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Evaluating LMS-Based Extensive Reading Activities' Impact on Islamic Undergraduate Non-English Majors' Comprehension and Engagement

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Abstract. Extensive reading (ER) is widely recognized for improving reading comprehension and engagement; however, research on its effectiveness within Learning Management System (LMS)-based instruction for Islamic undergraduate students in non-English departments remains limited. Many first-year students at STAI Diponegoro Tulungagung, Indonesia, struggle with academic reading due to limited vocabulary exposure, lack of motivation, and inadequate reading strategies. To address this gap, this study investigates the effectiveness of LMS-based extensive reading activities in enhancing reading comprehension and engagement among non-English major Islamic undergraduate students. Employing a sequential mixed-methods approach, the study involved 35 first-semester students participating in an ER program integrated into an LMS. Data were collected through pre- and post-tests to assess reading comprehension progress and a closed-ended questionnaire measuring engagement across key dimensions: motivation, reading strategies, and perceived challenges. Findings indicate that LMS-based ER activities enhanced students' comprehension, particularly in identifying main ideas and contextual meaning inference, supporting the role of structured digital reading tasks. Participants reported increased motivation and engagement, particularly due to the accessibility of materials, self-paced learning, and interactive LMS features. However, some students struggled with content overload, digital distractions, and difficulties in sustaining motivation without direct instructor intervention. Additionally, technical challenges such as internet instability and limited LMS familiarity hindered some students' experiences. The study underscores the benefits and challenges of LMS-based ER for non-English major Islamic students, highlighting the need for adaptive support to sustain engagement and reading proficiency. Future research should focus on long-term implementation and instructional enhancements for optimized digital ER.

Keywords: Extensive reading, LMS, reading, Islamic undergraduate students, non-English majors

INTRODUCTION

Extensive reading (ER) has been widely recognized as a powerful approach for improving reading comprehension, vocabulary acquisition, and overall language proficiency. Unlike intensive reading, which focuses on detailed text analysis, ER encourages learners to read large volumes of comprehensible material, fostering fluency and motivation (Alajaili & Barella, 2023). Within English as a Foreign Language (EFL) context, ER has demonstrated significant benefits, particularly in enhancing students' ability to process texts more efficiently and develop positive reading habits (Dardjito et al, 2023; Renandya et al., 2021). The integration of ER into digital learning environments, particularly through Learning Management Systems (LMS), has significantly enhanced accessibility and interactivity compared to traditional print-based ER. While print-based ER offers tangible engagement and a distraction-free reading experience, digital ER via LMS provides structured, self-paced access to diverse reading materials, along with interactive features such as progress tracking, multimedia support, and instant feedback, which can further support student engagement and comprehension (Liu et al., 2023). However, while LMS-based ER has been extensively examined in general EFL contexts, its effectiveness for Islamic undergraduate students in non-English departments remains underexplored. These students often encounter unique linguistic and academic challenges, such as limited exposure to English, lower intrinsic motivation for language learning, and difficulties in adapting to digital reading platforms (Elturki & Harmon, 2020; Samaraweera, 2024). The present study aims to address this gap by investigating the impact of LMS-based ER on the reading comprehension and engagement of first-semester non-English major students at STAI Diponegoro Tulungagung, Indonesia.

Despite the growing body of research on ER, several critical gaps persist, particularly in its application to Islamic undergraduate students outside English departments. Previous studies have demonstrated that ER improves EFL learners' comprehension skills, increases lexical knowledge, and fosters more positive attitudes toward reading (Jalil,2024; Terasne et al., 2023). However, these studies primarily focus on English majors or secondary school students, leaving a significant gap regarding non-English major students, who often exhibit lower language proficiency and reading motivation (Hidayati, 2024; Slamet et al., 2025; Yamashita, 2013). Moreover, in Islamic higher education institutions, where English is primarily taught as a supplementary skill rather than a core subject, students may lack the exposure and structured support needed for effective ER implementation (Fatimah et al., 2020; Samaraweera, 2024). Research suggests that non-English majors struggle with extensive reading due to the absence of explicit reading strategy instruction, difficulty in selecting appropriate texts, and limited engagement with digital learning tools (Romsi et al., 2024; Slamet & Basthomi, 2024; Terasne et al., 2023). These issues highlight the need to examine how LMS-based ER can be tailored to address the specific needs of Islamic undergraduate students in non-English disciplines, ensuring that the approach is both pedagogically effective and contextually relevant.

Furthermore, while LMS platforms have been widely adopted in EFL instruction, their role in supporting ER among non-English majors remains inadequately explored. Studies on LMS-integrated reading programs have shown promising results, indicating that digital platforms provide flexibility, accessibility, and interactive features that enhance reading engagement (Zhao & Yang, 2022). However, research also points to several challenges, including students' digital literacy limitations, issues with online distractions, and the need for more structured guidance to sustain engagement (Slamet, 2024; Slamet et al., 2024b, 2024a; Slamet & Mukminatien, 2024). In the context of Islamic higher education, where students may have limited prior exposure to LMS-based learning, these challenges become even more pronounced. A study by Nur et al. (2022) found that Islamic university students often struggle with independent online learning due to unfamiliarity with digital tools and

the lack of instructor support. Additionally, many LMS platforms primarily cater to intensive reading activities, focusing on comprehension quizzes and vocabulary exercises rather than fostering extensive reading habits (J. P. Widodo et al., 2022, 2023; P. Widodo et al., 2023). These factors indicate a pressing need to investigate whether LMS-based ER can effectively address the reading difficulties faced by Islamic undergraduate students in non-English departments while mitigating potential digital learning barriers.

Another key issue concerns student engagement, a critical factor influencing the success of ER programs. Motivation and engagement have been extensively studied in the context of ER, with findings consistently highlighting their importance in sustaining long-term reading habits (Renandya et al., 2021). However, non-English major students, particularly those in Islamic universities, often exhibit lower intrinsic motivation for reading in English, viewing it as a secondary academic requirement rather than a meaningful skill for their professional and personal development (Terasne et al., 2023). Research suggests that LMS-based learning environments can enhance motivation by incorporating interactive elements such as progress tracking, peer discussions, and gamification (Syamsuddin, 2021). Yet, despite these potential advantages, studies have also revealed that digital platforms alone may not be sufficient to sustain engagement, particularly for students with lower self-regulated learning abilities (Pongsatornpipat, 2022; Slamet & Basthmi, 2024). For Islamic undergraduate students, factors such as text difficulty, unfamiliar cultural references, and a lack of immediate instructor feedback can further reduce their willingness to engage in ER activities (Li et al., 2021). Given these complexities, it is essential to examine how LMS-based ER influences engagement levels among non-English major students, focusing on both the enablers and barriers that affect their reading behaviors. Features such as personalized reading recommendations, progress tracking, and interactive annotations can enhance engagement by supporting self-paced learning and improving comprehension. Conversely, challenges such as complex navigation, limited accessibility to diverse reading materials, and the absence of interactive feedback may hinder students' motivation and participation.

In light of these identified gaps, the present study seeks to provide a comprehensive investigation into the effectiveness of LMS-based ER for Islamic undergraduate students in non-English departments. While existing research confirms the benefits of ER in general EFL contexts, its applicability to non-English majors, particularly in Islamic institutions, remains insufficiently explored. Moreover, although LMS platforms have been recognized for their potential to support digital reading instruction, their effectiveness in sustaining ER engagement among this specific student demographic is unclear. Additionally, challenges related to digital literacy, motivation, and engagement require further examination to determine how LMS-based ER can be optimized for non-English major students in Islamic universities. Addressing these gaps, this study explores how LMS-based ER influences reading comprehension and engagement, not only by identifying its benefits and limitations but also by uncovering specific pedagogical strategies and LMS design features that enhance or hinder student engagement. By providing empirical insights into how non-English major students interact with digital ER, this study offers practical recommendations for optimizing LMS-based ER implementations, informing educators and instructional designers on how to refine digital reading environments for improved learning outcomes.

REVIEW OF LITERATURE

ER in EFL Contexts

ER has long been recognized as a key approach to fostering language acquisition and literacy development. Unlike intensive reading, which focuses on detailed linguistic analysis, ER encourages learners to read large amounts of comprehensible material, facilitating vocabulary growth, fluency,

and reading enjoyment (Fatimah, 2024; Liu et al., 2023). Studies have consistently shown that ER contributes to increased reading speed, improved text comprehension, and enhanced motivation for reading in EFL contexts (Renandya et al., 2021). Additionally, ER promotes incidental vocabulary acquisition, helping learners develop a deeper lexical repertoire through meaningful exposure rather than direct instruction (Huynh, 2022). ER has been widely incorporated into EFL curricula worldwide, demonstrating significant positive outcomes for language learners at various proficiency levels (Yen & Thao, 2021). Its benefits, including improved language skills and increased reading motivation, have been well-documented across multiple studies. However, despite its proven benefits, ER is often underutilized, particularly in contexts where English is not a primary subject of study, such as non-English departments in Islamic higher education institutions. Many students struggle with ER due to limited exposure to English texts, lack of motivation, and difficulty in selecting appropriate reading materials (Elturki & Harmon, 2020). Moreover, while ER has been effectively implemented in traditional classroom settings, its adaptation to digital learning environments, particularly LMS-based platforms, remains underexplored (Samaraweera, 2024). The effectiveness of ER in these settings is influenced by factors such as digital literacy, engagement levels, and the availability of interactive support mechanisms, all of which require further empirical investigation. Given these limitations, it is crucial to examine how LMS-based ER can be optimized to support non-English major students in Islamic universities, ensuring that its pedagogical benefits are fully realized in digital learning contexts.

LMS Integration in Reading Instruction

LMSs have transformed language education by offering structured and interactive learning environments. LMS platforms facilitate digital reading engagement by providing a wide range of texts, interactive assessments, and tracking tools to monitor student progress (Slamet et al., 2024a; Slamet & Mukminatien, 2024; J. P. Widodo et al., 2023). Studies have shown that LMS integration in reading instruction enhances learners' autonomy, engagement, and access to diverse reading materials, enabling a more flexible and student-centered learning experience (Romsi et al., 2024; Slamet & Basthomi, 2024; Widodo et al., 2022). In EFL contexts, LMS-based reading programs have been linked to improved comprehension skills and reading habits, as they allow students to practice extensive reading at their own pace while receiving automated feedback and progress reports (Abdolmaleki & Saeedi, 2024). Furthermore, the incorporation of multimedia resources such as audio-supported texts, discussion forums, and comprehension quizzes has been found to increase students' motivation and retention of reading content (Pongsatornpipat, 2022; Rupere & Jakovljevic, 2021). Despite these advantages, LMS-based ER remains an emerging area of research, with many unresolved challenges. One critical issue is students' varying levels of digital literacy, which can affect their ability to navigate LMS features effectively (Simanullang & Rajagukguk, 2020; Taufiqurrochman et al., 2020). Additionally, while LMS platforms provide structured reading environments, they may lack the interactive and immersive qualities needed to fully engage students in ER practices (Subiyantoro et al., 2024; Syamsuddin, 2021). Research suggests that digital reading can sometimes lead to superficial engagement, as students may skim through texts rather than develop deep reading comprehension skills (Mpungose & Khoza, 2022; Udin et al., 2022). Moreover, Islamic undergraduate students in non-English departments may face additional barriers in LMS-based ER, stemming from both linguistic and contextual factors. The integration of ER into an Islamic education setting often requires alignment with religious and cultural values, which may influence content selection and reading preferences. Additionally, students may have limited prior exposure to digital learning tools due to traditional pedagogical approaches that emphasize face-to-face instruction and printed texts. Combined with challenges such as limited English proficiency and difficulties in sustaining motivation for independent reading, these factors create a distinct learning environment that differs from general EFL settings (Slamet & Fatimah, 2022; Usri, 2022). These gaps highlight

the need for further studies examining how LMS-based ER can be tailored to the specific needs of these students, ensuring that it supports both comprehension and sustained engagement.

Reading Engagement in Digital Environments

Student engagement is a crucial factor in determining the success of any reading program, particularly in digital learning environments. Engagement in ER involves cognitive, behavioral, and affective dimensions, encompassing students' willingness to invest effort in reading, their active participation in learning activities, and their emotional connection to reading materials (Huynh, 2022; Liu et al., 2023). Research has shown that higher engagement levels lead to better reading comprehension and long-term reading habits, as engaged students are more likely to persevere through challenging texts and apply effective reading strategies (Elturki & Harmon, 2020; Terasne et al., 2023). In digital environments, LMS features such as gamification, progress tracking, and interactive discussions have been found to enhance engagement by making reading more dynamic and goal-oriented (Yen & Thao, 2021). However, digital reading engagement presents unique challenges, particularly for non-English major students in Islamic universities. Studies indicate that while some students benefit from the flexibility of LMS-based learning, others struggle with distractions, lack of direct instructor support, and reduced accountability (Renandya et al., 2021). Moreover, research has found that students from non-English departments often view reading in English as a secondary academic requirement rather than an intrinsic skill for their personal and professional development (Samaraweera, 2024). This lack of intrinsic motivation can result in low engagement, superficial reading practices, and minimal long-term benefits from ER programs (Li et al., 2021). Given these issues, it is essential to investigate the extent to which LMS-based ER fosters meaningful engagement among non-English major Islamic students and identify the specific factors that enhance or hinder their participation in digital reading activities.

Challenges of LMS-Based Extensive Reading for Non-English Majors

Despite the increasing adoption of LMS-based ER programs, several challenges hinder their effectiveness, particularly for non-English major students. One of the primary challenges is the difficulty in selecting appropriate reading materials that align with students' linguistic abilities and interests. Research indicates that students often struggle with ER due to text complexity, lack of culturally relevant content, and limited scaffolding to support comprehension (Renandya et al., 2021). Additionally, technical issues such as internet instability, unfamiliarity with LMS platforms, and difficulty in navigating digital tools have been identified as barriers to effective digital reading experiences (Samaraweera, 2024). Another significant challenge is the lack of direct instructor intervention in LMS-based ER. While LMS platforms offer automated assessments and progress tracking, students often require personalized feedback and guidance to develop effective reading strategies (Pongsatornpipat, 2022; Slamet & Mukminatien, 2024). Without active instructor involvement, many students may disengage from ER activities, treating them as optional rather than integral to their academic development (Syamsuddin, 2021). Furthermore, motivation and self-regulation remain key concerns, as many non-English major students lack the intrinsic drive and strategic competence needed for independent digital reading (Samaraweera, 2024; Terasne et al., 2023).

Given these challenges, it is evident that LMS-based ER requires contextualized instructional design and adaptive support mechanisms to be effective for non-English major Islamic undergraduate students. Existing research has yet to fully address how LMS-based ER can be optimized to accommodate the specific linguistic, motivational, and technical needs of these students. Thus, the present study seeks to bridge these gaps by examining the effectiveness of LMS-based ER in

enhancing reading comprehension and engagement, identifying the barriers students face, and proposing strategies to improve digital reading practices in Islamic higher education contexts.

METHOD

Research Design

This study employs a sequential mixed-methods design, integrating both quantitative and qualitative approaches to comprehensively examine the impact of LMS-based ER on reading comprehension and student engagement among first-semester Islamic undergraduate students in non-English departments. The mixed-methods approach is particularly suited to addressing the study's two research objectives: first, to investigate the extent to which LMS-based ER influences students' reading comprehension development; and second, to explore how LMS-based ER fosters engagement and sustained reading motivation in an EFL context. The sequential nature of the design ensures that the findings from the quantitative phase inform the qualitative phase, allowing for a deeper understanding of students' experiences. Quantitatively, the study utilizes a closed-ended questionnaire to measure students' perceptions of their reading progress, engagement, and challenges with LMS-based ER. This provides measurable insights into the effectiveness of LMS integration in supporting reading comprehension. The qualitative phase consists of structured interviews with selected participants to further explore their perspectives, addressing aspects that may not be fully captured in the survey data. This phase allows for a more nuanced understanding of how students interact with the LMS-based ER activities and what instructional or design elements may enhance or hinder their engagement. Through this mixed-methods approach, the study aims to triangulate findings from multiple data sources, ensuring a more robust and holistic analysis of LMS-based ER implementation in an Islamic higher education setting.

Participants

The study involved 35 first-semester students enrolled in non-English departments at STAI Diponegoro Tulungagung, Indonesia. This institution was selected due to its growing emphasis on digital learning tools within Islamic higher education, offering a relevant context to examine LMS-based ER implementation. Participants were chosen through purposive sampling, ensuring they met specific criteria: (1) they were first-year students with limited prior exposure to formal English extensive reading programs, (2) they were non-English majors, representing a group that traditionally faces challenges in engaging with English reading materials, and (3) they had actively participated in an LMS-integrated ER course throughout the semester. The decision to focus on first-year students was driven by the need to assess LMS-based ER at an early stage of academic development, where reading habits and engagement patterns are still forming. By examining their experiences, this study aims to identify potential early-stage barriers and opportunities that could inform instructional design for subsequent academic years. Table 1 presents a detailed demographic profile of the participants.

Table 1. Participant Demographics

Variable	Categories	Frequency (n = 35)	Percentage (%)
Gender	Male	18	51.4
	Female	17	48.6
Age	18-24 years	22	62.9
	25-34 years	13	37.1
	35 +	0	0

English Proficiency *(Self-reported)*	Beginner	19	54.3
	Intermediate	16	45.7
	Advanced	0	0.0

The self-reported English proficiency levels indicate that the majority of students assessed themselves as having low to intermediate proficiency, reinforcing the need for structured scaffolding in LMS-based ER activities. Their engagement with digital reading materials was shaped by their initial struggles with vocabulary, comprehension, and motivation, making them a relevant population for investigating the challenges and affordances of LMS-integrated ER.

Instruments

The study employs a closed-ended questionnaire and structured interviews as primary instruments for data collection. The quantitative instrument, a questionnaire, was adapted from previous validated studies on LMS-based language learning and extensive reading engagement (Dardjito et al, 2023; Slamet & Basthomi, 2024). The questionnaire measures student perceptions across three key dimensions:

- Reading Comprehension Development (perceived improvement in vocabulary, fluency, and text understanding)
- Engagement and Motivation (self-reported effort, participation in LMS activities, and interest in ER)
- Challenges and Barriers (difficulty in navigating LMS, motivation fluctuations, and comprehension struggles)

Each item was rated on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). Before implementation, the questionnaire was validated by three experts in digital language learning and reading pedagogy, ensuring content validity and clarity. A pilot test was conducted with 10 non-participant students to refine ambiguous items. The qualitative phase involved structured interviews with eight participants, selected based on their varying engagement levels with LMS-based ER. The interview questions aimed to explore students' experiences, including: their interaction with LMS-based ER tasks, difficulties encountered, the role of the LMS features in sustaining their motivation, their preferences for digital reading environments

Data Collection Procedures

The LMS-based ER activities were conducted over one semester (2 credits) in the course "Academic Reading for Islamic Studies". Students engaged with graded digital texts on the LMS, supplemented by interactive activities such as comprehension quizzes, forum discussions, and progress tracking. LMS features, summarized in Table 2, ensured a structured yet flexible reading experience.

Table 2. LMS Features and Weekly Activities Text

Week	Activity Type	Description of Activities	LMS Features Utilized	Objectives
1	Pre-Test & Orientation	- Pre-test (reading comprehension assessment) - LMS introduction: navigation, usage guidelines	- Online pre-test (MCQs & short answers) - LMS tutorial videos - Goal-setting dashboard	- Assess baseline reading proficiency - Familiarize students with LMS environment - Establish reading objectives

		- Setting individual reading goals		
2-4	Guided Reading & Vocabulary Building	- Assigned graded texts based on proficiency level - Annotating texts using LMS tools - Vocabulary exercises with AI-generated hints - Interactive glossaries and pronunciation guides	- Digital graded readers - Annotation tools - AI-powered vocabulary hints - Pronunciation support	- Develop reading fluency and comprehension - Enhance vocabulary retention through contextual exposure
5-6	Interactive Quizzes & Comprehension Checks	- Quizzes after each reading - AI-generated comprehension feedback - LMS tracking of reading progress	- Auto-graded comprehension quizzes - AI-driven feedback system - Reading analytics dashboard	- Assess reading comprehension in real time - Provide immediate formative feedback
7-8	Discussion Forums & Peer Interaction	- Weekly text-based discussions on LMS - Peer feedback on comprehension and opinions - Instructor-guided discussion prompts	- LMS forum with comment/reply threads - Peer rating system - Instructor moderation	- Enhance critical thinking through discussions - Encourage peer learning and engagement
9-10	Self-Paced Reading & Progress Monitoring	- Students select texts from LMS library - Self-tracking of reading progress - Automated recommendations based on reading history	- LMS library with personalized recommendations - Progress tracking dashboard	- Promote independent reading habits - Strengthen self-regulated learning skills
11-12	Collaborative Reading & Group Reflections	- Small group reading tasks - Peer discussions and reflection logs - Instructor-led Q&A sessions	- LMS collaborative workspace - Reflection log feature - Q&A session with instructor	- Encourage teamwork in reading analysis - Foster deeper engagement through peer interactions
13-14	Reflection & Self-Assessment	- Students evaluate their reading improvements - LMS self-reflection questionnaire - Identifying strengths and areas for improvement	- Self-assessment quizzes - Progress review analytics	- Encourage metacognitive awareness in reading - Guide students in setting future reading goals
15-16	Post-Test & Final Evaluation	- Post-test (reading comprehension assessment) - Course review and individual feedback - Final reflection on LMS-based ER experience	- Online post-test (MCQs & short answers) - Personalized feedback reports - Course evaluation survey	- Measure reading progress compared to pre-test - Evaluate course effectiveness and student experience

Data Analysis

Quantitative data were analyzed using SPSS 27, applying descriptive statistics to measure trends in reading comprehension, engagement, and challenges. The reliability of the questionnaire

was tested using Cronbach's alpha, ensuring internal consistency across dimensions. The qualitative data from interviews were transcribed and analyzed thematically, identifying emerging patterns related to student engagement, difficulties, and LMS effectiveness.

Ethical Considerations

Ethical approval was obtained from the Ethics Committee of STAI Diponegoro Tulungagung, ensuring compliance with research ethics. Participants provided informed consent, guaranteeing voluntary participation, anonymity, and confidentiality. The study adhered to ethical guidelines for educational research, prioritizing transparency and student well-being throughout data collection.

RESULTS

Reading comprehension and engagement are central to language acquisition, particularly in contexts where students have limited exposure to English outside the classroom. This study examines how LMS-based ER impacts these two aspects by comparing pre-test and post-test scores, followed by an in-depth analysis of student engagement through LMS activity tracking. The findings provide insights into the effectiveness of digital ER practices in enhancing students' reading proficiency and fostering consistent engagement throughout the semester.

Effects of LMS-Based Extensive Reading on Reading Comprehension

A comparison of pre-test and post-test scores was conducted to determine the impact of LMS-based ER on students' reading comprehension. The pre-test assessed students' initial proficiency in terms of word recognition, sentence understanding, inferencing, and overall text comprehension, while the post-test evaluated the same components after 16 weeks of LMS-based ER activities. The results are presented in Table 3.

Table 3. Pre-Test and Post-Test Scores of Reading Comprehension

Reading Component	Pre-Test Mean (SD)	Post-Test Mean (SD)	Difference	Interpretation
Word Recognition	56.4 (9.2)	72.1 (8.5)	+15.7	Significant improvement in decoding and recognizing words
Sentence Understanding	58.7 (10.1)	74.3 (9.4)	+15.6	Increased ability to comprehend sentence structures
Inferencing Skills	52.3 (8.7)	68.9 (9.1)	+16.6	Enhanced ability to make logical connections within texts
Overall Text Comprehension	54.2 (9.5)	71.5 (8.9)	+17.3	Notable improvement in extracting and interpreting meaning
Total Score	55.4 (9.4)	71.7 (9.0)	+16.3	Overall growth in reading comprehension proficiency

The pre-test and post-test results indicate a notable improvement in students' reading comprehension abilities following their engagement with LMS-based ER. Across all assessed

components, students demonstrated statistically significant gains, with the total score increasing by 16.3 points from the pre-test (M = 55.4, SD = 9.4) to the post-test (M = 71.7, SD = 9.0). The most substantial progress was observed in overall text comprehension (+17.3 points), suggesting that prolonged exposure to digital reading materials, guided exercises, and interactive LMS features contributed to better meaning extraction and interpretation skills. Similarly, inferencing skills (+16.6 points) showed considerable improvement, reflecting students' enhanced ability to connect textual information, draw logical conclusions, and make predictions—a crucial aspect of deep reading engagement. Sentence understanding (+15.6 points) and word recognition (+15.7 points) also demonstrated strong upward trends, indicating that structured reading tasks, AI-assisted vocabulary support, and comprehension quizzes effectively reinforced students' syntactic processing and decoding skills. These findings justify the role of LMS-integrated ER in fostering reading proficiency, as the platform provided structured, engaging, and self-paced learning experiences, enabling students to actively construct meaning rather than passively consume texts. However, while improvements were evident across all components, the data also highlight the need for continued scaffolding and differentiated instruction to further enhance inferencing skills and reading fluency, particularly for students who may require additional cognitive support in processing complex texts.

Effects of LMS-Based Extensive Reading on Student Engagement

Beyond reading comprehension, this study also examined the extent to which LMS-based ER influenced students' reading engagement throughout the semester. LMS activity tracking provided insights into students' reading frequency, quiz participation, and interaction in discussion forums. Table 4 summarizes the engagement trends over 16 weeks.

Table 4. Student Engagement in LMS-Based Extensive Reading

Engagement Indicator	Weeks 1-4	Weeks 5-8	Weeks 9-12	Weeks 13-16	Overall Trend
Reading Frequency (Avg. texts read per student)	3.1	4.5	5.2	5.7	Increased engagement over time
Quiz Participation (%)	68%	74%	82%	85%	Steady rise in quiz attempts
Forum Participation (Avg. posts per student)	2.4	3.1	3.8	4.2	Growing willingness to interact with peers
Self-Paced Reading Completion (%)	45%	61%	78%	83%	Higher engagement with independent reading

The engagement data from Table 4 illustrates a progressive increase in student participation and interaction within the LMS-based ER environment over the semester. Reading frequency consistently grew, with students reading an average of 3.1 texts in Weeks 1–4 and increasing to 5.7 texts by Weeks 13–16, indicating that exposure to structured ER activities fostered habitual reading behavior. Similarly, quiz participation followed an upward trajectory, rising from 68% in the initial weeks to 85% in the final phase, reflecting students' increased motivation to assess their comprehension and engage with formative feedback. Forum participation, measured by the average number of posts per student, also saw a steady increase (2.4 posts in the first phase to 4.2 posts in the

final weeks), suggesting that peer discussions became a more integral part of the reading process, likely enhancing critical engagement with texts. Additionally, self-paced reading completion improved significantly, with only 45% of students completing independent reading tasks in the early weeks, compared to 83% by the final phase, highlighting an increasing sense of autonomy and self-regulated learning. These trends suggest that LMS-based ER not only facilitated structured engagement but also nurtured student-driven learning behaviors, allowing for gradual adaptation to digital reading practices. However, while overall engagement improved, early-phase participation in quizzes and self-paced reading was relatively low, emphasizing the need for stronger initial scaffolding, motivation strategies, and support mechanisms to ensure more immediate and consistent engagement from the outset.

Furthermore, we conducted the survey from the questionnaire aimed to measure student perceptions of LMS-based ER across three core dimensions: Reading Comprehension Development, Engagement and Motivation, and Challenges and Barriers. Each item was rated on a five-point Likert scale, with responses categorized as Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A), and Strongly Agree (SA). The results are presented in Table 5.

Table 5. Student Perceptions of LMS-Based Extensive Reading *(n = 35)*

Dimension	No	Item	SD *(n, f)*	D *(n, f)*	N *(n, f)*	A *(n, f)*	SA *(n, f)*	Mean	Std. Dev
Reading Comprehension Development	1	I improve my vocabulary through LMS-based reading.	1 (2.9%)	2 (5.7%)	3 (8.6%)	19 (54.3%)	10 (28.6%)	4.00	0.93
	2	I read texts more fluently after using LMS.	2 (5.7%)	3 (8.6%)	5 (14.3%)	17 (48.6%)	8 (22.9%)	3.74	1.02
	3	I understand complex texts better after LMS practice.	2 (5.7%)	4 (11.4%)	4 (11.4%)	18 (51.4%)	7 (20.0%)	3.69	1.04
	4	I recall details from texts more accurately.	1 (2.9%)	3 (8.6%)	6 (17.1%)	16 (45.7%)	9 (25.7%)	3.83	0.98
	5	I summarize texts better after LMS activities.	1 (2.9%)	4 (11.4%)	5 (14.3%)	19 (54.3%)	6 (17.1%)	3.71	0.99
Engagement and Motivation	6	I read consistently due to LMS tracking.	2 (5.7%)	3 (8.6%)	4 (11.4%)	17 (48.6%)	9 (25.7%)	3.80	1.02
	7	I enjoy interactive features like quizzes and discussions.	1 (2.9%)	4 (11.4%)	3 (8.6%)	18 (51.4%)	9 (25.7%)	3.86	0.98

	8	I feel motivated to read due to immediate feedback.	2 (5.7%)	3 (8.6%)	4 (11.4%)	19 (54.3%)	7 (20.0%)	3.74	1.02
	9	I participate in LMS activities without external pressure.	3 (8.6%)	5 (14.3%)	6 (17.1%)	15 (42.9%)	6 (17.1%)	3.46	1.14
	10	I prefer LMS-based reading over traditional reading.	4 (11.4%)	6 (17.1%)	5 (14.3%)	13 (37.1%)	7 (20.0%)	3.37	1.26
Challenges and Barriers	11	I struggle to maintain focus while reading on LMS.	6 (17.1%)	7 (20.0%)	4 (11.4%)	12 (34.3%)	6 (17.1%)	3.14	1.30
	12	I experience difficulties in understanding some digital reading materials.	4 (11.4%)	7 (20.0%)	5 (14.3%)	12 (34.3%)	7 (20.0%)	3.31	1.28
	13	I find LMS navigation challenging when accessing readings.	5 (14.3%)	6 (17.1%)	5 (14.3%)	13 (37.1%)	6 (17.1%)	3.26	1.28
	14	I sometimes lack motivation to complete reading tasks.	3 (8.6%)	7 (20.0%)	6 (17.1%)	14 (40.0%)	5 (14.3%)	3.31	1.18
	15	I feel overwhelmed by the number of texts assigned.	6 (17.1%)	7 (20.0%)	5 (14.3%)	11 (31.4%)	6 (17.1%)	3.11	1.30

The findings indicate positive student perceptions of LMS-based ER, with notable improvements in reading comprehension, motivation, and engagement, though some challenges were also identified. In reading comprehension development dimension, the students reported significant vocabulary enhancement (M = 4.00, SD = 0.93), with over 80% agreeing or strongly agreeing that LMS reading improved their word recognition. Additionally, comprehension skills improved, particularly in recalling details (M = 3.83, SD = 0.98) and understanding complex texts (M = 3.69, SD = 1.04). The guided reading phases in early weeks likely contributed to this growth, allowing

students to gradually develop fluency and comprehension strategies. Then, in engagement and motivation dimension, a majority of students (M = 3.80, SD = 1.02) acknowledged that LMS tracking encouraged consistent reading habits, reinforcing the role of automated progress tracking as a motivational tool. Features like quizzes, discussions, and AI feedback (M = 3.86, SD = 0.98) were widely appreciated, suggesting that interactive engagement elements play a crucial role in sustaining reading interest. However, some students (M = 3.46, SD = 1.14) admitted they engaged in LMS activities only when required, indicating that self-driven motivation remains an area for improvement. Lastly, in challenges and barriers dimension, although students recognized LMS benefits, some difficulties persisted. Digital text comprehension (M = 3.31, SD = 1.28) and navigation challenges (M = 3.26, SD = 1.28) were cited as obstacles, particularly among those less familiar with digital learning environments. Additionally, motivation fluctuations (M = 3.31, SD = 1.18) and reading workload concerns (M = 3.11, SD = 1.30) suggest that not all students fully adapted to the LMS-based ER approach. Overall, the results confirm that LMS-based ER effectively enhances reading comprehension and engagement, though sustained motivation and navigation ease remain areas requiring further instructional support. Future implementations should consider adaptive scaffolding mechanisms to assist struggling students and integrated gamification elements to further drive motivation.

DISCUSSION

The findings of this study provide compelling evidence for the effectiveness of LMS-based ER in improving reading comprehension and student engagement among Islamic undergraduate students in non-English departments. The results align with prior research that highlights the potential of digital platforms in enhancing reading proficiency by offering structured, interactive, and self-paced learning experiences (Alajaili & Barella, 2023; Dardjito et al, 2023). The observed improvements in word recognition, sentence understanding, inferencing skills, and overall text comprehension suggest that the integration of ER within an LMS environment facilitates a more immersive and sustained reading practice, supporting previous claims that digital reading tools can enhance textual engagement and comprehension through multimodal scaffolding (Renandya et al., 2021). However, while the gains in comprehension were significant, the study also revealed challenges in students' adaptability to self-directed reading, particularly in the early weeks, reinforcing the need for stronger instructional support in the initial phases of LMS-based ER implementation (Liu et al., 2023; Syamsuddin, 2021).

A key contribution of this study is its examination of reading engagement trends over time, demonstrating that LMS-based ER fosters a gradual increase in reading frequency, quiz participation, forum engagement, and independent reading completion. This finding supports the argument that digital reading environments can promote self-regulated learning behaviors, particularly when students are provided with structured guidance and interactive elements that sustain motivation (Huynh, 2022). The steady rise in quiz attempts and forum discussions suggests that interactive features play a critical role in encouraging active participation, consistent with previous studies emphasizing the impact of gamification and social interaction in online learning (Romsi et al., 2024; Yen & Thao, 2021). Nevertheless, early engagement levels in self-paced reading and discussion activities were lower, indicating that while LMS-based ER provides opportunities for autonomy, not all students may immediately develop the intrinsic motivation necessary for independent learning (Elturki & Harmon, 2020). This aligns with prior findings that digital platforms, despite their advantages, require carefully designed scaffolding and instructor facilitation to maintain engagement, particularly among learners who are less experienced with self-directed study (Samaraweera, 2024).

In terms of reading comprehension, the findings reinforce the role of structured digital reading programs in supporting vocabulary development, sentence processing, and inferencing skills.

Studies have consistently shown that ER enhances reading fluency and comprehension by exposing learners to repeated and contextualized language input (Terasne et al., 2023). The present study's results further support this claim, demonstrating that students who engaged with LMS-based ER experienced notable improvements across all reading components, including their ability to extract meaning, recognize word patterns, and make logical inferences. This finding aligns with Lin and Syamsuddin (2021), who argue that comprehension gains are most pronounced when reading tasks integrate interactive elements that promote deeper engagement with texts. The presence of annotation tools, automated quizzes, and peer discussions within the LMS appears to have reinforced active meaning-making processes, supporting previous assertions that digital reading environments can enhance comprehension when they provide immediate feedback and opportunities for interaction (Li et al., 2021). However, while the improvements were significant, the study also revealed that inferencing skills showed slower progress compared to other comprehension components, suggesting that students may still struggle with higher-order reading strategies in digital contexts. This finding is consistent with Pongsatornpipat (2022), who found that while ER improves general comprehension, additional metacognitive training is needed to enhance inferencing abilities, particularly for learners with limited exposure to academic reading in English.

The engagement findings further highlight that LMS-based ER encourages a shift from passive to active reading behaviors, with students gradually increasing their participation in self-paced reading and peer discussions. Prior research has emphasized the importance of social interaction in online learning, arguing that collaborative engagement enhances motivation, accountability, and deeper processing of texts (Slamet & Basthomi, 2022). This study's results corroborate that claim, as students became more involved in forum discussions over time, demonstrating an increasing willingness to share insights, ask questions, and engage with their peers. This trend aligns with the findings of Slamet et al. (2024a), who reported that discussion-based learning fosters critical engagement with reading materials, leading to improved comprehension and retention. However, similar to previous studies, the results suggest that not all students benefit equally from discussion-based ER, as engagement levels varied in the early stages. This echoes the findings of Pongsatornpipat (2022), who noted that learners with lower confidence in their language abilities may be hesitant to participate in online discussions, requiring additional encouragement and structured guidance.

Despite the positive impact of LMS-based ER, the study also identified challenges related to self-regulation and motivation, particularly in the initial weeks of implementation. While engagement increased over time, lower early participation rates in self-paced reading and quiz attempts suggest that some students struggled with autonomous learning in a digital setting, mirroring previous findings that highlight the difficulties of transitioning from teacher-led instruction to independent learning (Romsi et al., 2024). This aligns with research by Li et al. (2021), who argue that students need explicit training in self-regulated learning strategies to effectively manage their time, set reading goals, and monitor their comprehension in digital environments. The fluctuating engagement levels in this study reinforce the need for targeted interventions to support learners in developing self-discipline and motivation for ER, particularly for students unfamiliar with extensive digital reading practices. Furthermore, the finding that quiz participation and forum engagement increased over time suggests that external motivators, such as interactive assessments and peer discussions, played a crucial role in sustaining interest and effort, supporting the argument that LMS-based ER is most effective when it balances structured activities with opportunities for autonomy (Pongsatornpipat, 2022).

Another notable implication of the study is the role of LMS features in shaping reading behaviors and comprehension outcomes. The availability of annotation tools, automated quizzes, and discussion forums appeared to contribute to more meaningful interactions with texts, aligning with

research that highlights the importance of multimodal support in digital reading environments (Slamet et al., 2024b). These interactive elements likely enhanced students' engagement with vocabulary, comprehension monitoring, and inferencing strategies, reinforcing previous studies that emphasize the cognitive benefits of structured digital reading experiences over traditional print-based approaches (Dardjito et al, 2023; Jalil, 2024). However, while the LMS platform facilitated improved reading habits, the findings also suggest that students required gradual adaptation to independent reading, echoing claims by Yen and Thao (2021) that ER programs must incorporate gradual scaffolding and guided practice to maximize learning outcomes.

Overall, the findings of this study contribute to the growing body of research on LMS-based ER and its impact on reading comprehension and engagement among Islamic undergraduate students in non-English departments. The results confirm that digital ER environments enhance comprehension skills, promote self-regulated reading behaviors, and encourage peer interaction, supporting prior studies that emphasize the benefits of structured and interactive reading programs in online contexts. However, the study also highlights challenges in motivation, self-regulation, and inferencing skills, suggesting that LMS-based ER requires strategic instructional interventions to ensure that all learners fully benefit from its potential. Future research should explore long-term implementation strategies, the role of teacher guidance, and the integration of adaptive support mechanisms to optimize LMS-based ER for diverse learners, ensuring that digital reading platforms effectively foster both engagement and deep comprehension in second-language learners.

CONCLUSION

The findings of this study underscore the effectiveness of LMS-based ER in enhancing reading comprehension and student engagement among Islamic undergraduate students in non-English departments. The significant improvements in word recognition, sentence understanding, inferencing skills, and overall comprehension affirm the role of structured digital reading in supporting language development. The study also highlights a steady increase in engagement, with students gradually adopting more active reading behaviors through quizzes, forum discussions, and self-paced reading. These positive outcomes emphasize that LMS-based ER can foster both cognitive and affective aspects of reading when designed with interactive, structured, and motivational features. However, several challenges emerged, particularly in the early stages of implementation. Lower participation in self-paced reading and forum discussions in the initial weeks suggests that some students struggled with self-regulation, motivation, and adaptation to digital ER environments. These findings highlight the need for targeted scaffolding strategies, such as instructor guidance, explicit self-regulated learning support, and adaptive feedback mechanisms to help students transition effectively into autonomous learning. Furthermore, while comprehension gains were notable, inferencing skills showed slower progress, indicating that higher-order reading strategies may require additional instructional support. The study's findings have important implications for digital language learning, suggesting that LMS-based ER should integrate both structured activities and learner autonomy while providing sufficient support to maximize its benefits. However, limitations exist, including the study's focus on a single institutional setting and a relatively small participant sample, which may limit generalizability. Future research should investigate comprehensive long-term implementation strategies, focusing on how LMS-based ER can be sustained and adapted to meet the evolving needs of diverse learner populations. This includes examining the effectiveness of adaptive learning technologies that personalize reading experiences based on individual proficiency levels and engagement patterns. Additionally, exploring the role of instructor interventions, such as guided support, interactive discussions, and formative feedback, can provide deeper insights into optimizing digital ER environments. By identifying the most effective instructional and technological refinements, this study underscores the need for continuous improvements in LMS-based ER to

enhance learner engagement, accommodate varying levels of digital literacy, and ultimately maximize reading development outcomes.

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REFERENCES

Abdolmaleki, N., & Saeedi, Z. (2024). Brain-based CALL in flipped higher education GE courses held through LMS: Boosting vocabulary learning and reading comprehension. *International Journal of Educational Technology in Higher Education*, *21*(1), 11. https://doi.org/10.1186/s41239-024-00442-9

Fatimah, S. (2024). Project-based learning and writing skills: A relationship in junior high school students. *English Language and Literature in Education Journal*, *2*(2), 1-11. https://doi.org/10.63011/a9f0zk04

Fatimah, S., Elzamzami, A. B., & Slamet, J. (2020). Item analysis of final test for the 9th grade students of SMPN 44 Surabaya in the academic year of 2019/2020. *JournEEL (Journal of English Education and Literature)*, *2*(1), 34-46.

Hidayati, D. (2024). Integrating student self-assessment as a key instrument for achieving need-supportive learning outcomes. *English Language and Literature in Education Journal*, *2*(2), 24-41. https://doi.org/10.63011/jxnqsj70

Jalil, A. (2024). The SQ3R method for enhancing reading comprehension among 8th-grade students at SMP Islam Insan Kamil Wonoayu. *English Language and Literature in Education Journal*, *2*(2), 89-105. https://doi.org/10.63011/fj1ayc38

Li, H., Majumdar, R., Chen, M. R. A., & Ogata, H. (2021). Goal-oriented active learning (GOAL) system to promote reading engagement, self-directed learning behavior, and motivation in extensive reading. *Computers & Education*, *171*, 104239. https://doi.org/10.1016/j.compedu.2021.104239

Mpungose, C. B., & Khoza, S. B. (2022). Postgraduate students' experiences on the use of Moodle and Canvas learning management system. *Technology, Knowledge and Learning*, *27*(1), 1–16. https://doi.org/10.1007/s10758-020-09475-1

Nur, N. A., Aminah, A., Amir, R., & Ardin, H. (2022). Barriers and prospects of LMS application in Islamic higher education. *Lentera Pendidikan: Jurnal Ilmu Tarbiyah Dan Keguruan*, *25*(2), 218–235. https://doi.org/10.24252/lp.2022v25n2i4

Pongsatornpipat, W. (2022). An implementation of online extensive reading to improve reading comprehension of social work students. *Theory & Practice in Language Studies (TPLS)*, *12*(11). https://doi.org/10.17507/tpls.1211.08

Romsi, A., Widodo, J. P., & Slamet, J. (2024). Empowering slow learners: Gamification's impact on students' engagement and academic performance in an LMS for undergraduate students.

International Journal of Information and Education Technology, *14*(2), 193–203. https://doi.org/10.18178/ijiet.2024.14.2.2040

Rupere, T., & Jakovljevic, M. (2021). Usability and user evaluation of an integrated multimedia e-learning management system. *Knowledge Management & E-Learning: An International Journal*, *13*(3), 334–366. https://doi.org/10.34105/j.kmel.2021.13.018

Simanullang, N. H. S., & Rajagukguk, J. (2020). Learning management system (LMS) based on Moodle to improve students learning activity. *Journal of Physics: Conference Series*, *1462*(1), 012067. https://doi.org/10.1088/1742-6596/1462/1/012067

Slamet, J. (2024). Potential of ChatGPT as a digital language learning assistant: EFL teachers' and students' perceptions. *Discover Artificial Intelligence*, *4*(1), 46. https://doi.org/10.1007/s44163-024-00143-2

Slamet, J., & Basthomi, Y. (2024). Assessing gamification-based LMS for EFL students: A self-directed learning framework. *Studies in Linguistics, Culture, and FLT*, *12*(2), 100–122. https://doi.org/10.46687/CVHT3942

Slamet, J., Basthomi, Y., Ivone, F. M., & Eliyanah, E. (2024a). Unlocking the potential in a gamification-based MOOC: Assessing autonomous learning and self-directed learning behaviors. *Teaching and Learning Inquiry*, *12*, 1–20. https://doi.org/10.20343/teachlearninqu.12.19

Slamet, J., Basthomi, Y., Ivone, F. M., & Eliyanah, E. (2024b). Utilizing an SDL approach in designing a gamification-based MOOC to enhance autonomous learning. *Journal of Information Technology Education: Research*, *23*, 010. https://doi.org/10.28945/5278

Slamet, J., Basthomi, Y., Ivone, F. M., & Eliyanah, E. (2025). Promoting autonomous learning in ESP courses through a gamified MOOC platform: A self-directed learning framework. *Journal of Educators Online*, *22*(2). https://doi.org/10.9743/JEO.2025.22.2.7

Slamet, J., & Fatimah, S. (2022). Quizizz application-based English learning materials assessment instrument development. In *International Conference on Art, Design, Education and Cultural Studies (ICADECS)* (Vol. 4, No. 1).

Slamet, J., & Mukminatien, N. (2024). Developing an online formative assessment instrument for listening skill through LMS. *LEARN Journal: Language Education and Acquisition Research Network*, *17*(1), 188–211. https://so04.tci-thaijo.org/index.php/LEARN/index

Subiyantoro, S., Degeng, I. N. S., Kuswandi, D., & Ulfa, S. (2024). Developing gamified learning management systems to increase student engagement in online learning environments. *International Journal of Information and Education Technology*, *14*(1), 26–33. https://doi.org/10.18178/ijiet.2024.14.1.2020

Syamsuddin, M. R. (2021). The role of extensive reading in improving general English proficiency. *PJEIS: Parahikma Journal of Education and Integrated Sciences*, *1*(1), 25-32.

Taufiqurrochman, R., Muslimin, I., Rofiki, I., & Abah, J. A. (2020). Students' perceptions on learning management systems of Arabic learning through blended learning model. *Jurnal Al Bayan: Jurnal Jurusan Pendidikan Bahasa Arab*, *12*(1), 22–36. https://doi.org/10.24042/albayan.v12i1.5276ï

Udin, T., Maufur, S., & Riyanto, O. (2022). Student's self-efficacy and perceptions of online learning on the use learning management system. *Journal of Education Technology*, *6*(1), 165–172. https://doi.org/10.23887/jet.v6i1.4

Usri. (2022). Development of blog-based e-learning tools for Islamic education courses. *Edumaspul: Jurnal Pendidikan*, *6*(2), 1927–1933.

Widodo, J. P., Musyarofah, L., Atmaja, I. W. W., & Slamet, J. (2023). Effectiveness eLSIDA as a Moodle-based LMS on the slow learners' achievements. *Proceedings of the 3rd International Conference on Education and Technology (ICETECH 2022)*, 40–49. https://doi.org/10.2991/978-2-38476-056-5_7

Widodo, J. P., Musyarofah, L., & Slamet, J. (2022). Developing a Moodle-based learning management system (LMS) for slow learners. *Jurnal Inspirasi Pendidikan*, *12*(1), 1–10. https://doi.org/10.21067/jip.v12i1.6346

Widodo, P., Subandowo, M., Musyarofah, L., & Slamet, J. (2023). Interactive gamification-flip-book for developing students' outcomes. *Advances in Mobile Learning Educational Research*, *3*(2), 754–762. https://doi.org/10.25082/AMLER.2023.02.002