EFL LECTURERS' READINESS FOR DIGITAL READING MATERIALS: ATTITUDES, BARRIERS, AND INSTITUTIONAL SUPPORT IN HIGHER EDUCATION

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Abstract

The growing availability of digital technologies in higher education has expanded access to learning resources, but it has not necessarily resulted in pedagogically meaningful digital reading instruction. This study investigated the digital pedagogical readiness of EFL lecturers by examining their technical competence, attitudes toward digital materials, and perceived implementation barriers. A descriptive mixed-methods design was employed with EFL lecturers from two higher education institutions in Central Java, Indonesia. Quantitative data were collected through a structured questionnaire, while qualitative data were obtained through semi-structured interviews with four lecturers. The findings revealed a digital readiness paradox: lecturers demonstrated relatively strong operational competence and highly positive attitudes toward digital materials, yet substantial resource and institutional barriers constrained implementation. Ninety percent considered digital teaching materials very important, 87% expressed strong interest in using them, and 100% believed that digital materials could change how students learn. However, 87% frequently experienced a lack of digital teaching materials, while 63% reported insufficient supporting software or websites and 60% insufficient technical support. Interview findings further indicated limited access to curated digital resources, inadequate integration of contemporary issues, insufficient representation of digital culture, and limited training for AI-supported reading instruction. The findings indicate that digital readiness extends beyond technical competence to include pedagogical, curricular, and institutional conditions. The resulting pedagogical readiness framework distinguishes access readiness from instructional readiness and provides a foundation for aligning lecturer competence, digital resources, institutional support, and pedagogical design in digital reading instruction.

Keywords: digital reading; EFL lecturers; digital pedagogical readiness; digital learning materials; higher education; teacher digital competence; learning analytics

INTRODUCTION

Digital transformation has become an important dimension of higher education, expanding how students access and engage with learning resources through learning management systems, e-books, smartphones, multimedia resources, and online platforms. In EFL contexts, these technologies are particularly relevant because language learning increasingly involves digital and multimodal texts. However, technology availability does not automatically result in meaningful pedagogical integration. Recent studies emphasize that lecturers' digital competence involves not only technical skills but also pedagogical knowledge, attitudes, and the capacity to integrate technology into teaching practices (Basilotta-Gómez-Pablos et al., 2022; Peters et al., 2022). This distinction echoes the long-standing Technological Pedagogical Content Knowledge (TPACK) framework, which conceptualizes effective technology integration as the intersection of technological, pedagogical, and content knowledge rather than technical skill alone (Mishra & Koehler, 2006).

This issue is particularly important in digital reading instruction, where flexible access to texts does not by itself guarantee effective learning. As detailed in the Literature Review below, existing research has largely examined the effectiveness of specific digital reading tools, the digital literacy of Indonesian EFL students, and lecturers' general digital competence as separate lines of inquiry. What remains insufficiently explored is how EFL lecturers' technical and pedagogical readiness for digital reading instruction can be understood as a distinct, integrated construct, and how this readiness relates to the future role of Learning Analytics (LA) in supporting more personalized reading instruction. This gap is particularly relevant in contexts where students demonstrate substantial digital engagement while lecturers may experience limitations in resources, technical support, and pedagogical preparation.

The Indonesian context illustrates this potential mismatch. In the present study, most students reported frequent or very frequent use of online platforms for learning English and for submitting assignments, while lecturers demonstrated relatively strong operational competence and positive attitudes toward digital materials. Nevertheless, lecturers frequently reported a lack of digital teaching materials, insufficient supporting software or websites, and inadequate technical support. Interviews further revealed limited access to curated resources, inadequate integration of contemporary issues and digital culture, and limited training for AI-supported reading instruction. This combination indicates a digital readiness paradox, in which lecturers may be technically capable and positively disposed toward digital materials while the conditions for sustained pedagogical implementation remain inadequate.

Accordingly, this study investigates the digital pedagogical readiness of EFL lecturers by examining their technical competence, attitudes toward digital teaching materials, and implementation barriers, while exploring how these conditions can inform a pedagogical readiness framework for digital reading. Specifically, this study addresses the following research questions: (1) What is the level of EFL lecturers' technical in using digital technology for teaching? (2) What attitudes do lecturers hold toward digital teaching materials? (3) What barriers do lecturers perceive in implementing digital reading materials? (4) To what extent are students digitally engaged in academic activities, and how does this relate to lecturers' readiness? Rather than evaluating the effectiveness of a specific digital reading product, the study focuses on the conditions

required for future personalized and data-informed reading instruction. It contributes a framework that distinguishes access and operational readiness from pedagogical and institutional readiness, providing a conceptual foundation for the future integration of learning analytics into more responsive EFL digital reading environments.

LITERATURE REVIEW

Digital Transformation and Teachers' Digital Competence in Higher Education

Teachers' digital competence is widely conceptualized as extending beyond the operational ability to use digital tools to include pedagogical knowledge and the capacity to embed technology meaningfully within instructional design (Basilotta-Gómez-Pablos et al., 2022; Peters et al., 2022). The TPACK framework similarly frames effective technology integration as the intersection of technological, pedagogical, and content knowledge, rather than technical proficiency alone (Mishra & Koehler, 2006). Systematic reviews of standards for teacher digital competence in higher education further indicate that institutions increasingly expect lecturers to demonstrate competence across technical, pedagogical, and evaluative dimensions, yet report considerable variability in how these standards are operationalized and assessed across contexts (Basantes-Andrade et al., 2022; Saltos-Rivas et al., 2023). This variability aligns with earlier, broader findings that a lack of confidence, competence, and access to appropriate resources remain the most persistent barriers to technology integration in education (Bingimlas, 2009). Recent evidence on teacher professional development (TPD) further shows that programs are most effective in shifting attitudes and practice when they are customized to teachers' needs, combine hands-on digital training with ongoing mentorship, and are embedded within sustained institutional support, rather than delivered as one-off technical workshops (Amemasor et al., 2025). This body of work suggests that lecturers' digital readiness should be examined as a multidimensional construct that includes not only technical skill but also pedagogical design capacity and the institutional conditions that sustain it.

Digital Reading Instruction in EFL Contexts

Empirical studies in EFL settings show that digital reading tools can meaningfully improve comprehension, vocabulary acquisition, and reading engagement when they are pedagogically well-designed (Noori, 2025), and that the reading medium itself shapes learners' comprehension outcomes and attitudes toward reading (Almadhi & Alanazi,

2024). At the same time, a large-scale meta-analysis comparing paper- and screen-based reading found a consistent, if moderate, comprehension advantage for reading on paper, an advantage that becomes more pronounced under time-constrained reading conditions (Delgado et al., 2018). Taken together, these findings imply that digitizing reading materials is not pedagogically neutral: without deliberate instructional design, such as scaffolding, annotation support, and interactive comprehension activities, digital reading materials may not automatically translate into improved learning outcomes, which reinforces the importance of lecturers' pedagogical readiness rather than digital access alone. In the Indonesian context specifically, digital extensive reading has expanded rapidly through various applications and online platforms, yet its implementation remains uneven across institutions (Janah, 2022), underscoring the need to examine the readiness of the lecturers who are expected to design and facilitate this instruction.

Digital Literacy, Critical Reading, and Institutional Barriers in Indonesian EFL Higher Education

Research on digital literacy implementation in Indonesian EFL classrooms indicates that EFL students' ability to critically evaluate and engage with digital reading materials is still developing (Novita & Putri, 2022; Silvhiany et al., 2021). Complementary studies have repeatedly identified limited access to digital tools, insufficient institutional support, and gaps in both teachers' and students' digital skills as persistent obstacles to digital literacy implementation (Purmayanti, 2022; Rini & Nabhan, 2023). Notably, this research has largely focused on students' skills and classroom-level barriers rather than on lecturers' own readiness to design and deliver digital reading instruction, leaving open the question of how lecturer-level technical and pedagogical readiness relates to these classroom-level constraints.

Learning Analytics and the Future of Personalized Digital Reading

Learning Analytics (LA) can, in principle, provide information about students' performance and learning behavior to support instructional decisions and content adaptation. However, recent research indicates that the connection between learning analytics and pedagogical design remains insufficiently developed (Drugova et al., 2024), while learning analytics dashboards increasingly need to move beyond data visualization toward meaningful support for learning processes and pedagogical decisions (Paulsen & Lindsay, 2024). This concern is consistent with broader trends in technology-enhanced adaptive and personalized learning, where the volume of research has grown substantially

without a corresponding consensus on how personalization should be designed and implemented in practice (Xie et al., 2019). Bernacki et al. (2021) similarly argue that research on personalized learning needs greater clarity regarding who personalizes learning, to what aspect of learning, through what mechanism, and for what purpose, given the wide variability in how personalization is defined and operationalized. Framed in these terms, the present study addresses the questions of by whom and how digital reading can be made more responsive, by examining lecturers' readiness as the human and institutional precondition for any future learning-analytics-informed personalization of reading content.

Synthesis and Conceptual Positioning

Across these strands of literature, teacher digital competence, digital reading design, and learning analytics have largely been examined as separate lines of inquiry. Studies on digital reading in EFL have primarily evaluated the effectiveness of specific tools or media on student outcomes (Almadhi & Alanazi, 2024; Noori, 2025); research on digital literacy in Indonesian EFL classrooms has focused mainly on students' skills and classroom-level barriers (Novita & Putri, 2022; Purmayanti, 2022; Rini & Nabhan, 2023; Silvhiany et al., 2021); and research on teacher digital competence has largely examined readiness at a general higher-education level rather than in relation to reading instruction specifically (Basilotta-Gómez-Pablos et al., 2022; Saltos-Rivas et al., 2023). To date, no study appears to have examined EFL lecturers' technical and pedagogical readiness for digital reading instruction as a distinct, integrated construct, nor connected this readiness to the future role of learning analytics in supporting more personalized reading instruction. This synthesis provides the conceptual foundation for the present study, which develops a pedagogical readiness framework distinguishing access and operational readiness from pedagogical and institutional readiness, directly addressing the intersection of lecturer readiness, digital reading resources, institutional support, and future analytics-informed personalization identified as underexplored above.

RESEARCH METHOD

This study employed a descriptive mixed-methods design to examine EFL lecturers' readiness to integrate digital reading materials. Four English lecturers teaching reading-related courses at two higher education institutions in Surakarta participated in the study

through questionnaires and semi-structured interviews. The questionnaire focused on technical readiness, attitudes toward digital materials, and implementation barriers, while the interviews explored current reading-material practices, access to digital resources, integration of contemporary issues and digital culture, critical-reading instruction, digital source-supported reading instruction, and institutional support. Quantitative data were analyzed using descriptive percentages, while qualitative data were analyzed thematically based on recurring issues. The findings from both data sources were then integrated to provide a comprehensive understanding of lecturers' digital pedagogical readiness.

RESULTS AND DISCUSSION

The findings highlight lecturers' digital readiness in terms of technical competence, attitudes, implementation barriers, and students' digital engagement, complemented by insights from lecturer interviews. The findings are discussed to identify key implications for the effective integration of digital reading materials.

Table 1. Lecturers' Technical Readiness in Using Digital Technology

Indicator	Very Good	Good	Sufficient	Unable
Using technology to support teaching	0%	70%	30%	0%

Indicator	Very Good	Good	Sufficient	Unable
Integrating technology into curriculum	0%	75%	25%	0%
Managing time in technology-supported classes	0%	80%	20%	0%
Planning technology-supported teaching	0%	50%	50%	0%
Managing technology-supported learning	0%	50%	50%	0%
Downloading/uploading files	100%	0%	0%	0%
Using PDF software	0%	90%	10%	0%
Using e-books	0%	90%	10%	0%
Using e-book software	0%	75%	25%	0%
Communicating through e-book software	0%	50%	50%	0%

The findings indicate a gap between operational and pedagogical readiness. Although the lecturers are generally capable of using digital tools, their readiness is less developed when technology needs to be integrated into lesson planning and learning management. This suggests that professional development should extend beyond technical skills to include digital instructional design and pedagogical integration, consistent with evidence that effective TPD combines hands-on training with sustained mentorship and institutional support rather than one-off technical sessions (Amemasor et al., 2025).

Table 2. Lecturers' Attitudes toward Digital Teaching Materials

Statement	Strongly Agree	Agree
Digital teaching materials are very important	90%	10%
I am interested in using digital materials	87%	13%
I feel comfortable using digital materials	80%	20%
Digital materials are valuable for lecturers	90%	10%
Digital materials increase my enthusiasm	87%	13%

Statement	Strongly Agree	Agree
Digital materials will change student learning	100%	0%
Digital materials help students understand concepts	25%	75%
Digital materials increase student activity	75%	25%

The findings indicate a strong positive orientation toward digital teaching materials, suggesting that lecturers are generally receptive to their integration into EFL instruction. This indicates that the main challenge is unlikely to be lecturers' willingness to adopt digital materials, but rather their capacity to translate positive perceptions into effective pedagogical practices. The findings also suggest that while lecturers broadly recognize the potential of digital materials to influence learning, further support may be needed to strengthen their understanding of how digital resources can be purposefully designed and integrated to enhance students' learning experiences.

Table 3. Perceived Barriers to Digital Material Implementation

Barrier	Frequently	Sometimes	Rarely
Lack of technical support	60%	40%	0%
Lack of classroom time	0%	55%	45%
Limited knowledge of digital-material integration	0%	45%	55%
Lack of supporting software/websites	63%	37%	0%
Lack of digital teaching materials	87%	13%	0%

The findings suggest that the main barriers to digital implementation are related to resources and support rather than lecturers' knowledge. The lack of digital teaching materials, supporting software or websites, and technical support appears to make digital implementation more difficult. In contrast, limited knowledge of digital-material integration is less frequently reported as a barrier. This suggests that lecturers already have a basic foundation for using digital materials, but they need better access to suitable resources, technical support, and institutional facilities to use them effectively in their teaching.

Table 4. Students' Engagement with Digital Academic Activities

Academic Activity	Very Frequent	Frequent	Combined
Learning English through online platforms	39.5%	42.5%	82.0%
Developing English skills	31.1%	50.9%	82.0%
Completing lecturer assignments	38.9%	49.7%	88.6%
Submitting assignments	64.7%	30.5%	95.2%
Discussing assignments	41.3%	47.3%	88.6%

The findings suggest that digital technology has already become a routine part of students' academic practices. However, the high level of digital engagement does not necessarily indicate meaningful or higher-order learning. The pattern may suggest that students are more accustomed to using technology for task-oriented activities than for deeper learning processes. Therefore, the key issue is no longer students' access to or familiarity with digital technology, but how existing digital practices can be transformed into more meaningful learning experiences, particularly through critical and interactive digital reading activities.

Insights from Lecturer Interviews

The interviews revealed five interconnected issues: limited access to appropriate learning resources, insufficient integration of contemporary issues, limited representation of digital culture, insufficient depth in critical-reading activities, and emerging needs for online digital training. The lecturers reported that the available reading materials did not adequately address relevant topics such as sustainability, critical discussion, and local and global social culture. In addition, reading activities tended to focus on basic comprehension rather than encouraging deeper analysis and critical engagement, a pattern consistent with prior findings that Indonesian EFL students' critical digital literacy remains an area requiring further pedagogical attention (Novita & Putri, 2022; Silvhiany et al., 2021).

Overall, these findings show that lecturers are technically ready and positively disposed toward digital teaching materials, but this readiness has not yet translated into

strong pedagogical integration, largely due to limited resources, software, and technical support rather than a lack of knowledge or motivation. Students, for their part, are already highly engaged with digital technology, though mostly for task completion rather than deeper learning. Combined with the interview findings, this suggests that the main obstacle to integrating digital reading materials is not access or willingness, but the availability of well-designed, contextually relevant materials and adequate institutional support to help lecturers turn their positive attitudes into effective classroom practice.

CONCLUSIONS

The findings indicate that EFL lecturers generally possess adequate technical skills and hold a positive attitude toward digital teaching materials. The challenges they face do not appear to stem primarily from a lack of competence or willingness, but rather from limited institutional support, including the availability of suitable digital reading resources, supporting software, and technical assistance. Students, for their part, were found to use digital technology frequently, although this use is more closely associated with completing and submitting assignments than with deeper, critical, and reflective reading activities. These findings point to the need for improved access to curated digital reading resources as well as more adequate technical support. Professional development programs for lecturers should be designed to go beyond basic technological training and place greater emphasis on the design and management of digital reading instruction, including the integration of contemporary issues and activities that foster critical reading skills, rather than focusing solely on literal comprehension. Lecturers also need to be equipped with practical strategies to direct students' digital habits toward more purposeful and meaningful learning activities. The final conclusion that can be drawn from these findings is that there is a need for an online digital medium tailored to students' interests, one that can support them in developing critical thinking skills anytime and anywhere. Future research may build on the pedagogical readiness framework proposed here to design and test learning-analytics-informed digital reading materials in EFL higher education settings.

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