



Implementing Moodle-based Tests on English Reading Skills at a Gifted High School in An Giang Province

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ARTICLE INFO	ABSTRACT
Published Online: 28 November 2025	In recent years, with great strides in digital modes, the world has witnessed the creation of new opportunities to foster interactive and learner-centered approaches to reading comprehension. Nonetheless, in spite of global trend adoption, empirical research continues to remain scarce on the assessment side of Moodle applications in Vietnam's secondary education, especially in the context of specialized public schools. This research examines the implementation of Moodle tests to enhance English reading comprehension skills in the tenth-grade curriculum at a specialized public school in An Giang Province, Vietnam. Adopting an integrated mixed-methods approach, the study collected quantitative data through pre- and post-tests, while qualitative data were drawn from student interviews. A 12-week Moodle intervention was prepared using authentic reading texts, multimedia elements, and immediate feedback to promote learner engagement and formative assessment. The paired T-test and Wilcoxon signed-rank test indicated a present (statistically significant) difference in the scores, thereby allowing a claim on the presence of potential in Moodle for supporting the development of comprehension skills. Moreover, the thematic analysis of student responses also revealed that they positively regarded Moodle for its usability and benefits for autonomy and motivation. At the same time, some challenges related to digital literacy and technical access were noted. Language Moodle should be chosen particularly in ICT-equipped schools, and the findings present certain insights into language teachers, administrators, and policymakers interested in modernizing language schooling through emerging technology.
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1. INTRODUCTION

Globalization and digital transformation have significantly advanced the use of technology in English language teaching and learning, especially in developing regions such as the Mekong Delta of Vietnam. Among the four basic English language skills, reading comprehension has a prominent position in helping students receive academic content, acquire vocabulary and grammar, and cultivate higher-order thinking skills (Grabe, 2009). However, the effective assessment of students' reading ability has become a big problem for many schools since the conventional ways just do not take into account real comprehension or differentiated instruction for learners.

Asynchronous learning platforms can provide solutions to such issues. One of the successful platforms is Moodle, an open-source LMS generally used worldwide. It supports independent learners, whereby the system offers

courses with content that is interactive, provides automated feedback, and tracks the performance of learners (Dougiamas & Taylor, 2003; Al-Ajlan & Zedan, 2008). Besides, Moodle can also be integrated into digital learning ecosystems in Vietnamese higher education institutions and raising the autonomy of learners (Le & Le, 2020; Nguyen & Pham, 2021).

Inspired by national education reform and insisting on Information and Communication Technology integration (MOET, 2019), some high schools have piloted Moodle reading assessments to foster students' reading ability and autonomy. The assessment contents are often developed following Vietnam's 2018 General Education Program for English, which emphasizes communicative and learner-centered approaches.

However, a few empirical studies have been carried out on the application of Moodle and its effects in Vietnamese EFL

settings, particularly at the high school level. This paper addresses this gap by examining the effectiveness of Moodle-based English reading comprehension tests and student perceptions of their experience with digital assessment, thereby enriching the research corpus on ICT-supported language learning.

2. LITERATURE REVIEW ON READING IN EFL CONTEXTS

2.1. Definitions and theoretical perspectives

Reading is acknowledged by many as one of the most important life skills and remains the first step in second language development. Debatably, the acquisition of reading skills starts with decoding the writing symbols, but the majority of scholars are of the opinion that reading itself is a complicated cognitive, linguistic, and sociocultural activity. Nevertheless, the various theoretical viewpoints differ as to which processes are to be given more importance, thus exposing the multidimensional aspect of reading, especially in teaching contexts.

Ruddell (1994) sees reading as a vibrant and interactive process influenced by a reader's background knowledge, the social setting, and the constructivist principles. His focus on interaction virtually positions readers as the very creators of meaning rather than passive holders of the information. Meanwhile, Goodman (1996), who defines reading as a “psycholinguistic guessing game,” puts the aspect of prediction and testing of hypotheses into the foreground. With this, he argues that readers are always combining bottom-up and top-down processes in order to arrive at meaning, employing the cues from the text to either support or alter their expectations. Even though they are different in what aspects they look at, the two viewpoints do share one point, namely that comprehension is not a linear process but one that involves the simultaneous and multidirectional processing of several aspects.

Nuttall (2015) adopts a more comprehensive view, stating that reading is the skill to decode, interpret, and express written language. While her construct includes understanding and fluency, she still purposely omits the pronunciation-related aspects, thus bringing out reading as basically a meaning-oriented skill. These theorists, however, still provide different but supporting viewpoints: Ruddell points to sociocognitive interaction, Goodman gives preference to psycholinguistic strategies, and Nuttall fuses cognitive processing with communicative outputs.

Each of these views focuses on different aspects of the reading process, but they all agree on the point that reading is an active, interpretive, and communicative act. This common perception of reading has a great impact on the teaching process. In the case of learners of English as a Foreign Language (EFL), theories of this nature pave the way for the design of formative evaluations that do not stop at the mere decoding of words but also cover the use of strategies and the construction of meaning. If digital platforms like Moodle are

used to implement these formative assessments, then there will be learners' tasks that encourage participation and also help the students to acquire important reading skills.

2.2. Reading comprehension in EFL classrooms

In the case of EFL learning, reading comprehension is the main skill, especially in situations where students have little or no access to English outside of the class. Reading, unlike listening, does not impose the limitation of immediate processing; it, therefore, gives learners more time to get involved with the language, think about what it means, and relate the linguistic forms to the understanding of the concepts. This is in accordance with Van Dijk and Kintsch's (1986) widely cited model, which categorizes the comprehension process into two main levels: lower-level and higher-level processes; the former includes word recognition and grammatical parsing, while the latter comprises inference-making, integration of ideas, and evaluation of authorial intent. Their model reiterates that comprehension is not only a language-related act but also a cognitive one that includes the gradual and interdependent processing of multiple levels.

By acknowledging the existence of the experiential and sociocultural dimensions in comprehension, other scholars broaden the discussion of this matter. According to Patel and Jain (2008), reading is an active interaction between the learner and the technological or cultural content of the text that is unfamiliar to the learner. That means the interaction must be strategic rather than just decoding passively. Elghotmy (2018) agrees that comprehension is dependent on multiple learner-related factors— background knowledge, vocabulary range, motivation, and cognitive strategy use. These views make a joint statement that effective EFL reading comprehension is much more than just understanding words; it involves questioning, predicting, synthesising information, and drawing on prior knowledge to create meaning.

Theoretical insights of this kind have a direct implication for reading pedagogy and formative assessment practices. More specifically, they validate the application of digital platforms like Moodle in the process of developing comprehension skills. Moodle-based evaluations can be utilized to detect which stage of processing (lower or higher) the students are having difficulties with, to give immediate and personalized feedback, and to indicate the necessary instructional changes. When the theoretical understandings are merged with the use of technology, EFL teachers can create tasks that promote participation, critical reading, and more profound comprehension. The literature thus not only depicts reading comprehension as a complex and multifaceted issue but also lays a solid foundation for the exploration of Moodle implementation in formative assessment as a means to improve EFL classroom learning outcomes.

2.3. Moodle-based formative assessment in EFL reading

Moodle, initially created by Martin Dougiamas at Curtin University, was intended to be a social constructivist learning platform that not only allowed but encouraged active participation, collaboration, and communication by means of different course formats and tools (Dougiamas, 2000). The very pedagogical foundations of the platform closely run with the principles of constructivism, placing the learners as partners in the process of knowledge creation rather than as passive recipients. In a language learning scenario, this means continuous practice, exploration, and feedback opportunities, which are the main ingredients in building both linguistic knowledge and communicative competence. Chung and Choi (2021) remark that Moodle's design embraces ongoing assessment cycles that are an integral part of learning and are done through immediate and structured feedback.

Moodle was a powerful tool in the EFL classrooms, as it integrated online activities with the traditional teaching, making it possible for instructors to make their reading classes more flexible, personalized, and interactive (Ayan, 2015). The Quiz module, which is one of the most common tools of Moodle, supports different types of questions like multiple-choice, matching, and short answers, and it also gives students many attempts, provides content based on students' ability, and gives instant feedback (Cole & Foster, 2007). All these capabilities give learners the opportunities to explore at their own pace and learn by themselves while they keep track of their comprehension processes and know which parts need more attention.

When utilized as a formative assessment tool, Moodle not only helps the students to monitor their reading growth but also to think about their mistakes and manage their learning techniques. The continuous feedback that Moodle gives is the basic requirement for the reader to be aware of his/her cognitive processes and thus, be an effective reader. In addition to this, the Moodle activities have the potential to connect different subjects by inviting learners to combine vocabulary, grammar, and discourse-level skills within real comprehension tasks. The collaboration between technology and teaching goals puts learners in a better position to acquire powerful reading strategies, deep comprehension, and high overall language proficiency.

2.4. Advantages and challenges of Moodle-based formative assessment in EFL

Moodle's role in English language teaching and learning has been extensively researched, and the pedagogical advantages are pointed out by many. The use of Moodle in EFL, one way or another, shows for learners a significant increase in motivation, participation, and engagement, and for teachers, the platform's usability and real-time access to students' performance data are the key points (Kucheroва & Ushakova, 2022). The interactive character of tasks such as drag-and-drop vocabulary or matching in Moodle helps reading, writing, and vocabulary development through practice combined with immediate

reinforcement (Qaddumi & Smith, 2024). Besides, through collaboration, commenting on peers' work, and taking responsibility for their own progress, the learners acquire independence and digital self-efficacy, which is a good thing for running Moodle (Prasetya, 2021). The above-mentioned learners' characteristics are closely related to the prevailing constructivist and learner-centered approaches in EFL reading teaching.

Moreover, Moodle confers a vast amount of pedagogical flexibility. The huge collection of multimedia options and various task formats provided by Moodle enables the teacher to use different strategies to address different students and their varying tastes (Rahman, 2020). Instant feedback—one of the aspects of the platform that gets the most praise—allows students to see their mistakes as they happen, which in turn aids self-correction, confidence-building, and gradual improvement in performance (Shilova et al., 2014). Moodle also enables teachers to create a systematic place wherein the assessments can be connected to curriculum outcomes, and at the same time, the development of higher-order comprehension and analytical skills is encouraged. All of these benefits combined make e-assessment with Moodle is not only inclusive but also a way of developing skills in EFL education.

All the same, the difficulties encountered are quite a number, and thus, the process of coming up with a Moodle-based formative assessment for Vietnamese high school contexts is not that easy. Infrastructure continues to be a very significant barrier, particularly in the countryside, where the internet is not stable and the number of devices and hardware is insufficient, so that students' participation is restricted (Nguyen, 2021). This digital divide has also affected students at home: some students are not able to access decent technology outside school, and this has led to fewer assessment opportunities. But the teacher-related issues do complicate the situation even further. Lack of proper training in the areas of technical skills and pedagogical design leaves the teachers unable to make assessments that are interactive and full of multimedia (Pham & Dao, 2022). The burden of a heavy workload coupled with little time for preparation further limits their ability to introduce innovations (Kebritchi et al., 2017).

The literature often raises issues about assessment integrity, the digital literacy of students, and their ability to self-regulate. A lack of technological confidence may increase the anxiety of learners, and their motivation may go down, while insufficient monitoring systems may undermine the trustworthiness of online assessments (Prasetya, 2021). Moreover, the Vietnamese education system, which is highly exam-oriented, is conditioning the society to put more emphasis on summative tests rather than formative feedback, which could affect the commitment of teachers and learners to Moodle-based assessment practices (Nguyen & Tran, 2020).

Joined together, these research works suggest that despite the positive aspects of Moodle-based formative assessment for EFL reading development, its efficiency is considerably influenced by larger systemic conditions. If the problems of infrastructure, teacher training, and mindset towards assessment are not solved, Moodle's influence on reading comprehension will be inconsistent. These contextual difficulties emphasize the necessity of looking at the ways in which Moodle-based formative assessment can be introduced to Vietnamese high school EFL classes in a practical and long-lasting manner.

2.5. Related studies

Moodle has been thoroughly researched internationally in terms of its importance in language assessment and teaching. In the KSA, research has been done on the role of Moodle quizzes and assignments in the high schools' assessment and feedback practices and their overall positive effect on the monitoring of learners (Rajab & Sultan, 2019). Similarly, in Malaysia, research found that quizzes in Moodle give a more accurate picture of the learners' language development and their participation, especially if quizzes are held regularly and are a part of the structured coursework (Mohamad & Abdul-Majid, 2021). In Indonesia, the use of Moodle for reading materials, exercises, and comprehension strategies such as skimming, scanning, and identifying main ideas indicates the potential of the platform in nurturing reading skills through strategy-based instruction (Oetomo et al., 2022). Studies in Peru even indicate that the Moodle platform has advantages for developing reading skills, but at the same time, they point to one big obstacle—that when the training of the teachers and the students is not adequate, one has to deal with all the usability issues (Ramirez-Heredia et al., 2024). The aforementioned international studies provide evidence of the extensive use of Moodle in EFL teaching and learning, and at the same time point to the need to take into consideration the local conditions highlighted here—digital literacy, training, and infrastructure—as those are the factors that determine the extent of successful implementation.

In the context of Vietnam, the utilization of Moodle is increasingly discussed not only in the media but also in academic circles, particularly in association with the teaching of the English language in higher and secondary education. The results of the studies claim that, besides the hard-core barriers, the system is capable of boosting learners' motivation and enabling different types of assessments to be carried out. To illustrate, in her research, Nguyen (2020) reported that the use of Moodle's interactive quizzes and instant feedback features made the digital platform of teaching and learning very flexible to the situation of Vietnamese high school students, thus giving the students the opportunity of self-assessment while the teachers got the chance to intervene when the situation demanded it. Nevertheless, the question of access to technology, particularly in the case of rural and low-income areas—still limits the effect of the platform.

Following this, Phan (2021) came to the conclusion that Moodle is an appropriate platform for formative assessment as it provides a means to accommodate the varying levels of different learners and, at the same time, facilitates a two-way feedback loop whereby quiz feedback through automation is supplemented by the teacher's help. This combination of both types of feedback has been beneficial in terms of learners' responsibility as well as helping them to stay focused on the educational objectives. In the higher education sector, Huynh-Cam et al. (2021) used Moodle to conduct experiments related to reading and listening activities in an EFL (English as a Foreign Language) program for testing the pedagogical potential of the platform. The experiment involved drag-and-drop tasks, quizzes for understanding, and vocabulary matching done through a learner-paced structure that allowed students to go back to the materials, take part in practice sessions, and work according to their own learning styles. The immediate feedback with explanations helped the learners to think about the mistakes, and thus the learning goal of developing the skill of reading was not only achieved, but the students also perceived their own progress. The results indicated that there was an increase in both linguistic performance and positive attitude of students, thus supporting the above-mentioned assumption regarding Moodle's role in the development of reading skills, even when the research was focused on both reading and listening.

Even if these studies provide important perspectives, the predominant research area in Vietnam is university students, while high school learners, where learning challenges and technology conditions vary a lot, get very little attention. Furthermore, using Moodle in Vietnamese high schools is still limited, especially in rural places like An Giang. The differences in infrastructure, access to devices, and training for teachers result in uneven access and limit the success of teaching approaches. These differences in context point out the necessity of research that not only pinpoints but also offers methods and strategies for implementing Moodle-based assessment of learning in the case of high schools that are short of resources. This type of research would not only be helpful in the national debates on the digital transformation in education but also in making the digital tools for assessment in the context of language teaching at Vietnamese secondary schools more equitable and sensitive.

3. METHODOLOGY

This present study was conducted to determine the effect of Moodle-LMS on English reading comprehension skills of 70 10th-graders at a gifted high school in An Giang province. Adopting a quasi-experimental pre-test/post-test design, the intervention lasted for 12 weeks and required students to do reading comprehension tasks on Moodle with authentic texts and multimedia resources.

The data were gathered by administering reading tests given before and after the treatment and in an end-of-

treatment student interview. This ensures strong analysis through the use of parametric and non-parametric tests comprising paired t-tests, normality tests, estimation procedures, and Wilcoxon signed-rank tests. With quantitative evidence showing improved reading comprehension (mean increase of 0.7643 points, median 0.75 points), interviewers were employed to investigate the experiences of students using a Moodle-based LMS at the research site.

Interviews were conducted after the 12-week intervention with 70 students from two 10th classes (coded HS01 to HS70), who presented qualitative evidence on usability, motivation, gains students expected, challenges, and assessments that were added to the statistical base concerning the effectiveness of Moodle. Students were asked to share their feelings, discuss the technical aspects of the platform, report improvements in skills, describe any difficulties they encountered, and reflect on the impact of the test. All interviews were audio-recorded with students' consent. Subsequently, the transcripts were analysed for thematic content to identify and classify the main groups of students' opinions.

4. RESULTS AND DISCUSSION

4.1. Results from Pre-test/ Post-test

This research work's goal was to find out the effect of the Moodle-LMS on reading comprehension skills of seventy high school learners at Thoai Ngoc Hau High School, An Giang province, Vietnam. The study employed a mixed-methods research approach that integrated pre-test and post-test designs with statistical analyses such as the Paired t-test, Normality Test, and Wilcoxon Signed-Rank Test to comprehensively evaluate the outcomes. The results, derived from the data at hand, provide convincing evidence as to the effectiveness of the LMS, while simultaneously putting forth issues worthy of additional inquiry and remediation. This conclusion integrates the results, considers the implications for educational practice, and provides recommendations for implementation and further research in the future.

Pre-test and post-test results (see Appendix) revealed a statistically significant improvement in students' English reading comprehension, confirming the effectiveness of Moodle as a digital learning environment. Pre-test scores were between 4.5 and 9.5, while post-test scores ranged between 5.0 and 10.0, with all post-test scores being greater than or equal to the pre-test score (Figures 1 and 2), which shows the positive impact of LMS.

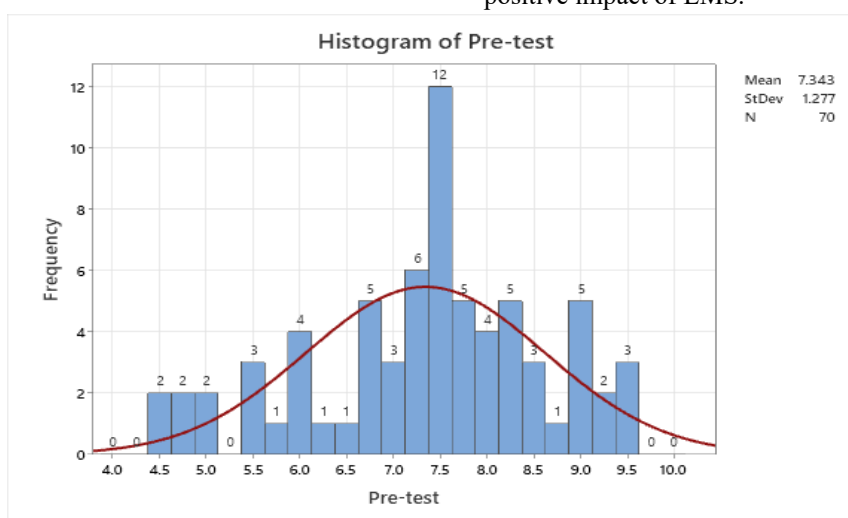


Figure 1: Scores' distribution Pre-test, with Mean = 7.343 and StDev = 1.277

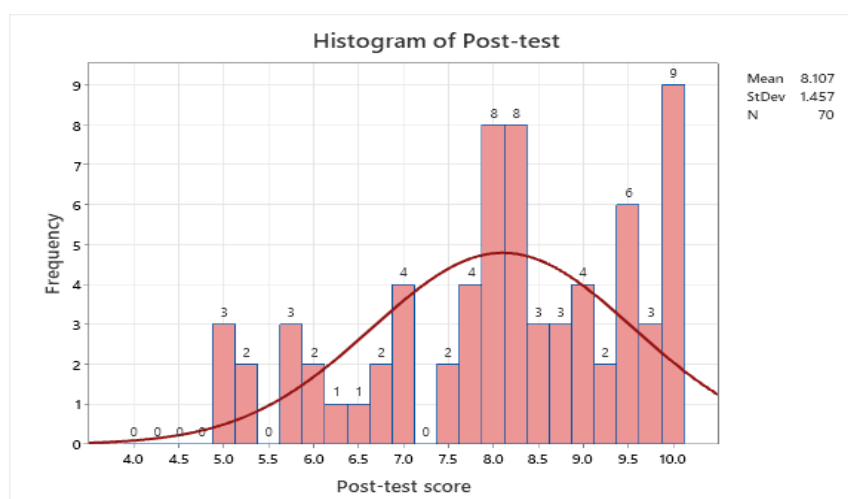


Figure 2: Scores' distribution Post-test, with Mean = 8.107 and StDev = 1.457

Pre-test scores (mean = 7.343, SD = 1.277) and post-test scores (mean = 8.107, SD = 1.457) were compared through a Paired t-test, which revealed a mean improvement of 0.7643 points ($T = -18.65$, $P = 0.000$, 95% CI: [-0.8460, -0.6825]). Since the P-value was smaller than 0.005, this was

a statistically significant finding that there is a notable effect in score improvement, regardless of non-normality. However, the Normality Test on the difference scores (Mean = 0.7643, SD = 0.3429, AD = 1.770, $P < 0.005$) indicated a deviation from normality, challenging the validity of the t-test.

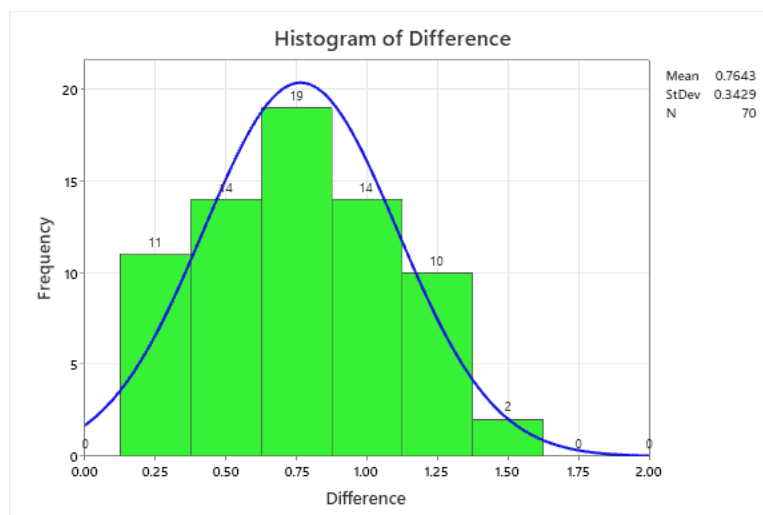


Figure 3: Distribution of score differences between Pre-test and Post-test

To address this distributional concern, the Wilcoxon Signed-Rank Test, a non-parametric alternative that does not assume normality, was conducted. This test reported a median difference of 0.75 points, a Wilcoxon Statistic of 2485.00, and a P-value of 0.000 under the alternative hypothesis that the median difference is greater than 0. Equally, the tight coupling of the T-test's mean improvement of 0.7643 and Wilcoxon's median of 0.75 strengthens this finding with a very significant difference made by Moodle LMS. Combining parametric (paired T-test) with nonparametric (Wilcoxon Signed-Rank test) procedures provides a clear and robust analysis with objective and multidimensional data. The significant t-test results were supported by the Wilcoxon test results, considering non-normal distributions. Combining both parametric and non-parametric analyses complements various perspectives and increases confidence in the findings.

The statistical results suggest that Moodle LMS works very well in fostering students' English reading comprehension. The mean scores increased from 7.343 (SD=1.28) on the pre-test to 8.107 (SD=1.46) on the post-test. This improvement may reflect growth in vocabulary knowledge, grammatical awareness, and critical thinking skills. The more significant post-test standard deviation of 1.457 from that of 1.277 shows evidence of greater variability, possibly due to participants' engagements with the LMS differing. High scores (e.g., HS21: Pre-test; 9.5 post-test; 10.0) showed little enhancement, hardly making any improvement past the maximum score, whilst middle-range

scores (HS18: Pre-test; 8.0, post-test; 9.0) followed an upward growth pattern. Low scores (HS66: Pre-test; 4.75, post-test; 5.0) achieved very minimal increases; hence, the LMS benefited the middle-range students more. Probably features such as immediate feedback, multimedia designs on activities, access anywhere and anytime, teacher support and training, weekly tests based on the Vietnamese curriculum, and CEFR (A2-B1) played a role in stimulating the program's merit.

The histogram of score differences (Figure 2) illustrates the distribution of score improvements after using the LMS. Since Mean Difference = 0.7643, the peak of the histogram may be near the 0.5-1.0 range, reflecting that most students have improvements in this range. The histogram is skewed to the right (positive skew), which indicates that some students have large improvements (nearly 1.5 points), while most of them have small increases (nearly 0), consistent with the StDev of Difference = 0.3429 (moderate variation).

The Paired t-test applies under the condition that the differences between paired observations are normal. A Normality Test was taken on the "Difference" column ("Post-test - Pre-test") with an average of 0.7643 and a Std. Deviation of 0.3429. The test gave out an Anderson-Darling (AD) statistic of 1.770 and a P-value < 0.005 . When a P-value is less than 0.05, one rejects the null hypothesis that the difference is normally distributed. Therefore, the non-normality presents an issue in that it challenges the appropriateness of a t-test, despite the Evidence for a Significant difference. Non-normality arises due to the

differing patterns of improvement among half the students, who have shown large improvements, compared to the

remainder, who have shown fewer improvements. This is mainly due to how students engaged with the LMS

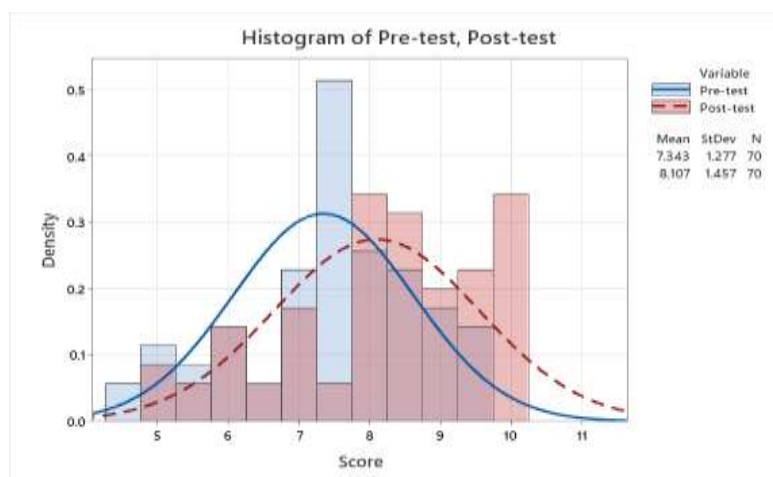


Figure 4: Histogram of score differences between Pre-test and Post-test

The LMS training effect spanned across the different performance levels. High performers seemed to strengthen prior skills; the middle group enjoyed almost the full benefits of the interactive features, while the low achievers showed relatively small gains, which hints at the need for intervention. The increased post-test standard deviation points toward greater individual differences and impels further research to provide equity in outcomes for all learners. The mid-tier students probably took advantage of adaptive quizzes and feedback; however, low performers will probably benefit from some type of remedial intervention or tutoring, ideally embedded in Moodle.

The results of the Paired t-test (P-value = 0.000) and Wilcoxon Test (P-value = 0.000) demonstrate that the LMS has a positive and statistically significant impact. However, non-normality (P-value < 0.005 from Normality Test) may appear as asymmetrical shapes, reflecting different student experiences (e.g., students with lower numerical skills have more difficulty). The chart in Figure 4 plays an important role in visualizing the effectiveness of the LMS:

- Improvement confirmation: The score that shifts from Pre-test to Post-test (mean 0.7643 points, median 0.75 points) is illustrated visually, reinforcing the statistical results (P-value = 0.000 from both tests).

- Variation analysis: The chart shows the uniformity of the improvement. The increase in StDev from 1.277 (Pre-test) to 1.457 (Post-test) can be seen through the spread of the data, reflecting that some students (such as HS21, HS34) achieved the maximum score of 10.0, while others (such as HS66, HS67) only increased slightly.

- Qualitative support: Combined with interview results (e.g., satisfaction with Moodle interface, digital skills difficulties), the chart provides context for improvement, explaining why some students make more progress (due to motivation or adaptability to technology).

To address this issue and give it some alternative robustness, the Wilcoxon Signed-Rank Test was applied. The test results indicated a median difference of 0.75, a Wilcoxon Statistic of 2485.00, and a P-value of 0.000 against the alternative that the median difference is greater than zero. This non-parametric test, which does not rely on normality, thus corroborated the t-test results and confirmed that the improvement of the median “Post-test” scores over the “Pre-test” ones was statistically significant. So, from the consistency between the t-test's mean improvement of 0.7643 and the Wilcoxon test of median improvement of 0.75, it follows that Moodle LMS had a great impact.

4.2. Results from interviews

The interview results are classified into 5 main themes:

Theme 1: Usability and engagement

Speaking of design, most students said that the Moodle platform was easy to use and engaging. A high performing student (HS21) said, "Having a simple layout really made looking for tasks easy, and then I could get my answers reviewed anytime." A mid-level student (HS18) added, "The videos and texts made me feel like I was playing a game. I didn't feel like I was doing homework." Multimedia and flexible access were conducive to self-paced learning, which may have increased scores. However, a low-range student, HS66, said he was confused at first by such an interface, revealing a lack of digital literacy for some.

Theme 2: Motivation and emotional response

Moodle's features, like immediate feedback and progress tracking, offered some motivation. HS21 stated, "Points for correct answers motivated me to improve." A mid-tier student HS30 echoed, "Seeing my progress pushed me to continue." However, low performer HS67 felt initial stress from low scores and required teacher support in sustaining

engagement, thus highlighting a disparity in emotional impact across the performance spectrum.

Theme 3: Perceived reading gains

There was an increase in students' understanding, which corroborated the quantitative results. HS15 said, "I understand longer texts now, thanks to explained vocabulary" (pre-test 9.0; post-test 10.0). Mid-tier HS19 also voiced the faster identification of main ideas, while low performer HS69 mentioned being able to handle short sentences better, but still struggling with complex vocabulary. These perceptions mirror the overall 0.7643-point improvement in favor of the mid-tier and high performers.

Theme 4: Challenges

Technical problems like slow internet (noted by HS64) and poor computer literacy skills (HS67: "I took time to learn the computer") had adverse impacts on some students, contributing to higher variability observed in post-test results (SD 1.457 vs. 1.277). Difficulty in the content seemed to be another challenge, particularly when HS62 felt that some texts were too difficult for the students, suggesting that

Moodle might have limited adaptive capacity to accommodate diverse learners.

Theme 5: Role of assessments

Moodle assessments supported instruction in English reading comprehension by directing practice and granting formative feedback. Some students reported that these regular tests improved their accuracy as well as their confidence (HS19, HS57), while one underperforming student (HS64) found that they were quite difficult and the feedback was so vague that differentiated support was necessary. Such interventions may be considered necessary and should, perhaps, be more deliberately tied into instructional practices with good feedback, scaffolding for weak learners, and remedial opportunities. Through tackling extrinsic impediments such as those pertaining to infrastructure and navigating digital literacy, combined with adaptive test designs, the instructional value inherent in assessments under Moodle may be enhanced and better aligned with MOET's concept of active learning

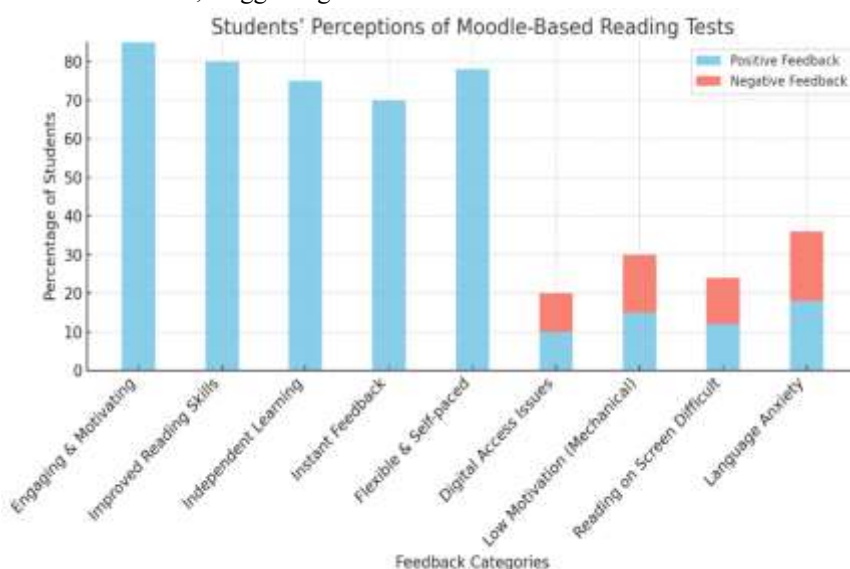


Figure 5: Feedback from students

It is obvious from Figure 5 that Students rated categories such as "Engaging & Motivating," "Improved Reading Skills," "Independent Learning," "Instant Feedback," and "Flexible & Self-Paced Learning" the highest. More than 85% of students found the tests "engaging and motivating," whereas the other categories recorded approval ratings in the 70-80% range. The high ratings implied Moodle-based tests do instill active participation, encourage autonomy, and facilitate timely. However, certain issues require addressing - especially concerning digital access and language-based stress - for the sake of inclusivity and a supportive learning atmosphere.

5. DISCUSSION

This study found that Moodle significantly improved reading comprehension among tenth-grade students, with the most marked gain in mid-level learners. Meanwhile,

qualitative findings indicated that students generally valued Moodle's use, motivation and feedback functions despite some contextual barriers such as unstable internet access, limited digital literacy, and heavy teacher workloads.

The results obtained in the present study mostly align with previous research that has demonstrated the effectiveness of Moodle for English language learning. For example, the finding that immediate feedback encouraged self-correction and confidence would align with Shilova et al. (2014), who emphasized timely feedback to assist performance. Positive perceptions of student attitudes toward Moodle-based assessments also reinforce what Kucherova and Ushakova (2022) highlighted increase in motivation and participation, as well as teachers' appreciation of the usability of the platform and the availability of real-time data. Furthermore, the benefit of interactive and varied forms of assessment may be attributed to Qaddumi and Smith (2024)

and Rahman's (2020) assertions that multimedia and differentiated tasks address several learning styles while developing required skills.

Nonetheless, some findings tend to be in variance with what the previous literature stated. This present study observed a ceiling effect among high-achieving students, whereas previous studies, such as Prasetya (2021), highlight the potential of Moodle for promoting learner autonomy and digital self-efficacy, rather evenly among groups. Further, while infrastructure and cultural barriers were acknowledged in Vietnam (Nguyen, 2021; Nguyen & Tran, 2020), this set of findings demonstrates specifically how unstable Internet access and difficulty in screen-based reading hampered test performance. Likewise, although lack of teachers' training and heavy workload have been listed as barriers (Pham & Dao, 2022; Kebritchi et al., 2017), this study shows that these issues affect assessment design quality and engagement by students directly. Taken together, these comparisons suggest that while Moodle-based formative assessment offers tremendous potential in the enhancement of English reading abilities, its success is mediated by contextual constraints unique to the Vietnamese environment.

6. CONCLUSION AND RECOMMENDATIONS

In this study, Moodle has emerged as one of the tools that can potentially be used to improve English reading comprehension in student-centered, technology-based environments. Its instructional design flexibility permits teachers to develop interactive, multimodal exercises that go beyond the usual paper-and-pencil testing. Multimedia functions, instant feedback, and various question types serve autonomy, motivation, and self-learning. Pedagogically, Moodle transforms assessment into a formative and dynamic process in which teachers may monitor progress in real time, identify gaps in learning, and offer immediate support. At the same time, Moodle provides key analytics to the teachers and administrators to base decisions on evidence and gives the students an assessment method that is less threatening and more engaging.

The findings of the project contribute to technical improvement in local assessment practices and thus strengthen work on the teachers' competencies in digital pedagogy, which is increasingly important in today's education. This study shows that Moodle can serve a dual purpose; it can lead to betterment of students in their reading skills and alteration of assessment methods, thereby becoming a very efficacious tool in the teaching of languages in the digital age.

However, the findings in this study cannot be generalized because the location-based sample, infrastructural equipment, teacher quality, and student demographics can vary across schools in Vietnam. Larger, more diverse samples from urban and rural schools should be selected in future studies to increase generalization. Intervention programs should be offered for longer than 12

weeks, and finer-grain scoring should be used to account for skill gains more appropriately, especially for low performers. There should be more specific feedback on tests and regular student feedback, as well as on what will improve the Moodle

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