to AI humanification. Overall, maintaining academic integrity in AI-mediated environments requires addressing the imbalance in teacher readiness through both pedagogical and institutional support.

Aknowledgment

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References

Al-Dahoud, A., Fezari, M., Al-Dahoud, A., Aqel, D., Mimi, H., & Daoud, M. Sh. (2024). Revolutionizing Space: The Potential of Artificial Intelligence. *Wseas Transactions On Computer Research*, *12*, 404–414. https://doi.org/10.37394/232018.2024.12.40

Askari, M. (2025). Reclaiming authorship in the age of generative AI: From panic to possibility. *AI Magazine*, *46*(3), 1–5. https://doi.org/10.1002/aaai.70022

Barus, O., Hidayanto, A. N., & Eitiveni, I. (2025). Mapping Generative Ai's Ethical Issues In Higher Education: A Felt-Guided Systematic Review [Pemetaan Isu Etika Generative Ai Di Pendidikan Tinggi: Tinjauan Sistematis Berpanduan Felt]. *Polyglot: Jurnal Ilmiah*, *21*(2), 159–196. https://doi.org/10.19166/pji.v21i2.10020

Calles, A. B. (2025). Harnessing AI for content and strategies in instructional purposes: Limitations and red flags. *Environment and Social Psychology*, *10*(5), 1–14. https://doi.org/10.59429/esp.v10i5.3235

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*, *25*(8), 652–661. https://doi.org/10.1177/1744987120927206

Chapman, E., Zhao, J., & Sabet, P. G. P. (2024). Generative Artificial Intelligence and Assessment Task Design: Getting Back to Basics through the Lens of the AARDVARC Model. *Education Research and Perspectives*, *51*, 1–36. https://doi.org/10.70953/ERPv51.2412001

Chiu, T. K. F., Ahmad, Z., Ismailov, M., & Sanusi, I. T. (2024). What are artificial intelligence literacy and competency? A comprehensive framework to support them. *Computers and Education Open*, *6*, 1–9. https://doi.org/10.1016/j.caeo.2024.100171

Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2024). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International*, *61*(2), 228–239. https://doi.org/10.1080/14703297.2023.2190148

Dragomir, A. (2025). The role of the European Union in shaping an ethical and legal framework for artificial intelligence (AI) in education. *SDGs Studies Review*, *6*(studies), 1–11. https://doi.org/10.37497/sdgs.v6istudies.35

Eaton, S. E. (2025). Global Trends in Education: Artificial Intelligence, Postplagiarism, and Future-focused Learning for 2025 and Beyond – 2024–2025 Werklund Distinguished Research Lecture. *International Journal for Educational Integrity*, *21*(12), 1–27. https://doi.org/10.1007/s40979-025-00187-6

Fleckenstein, J., Meyer, J., Jansen, T., Keller, S. D., Köller, O., & Möller, J. (2024). Do teachers spot AI? Evaluating the detectability of AI-generated texts among student essays. *Computers and Education: Artificial Intelligence*, *6*, 1–9. https://doi.org/10.1016/j.caeai.2024.100209

Hill, C., & Hargis, J. (2025). An ethics module on academic integrity and generative AI. *New Directions for Teaching and Learning*, *2025*(182), 41–50. https://doi.org/10.1002/tl.20626

Kemp, S., Goddard, V. C. T., Boursicot, K., Fuller, R., & Nadarajah, V. D. (2023). Supporting validity: steps to contextualise applications for technology and assessment, for learning. *MedEdPublish*, *13*, 37. https://doi.org/10.12688/mep.19688.1

Kim, J. (2025). Perceptions and preparedness of K-12 educators in adopting generative AI. *Research in Learning Technology*, *33*, 1–17. https://doi.org/10.25304/rlt.v33.3448

Kundu, S. (2021). AI-Driven Cognitive and Emotional Interfaces: Real-Time Thought Translation and Emotion-Based Content Creation. *Interantional Journal Of Scientific Research In Engineering And Management*, *05*(04), 1–6. https://doi.org/10.55041/IJSREM6779

López-Meri, A., Doménech-Fabregat, H., & Marcos-García, S. (2024). Digital competencies in verifying fake news: assessing the knowledge and abilities of journalism students. *Societies*, *14*(5), 66. https://doi.org/10.3390/soc14050066

Lynch, D., & Smith, R. (2016). Readiness for school reform. *International Journal of Innovation, Creativity and Change*, *2*(3), 1-12.

Matthews, J., & Volpe, C. R. (2023). Academics' perceptions of ChatGPT-generated written outputs: A practical application of Turing's Imitation Game. *Australasian Journal of Educational Technology*, *39*(5), 82-100. https://doi.org/10.14742/ajet.8896

Meylani, R. (2024). Artificial Intelligence in the Education of Teachers: A Qualitative Synthesis of the Cutting-Edge Research Literature. *Journal of Computer and Education Research*, *12*(24), 600–637. https://doi.org/10.18009/jcer.1477709

Mishra, Y., Jaiswal, A., & Soni, Dr. G. (2025). Humanizing Text with AI: A Natural Language Processing Approach Using Pre-Trained Language Models. *International Journal for Research in Applied Science and Engineering Technology*, *13*(4), 4953–4958. https://doi.org/10.22214/ijraset.2025.69466

Muhammadi, M., Meizatri, R., Yolanda, E., & Anggria, V. D. (2026). Implementasi Evaluasi Pembelajaran Berbasis Digital di Sekolah Dasar. *Jurnal Literasi Digital*, *6*(1), 72–84. https://doi.org/10.54065/jld.6.1.2026.1133

Nabila, P., Albar, M. H., & Nabila, R. (2025). Penerapan Literasi Digital dalam Penggunaan Artificial Intelligence untuk Kebutuhan Akademik: Literasi Digital. *Jurnal Literasi Digital*, *5*(3), 242–253. https://doi.org/10.54065/jld.5.3.2025.834

Özkan, E. K., Erdemir, N., & Coşkun, D. (2024). A Systematic Review of EFL Teachers' Perspectives on Artificial Intelligence Technologies. *Ihlara Eğitim Araştırmaları Dergisi*, *9*(2), 150–168. https://doi.org/10.47479/ihead.1535035

Panmei, B., & Shimray, Y. P. (2025). GenAI as a Toolkit for English Academic Writing among International Business Students. *Teaching English as a Second or Foreign Language--TESL-EJ*, *29*(2), 1–35. https://doi.org/10.55593/ej.29114int

Pérez-Pérez, I., González-Afonso, M. C., Plasencia-Carballo, Z., & Pérez-Jorge, D. (2026). Transparency Mechanisms for Generative AI Use in Higher Education Assessment: A Systematic Scoping Review (2022–2026). *Computers*, *15*(2), 1–16. https://doi.org/10.3390/computers15020111

Peters, M., & Angelov, D. (2025). Redefining assessment tasks to promote students' creativity and integrity in the age of generative artificial intelligence. *International Journal for Educational Integrity*, *21*(25), 1–19. https://doi.org/10.1007/s40979-025-00201-x

Prakoso, A. F., RoziqiFath, Z. F. M., Ginanjar, A. E., Wulandari, W., Kamalia, P. U., & Irawan, N. (2025). Technology Readiness: What Are The Catalysts? *Jurnal Eduscience*, *12*(4), 1042–1058. https://doi.org/10.36987/jes.v12i4.7016

Ramazanoglu, M., & Akın, T. (2025). AI readiness scale for teachers: Development and validation. *Education and Information Technologies*, *30*(6), 6869–6897. https://doi.org/10.1007/s10639-024-13087-y

Shardey, E., Nabi, F., & Vortia, W. (2025). Teacher Readiness for AI and Digital Tools in K-12 Classrooms: A Review of Professional Development Trends and Gaps. *International Journal For Multidisciplinary Research*, *7*(5), 1–17. https://doi.org/10.36948/ijfmr.2025.v07i05.55119

Shi, L. (2025). Assessing teachers' generative artificial intelligence competencies: instrument development and validation. *Education and Information Technologies*, *30*(16), 23365–23384. https://doi.org/10.1007/s10639-025-13684-5

Somabut, A., Tuamsuk, K., Lowatcharin, G., Traiyarach, S., & Kwangmuang, P. (2025). Preparing for the AI era: Science teachers' readiness and professional development needs for generative AI integration in secondary education. *Social Sciences & Humanities Open*, *12*, 1–14. https://doi.org/10.1016/j.ssaho.2025.102259

Sullivan, M., Kelly, A., & McLaughlan, P. (2023). ChatGPT in higher education: Considerations for academic integrity and student learning. *Journal of Applied Learning & Teaching*, *6*(1), 31–40. https://doi.org/10.37074/jalt.2023.6.1.17

Susanti, S., & Nurhikmah, N. (2022). Improving Students' Reading Ability Through Retelling Technique. *Jurnal Dieksis ID*, *2*(2), 100–106. https://doi.org/10.54065/dieksis.2.2.2022.196

Waltzer, T., Pilegard, C., & Heyman, G. D. (2024). Can you spot the bot? Identifying AI-generated writing in college essays. *International Journal for Educational Integrity*, *20*(11), 1–18. https://doi.org/10.1007/s40979-024-00158-3

Wolff, B., Mahoney, F., Lohiniva, A. L., & Corkum, M. (2019). Collecting and analyzing qualitative data. *The CDC Field Epidemiology Manual; Oxford University Press: Oxford, UK; New York, NY, USA*, 213-228. . https://doi.org/10.1093/oso/9780190933692.003.0010