



Effectiveness eLSIDA as a Moodle-Based LMS on the Slow Learners' Achievements

J. Priyanto Widodo¹, Lailatul Musyarofah¹, I Wayan Wesa Atmaja²,
and Joko Slamet³(✉)

¹ STKIP PGRI Sidoarjo, Sidoarjo, Indonesia

² Universitas PGRI Argopuro Jember, Jember, Indonesia

³ Universitas Negeri Malang, Malang, Indonesia

joko.slamet.2202219@students.um.ac.id

Abstract. This research aimed to examine the effectiveness eLSIDA, a Moodle-based Learning Management System (LMS) at STKIP PGRI Sidoarjo, on the slow learners' achievements. The pre-experimental design was applied to the students on History Education Study Program at STKIP PGRI Sidoarjo. The research subjects for the course "English for History Education Study Program" were selected using purposive sampling from the students who were identified as slow learners. For the purpose of conducting the research, one group experiment with 30 students was selected. The results showed that the pre-test mean was 74.2 and the post-test mean was 89.8, indicating that the post-test mean was better and significantly improved than the pre-test mean. The significance level (Sig. (2-tailed)) was .021, which was below .05. The alternative hypothesis (H_a), which is there is significant in mean gain score of the slow learners for History Education Study Program at STKIP PGRI Sidoarjo, was determined to be "accepted". The results show that there is a statistically significant difference between the group mean prior to treatment and the group mean following completion of treatment using the eLSIDA approach.

Keywords: eLSIDA · effectiveness · Moodle · slow learners

1 Introduction

From a range of viewpoints, information and communication technology (ICT) has a significant impact on human life, as well as the educational sector. On its implementation, the use ICT could be considered as an essential factor that might have positive impacts toward the goals of educational involving academic performances [1, 2]. Furthermore, ICT's evolvement development has had an impact on educational and teaching practices all over the world [3, 4]. For instance, blended learning which combines the delivery of content in person and online, was developed during this time and is now widely used in higher education [5]. In a short, impressive new developments in ICTs have had a significant influence on current educational policy, curriculum development, and instructional pedagogy, for instance, integrating LMS through courses held.

In higher education, the use of LMS is a notable development. Due to its ability to support both traditional classroom settings and distance learning, as well as any combination of the two, the Learning Management System (LMS), a web-based platform, is designed for management, recordkeeping, tracking, supervising, and delivering of courses in educational systems [6–8]. Maintaining crucial elements of the higher education experience when it is transferred to the LMS environment calls for extra care [9, 10]. It's extremely important to confirm that the crucial component is present when evaluating LMS. The primary significance of this component is its role as a support for cognitive presence, which helps the community of learners' process indirectly [11, 12]. Social presence, on the other hand, directly contributes to the success of the educational experience when there are affective goals for the process in addition to cognitive-based ones [13, 14].

The way the tool is used in a particular course and whether it helps the user achieve the intended course outcomes will ultimately determine how useful the LMS tool is useful. The system will need to be used effectively by students if they are to improve their study habits [12]. The LMS may be less effective due to students' lack of understanding and enthusiasm for using the system. From this point forward, the educator is crucial in encouraging the students to obtain it and make it impactful. Noticeable that LMS, a tool that helps both educators and learners throughout the entire learning and teaching process, it improves student learning by delivering the material and interacting with student implicit learning content, and many of its features make it possible for instructors and administrators to create and administer online courses quickly and easily [9, 15, 16].

Students' levels of motivation to learn and use a plan of learning can be significantly impacted by how effective the LMS is. In their study, [12] noted that research carried out in collaboration can have a significant effect on online instructional methods via LMS. They used the cognitive theory, situated learning theory, and constructivist learning as the foundation for their study, which found that synchronous collaboration through an LMS allows students to create their own learning. Because it is more engaging and interactive and offers a variety of applications, The use of an LMS is one factor that has the potential to boost student motivation [9]. The LMS shouldn't be the only tool used to improve teaching and learning, though.

For colleges and universities, continuing education during the Covid-19 pandemic outbreak presents a significant challenge [17–20]. The best way to prevent education from being interrupted and to ensure the safety of faculty members and students is to quickly transition to online learning [21–23]. In light of the challenging pandemic caused by COVID-19, one of the private universities in Sidoarjo, STKIP PGRI Sidoarjo, has implemented online learning through the use of a learning management system (LMS) called eLSIDA, which can be accessed through <http://lms.elsida.ac.id/>. eLSIDA has been firstly developed to enhance the students' academic performances especially for slow learners and it's completely designed [15, 24]. To examine its effectiveness, this research as a continuing the previous research done is conducted focusing on how effectiveness eLSIDA on the slow learners' achievements.

The term or idea 'slow learner' is rife with educational psychological interpretations referring to a student who takes longer than average to understand concepts in lesson [25]. Meanwhile, the term 'slow learning' refers to literal adjunctive statements that

illustrate instances of people failing to effectively integrate pertinent information in particular context or situation learning activity [25]. Although slow learners require special instructional techniques, they are not special individuals [26]. If a teacher can identify a slow learner's strengths and inner talents, it can provide positive reinforcement and encourage them to think about their studies for betterment in their progress; otherwise, they may lose confidence, drop out, and eventually be treated as illiterates [15, 25].

During the Covid-19 pandemic, on the other hand, the conventional model relied entirely on discussions held within WhatsApp Groups (also known as WAGs) and virtual classrooms where PowerPoint (PPT) explanation materials were utilized. As a result, there were some slow learners who struggled to understand the materials during the virtual classroom. This urgency is required to develop a new way in developing new environments such as Moodle-based e-learning. Since eLSIDA has been developed, the effectiveness of its implementation has not been examined so that it is essential to know by conducting this research. There were some related previous researches conducting and investigating a Moodle-based LMS [12, 14].

Related to its effectiveness, a Moodle-based was successfully applied as e-learning material on EEFL reading comprehension which was reported by [16]. Then, a Moodle-based LMS can enhance in collaboration as PjBL (project-based learning) model in higher education [27]. On the other hand, other studies were successfully in developing and investigating a Moodle-based LMS for students' writing skill [28, 29], reading skill [16, 30], speaking skill [31]. However, investigating of a Moodle-based LMS on its effectiveness on the slow learners' academic performances is limited discussion. To fill the research gap, this research was conducted by the aim to examine the effectiveness of a Moodle-based LMS called eLSIDA on the students' achievements since this LMS has been developed and needs to be evaluated.

2 Method

The pre-experimental design is what applies to this study. One group participated in both the pre-test and the post-test, which were both administered as part of the study's pre-experimental design with pre-test and post-test procedures. In this instance, there were two key elements of the one-group pre-test and post-test design that stood out. A single participant group was initially used, and there was no control group for comparison. The participants were treated for a single condition, and assessments were conducted in order to make these points. Student achievement was treated as a dependent variable, whereas the instructional approach (a Moodle-based LMS of eLSIDA) was treated as a dependent variable. The students who were classified into slow learners of the History Education Study Program at STKIP PGRI Sidoarjo for the 2021/2022 academic year served as the research subjects chose using purposive sampling for the course "Bahasa Inggris untuk Pendidikan Sejarah" or "English for History Education Study Program". One group experiment was chosen to form the experimental in order to carry out the research which included 30 students.

Before the experiment began, the subjects were given student achievement of pre-test. Following that, eLSIDA as a Moodle-based LMS was used to teach the treatment group (the experiment group), and the achievement test (post-test) was once more given to the

Table 1. Research Design

Experimental	Pre-test	Treatment	Post-test
Group	S1-HX1	X	S1-HX2

group at the conclusion of the study and there was scoring. Descriptive and inferential statistics were computed to analyze the data and draw conclusions. Table.1 shows how the study was structured.

Description:

S1-HX1: Pre-test in experimental group.

S1-HX2: Post-test in experiment group.

X: Treatment using eLSIDA.

Following that, two hypotheses were formulated as: Ho: There is no significant in mean gain score of the slow learners for History Education Study Program at STKIP PGRI Sidoarjo. Ha: There is significant in mean gain score of the slow learners for History Education Study Program at STKIP PGRI Sidoarjo.

In addition to gathering information from both the pre-test and post-test cycles, the data were analyzed both descriptively and inferentially using the SPSS Statistics 26 software. To ascertain whether a treatment had a statistically significant effect, a dependent t-test (paired sample test) must first be performed to make sure the data were distributed normally. As a consequence of this, the Kolmogorov-Smirnov statistic, which can be found in SPSS Statistics 26, is utilized to determine whether or not the data follow a normal distribution. When the level of significance was higher than 0.05, the researchers concluded that the data followed a normal distribution [32]. The next step is to use the paired sample test to compare the pre-test and post-test scores in order to determine whether or not the Moodle-based LMS of the eLSIDA approach to teaching slow learners was effective in increasing the students' academic achievement, assuming that the normality test produces the desired results.

3 Results and Discussion

The purpose of this study was to determine how well the eLSIDA approach's Moodle-based LMS adversely effected the academic performance of STKIP PGRI Sidoarjo students in the 2021/2022 academic year. With the aid of SPSS Statistics 26 software, the data were collected, descriptively and inferentially analyzed, and conclusions were drawn from the findings. During the pre-test and post-test periods, the mean, standard deviation, minimum and maximum scores, among other things, were calculated using the descriptive analysis method. Inferential statistical analysis is used to interpret the results of the hypothesis testing process while it is being done. Table 2 displays information from the descriptive statistical analysis that was done.

Table 2 demonstrates that the post-test's mean was better and was significantly improved than the pre-test's mean, with the pre-test mean being 74.2 and the post-test mean being 89.8. According to the findings, there is a difference that can be considered statistically significant between the group mean before receiving treatment and the group

Table 2. Descriptive Analysis Results of Tests

	N	Min.	Max.	Mean	SD
Pre-test	30	62	80	74.2	5.886
Post-test	30	78	92	89.8	3.485
Valid N	30				

mean after receiving treatment using the eLSIDA method after it has been completed. Additionally, the post-test standard deviation (SD) was 3.485, whereas the pre-test's SD was 5.886 (see Table 2). After the data were established to be normally distributed as previously described, the inferential test, also referred to as the pair sample test, can be carried out. It was unnecessary to perform a homogeneity test on the sample since there was only one group represented [32]. The data's normality was also assessed using the Kolmogorov-Smirnov test. Table 3 displays the experiment's results.

According to Table 3, the pre-test's Sig. Value was .262 and the post-test's Sig. Value was .172, both of which were higher than the sig. Level of .05. The post-Sig. Test's value was .172, which was greater than the Sig. Level of .05. In relation to the findings, it has been suggested that normal distribution was present in the data if the significance level was higher than 0.05, similar to what was found by [32]. Inferring that the data from the pre-test and post-test were normally distributed and that the data satisfied the requirements for hypothesis testing can be accomplished through the use of a pair sample test. Since the prerequisite for conducting hypothesis testing has been satisfied in this instance, inferential analysis is carried out using a pair sample test. A hypothesis testing procedure was used to determine whether or not the eLSIDA approach has a statistically significant impact on the academic performance of the students. Table 4 presents the research's findings.

Given the information in Table 4, it can be said that the level of significance (Sig. (2-tailed)) was .021, which was less than .05. The alternative hypothesis (H_a), There is significant in mean gain score of the slow learners for History Education Study Program

Table 3. The result of Normality Tests

	Statistic	df.	Sig.
Pre-test	1.36	30	.262
Post-test	1.68	30	.172

Table 4. The Results of Pair Sample Tests

Mean	SD	Std. Error Mean	Lower	Upper	t	df.	Sig. (2tailed)
8.274	4.258	1.005	7.025	9.762	6.221	30	.021

at STKIP PGRI Sidoarjo, was found to be “accepted”. In addition, the average was 8.881 (St. Dev was 4.258). These results demonstrate that students’ achievements improved after treatment, using the eLSIDA approach on the students’ achievements in the era of pandemic Covid-19.

The experimental group’s achievement gain score showed a significant improvement, indicating that a Moodle-based LMS of eLSIDA which applied to the 30 slow learners at STKIP PGRI Sidoarjo improved student achievement. This finding was supported by other previous related studies conducting Moodle as LMS in educational process of learning that effectively improved students’ academic performances [33, 34]. The most likely explanation is that Moodle, as an LMS of e-learning platform, has a lot of fascinating features like a chat box, an online test, a discussion forum, and access to course materials in both audio and video format [8, 14, 35]. The developers’ module included a video with content-related information in it so that students are given the most examples possible [15, 28, 34, 36].

The degree to which users, in this research were all of the slow learners, were familiar with technological innovations like LMS and their level of LMS adaptability are reflected in technological characteristics. It is proven that users who are involved represent these qualities [7, 9] and discovered that a user’s ability to control the technology they are using, such as an LMS, is directly related to how well a learning environment works. The degree of freedom is what is meant by learner control. The pace, order, and content of the lesson can all be changed under the learner’s control in the learning activities. Furthermore, LMS effectiveness measured in terms of satisfaction, fairness, and usefulness toward students’ academic achievements [9, 11].

Examining eLSIDA as a Moodle-based LMS used for slow learners is the main goal. As its implementation, the slow learners were motivated and encouraged to learn independently. At the same time, the students could follow the instructions given well. Thus, they enjoyed learning via eLSIDA. Moreover, there is evidence that group learning sessions are more effective at fostering thought and the formation of attitudes and values. As a result, their academic outcomes were improved significantly. Better academic grades were also reported and supported our findings [37]. Although the majority of participants in the study preferred group instruction, the division of the class into fast and slow learners received less positive feedback. Since the study was conducted in a small private college where the majority of the students are expected to have good learning capacities as part of the requirements for admission, this is most likely the cause. The academic level of these students might not differ noticeably when divided based on their performance in previous years.

It is in the best interest of the university to take the necessary steps to ensure that all of its faculty members have a working knowledge of learning management systems (LMS) in order to facilitate the education of its student body [38]. The instructor has a bigger impact on getting students to use the LMS and encouraging them to do so as a resource for learning about a particular topic [11]. Due to the small sample size, the study’s findings can be generalized, and they do provide some insight into the advantages of LMS. Due to the LMS’s ability to track student progress individually or in relation to particular topics, instructors will be more aware of their students’ participation.

To sum up the findings of this research, a Moodle-based LMS called eLSIDA was effective to be applied regarding the materials, contents and language used in its platform and significantly improved the students' achievements. However, this research still has limited discussion which focused only on the slow learners in limited number of samples. To enrich and prove the findings, further researches are encouraged to conduct the similar research using this kind of approach with a large sample of subjects and involving academic achievements in other specific skills such as listening comprehension and reading comprehension for special needs.

4 Conclusion

To conclude this research, it was determined that eLSIDA as a Moodle-based LMS used at STKIP PGRI Sidoarjo was effective in improving the slow learners' academic performances during pandemic Covid-19. It is proven it was less than .05. The level of significance (Sig. (2-tailed)) was .021. The alternative hypothesis (H_a), here is significant in mean gain score of the slow learners for History Education Study Program at STKIP PGRI Sidoarjo, was determined to be "accepted". The study's educational implication is that STKIP PGRI Sidoarjo lecturers must be trained to use Moodle for teaching. Government is not required to do it. In fact, Moodle allows various educational institutions to organize orientation programs for their lecturers, enabling them to use Moodle for their instruction. Additionally, lecturers need to adopt a positive outlook toward using Moodle for instruction. Higher education institutions can also plan Moodle workshops for faculty members.

Authors' Contributions. This research was completely done and supported by eLSIDA as a Moodle-based Learning Management System (LMS) at STKIP PGRI Sidoarjo.

References

1. M. Mellati and M. Khademi, "The impacts of distance interactivity on learners' achievements in online mobile language learning: Social software and participatory learning," *International Journal of Web-Based Learning and Teaching Technologies*, vol. 10, no. 3, pp. 19–35, 2015, <https://doi.org/10.4018/ijwltt.2015070102>.
2. B. Landrum, J. Bannister, G. Garza, and S. Rhame, "A class of one: Students' satisfaction with online learning," *Journal of Education for Business*, vol. 96, no. 2, pp. 82–88, Feb. 2021, <https://doi.org/10.1080/08832323.2020.1757592>.
3. J. F. Kalolo, "Digital revolution and its impact on education systems in developing countries," *Educ. Inf. Technol.*, vol. 24, no. 1, pp. 345–358, 2019.
4. S. G. v. Nikolić, D. Petković, N. Denić, M. Milovančević, "Appraisal and review of e-learning and ICT systems in teaching process," *Phys. A, Stat. Mech. Appl.*, vol. 513, pp. 456–464, 2019.
5. W. K. Z. Masturin Masturin, "Blended learning as solution in character education during the Covid-19 pandemic," vol. 10, no. 1, pp. 121–136, 2022, <https://doi.org/10.21043/quality.v10i1.15124>.
6. M. J. Casany, M. Alier, and M. Barcelo, "Integration of m-learning and LMS: A sustainability approach," 2012 International Symposium on Computers in Education, SIIE 2012, 2012.

7. J. P. Widodo and J. Slamet, "Developing LMS through Moodle in teaching 'article writing for journal' for post graduate students," in Proceedings of the 2nd International Conference on Education and Technology (ICETECH 2021), 2022, pp. 22–25. <https://doi.org/10.2991/assehr.k.220103.002>.
8. R. F. Bataineh and M. B. Mayyas, "The utility of blended learning in EFL reading and grammar: A case for Moodle," *Teaching English with Technology*, vol. 17, no. 3, pp. 35–49, 2017.
9. Y. Ghilay, "Effectiveness of learning management systems in higher education: Views of lecturers with different levels of activity in LMSs," *Journal of Online Higher Education*, vol. 3, no. 2, pp. 29–50, 2019, [Online]. Available: https://www.researchgate.net/publication/335339621_Effectiveness_of_Learning_Management_Systems_in_Higher_Education_Views_of_Lecturers_with_Different_Levels_of_Activity_in_LMSs
10. M. M. Alomari, H. El-Kanj, N. I. Alshdaifat, and A. Topal, "A framework for the impact of human factors on the effectiveness of learning management systems," *IEEE Access*, vol. 8, pp. 23542–23558, 2020, <https://doi.org/10.1109/ACCESS.2020.2970278>.
11. A. M. Nur Sakinah Binti S M J Dulkaman; Ali, "Factors influencing the success of learning management system (LMS) on students' academic performance," *IYSJL*, vol. 1, no. 1, pp. 36–49, 2016, [Online]. Available: http://irep.iium.edu.my/55413/1/FACTORS_INFLUENCING_THE_SUCCESS_OF_LEARNING_MANAGEMENT_SYSTEM_%28LMS%29_ON_STUDENTS'_ACADEMIC_PERFORMANCE%281%29.pdf
12. N. Kerimbayev, J. Kultan, S. Abdykarimova, and A. Akramova, "LMS Moodle: Distance international education in cooperation of higher education institutions of different countries," *Educ Inf Technol (Dordr)*, vol. 22, no. 5, pp. 2125–2139, Sep. 2017, <https://doi.org/10.1007/s10639-016-9534-5>.
13. D. Chourishi, "Effective e-learning through Moodle," *International Journal of Advance Technology & Engineering Research*, vol. 1, no. 1, pp. 34–38, 2015.
14. S. H. P. W. Gamage, J. R. Ayres, and M. B. Behrend, "A systematic review on trends in using Moodle for teaching and learning," *Int J STEM Educ*, vol. 9, no. 1, 2022, <https://doi.org/10.1186/s40594-021-00323-x>.
15. J. S. J. Priyanto Widodo, Lailatul Musyarofah, "Developing a Moodle-based learning management system (LMS) for slow learners," *Jurnal Inspirasi Pendidikan*, vol. 12, no. 1, pp. 1–10, 2022, <https://doi.org/10.21067/jip.v12i1.6346>.
16. H. Ismail, A. Rahmat, and E. Emzir, "The effect of Moodle e-learning material on EFL reading comprehension," *International Journal of Multicultural and Multireligious Understanding*, vol. 7, no. 10, p. 120, 2020, <https://doi.org/10.18415/ijmmu.v7i10.2069>.
17. A. N. Bahasoan, Wulan Ayuandiani, Muhammad Mukhram, and Aswar Rahmat, "Effectiveness of online learning in pandemic Covid-19," *International Journal of Science, Technology & Management*, vol. 1, no. 2, pp. 100–106, 2020, <https://doi.org/10.46729/ijstm.v1i2.30>.
18. F. Munir, A. Anwar, and D. M. H. Kee, "Online learning and students' fear of Covid-19: Study in Malaysia and Pakistan," *International Review of Research in Open and Distance Learning*, vol. 22, no. 4, pp. 1–21, 2021, <https://doi.org/10.19173/irrodl.v22i4.5637>.
19. M. Mahyoob, "Online learning effectiveness during the Covid-19 pandemic: A case study of Saudi universities," *International Journal of Information and Communication Technology Education*, vol. 17, no. 4, pp. 1–14, 2021, <https://doi.org/10.4018/IJICTE.20211001.0a7>.
20. A. Qazi et al., "Conventional to online education during Covid-19 pandemic: Do developed and underdeveloped nations cope alike," *Child Youth Serv Rev*, vol. 119, p. 105582, Dec. 2020, <https://doi.org/10.1016/j.childyouth.2020.105582>.
21. S. B. Dias, S. J. Hadjileontiadou, J. Diniz, and L. J. Hadjileontiadis, "DeepLMS: a deep learning predictive model for supporting online learning in the Covid-19 era," *Sci Rep*, vol. 10, no. 1, pp. 1–17, 2020, <https://doi.org/10.1038/s41598-020-76740-9>.

22. O. M. Auma and J. Achieng, "Perception of teachers on effectiveness of online Learning in the wake of Covid-19 pandemic," *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, vol. 25, no. 6, pp. 19–28, 2020, <https://doi.org/10.9790/0837-2506111928>.
23. Y. A. Alshehri, N. Mordhah, S. Alsibiani, S. Alsobhi, and N. Alnazzawi, "How the regular teaching converted to fully online teaching in Saudi Arabia during the coronavirus Covid-19," *Creat Educ*, vol. 11, no. 07, pp. 985–996, 2020, <https://doi.org/10.4236/ce.2020.117071>.
24. J. Priyanto Widodo, Lailatul Musyarofah, & Joko Slamet "Sosialisasi LMS eLSIDA pada mahasiswa slow learners di STKIP PGRI Sidoarjo," *Jurnal Abdidias*, vol. 3, no. 3, pp. 456–464, 2022, <https://doi.org/10.31004/abdidias.v3i3.613>.
25. S. S. N. A. Varghese, "Teaching slow learners and fast learners separately in small group teaching in dental school-students perception, concern and impact," *Int J Dent Oral Sci*, vol. 08, no. 03, pp. 2025–2030, 2021, <https://doi.org/10.19070/2377-8075-21000398>.
26. A. Korikana, "Slow Learners-a universal problem and providing educational opportunities to them to be a successful learner," *PEOPLE: International Journal of Social Sciences*, vol. 6, no. 1, pp. 29–42, 2020, <https://doi.org/10.20319/pjss.2020.61.2942>.
27. N. Irwan, Yenny, Desnelita, Wilda, Susanti, Wakhinuddin, Rizal, Fahmi, Ramalia, Nora-tama, Putri, Dony, "Application of the collaborative project-based learning model using Moodle in higher education," *Review of International Geographical Education*, vol. 11, no. 9, pp. 2141–2149, 2021, <https://doi.org/10.48047/rigeo.11.09.187>.
28. J. P. Widodo and J. Slamet, "Developing LMS Through Moodle in Teaching 'Article Writing for Journal' for Post Graduate Students," 2022. <https://doi.org/10.2991/assehr.k.220103.002>.
29. A.-S. A. El-Maghraby, "Investigating the effectiveness of Moodle based blended learning in developing writing skills for university students," *Journal of Research in Curriculum Instruction and Educational Technology*, vol. 7, no. 1, pp. 115–140, 2021, <https://doi.org/10.21608/jrciet.2021.134636>.
30. Lilik Ulfiati, D. Kurniawan, and Failasofah, "Moodle and reading comprehension materials for the EFL students," *The 61 TEFLIN International Conference, UNS Solo 2014*, pp. 964–967, 2014.
31. H. N. Truong, "Students' perception towards the use of Moodle-based LMS in learning speaking skill at tertiary level," *Proceedings of the 17th International Conference of the Asia Association of Computer-Assisted Language Learning (AsiaCALL 2021)*, vol. 533, no. Asi-aCALL, pp. 128–134, 2021, <https://doi.org/10.2991/assehr.k.210226.016>.
32. J. W. Creswell, *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. Boston: Pearson, 2012.
33. B. Radia, "Approaching a reading course via Moodle-based blended learning: EFL learners' insights," *Modern Journal of Language Teaching Methods ...*, vol. 9, no. 11, pp. 1–12, 2019, [Online]. Available: http://mjltm.org/browse.php?a_id=555&slc_lang=en&sid=1&prntcase=1&hbnr=1&hmb=1
34. R. E. Prasetya, "The design of Moodle-based English language learning environments (Case study of Indonesian higher education)," *ELT Worldwide: Journal of English Language Teaching*, vol. 8, no. 2, pp. 222–239, 2021, <https://doi.org/10.26858/eltww.v8i2.19934>.
35. W. Duangjai and S. Rutaikarn, "Effectiveness of Moodle e-learning for students enrolment of GENL 1101 'Learning Resources and Skills' at Asia-Pacific International University," *Abstract Proceedings International Scholars Conference*, vol. 7, no. 1, pp. 1661–1676, 2020, <https://doi.org/10.35974/isc.v7i1.1776>.
36. A. Febliza and O. Okatariani, "The development of online learning media by using Moodle for general chemistry subject," *Journal of Educational Science and Technology (EST)*, vol. 6, no. 1, p. 40, 2020, <https://doi.org/10.26858/est.v6i1.12339>.
37. A. M. P. McLaughlin, "The flipped classroom—from theory to practice in health professional education," *Am J Pharm Educ.*, vol. 81, no. 6, p. 118, 2017.

38. M. Azlim, K. Husain, B. Hussin, and Z. Maksom, "Utilization of learning management system in higher education institution in enhancing teaching and learning process," *Journal of Human Capital Development*, vol. 7, no. 1, pp. 99–110, 2014, [Online]. Available: <https://core.ac.uk/download/pdf/229279887.pdf>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

