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Developing a Comprehensive Reading Test for Undergraduate Students: An LMS-Based Reading Test

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ABSTRACT: There has been a significant increase in the development of reading assessment methods by educators and researchers. However, very few of these assessments have been integrated into a Learning Management System (LMS) platform, with current LMS usage primarily focused on course content delivery. This research aims to address this gap by developing a comprehensive LMS-based reading test to measure students' reading competence. Additionally, the study seeks to explore students' perspectives on the use of the developed instrument. The development of the instrument followed a Research & Development (R&D) approach using the 4D model, which consists of defining, designing, developing, and disseminating stages. The participants of this study were undergraduate English as a Foreign Language (EFL) students from Universitas Madako Tolitoli. In total, 50 reading test items were successfully developed. Both validity and reliability tests were conducted: the validity test was performed by experts in the field and followed by a pilot test with a small sample of students. The results indicated that the test items were reliable, with a Cronbach's Alpha score of 0.75. However, 6 of the items (12%) were deemed to need improvement or were considered invalid, while the remaining 44 items (88%) were judged to be valid. Students' perceptions of the LMS-based reading test were generally positive across three aspects: usability and accessibility, engagement and motivation, and the impact of the LMS on language learning outcomes. In light of the limitations of the current study, suggestions for improvement were also provided. These will serve to guide future research in this area, with the aim of refining the LMS-based reading test and further enhancing its potential benefits for student learning.

KEYWORDS: Developing, LMS-based reading, EFL Students, Test.

INTRODUCTION

Reading assessment is a process that measures an individual's reading skills and abilities. This involves the use of diverse tools and techniques to gauge reading proficiency and identify areas of strength and weakness. Reading assessments, as suggested by Auphan et al. (2020), Stenner (2022), and Støle et al. (2020), can determine a person's reading level, diagnose reading difficulties, monitor progress, and guide instruction. The results can be used to tailor instruction, support student learning, provide targeted interventions, and track progress over time. They can also identify students needing extra support or accommodations, such as those with reading disabilities or English language learners (Stahl et al., 2019; Villesseche et al., 2019).

Recently, a surge in the development of reading assessment methods has been noted among educators and researchers, including Al-Baihaqi (2020), Dalman et al. (2021), Suzanne & Rozimela (2020), and Vidhiasi (2022). However, these studies predominantly employ traditional reading assessment approaches. Boubris & Haddam (2020) note that such standardized assessments can negatively impact learners' comprehension abilities and reading motivation due to their limited scope, often failing to provide a comprehensive understanding of a student's reading skills. Auphan et al. (2020), Shaari & Mohamad (2020), and Toprak-Yildiz (2021) echo this sentiment, noting the partial nature of current assessments. Hence, the need for an approach that can measure comprehensive reading abilities is apparent.

An emerging assessment approach is the online-based reading assessment via a Learning Management System (LMS). LMS-based assessments, delivered and administered through an LMS platform, evaluate a range of reading skills, including phonemic awareness, phonics, fluency, vocabulary, and comprehension (Alneyadi et al., 2023; Main & Slater, 2022). Notably, Katsumata (2022) highlights that LMS platforms can offer personalized learning experiences, including adaptive assessments that adjust question difficulty based on a student's performance. This personalization allows students to work at their own pace, receiving targeted feedback and support. Furthermore, LMS-based reading assessments can align with the specific learning goals

of a course or program, ensuring the evaluation of the most critical skills for student success. However, there is a scarcity of research reporting the development of LMS-based reading assessments for undergraduate students in the Indonesian context. While the LMS has been widely used for assessments for learning (AfL) (Sabila et al., 2020; Sumardi et al., 2021; Triswidrananta., 2022), these studies have not focused on developing LMS-based assessments as learning (AaL). Thus, the use of LMS in undergraduate education in Indonesia for developing LMS-based reading assessments as learning (AaL) remains largely unexplored, with most LMS usage focused on course content delivery.

To address this gap, we aim to develop a comprehensive reading assessment model that simultaneously assesses multiple aspects of reading, including vocabulary knowledge, inferential and critical thinking, comprehension, and metacognition. Vocabulary pertains to the knowledge of words and their meanings, inferential and critical thinking to the ability to draw conclusions and connect information in the text, comprehension to the understanding and interpretation of written text, and metacognition to the awareness and understanding of one's thought processes during reading. This assessment will be embedded into a learning management system, accessible to both students and teachers. Embedding the reading assessment into the LMS ensures that all students are evaluated using the same materials and criteria, leading to a more standardized and consistent evaluation process. An LMS-based reading assessment also allows for automated grading and feedback, which can save teachers considerable time and effort that can be redirected towards other aspects of the learning process. In summary, the use of an LMS-based reading assessment offers an efficient and effective method for teachers to evaluate their students' reading abilities and progress. Therefore, the research questions of the current study are:

a. What is the process for developing a comprehensive LMS-based reading test for undergraduate EFL students?
b. How do students perceive the implementation of an LMS-based reading test?

METHODOLOGY

Research Design

This study is part of the Research and Development (R&D) process, which follows the 4-D model proposed by Thiagarajan et al (1974). In this research the 4-D model is adopted to develop an LMS-based reading assessment tool that to measure students' learning outcomes. This model comprised of four steps: defining, designing, developing, and disseminating.

Participants

The test taker of this study is the English Department Student who enrolled an Extensive Reading course consist of two classes with total 53 students.

Data Collection procedure and Analysis

The procedure of data collections followed the 4-D model: defining, designing, developing, and disseminating. The ***defining*** stage is crucial for this study as it sets the foundation for the rest of the process. During this stage, the learning objectives are carefully analyzed to identify the indicators for the test items. These indicators provide a clear understanding of which of the students' abilities should be assessed in line with the reading subject they have completed. In the ***designing*** stage, the test items are created based on the learning objectives and their indicators. The number of items for each indicator is determined, and the types of questions that will be used are decided upon. This stage requires careful consideration to ensure that the test items align with the learning objectives and are relevant to the students' reading abilities. During the ***developing*** stage, the assessment tool is validated to ensure its reliability and validity. The validation process is performed in two stages, content validity and construct validity, by experts in the field. Content validity ensures that the assessment tool covers all the necessary content related to the learning objectives, while construct validity ensures that the assessment tool measures what it is intended to measure. Once the validation process is complete, the media is tested on a number of participants to ensure that it is functioning as intended. The participants are then given a questionnaire to provide feedback on their experience with the reading LMS-based assessment. This feedback is used to further improve the assessment tool and ensure that it is effective in measuring students' learning outcomes. Finally, in the ***dissemination*** stage, the developed assessment tool is shared with a specific group of students, known as a cohort. This group is carefully selected to ensure that it is representative of the overall student population and that the assessment results accurately reflect the learning outcomes of the entire student body. The assessment tool is distributed to each student in the cohort, and they are given clear instructions on how to complete it. Once the students had completed the LMS-based reading test, an open-ended questionnaire was distributed.

FINDINGS AND DISCUSSIONS

Findings

RQ 1: What is the process for developing a comprehensive LMS-based reading test for undergraduate EFL students?

To answer the first research question, the following stage were presented consisting of defining, designing, developing and disseminating.

Defining Stage At this phase, the learning objective are meticulously examined to pinpoint the criteria for the exam components. These criteria offer a distinct comprehension of which skills of the students should be evaluated, consistent with the reading topic they have recently finished. In other words, the learning objective is use as guidance to develop the test items. The learning objective can be shown as follows: *The students will be able to analyze information about reading topics, apply critical thinking skills to synthesize information, and demonstrate comprehension and knowledge related to various topics at the end of the course.* The learning objective were then broken down in some indicators. Those are knowledge and comprehension**,** analysis and interpretation, and application and synthesis. Knowledge and comprehension are the foundational skills in reading achievement. These skills involve the ability to understand and remember information presented in a text. Questions that assess knowledge and comprehension usually ask students to recall information, define key terms or concepts, or identify details in a text. Analysis and interpretation are higher-order thinking skills that require students to go beyond simple recall and understand the deeper meaning of a text. These skills involve the ability to identify themes, make connections, draw inferences, and evaluate the author's arguments or perspective. Application and synthesis are the highest-order thinking skills in reading achievement. These skills involve the ability to take what students have learned and apply it to new situations or contexts. This includes the ability to solve problems, make decisions, and create new ideas or products.

Designing Stage

After successfully identifying the learning objectives (LO) and their corresponding indicators, we proceeded to create the test items in this stage. We developed a total of 50 items, meticulously designed to reflect the predetermined learning objectives. These items were composed of a diverse set of question types: 30 multiple-choice questions, 10 true-or-false questions, and 10 fill-in-the-blank questions. Each question was carefully aligned with the established indicators, ensuring that the test provided a comprehensive evaluation of the learner's understanding. The table below provides a detailed illustration of how the blue print items are distributed based on the corresponding indicators:

Table 1. The distribution of items based on the LO indicators

Indicators	Number of Questions
Knowledge and comprehension	1,2,3,4,15,8,9,10,26,30,34,36,37,38,39,40
Analysis and interpretation	13,6,11,12,5,27,28,31,17,19,41,42,46,48
Application and synthesis	7,14,29,32,35,16,18,20,21,43,45,47,49,50

Developing

The procedure at that stage involved several activities. Firstly, we had uploaded 50 constructed test items to a Learning Management System (LMS), which was selected for its ease of implementation in online assessments and the certainty of its responses. This platform had enabled participants to select or click on what they perceived to be the best or most correct answer. Crucially, the system automatically corrected the participant's answer, comparing it to the correct answer key.

Once all the items had been integrated into the LMS, we sent a test link access to three validators, specifically reading course lecturers, for validation. This validation was based on various indicators related to construct and content validity. Validators were tasked with evaluating each test item on a scale of 1 to 4, where 1 signified 'very invalid,' 2 'invalid,' 3 'valid,' and 4 'very valid.' The results of this validation process were presented below.

Table 2. The result of Validation from 3 Lecturers (i.e., Reading Course Lecturers)

Aspects	Indicators	Very invalid	invalid	Valid	Very valid	Category
Construct Coverage	The item perfectly reflects the construct it is intended to measure.	0	0	1	2	Valid

Content Relevance	The item is completely relevant to the skill being assessed.	0	0	1	2	Valid
Test Clarity	The item is completely clear, concise, and easy to understand.	0	0	2	1	Valid
Scoring System	The scoring system is clear, objective, and perfectly aligned with the test's purpose.	0	0	1	2	Valid

In accordance to the table above, most aspects have been evaluated as 'Valid' or 'Very Valid', with 'Very Valid' being the most common rating. This indicates a high degree of confidence in the quality and relevance of the item or test. Construct Coverage, Content Relevance, and Scoring System have an equal distribution of 'Valid' and 'Very Valid' scores, suggesting that these aspects are perceived to be equally well-executed in the item or test. Test Clarity has a slightly higher 'Valid' score compared to 'Very Valid', suggesting that while the test is clear. Overall, the item or test appears to be highly valid and reliable, reflecting well on its construct, relevance, clarity, and scoring system.

After the reading course lecturers completed the validation activity, we conducted a pilot test with a small sample of students, comprised of 25 individuals. The results of this pilot test are presented as follows:

Table 3. The result of Validity based on Person Correlation

No. Item	Pearson Correlation	Sig. Value (0.05 two tails)	Interpretation		Participants
1	0.815	0.000	--	Valid	25
2	0.712	0.000	-	Valid	25
3	0.525	0.023	-	Valid	25
4	0.815	0.000	-	Valid	25
5	0.652	0.008	-	Valid	25
6	0.721	0.000	-	Valid	25
7	0.812	0.000	-	Valid	25
8	0.815	0.000	-	Valid	25
9	0.735	0.000	-	Valid	25
10	0.721	0.000	-	Valid	25
11	0.521	0.025	-	Valid	25
12	0.525	0.028	-	Valid	25
13	0.613	0.004	-	Valid	25
14	0.630	0.009	-	Valid	25
15	0.421	0.203	Not Valid	-	25
16	0.815	0.000	-	Valid	25
17	0.782	0.000	-	Valid	25
18	0.815	0.000	-	Valid	25
19	0.532	0.000	-	Valid	25
20	0.521	0.000	-	Valid	25
21	0.725	0.000	-	Valid	25
22	0.321	0.721	Not Valid		25
23	0.782	0.000	-	Valid	25
24	0.632	0.009	-	Valid	25
25	0.512	0.000	-	Valid	25
26	0.521	0.000	-	Valid	25

27	0.720	0.000	-	Valid	25
28	0.815	0.000	-	Valid	25
29	0.723	0.000	-	Valid	25
30	0.412	0.814	Not Valid	-	25
31	0.812	0.000	-	Valid	25
32	0.845	0.000	-	Valid	25
33	0.744	0.000	-	Valid	25
34	0.812	0.000	-	Valid	25
35	0.815	0.000	-	Valid	25
36	0.720	0.000	-	Valid	25
37	0.512	0.023	-	Valid	25
38	0.321	0.721	Not Valid	-	25
39	0.723	0.000		Valid	25
40	0.412	0.814	Not Valid	-	25
41	0.815	0.000	-	Valid	25
42	0.734	0.000	-	Valid	25
43	0.812	0.000	-	Valid	25
44	0.813	0.000	-	Valid	25
45	0.723	0.000	-	Valid	25
46	0.521	0.020	-	Valid	25
47	0.532	0.000	-	Valid	25
48	0.421	0.203	Not Valid	-	25
49	0.671	0.008	-	Valid	25
50	0.512	0.023	-	Valid	25
Total			**6 (12%)**	**44 (88%)**	

Note: If the Sig. Value < 0.05 then the items were categorized as valid

Based on the table above it is clearly that most of items (44 out of 50) or (88%) were valid and only small number of items (6 out of 50) or (12%) were invalid. It means that the majority of the data collected or processed were of good quality and usable for further analysis or operations. This high validity rate of 88% indicates a well-structured and efficiently executed data collection or production process. However, the presence of 12% invalid items suggests that there's still room for improvement in the system, whether it is in data collection, data entry, or product quality control. Therefore, we identify the sources of these errors and implement necessary corrective measures to improve the quality of the invalid items. Even though a few items were found to be invalid, the reliability of the items, as determined by Cronbach's alpha, indicated that they were reliable. The specifics of this reliability assessment are displayed in the table below:

Table 4. Reliability result based on Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
.757	50

The Cronbach's Alpha value of 0.757 suggests that the 50-item test has good internal consistency, meaning that the items on the test are closely related as a group. Cronbach's Alpha values range from 0 to 1. A higher value indicates higher reliability, and a commonly accepted threshold for good internal consistency is 0.7 or above. Therefore, with a value of 0.757, the test items show a satisfactory level of reliability.

Dissemination

In the dissemination stage, the full developed and revised assessment tool is shared with a specific group of students, namely the second-year EFL students at the English Department of Universitas Madako Tolitoli. The group comprises a total of 53 students, all enrolled in extensive reading course. This group has been carefully selected to ensure it is representative of the overall student

population, and to guarantee that the assessment results accurately reflect the learning outcomes of the entire student body. Each student is individually invited to log into their LMS account to access the reading test. They are supplied with clear instructions on how to complete the test.

RQ 2. How do students perceive the implementation of an LMS-based reading test?

Once the students have completed the LMS-based reading test, an open-ended questionnaire is distributed. This questionnaire consisted of three themes: Usability and Accessibility, Engagement and Motivation, and Learning Outcomes and Feedback. Furthermore, it is designed to capture the students' attitudes towards the implementation of the LMS-based reading test.

The result of the questionnaire displayed below:

Table 5. Usability and Accessibility

No	Statement	Criteria					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1	I found the LMS-based reading test easy to navigate and use.	1	2	7	19	24	53
2	The LMS-based reading test was accessible and user-friendly, regardless of my tech proficiency.	1	2	5	20	25	53
Total		2	4	12	39	49	106
Percentage		1.9%	3.8%	11.3%	36.8%	46%	100%

In accordance with the data provided, the majority of respondents agree or strongly agree with the statements regarding the usability and accessibility of the LMS-based reading test (83.8%), signifying a largely positive perception of this technology in language learning. Neutral responses account for 11.3% of the total, while a smaller portion of respondents disagree or strongly disagree (5.7% combined).

In summary, the data reveals a robust positive perception of the role of the LMS-based reading test in language learning, particularly in terms of usability, accessibility, and ease of navigation. Respondents generally view this tool as an effective aid in their language learning process, contributing to a more efficient and user-friendly learning experience. The data suggests that students generally found the LMS-based reading test easy to navigate and use, and accessible irrespective of their technological proficiency. The following figure is the example appearance of LMS-based reading test:

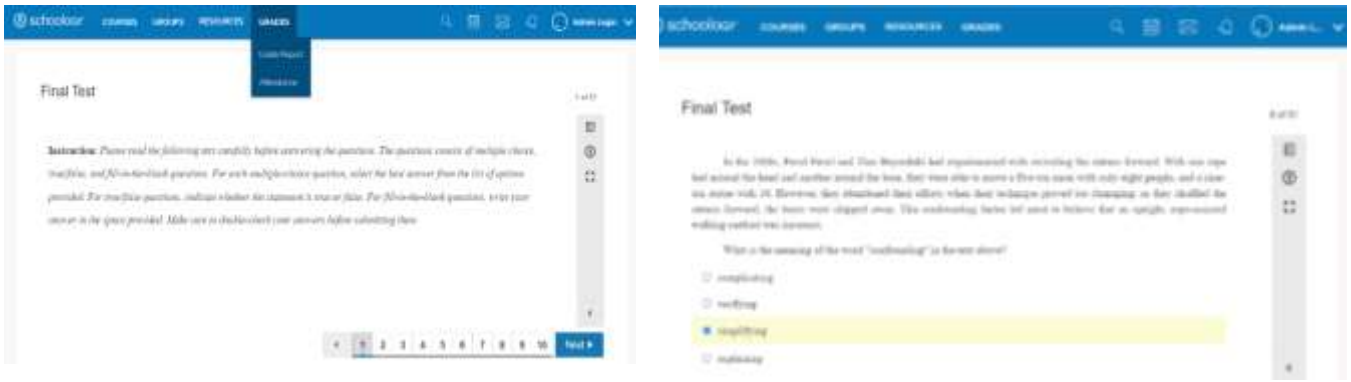

Figure 1. Example of appearance of the LMS-based reading test

Table 6. Engagement and Motivation

No	Statement	Criteria					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
3	The format and content of the LMS-based reading test engaged me and motivated me to learn.	1	3	5	15	29	53
4	The LMS-based reading test provided a variety of reading materials that kept me interested	1	2	7	18	25	53
Total		2	5	12	33	54	106
Percentage		1.9%	4.7%	11.3%	31.1%	50.9%	100%

According to the data provided, the majority of respondents agree or strongly agree with the statements concerning the engagement and motivation offered by the LMS-based reading test (82%), indicating a predominantly positive perception of the test's ability to sustain interest and stimulate learning. Neutral responses account for 11.3% of the total, while a smaller fraction of respondents disagree or strongly disagree (6.6% combined).

In summary, the data reveals a strong positive perception of the role of the LMS-based reading test in fostering engagement and motivation in language learning, particularly in terms of diverse content and an engaging format. Respondents generally view this tool as a significant aid in maintaining their interest and motivating their learning efforts. The data suggests that students generally found the variety of reading materials and the format of the LMS-based reading test effective in keeping them engaged and motivated in their learning process. The following figure illustrate the text question appearance.

Figure 2. Various text appearance on student test LMS

Table 7. Learning Outcomes and Feedback

No	Statement	Criteria					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
5	The LMS-based reading test effectively assessed my reading comprehension skills.	1	3	5	19	25	53
6	The feedback I received after the LMS-based reading test	1	1	7	17	27	53

was clear, timely, and helped me in my learning process.						
Total	2	4	12	36	52	106
Percentage	1.9%	3.8%	11.3%	33.9%	49.1%	100%

Based on the data provided, a significant majority of respondents agree or strongly agree with the statements about the effectiveness of the LMS-based reading test in assessing their reading comprehension skills and providing valuable feedback (83%), indicating a strongly positive perception of the test's role in their learning process. Neutral responses account for 11.3% of the total, while a smaller proportion of respondents disagree or strongly disagree (5.7% combined).

In summary, the data reveals a robust positive perception of the role of the LMS-based reading test in enhancing learning outcomes, particularly in terms of effectively assessing reading comprehension and providing clear, timely feedback that aids learning. Respondents generally view this tool as highly effective in assessing their skills and providing valuable feedback, thereby contributing to better learning experiences and outcomes. The data suggests that students generally found the LMS-based reading test useful in evaluating their reading comprehension and appreciated the feedback received post-test for its clarity and timeliness. The following figure is the example of direct feedback soon after the test is submitted

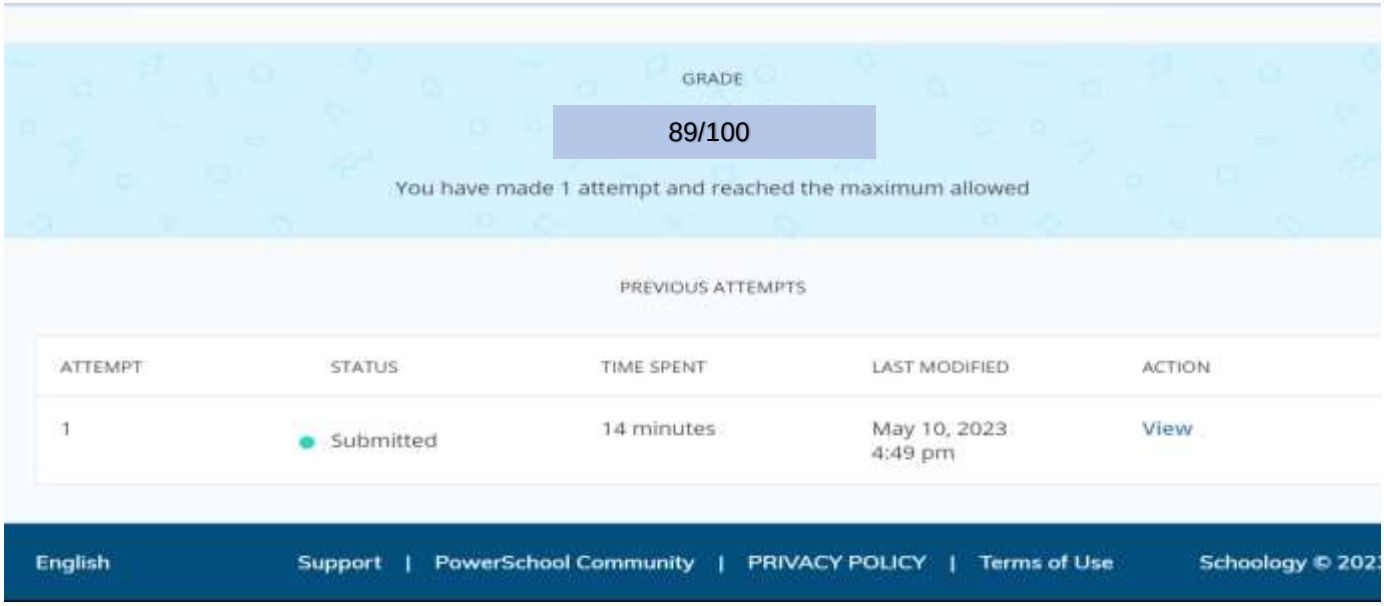

Figure 3. Score feedback of the reading test

DISCUSSIONS

The escalating dependence on Learning Management Systems (LMS) for developing and administering tests, as showcased in this study, is gaining traction in the field of educational technology. The compelling results of this study, with a remarkable validity rate of 88% for test items, echo the findings of prior research, further consolidating the notion that digital platforms are efficacious tools for educational assessment (Saiyad, et al., 2020). This aligns with the work of Jokhan et al. (2022), who found that the use of LMS in the educational setting improved the quality of student assessment and allowed for more efficient tracking of student progress. Similarly, Alkinani and Alzahrani (2021) highlighted that an LMS not only supports course management but also provides a robust platform for assessing student learning, further substantiating the findings of this study. Moreover, the use of LMS for testing purposes is in line with the trend of digital transformation in education as identified by Mintii et al. (2020). They argued that LMS can offer an effective and scalable method for assessing a large number of students, thereby streamlining the assessment process.

The procedure employed in this study, involving expert evaluations and pilot testing to refine and validate the test items, is in line with best practices recommended by renowned scholars such as Yang et al. (2021). Yang's work emphasizes the importance of pilot testing and expert review in enhancing the validity of test items, thereby improving the overall quality of assessments. This approach is also supported by the research of Hasim et al. (2022), who stated that expert judgment and pilot testing are key to developing high-quality test items, ensuring they accurately measure the intended learning outcomes. The use of Cronbach's Alpha to determine the reliability of the test items, as conducted in this study, is a standard procedure in the realm of educational

assessment, further grounding this study in established literature (Nayahangan et al., 2020). The application of Cronbach's Alpha for reliability assessment is also consistent with the research of Sürücü and Maslakçi (2020), who emphasized the utility of this statistical tool in ensuring the internal consistency of test items. Similarly, Adeniran (2019) suggested that Cronbach's Alpha is a reliable measure for evaluating the internal consistency of a test, which is crucial to understanding the reliability of the test results.

The favorable perception of the LMS in terms of usability and accessibility in this study aligns with the findings of Shukla et al. (2020). Their research highlighted the importance of user-friendly and accessible interfaces in educational technologies, arguing that these aspects significantly enhance user experience and learning outcomes. This notion is further supported by the work of Elmunsyah et al. (2023), who found that an easy-to-use and intuitive interface significantly influences the users' satisfaction and continued use of an LMS. Their study underscores the importance of user-centered design in the development of educational technologies. In a similar vein, the research of Nguyen (2021) underscores the significance of accessibility in digital learning environments. Their findings suggest that a more accessible LMS contributes to improved student performance and higher levels of student satisfaction. Alkinani and Alzahrani (2021) have also underlined the influence of usability on the success of an LMS. They concluded that high usability can enhance learner engagement and promote a positive learning experience. Their work elucidates that the ease of use of an LMS can impact learners' attitudes towards learning, their motivation, and their overall academic success.

The elevated levels of student engagement and motivation observed in this study align with the conclusions of Berestova et al. (2022). They underscored the significance of diverse and captivating content in maintaining student interest and motivation within digital learning environments. This observation is further supported by the work Ustun and Yilmaz (2021). Their research found that engaging content in an LMS can foster a sense of community among students, thereby increasing their motivation to participate and engage with the course materials. Similarly, Larmuseau and Depaepe (2019) highlighted that student engagement in online learning environments is significantly influenced by the level of interactivity and the quality of the content provided. He asserted that well-designed, engaging content can stimulate online participation, leading to higher levels of student motivation and learning outcomes.

The observation that the LMS-based reading test in this study was considered a valuable tool for assessing reading comprehension and providing meaningful feedback aligns with the findings of Rivers et al. (2022). They underscored the crucial role of timely and effective feedback in promoting self-regulated learning and enhancing academic performance. This viewpoint is further corroborated by the research of Kucher (2021) who posits that well-designed feedback in digital learning environments can significantly improve student learning. According to Kucher, effective feedback not only rectifies misunderstandings but also reinforces learning, thus playing a crucial role in the learning process. Similarly, Wisniewski et al. (2020) argued that feedback is among the most powerful influences on learning and achievement. Their work suggests that feedback, when done right, can dramatically improve student performance and motivation. In addition, research by Qadir et al. (2020) emphasized the importance of feedback in formative assessment, stating that it is vital for learners to understand their current performance and how they can improve. This aligns with the findings of this study, where the LMS-based reading test provided useful feedback, allowing students to improve their reading comprehension skills.

In conclusion, this study enriches the expanding corpus of research on LMS-based assessment, affirming and building upon findings from previous research. It emphasizes user perception, enhancing our understanding of the acceptability and usability of digital tools in education, a topic of paramount importance in this digital learning age. It suggests that the LMS-based reading test, with its user-friendly design, engaging content, and effective feedback mechanisms, can be an invaluable tool in language learning environments.

CONCLUSION

The aim of this study was to develop a Learning Management System (LMS)-based reading test to gauge students' reading proficiency and gather their perceptions about the implementation of this novel, LMS-based test. The development process for this reading test adhered to the 4-D model proposed by Thiagarajan et al (1974), which includes defining, designing, developing, and disseminating. Subsequently, 50 reading items were successfully crafted and integrated into the LMS platform. These items underwent a rigorous validation process involving specialists in the field, specifically reading course lecturers, who affirmed their valid construction. Furthermore, the items were subjected to a Cronbach's Alpha reliability test, which confirmed that the test was indeed reliable, thus supporting the integrity of our instrument. Pilot testing of these items revealed that 88% were suitable for use, while 12% required further revision. After adjusting the items as needed, the fully developed instrument was distributed to 53 undergraduate English as a Foreign Language (EFL) students at Universitas Madako Tolitoli. In tandem, a questionnaire was provided to assess the students' attitudes towards the implementation of the instrument. Their responses indicated a positive

perception of the LMS-based reading test, especially in terms of its usability and accessibility, engagement and motivation, and the impact of the LMS on language learning outcomes.

However, the study does have its limitations. The sample size was relatively small and the study was limited to a single university, which may not represent the entire population of EFL students. Additionally, the perception of students may vary based on their individual learning styles and preferences, which was not accounted for in this study. To address these limitations, future research should include a larger and more diverse sample size drawn from multiple institutions to ensure broader applicability. Also, it would be beneficial to consider individual learning styles and preferences in future studies to better understand the varying student perceptions of LMS-based reading tests.

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