



Evaluating the Effectiveness of the Moodle Platform in Enhancing Reading Comprehension Skills among First-Year Undergraduate ESL Learners at a Sri Lankan State University

Dinuka Thamali Gunarathne

University of Peradeniya, Galaha Rd, 20400, Sri Lanka

Corresponding Author's Email: dinukag@sci.pdn.ac.lk

ABSTRACT

Introduction: The ability to read is one of the most important multi-layered cognitive processes that supports the effectiveness of learning and academic achievement, as well as the development of lifelong learning. In order to investigate the role e-learning platform can play in enhancing this skill in first-year undergraduate ESL students of the Sri Lankan state university. **Methods:** A mixed-methods experimental design was adopted. Sixty participants were selected randomly and served in an experimental group of Moodle-based reading instruction or a control group that had to undergo the traditional face-to-face instructions. The pre-tests and post-tests (standardized) were taken to gather quantitative data that was analysed in Statistical Package for the Social Sciences (SPSS) to attain statistical significance. Qualitative data was collected via focus group discussions with participants of the experimental group, who were asked to articulate their experiences and perspectives about the utilisation of Moodle as a learning tool. **Results:** Quantitative findings indicated, significant improvement in reading comprehension in students on Moodle as compared to those on the control group. Qualitative results also proved that general attitude towards the accessibility, interaction and possibility to foster autonomous learning were positive among the learners. **Conclusion:** Moodle is an effective tool for providing reading comprehension instruction to ESL students in higher education. The incorporation of e-learning platforms is therefore recommended to supplement and enhance traditional teaching approaches.

Keywords: Reading comprehension; ESL students; Moodle; e-learning; higher education

INTRODUCTION

Academic success and lifelong learning depend heavily on reading, which is a fundamental and cognitively multifaceted activity ([Mihret & Joshi, 2025](#)). Academic success, general language competency, and engagement with higher education exposed all depend on first-year undergraduate students studying English as a Second Language (ESL) in Sri Lankan state universities being able to understand academic texts. To extract and create meaning, reading comprehension requires using metacognitive techniques, decoding terminology, and combining textual information with existing

knowledge ([Bouali, 2022](#)). Because of the language challenges and cultural differences present in academic discourse, such processes might be particular challenging for ESL learners.

With the growing demand to pay significant attention to the field of digital transformation in the educational process, platforms like Moodle have become unavoidable in providing student-centered and flexible instructions to the students ([Qolamani & Mohammed, 2023](#)). Such technologies have the potential to facilitate independent study and enhance learner interaction, especially where personalized feedback, unrestricted access to resources and time limits are important ([Xi, 2015](#)). Though the existing literature on international studies proves adequately that e-learning is more effective in improving language proficiency, particularly, in terms of vocabulary learning, listening practice, and overall comprehension, it is still clearly evident that there is a dearth of empirical studies finding their way in investigating the impact of reading training implemented by use of Moodle on reading comprehension among ESL learners.

In spite of the apparent advantages of e-learning, there is a dearth of empirical research findings on the effectiveness of e-learning tools, like Moodle in enhancing reading comprehension, with reference to Sri Lankan ESL undergraduates, thus, defining a research gap of great magnitude. Moreover, only a few research has questioned the interpretations of the Moodle as an effective learning tool in terms of engagement, accessibility, and its use to facilitate independent learning. Such views are important to streamline the successful application and long-term adoption of digital intermeshes into ESL teaching and learning patterns.

This research has therefore been designed to examine the role and effectiveness of Moodle in improving reading comprehension among first-year undergraduate ESL students in Sri Lankan state universities. This study attempts to compare a Moodle-based instruction with a traditional type of instruction and to analyze the experience of the students using Moodle in terms of accessibility, interactivity, and learner autonomy.

Research Problem

- How effective is the Moodle platform in improving reading comprehension among first-year ESL undergraduates in Sri Lankan state universities, and how do students perceive its impact on engagement, accessibility, and autonomy compared to traditional instruction?

Research Aim

- The aim of this study is to investigate the role and effectiveness of Moodle-based e-learning in improving the reading comprehension skills of first-year undergraduate ESL learners, compared to conventional classroom instruction, at a Sri Lankan state university.

Objectives

1. To measure and compare the reading comprehension performance of students receiving Moodle-based instruction with those undergoing traditional face-to-face teaching.
2. To explore the experiences and perceptions of students using Moodle as a reading instruction tool, particularly regarding accessibility, interaction, and promotion of autonomous learning.
3. To determine the potential benefits and challenges of integrating Moodle into ESL reading instruction in higher education settings.

4. To provide recommendations on how e-learning platforms can complement conventional teaching methods to enhance reading comprehension and academic achievement among ESL students.

LITERATURE REVIEW

The adoption of Learning Management Systems (LMSs) in the college has changed the aspect of teaching of English as a Second Language (ESL). Moodle specifically has attained a lot of significance as an open-source LMS which accommodates various tools that include reading modules, quizzes, discussion forums, automated feedback, and so on. Such characteristics allow delivering differentiated instruction, learner autonomy and pedagogy specializing in skills. According to ([Prasetya, 2021](#)), the success of the Moodle-based English teaching process is associated with the pedagogical skills of the lecturer and with the level of his/her technical competence. The research implies that the best practices in utilizing Moodle include structuring instructional material, providing culturally applicable education, employing the native language of the learners with the purpose to supplement them in case they require it, and scaffolding the vocabulary and the understanding tasks to encourage reading writing.

The studies in other countries can prove the teaching power of Moodle to the English-as-a-second-language learners. As an illustration, ([Jing, 2016](#)) investigated the theoretical background of teaching College English on the basis of Moodle and proved via the aspects of both quantitative and qualitative research that Moodle promotes learner-focused learning experience. Students in such an environment are allowed to develop knowledge on their own in which interactive modules allow communication among peers and teachers. This cooperative learning environment had a positive role to play in overall language development of learners such as reading comprehension.

Likewise, [Teyebi and Yaiche, \(2024\)](#) focused on the research in Algerian higher education assessing the educational worth and easy workability of Moodle use by the educators and students who have found this system to be quite helpful. Nevertheless, the barriers noted in the study included poor accessibility of digital information and incremental professional development of teachers. The drawbacks may interfere with the use of Moodle to teach some parts of the language effectively in situations of resource constraints such as reading skills.

Largely adopted in the public sector of universities of Sri Lanka is Moodle as part of a national initiative to employ digital tools into the University higher education sector. According to [Marikar and Jayarathne, \(2016\)](#), a research study at General Sir John Kotelawala Defence University observed that students were positive to Moodle and many of them had top academic performances by conducting online activities. Despite the focus of this research on a more generic experience of online learning, Moodle received a degree of attention in its potential to support learner autonomy and the output of assessment. Nevertheless, it also acknowledged issues like tardy completion of assignments and inconsistent participation indicating that the course design should be better fixed.

[Kuruppu and Halwatura \(2013\)](#) carried out another study in Sri Lanka on the same topic, other than perceived learning experience in e-learning and in the traditional classroom at the University of Moratuwa. The students have shown a high rate of preference in Moodle, since it offered a high-level of flexibility, control over the time and a variety of ways of learning. These results demonstrate the potential of Moodle at facilitating the needs of different learners, particularly when being combined with the curriculum carefully. The research did not however single out reading as a subject of concentration which is why it is only limited in regard to skill-specific pedagogy of ESL.

Besides the general platform assessments, the Moodle has been assessed directly on its influence on the reading skills. According to ([Ismail et al., 2020](#)), the authors carried out the experimental study with EFL students and showed that Moodle-based e-learning had a significant effect on the improvement of reading comprehension. It also went on to point out that when Moodle reading activities are well structured, it is possible to use them to facilitate comprehension by use of developmental activities that include prediction, questioning, and summarization. All these findings suggest that Moodle can be employed successfully in building reading specific competences with a specific intention.

Furthermore, ([Sriyanto et al., 2024](#)) discussed the appeal of Moodle-mediated Outcome-Based Learning (OBL) on the aspects of reading, writing, and speaking. Their mixed-methods study showed that students who used Moodle more were more successful in every aspect, especially the reading one. Interestingly, we see that the relationship between reading and other language skills is very weak implying that reading tasks should be designed in specific ways instead of viewing the process of learning the language as a unitized process.

Another feature of the Moodle, the Moodle-reader tool, provides ways to support the reading improvement that are distinctive in themselves. [Riyani et al., \(2023\)](#) examined the impact of Moodle-reader toward students' perceptions of their reading improvement at Indonesian university. The students reacted well and attributed this to advantages like easy access, materials of the appropriate level to read, greater motivation and satisfaction with themselves. The presence of books according to the level of the learners assisted the learners to enjoy the reading activity hence fostering autonomous learning and better learning ([Ihm, 2013](#)).

In their mixed-method assessment of the use of Moodle in an English Language Program (ELP), ([Chen et al., 2012](#)) focused attention on the necessity to correlate the tools provided by Moodle and the concrete pedagogical goals. They reported the flexibility of Moodle, but also the importance of instructional design that needs to have a context upon which the instructions are presented. The study suggested a continuous assessment and adjustment of instructions using Moodle to suit the demands of the learners.

Notwithstanding the accumulating literature to prove the effectiveness of Moodle in ESL teaching, there exists various research gaps especially in the Sri Lankan scenario. Generally, most local studies are conducted on a broad level regarding learner engagement or overall academic success as opposed to study development of reading comprehension. Also, despite reading being one of the most vital skills in academic and professional application of English, little research has been done to determine how the Moodle can be utilised to promote this skill among the undergraduate ESL learners.

Few studies also exist that focus on detailing the ways in which lecturers approach the designing and the execution of reading tasks on Moodle and how their pedagogical choices influence the outcomes of their learners. Although research using the works of [Prasetya, \(2021\)](#) and [Jing, \(2016\)](#) notes the significance of having experience in teaching and platforms experience, there is limited empirical research that explores the interaction of Sri Lankan lecturers with Moodle to teach reading. Additionally, the view of the learner that is generally connected with reading materials, interactivity, and evaluation in Moodle settings have not been systematically captured in this respect.

Finally, literature has also demonstrated that Moodle can be used to improve ESL reading instructions as a result of requirements imposed on flexibility, interactivity, and learner autonomy. Nevertheless, the literature available is either broad-based or emphasizing mainly about numerous skills without isolating reading. In the context of the Sri Lankan higher education sector, it can also be seen that

specific research needed to assess the effectiveness of the Moodle in teaching the reading component specifically does not exist. In this study, the researcher seeks to fill that gap by examining the pedagogical usefulness of the Moodle in enhancing reading comprehension among undergraduates taking English as a Second Language (ESL) courses in a state university in accordance with the perceptions of learners and their instructional design practices.

METHODOLOGY

This study was a mixed-methods research design in that it examined the effect of a Moodle based e-learning platform on reading comprehension of first-year undergraduate ESL learners of a Sri Lankan state university. The 60 random sample was also selected and randomly assigned to the experimental and the control condition (related reading instructions within the Moodle platform and face-to-face instructions respectively). The standardized reading comprehension pre-test was administered to the two groups before the intervention to provide baseline similarity. The given intervention was provided on the basis of eight weeks and supposed that the experimental group was provided with materials and activities enabling reading with the help of Moodle, whereas the control group had a usual classroom teaching approach. At the end of the process, a standardized post-test was given to all the participants. Statistical computations (mean, standard deviations and intergroup values of means) were done on the pre-and post-test data by means of SPSS to determine significant differences within and between groups. Furthermore, the qualitative data was collected based on focus group discussions with the members of the experimental group using semi-structured interview guide to extract their experiences and perceptions about Moodle as a learning tool. To derive a theme related to accessibility, interactivity and encourage independent learning, these responses were analysed using thematic analysis as qualitative methodology. The ethical considerations had been followed carefully, where all the participants signed informed consent and the study was confidential.

RESULTS

The study aimed to investigate the role and effectiveness of Moodle-based e-learning in improving the reading comprehension skills of first-year undergraduate ESL learners, compared to conventional classroom instruction, at a Sri Lankan state university. To address this, both quantitative and qualitative data were gathered and examined.

Quantitative Results

Sixty first-year ESL students from a Sri Lankan state university were randomly allocated into two groups: an experimental group receiving Moodle-based education and a control group participating in conventional classroom teaching. Both groups had a standardized pre-test on reading comprehension to determine basic competency levels. Following the six-week educational intervention, both groups completed an identical post-test.

The Statistical Package for the Social Sciences was used to analyze the data (SPSS). The average and variance of the pre-test and post-test scores for each group were initially obtained using descriptive statistics.

The Moodle-based group exhibited a greater increase in mean scores (12.3 points) relative to the control group (4.3 points), indicating more significant improvements in reading comprehension with Moodle-supported education.

Table 1: Descriptive Statistics for Pre- and Post-Test Scores

Group	Test Type	Mean (M)	Standard Deviation (SD)	Mean Gain
Experimental (Moodle)	Pre-test	70.1	7.5	+12.3
	Post-test	82.4	6.3	
Control (Traditional)	Pre-test	69.9	8.1	+4.3
	Post-test	74.2	7.1	

An independent samples t-test contrasting the post-test results between the two groups was used to determine if this difference was significant. A statistically significant difference in reading comprehension scores was found between the Moodle-based and conventional groups ($t(58) = 4.83$, $p < 0.001$), demonstrating that the experimental group outperformed the control group after the intervention.

To evaluate the extent of improvements from the pre-test to the post-test, a paired samples t-test was also used within each group. Both groups exhibited notable progress over time; however, the improvement was much greater in the Moodle group, further evidencing the effectiveness of Moodle-based instruction.

Table 2: Paired Samples t-Test (Pre- vs Post-Test Within Groups)

Group	T(df)	p-value
Experimental	11.27 (29)	<0.001
Control	3.41 (29)	0.002

The findings indicate that technology-enhanced instruction in Moodle is of significant benefit to ESL students as far as the development of better reading comprehension skills is concerned. This gain can be attributed to the interactive features of the platform, self-directed learning model, and in-built feedback mechanisms all of which complement each other to develop learning environments that are more productive compared to those in the traditional classrooms.

Qualitative Results

In addition to test results, qualitative data was collected through focus group discussions with students of the experimental group. The discussions were focused on testing the perspectives of learners concerning Moodle as a tool used in the training of reading comprehension focusing on its aspects of accessibility, interaction, and increased autonomy in learners.

The themes derived from the thematic analysis were:

- Accessibility and Flexibility of Learning
- Increased Engagement Through Interactive Features
- Promotion of Learner Autonomy and Responsibility
- Moodle as an Educational Platform

Overall, the platform received beneficial comments from participants. Many more stressed the fact that learning can be convenient, and individualized because of the fact that due to the possibility of accessing course materials virtually regardless of location at any given moment. Discussion forums, instant feedback, and embedded quizzes were praised for their ability to make learning more engaging and enjoyable. Since the Moodle platform required them to solely manage their time and

instructional schedules, students also reported feeling more accountable for their own educational advancement.

These results taken together provide credibility to the notion that Moodle helps ESL students to become more independent and engaged with their learning environment whilst also improving their reading comprehension abilities.

DISCUSSION

This study's findings provide substantial insights into the educational effectiveness of Moodle-based training for improving reading comprehension among ESL students in a university setting. This section analyzes these results within the comprehensive context of e-learning, constructivist learning theories, and the current empirical literature.

Effectiveness of Moodle in Enhancing Reading Comprehension

The experimental group's learner's significant improvements in reading comprehension scores indicate Moodle's potential as an educational tool. It suggests that the platform's digital content distribution, along with its evaluation and feedback systems, has created an atmosphere that is favorable to improving the development of reading abilities. According to earlier studies, technology-mediated instruction can enhance language acquisition by exposing students to more diverse and rich material, encouraging practice, and offering immediate feedback ([Peguero, 2024](#)). These findings are consistent with previous research findings.

A complex cognitive process, reading comprehension involves decoding, vocabulary knowledge, and inferencing. Multimedia content, linked texts, scaffolding tools, and other interactive elements are some of the ways that Moodle facilitates these procedures. Students may continue over difficult subject matter again, which improves understanding and memory. It is frequently challenging to achieve this level of independence and repeatability in conventional classroom environments ([Qaddumi & Smith, 2024](#)).

Student Perceptions: Accessibility, Interaction, and Autonomy

Qualitative approaches to student perspectives offered important details about the learning process. Accessibility became a major theme. Students could learn at their own pace because to Moodle's asynchronous features, which also gave them an opportunity to review and reflect—two things that are essential for learning a second language.

Motivation was attributed to interactive elements including forums, tests that were incorporated, and connection to other resources. A sense of ownership and control was promoted, and the lack of interest that is sometimes connected to traditional learning was lessened. These results lend credence to Vygotsky's sociocultural theory, which holds that education is a socially influenced process ([Chand, 2023](#)). By encouraging peer engagement and assisting students in collaborating on meaning, Moodle's collaborative tools enhanced understanding.

Moodle also fostered student autonomy, which is essential for lifelong learning. The platform apparently inspired students to take charge of their own learning goals and schedules. Holec (2009), as cited in ([Palfreyman, 2020](#)), defined learner autonomy as the capacity to direct one's own education, and this is in line with that definition. As students became more self-reliant, they acquired self-control techniques that they could use in different disciplines.

Comparison with Traditional Instruction

Traditional instruction has its advantages when considered in isolation ([Hu, 2024](#)), as there is a real-time response to the same, there is face-to-face interactions, and there is classroom discipline, but it lacks further advantages that are important because they include repeated exposure and self-pacing), as revealed in this research. The control group students were given minimal time to encapsulate reading and revise materials and this can be one of the reasons why their performance in the post-test was lower. In addition, the traditional classroom setting may not be accommodative to different learning styles and speeds, which means that there will be an injustice to the learners who are slower or those who need further assistance even when they are outside the classroom. This aligns with the findings of ([Pashler et al., 2008](#)).

Limitations

The study includes limitations despite its encouraging results. In order to establish the results in context and provide future study direction, these limitations must be recognized. A significant constraint pertains to the study's scope and sample size. Because only 60 students from one state institution took part, the results' generalizability is limited. A larger sample size from several universities in various areas might improve the results' robustness and representativeness. The intervention's brief duration is yet another drawback. The study's six-week duration may have limited its ability to capture the long-term impacts of Moodle-based reading comprehension education. Given the progressive nature of language development, a longer intervention would be better appropriate for assessing the long-term effects of online instructional materials.

Additionally, technological barriers influenced the study's findings. The lack of devices or reliable internet connections among students may have affected their participation and academic achievement. Particularly in regard to participation and learning effectiveness, the study's findings may have been skewed by the digital divide, which is still an important concern in developing nations. The findings could also have been impacted by instructor influence. The quality of the delivery may have varied depending on the instructors' teaching styles, levels of digital literacy, and familiarity with online pedagogical tools, even if the course materials were standardized across both Moodle and traditional formats. Students' reactions to the intervention might have been influenced by these discrepancies.

Finally, there are assessment-related restrictions. Standardized assessments provide unbiased information for comparison, but it is possible that they failed to accurately represent the range and complexity of learners' reading comprehension abilities. Conventional testing methods are not necessarily efficient in measuring higher-order cognitive talents like synthesis, interpretation, and critical analysis. A more thorough evaluation process would provide a better understanding of how instruction affects students' reading performance.

CONCLUSION

This study examined the effectiveness and value of Moodle as an instructional platform for enhancing reading comprehension abilities among ESL learners in Sri Lankan state universities. The combination of quantitative and qualitative methodologies yielded a thorough comprehension of Moodle's influence on student performance and perceptions.

Quantitative findings demonstrated a substantial enhancement in reading comprehension among the cohort subjected to Moodle-based education. Qualitative studies emphasized the platform's benefits regarding accessibility, engagement, and facilitation of autonomous learning. The findings indicate

that Moodle functions not just as a delivery platform but also as a pedagogical medium that can enhance ESL training by promoting deeper involvement and independent learning practices.

In conclusion, Moodle can function as a beneficial adjunct—or, in certain instances, a substitute—to conventional classroom instruction. The use of this into ESL reading comprehension programs can improve student performance, encourage learner autonomy, and facilitate inclusive education by accommodating varied learner demands. This aligns with worldwide trends in mixed and online education, especially in the post-pandemic academic environment.

Future Scope

In order to expand knowledge and enhance the effectiveness of Moodle-based ESL teaching, many avenues for future research could be recommended based on the findings and limitations of this study. Assessing Moodle's long-term impact on reading comprehension via longitudinal study is an appealing approach. Monitoring learners over the course of a school year or a few semesters would provide valuable data on the maintenance of digitally-developed reading skills and the duration of learning outcomes. Another important consideration is the expansion of the sample size and diversity. Future research should involve participants from many universities from different linguistic, cultural, and geographic origins in Sri Lanka. This would help determine if the positive outcomes shown in this research are consistent across a range of institutional and learner settings, hence improving the generalizability of the findings.

Research that contrasts various online learning environments, such as Google Classroom, Edmodo, or Blackboard, may also be highly beneficial. By comparing the relative benefits and drawbacks of different platforms with Moodle, it is feasible to ascertain which features and resources are most appropriate for supporting ESL reading teaching and student participation. The effectiveness of mobile-friendly Moodle apps should be the subject of future studies, considering how common mobile devices are in Sri Lankan communities, especially in rural and low-resource settings. More inclusive teaching methods in underprivileged communities may be developed by examining how mobile learning fosters engagement, accessibility, and reading development.

The impact of teacher preparation on Moodle usage also needs to be thoroughly examined. Moodle-based learning may be strengthened or undermined by key factors that are shown by research on how teachers' training and proficiency in digital pedagogy affect teaching quality and student outcomes. For technology to be successfully integrated into the classroom, teachers need to be able to utilize and navigate digital tools.

Finally, future studies should look at ways to integrate reading instruction with other language abilities like writing and listening using the Moodle platform. Using a multimodal or mixed-skills approach might lead to a more thorough development of English language proficiency that is more in line with communicative competence and real-world language usage. Through these study approaches, a more comprehensive understanding of how Moodle and similar technologies could be utilized to improve ESL education in a multitude of learning environments can be achieved.

Recommendations

Several useful and feasible policy suggestions can be made for enhancing the integration of Moodle into ESL education at higher education institutions in Sri Lanka based on the findings of the research. The

official integration of Moodle into the ESL curriculum via the implementation of a blended learning approach is one important suggestion. Deeper understanding is promoted by this method, which blends conventional in-person instruction with online learning. It also provides more flexibility, accommodates a range of learning styles, and lets students go over material at their own pace.

Ongoing faculty training and development is equally vital. Opportunities for ongoing professional development should be made available to lecturers and instructors, emphasizing the positive digital pedagogy and the technical elements of utilizing Moodle. ESL training should be especially designed to support teachers in creating dynamic, student-focused classes that make the most of the platform.

For first-year undergraduates, universities ought to establish into operation comprehensive instruction and support mechanisms to make sure students are ready to utilize Moodle. Early exposure to Moodle via organized tutorials, specialized help desks, and peer mentorship programs may significantly improve students' self-esteem and encourage them to participate actively in online learning settings.

One of the top policy priorities remains to be addressing technological disparities. Many pupils in Sri Lanka still lack regular access to dependable internet or digital devices. In order to ensure that students from economically disadvantaged backgrounds have fair access to Moodle and other digital tools, universities should make investments in bolstering the on-campus internet infrastructure and take into account programs like lending or distributing electronic devices to these students.

Localizing content is yet another crucial area that has to be improved. Students may find learning more relevant and interesting if reading materials provided on Moodle are modified to suit the local cultural and language background. It is also possible to accommodate students with different levels of English ability and advance inclusive education by using bilingual material or simplified texts. For students to have frequent opportunities to discuss their Moodle experiences, it is advised that ongoing feedback systems be put in place. Feedback like this may be highly beneficial in figuring out technical issues, delivering information better, and increasing consumer happiness in general. Institutions should make a concerted effort to improve their Moodle-based teaching methods using this input.

Finally, to evaluate the success of integrating Moodle into ESL instruction, strong monitoring and assessment mechanisms should be established. Evaluation frameworks must take into account both qualitative indicators of student involvement and satisfaction as well as indications of academic accomplishment. Institutions should be able to make evidence-based changes and guarantee that Moodle keeps up with the changing demands of learners and educators via continuous assessment.

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REFERENCES

- Bouali, A. (2022). Exploring the metacognitive reading strategy awareness in promoting students' reading comprehension skills. *Global Journal of Foreign Language Teaching*, 12(4), 203-212. <https://doi.org/10.18844/gjflt.v12i4.7400>
- Chand, S. P. (2023). Constructivism in Education: Exploring the contributions of Piaget, Vygotsky, and Bruner. *International Journal of Science and Research (IJSR)*, 12(7), 274-278. <https://doi.org/10.21275/sr23630021800>
- Chen, X., Guilbaud, C., Yang, H., & Tao, C. (2012). Integrating An Open-Source Learning Management System (Moodle) In An English Language Program: A Case Study. *Emerald Publishing*. http://citation.allacademic.com/meta/p_mla_apa_research_citation/5/7/5/2/0/p575209_index.html
- Hu, J. (2024). The Challenge of Traditional Teaching Approach: A study on the path to improve classroom teaching effectiveness based on secondary school students' psychology. *Lecture Notes in Education Psychology and Public Media*, 50(1), 213-219. <https://doi.org/10.54254/2753-7048/50/20240945>
- Ihm, N. H. J. (2013). A Study of the Moodle System and its Application to Language Learning. *STEM Journal*, 14(3), 131-149. <https://doi.org/10.16875/stem.2013.14.3.131>
- Ismail, H., Rahmat, A., & Emzir, E. (2020). The effect of Moodle E-Learning material on EFL Reading Comprehension. *International Journal of Multicultural and Multireligious Understanding*, 7(10), 120. <https://doi.org/10.18415/ijmmu.v7i10.2069>
- Jing, M. A (2016). The application of Moodle-Based platform in college English learning. *Sino-US English Teaching*, 13(5). <https://doi.org/10.17265/1539-8072/2016.05.003>
- Kuruppu, G., & Halwatura, R. U. (2013, December). Effectiveness of moodle application on technical tertiary education in Sri Lanka. In *2013 IEEE International Conference in MOOC, Innovation and Technology in Education (MITE)* (pp. 362-365). *IEEE*. <https://doi.org/10.1109/mite.2013.6756368>
- Marikar, F. M., & Jayarathne, N. (2016). Effectiveness of MOODLE in education system in Sri Lankan University. *International Journal of Modern Education and Computer Science*, 8(2), 54-58. <https://doi.org/10.5815/ijmecs.2016.02.07>
- Mihret, G., & Joshi, J. (2025). The Relationship between Students' Reading Skill and Academic Achievement: A Comprehensive Investigation. *International Journal of Research Publication and Reviews*, 6(2), 2171-2181. <https://doi.org/10.55248/gengpi.6.0225.0913>
- Palfreyman, D. M. (2020). The discourse of Holec's autonomy and foreign language learning. In *Routledge eBooks* (pp. 13-30). <https://doi.org/10.4324/9780429261336-3>
- Pashler, H., McDaniel, M., Rohrer, D., & Bjork, R. (2008). Learning styles. *Psychological Science in the Public Interest*, 9(3), 105-119. <https://doi.org/10.1111/j.1539-6053.2009.01038.x>

- Peguero, L. P. (2024). The Impact of Technology-Enhanced Language Learning on Bilingual Education. *International Journal of Scientific Research and Management (IJSRM)*, 12(04), 3340–3350. <https://doi.org/10.18535/ijssrm/v12i04.el05>
- Prasetya, R. E. (2021). Effectiveness of teaching English for specific purposes in LMS Moodle: Lecturers' perspective. *Journal of English Language Teaching and Linguistics*, 6(1), 93. <https://doi.org/10.21462/jeltl.v6i1.498>
- Qaddumi, H. A., & Smith, M. (2024). Implementation of Learning Management Systems (Moodle): Effects on Students' Language Acquisition and Attitudes towards Learning English as a Foreign Language. *Trends in Higher Education*, 3(2), 260–272. <https://doi.org/10.3390/higheredu3020016>
- Qolamani, K. I. B., & Mohammed, M. M. (2023). The Digital Revolution in Higher Education: Transforming teaching and learning. *QALAMUNA Jurnal Pendidikan Sosial Dan Agama*, 15(2), 837–846. <https://doi.org/10.37680/qalamuna.v15i2.3905>
- Riyani, I., Regina, R., & Wardah, W. (2023). Students' Perception toward the Use of Moodle-Reader for Improving Reading Comprehension. *Journal of English Education Program*, 4(1). <https://doi.org/10.26418/jeep.v4i1.55203>
- Sriyanto, A., Prasetya, R. E., & Hidayat, R. S. (2024). Optimizing English learning through outcome-based education and Moodle integration in higher education. *Journal of English Language Teaching Innovations and Materials (Jeltim)*, 6(2), 180–201. <https://doi.org/10.26418/jeltim.v6i2.84849>
- Teyebi, S., & Yaiche, W. (2024). Assessing the Efficacy of Moodle: Perspectives from Educators and Learners at the English Department, Ahmed Salhi University Centre, Naama. -109, (2)5, *أطراس*, 128. <https://doi.org/10.70091/atras/vol05no2.9>
- Xi, G. (2015). Research on Moodle-based multimedia learning system for college English. *Information Technology Newsletter*. https://en.cnki.com.cn/Article_en/CJFDTotat-HDZJ201510039.htm