



IMPACT OF LEARNING MANAGEMENT SYSTEMS ON POSTGRADUATE DIPLOMA IN EDUCATION STUDENTS' SELF-REGULATED LEARNING PRACTICES

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This study investigated the impact of a Learning Management System (LMS) on the self-regulated learning (SRL) experiences of postgraduate students enrolled in the Postgraduate Diploma in Education (PGDE) programme at the Open University of Sri Lanka (OUSL). Employing an exploratory research design and qualitative approach, researchers explored the experiences of ten PGDE students using a focus group interview. The findings revealed a two-fold impact from the LMS on SRL. The LMS demonstrably supported SRL by providing a structured learning environment, time management tools, resource management options, and opportunities for engagement through features like quizzes and presentations. However, some areas for improvement emerged, including limited feedback mechanisms, technical issues with the platform, and a need for increased user engagement with collaborative features, such as discussion forums. To further enhance the LMS' role in supporting SRL, the study recommends several improvements. This includes implementing a system for consistent and constructive feedback from both instructors and peers, ensuring enhanced content quality with clear and accurate information, and developing strategies to encourage students to utilise the platform's collaborative tools. Additionally, prompt technical support and the potential incorporation of features like smaller assessments with feedback are suggested. Overall, the LMS holds significant potential as a valuable tool for fostering self-regulated learning within the PGDE program. By addressing the identified challenges and implementing the suggested improvements, the LMS can be optimised to become an even more effective platform empowering students to take ownership of their learning journeys.

Keywords: Self-regulated learning (SRL), Learning Management System (LMS), Open and Distance Learning (ODL), Postgraduate Diploma in Education (PGDE)

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INTRODUCTION

Electronic learning (e-learning), synonymous with online education and distance learning, has become a prominent method of educational delivery, especially with the widespread availability of internet access (Coates et al., 2005). In open and distance learning, Learning Management Systems (LMS) play a crucial role. Often referred to as Virtual Learning Environments (VLEs), Knowledge Management Systems (KMS), and Content Management Systems (CMS), these systems offer a comprehensive suite of tools. LMS functionalities go beyond just delivering content. They enhance the learning process and its administration, providing valuable support in both traditional classrooms and distance education contexts (Al-Busaidi & Al-Shihi, 2011). The LMS acts as a central hub, providing students with easy access to course materials, assessments, and announcements. It fosters communication by facilitating discussions and interactions between students and instructors. Essentially, the LMS bridges physical distance by serving as the key link that connects students to their peers and instructors, making it an indispensable tool for successful open distance learning (Tan, 2023). However, the active engagement of learners in LMSs depends on two major factors: expectancy value-based motivation and self-regulated learning practices. Park and Shon (2023) point out that the Expectancy-Value Theory (EVT) explains learners' engagement in the e-learning environment. According to EVT, learners' decisions to engage and persist are influenced by their perceptions of the learning activity's value (intrinsic, achievement, and utility) and their expectations for success in the specific learning task (Park & Shon, 2023). Additionally, e-learning environments require learners to be self-sufficient since instructors aren't physically present. This means managing their own learning activities, progress, and goals. Due to this independence, self-regulated learning becomes crucial. Self-regulated learning involves components like planning, monitoring progress (cognitive), finding value in learning (motivational), and managing time and resources (behavioural). Effective time management, or "scheduling," is especially important. Ultimately, strong self-regulation skills lead to better learner engagement, keeping them motivated and actively participating for longer durations (Park & Shon, 2023). The Faculty of Education (FoE) at the Open University of Sri Lanka (OUSL) offers supplementary and blended online courses to all registered students in its study programmes, alongside traditional printed course materials and contact sessions in the open and distance learning (ODL) mode. This approach emphasises self-regulated learning (SRL) practices, enabling students to effectively manage their learning and achieve desired outcomes. The FoE utilises a Moodle-based Learning Management System (LMS) to deliver the online components of its courses. While OUSL utilises a LMS and promotes SRL practices, there is a need to assess how effectively the LMS facilitates these practices among students. The Postgraduate Diploma in Education (PGDE) study programme is one of the main programmes offered in all regional and study centres of the OUSL. More than 3,000 school teachers enrol in the PGDE study programme every academic year. This study aims to investigate the impact of the OUSL's LMS on students' self-regulated learning practices, specifically focusing on those enrolled in the PGDE study programme with online course components.

This study aims to investigate the experiences of PGDE students and how the LMS influenced their ability to employ specific self-regulated learning (SRL) strategies. To achieve this, the study seeks answers to the following research questions:

- I. Does the use of the LMS impact students' application of SRL strategies such as goal setting, time management, resource management, motivation and engagement, collaboration, and self-reflection and feedback? And



II. What challenges do PGDE students face when using the LMS in relation to self-regulated learning?

REVIEW OF LITERATURE

Several studies highlight the benefits of LMSs (Oladejo et al., 2023; Odekeye et al., 2023). LMS use improves student understanding, promotes individual learning, and allows for flexible study schedules (Oladejo et al., 2023). Additionally, LMSs can support SRL (Jauhari et al., 2023). Students with higher SRL benefit more from LMS use in areas like statistical reasoning (Jauhari et al., 2023). Analysing learner behaviour within LMSs (Prasetya, 2023) can inform strategies to promote SRL and support struggling students (Prasetya, 2023; Araka et al., 2021).

METHODOLOGY

The study employed a qualitative research approach, specifically a exploratory research design. This in-depth design explored how postgraduate students enrolled in the PGDE program at OUSL utilized the LMS and employed self-regulated learning practices. Purposive sampling was used to select a sample of ten students from the target population. Data collection involved a single focus group interview guided by a pre-defined interview schedule. The schedule incorporated themes related to self-regulated learning strategies such as goal setting, time management, resource management, motivation and engagement, collaboration, and self-reflection and feedback strategies. This approach ensured consistency while allowing flexibility to explore unforeseen insights that emerged during the interview. Thematic analysis with a deductive approach was used to analyse the interview data. This method involved identifying and categorizing recurring themes within the collected data based on the predefined themes in the interview schedule. To ensure ethical research practices, informed consent was obtained from all participants prior to data collection. Table 1 shows a summary of the participants. The focus group consisted of ten postgraduate students who were enrolled in the PGDE program. All participants were between the ages of 32 and 43. There was a mix of genders (one male, nine females), with five from the Sinhala medium and five from the English medium programmes. The students came from a variety of OUSL centers across Sri Lanka, including Gampaha, Colombo, Badulla, Ambalangoda, Galle, and Kurunegala.

Table 01: Summary of the participants

Participant ID	Gender	Age	Medium	Centre
Case 1	Female	39	English	Gampaha
Case 2	Female	34	English	Colombo
Case 3	Female	32	Sinhala	Badulla
Case 4	Female	36	Sinhala	Ambalangoda
Case 5	Female	34	Sinhala	Badulla
Case 6	Female	36	Sinhala	Galle
Case 7	Female	33	English	Gampaha
Case 8	Female	37	Sinhala	Gampaha
Case 9	Female	43	English	Gampaha
Case 10	Male	41	Sinhala	Kurunegala

Most students reported that they accessed the LMS primarily on smartphones for convenience, but also used laptops for managing study materials, suggesting a preference for portability, and for quick access and functionality of complex tasks.



RESULTS AND DISCUSSION

Researchers in the study asked participants various questions about their understanding of SRL (Self-Regulated Learning), LMS (Learning Management System), and how the LMS facilitates SRL strategies. These strategies included goal setting, time management, resource management, motivation and engagement, collaboration, and self-reflection and feedback.

Understanding of Self-Regulated Learning

The participants' understanding of self-regulated learning (SRL) revealed a multifaceted approach to independent education. While many participants associated SRL with self-directed learning, their interpretations showed some nuances. For example, three participants described SRL as managing their study time and engaging in learning activities on their own. Two participants emphasised the importance of setting personal goals and the discipline to explore relevant topics without external pressure.

Overall, the responses indicated that participants possessed some awareness of SRL although their understanding encompassed various aspects of independent learning.

Knowledge and Use of LMS

All participants in the focus group readily confirmed that the PGDE program utilises the Moodle LMS platform to deliver courses. This high level of awareness translates to widespread acceptance and utilisation, as evidenced by every student acknowledging engagement with the LMS. This unanimous response highlights the LMS's integral role within the programme. The majority of students identified ten supplementary courses offered entirely online and one blended course incorporating both online and offline components. This blended approach proved particularly valuable during the economic crisis, allowing students to maintain their studies remotely while facilitating face-to-face interactions when possible. The LMS courses were widely appreciated for their flexibility, enabling continuous learning despite external disruptions. While participants showcased effective use of the LMS for core learning activities.

Goal Setting with LMS

Since goal setting is a cornerstone of self-regulated learning (SRL), the study investigated how the LMS facilitated this process for students. Analysis revealed a diverse range of experiences regarding the LMS's role in SRL strategies. Many participants highlighted its benefits in goal setting and progress tracking. The system offered various learning materials, additional readings, videos, and timely notifications, all of which are instrumental in measuring knowledge and managing learning objectives. One participant noted that these materials and notifications helped them stay on track with their goals. Similarly, four emphasised the importance of additional resources, past papers, and essential readings provided by the LMS in managing their time effectively. Additionally, the inclusion of course outlines, and clear learning objectives was particularly valuable for guiding students' studies. It was mentioned that the LMS' clear learning objectives were as a source of direction and knowledge for related lessons by three participants. Overall, the LMS plays a crucial role in supporting students' self-regulated learning by offering a variety of tools and resources that aid in goal setting, progress tracking, and reflection.

LMS and Time management

The analysis of responses regarding the use of the Learning Management System (LMS) for time management reveals several key themes and examples illustrating its effectiveness. The most prominent feature mentioned across cases is the implementation of deadlines for assignments and presentations, which play a crucial role in helping students manage their time. For instance, four participants in the focus group highlighted the importance of specific submission times, which allowed them to create a schedule and work efficiently, and stay organised and manage their workload effectively. Another significant benefit noted was the convenience and accessibility of the LMS,



which allowed students to access resources anytime anywhere. Two participants mentioned that accessing materials online rather than physically was particularly useful as it enabled them to read materials even before going to sleep. This flexibility was crucial for students balancing their studies with other commitments, as highlighted by one participant who found the LMS productive because it provided necessary learning resources without the need to seek external materials, thus saving time. The LMS' role in reducing the time spent searching for resources was also emphasised. Another participant appreciated that the LMS consolidated many materials in one place, eliminating the need to waste time looking for resources elsewhere. This streamlined access contributed significantly to effective time management, allowing students to focus more on their studies rather than on logistics. In summary, the LMS assists students in managing their time effectively through features like assignment deadlines, convenient and anytime access to resources, and centralised learning materials.

LMS and Resource management

The analysis of the responses regarding the use of the LMS for resource management reveals several key insights into how students find, organise, and integrate learning materials. The majority of students found the LMS to be an effective tool for accessing a wide range of essential reading materials, additional notes, Open Educational Resources (OER), and videos. Several respondents highlighted the comprehensive nature of the resources available in the LMS. For example, the use of YouTube links and additional reading resources provided in the LMS was identified by two participants, which helped them enhance their understanding of the subjects. Similarly, one participant pointed out the availability of OER research papers and videos, although they also noted the need to supplement LMS resources with additional searches on Google due to limited information on some subjects. In addition, the organisation of learning materials within the LMS was also appreciated. Three participants emphasised the ease of finding study materials, mentioning that past papers and all learning resources were clearly mentioned, making them easily accessible. In summary, the LMS plays a critical role in providing and organising a wide array of learning materials, but its effectiveness can be further enhanced by ensuring the reliability of links and resources.

Motivation and engagement with LMS

The influence of the LMS on students' motivation and engagement with their coursework varied among respondents. Several students highlighted the motivating aspects of the LMS, such as its role in promoting self-study and active learning. For instance, Case 1 mentioned that the LMS encouraged self-exploration of knowledge rather than passive learning, fostering a sense of responsibility for their own learning journey. Case 2 found motivation in the interactive features of the LMS, including quizzes, presentations, and notifications that kept them actively engaged and informed about deadlines. Similarly, Case 6 expressed how sharing presentations and receiving feedback through the LMS motivated them to improve their work, highlighting the collaborative and motivational aspects of the platform.

Collaborative learning

The utilisation of a LMS for collaborative learning varied among the respondents, showcasing a variety of engagement levels. Two teacher-students highlighted positive experiences with collaborative features, such as uploading presentations and receiving feedback from peers while others expressed limited use or preference for external communication platforms like WhatsApp groups. One participant acknowledged the potential of discussion forums but indicated a preference for more motivation to engage within the LMS itself. Similarly, another one noted active participation in WhatsApp groups for collaborative activities with uploads to the LMS afterward. These cases reflect a mixed pattern where students often resort to external platforms for collaboration, citing reasons like familiarity, responsiveness, or perceived limitations within the LMS' collaborative tools. Overall, the findings suggest a need for improvement in the LMS' collaborative features. This could involve enhancing user experience, fostering motivation to participate, and ensuring a more responsive environment to encourage active and meaningful peer interaction directly within the platform.



Self-reflection and feedback

The utilisation of feedback provided through the LMS for self-improvement varied among the respondents, reflecting a range of experiences and perspectives. Two teacher-students in the focus group highlighted the value of peer feedback received through presentations uploaded to the LMS, indicating a desire for more feedback from both peers and lecturers to enhance learning outcomes. Conversely, four participants expressed limited or no feedback received from lecturers, which could potentially impact students' opportunities for self-reflection and improvement. These cases underscore a need for more comprehensive feedback mechanisms within the LMS, encompassing both peer and instructor feedback, to provide students with a holistic view of their progress and areas for development. Improving feedback mechanisms within the LMS can contribute significantly to students' self-reflection processes and ultimately enhance their learning experiences.

Challenges

When examining the challenges faced in using the LMS for self-regulated learning, one student stood out with multiple obstacles identified. These include issues with study guide clarity, broken or incorrect links within the LMS, and difficulties with logging in. These challenges not only hindered self-study but also contributed to some students dropping out. Similarly, Case 8 highlighted problems with inadequate learning resources and non-functional links impacting self-study efforts. On the other hand, the need for additional support from lecturers to comprehend complex learning content effectively was identified by one participant. In terms of improvements and additional features, several suggestions emerged. Case 1 proposed making LMS activities compulsory to encourage consistent engagement and suggested integrating a rewarding system. One student emphasised the importance of an organised and stress-free environment within the LMS, while another one suggested motivating students to use discussion forums for collaboration. Cases like Case 6 highlighted the necessity of ensuring functional links within the LMS, and Case 8 recommended smaller assessments with feedback to enhance learning. Overall, these insights underscore the importance of addressing technical issues, improving content clarity, and integrating engaging features to better support self-regulated learning through the LMS.

Overall impact on SRL

The main conclusion drawn from the responses regarding the overall impact of the LMS on SRL is that the LMS has generally had a positive impact on users' ability to self-regulate their learning. Most students expressed that the LMS was helpful, supportive, and facilitated their self-regulated learning efforts. They appreciated the flexibility, accessibility to resources, and the structure provided by course outlines and materials on the platform. However, there were also suggestions for improvements, such as enhancing connectivity with lecturers and making the platform more user-friendly. Overall, while the LMS has positively impacted self-regulated learning for many users, there is room for further enhancements to optimise its effectiveness in supporting SRL.

CONCLUSION AND RECOMMENDATIONS

This study explored the impact of the LMS on PGDE students' SRL experiences. The findings revealed a two-fold impact. While the LMS demonstrably supported SRL by providing a structured learning environment, time management tools, resource management options, and opportunities for engagement, some areas for improvement emerged. These challenges included limited feedback mechanisms, technical issues with the platform, and a need for increased user engagement with collaborative features.

To further enhance the LMS' role in supporting SRL, the study recommends several improvements. Implementing a system for consistent and constructive feedback from both instructors and peers would be beneficial. Additionally, ensuring enhanced content quality with clear and accurate information, and developing strategies to incentivise students to utilise the platform's collaborative



tools are crucial. Prompt technical support and the potential incorporation of features like smaller assessments with feedback and a feedback system are also suggested to further promote student engagement.

Overall, the LMS holds significant potential as a valuable tool for fostering self-regulated learning within the PGDE programme. By addressing the identified challenges and implementing the suggested improvements, the LMS can be optimised to become an even more effective platform empowering students to take ownership of their learning journeys.

Finally, further studies employing a quantitative approach with survey research could provide a wider perspective. Expanding the scope to encompass all postgraduate programmes within the faculty or even the university would be beneficial to gain a more comprehensive understanding of the LMS' impact on students' SRL strategies.

REFERENCES

- Araka, E. Robert Oboko and John Kihoro. (2021). The Cooperative University of Kenya, Kenya. "University Students' Perception on the Usefulness of Learning Management System Features in Promoting Self-Regulated Learning in Online Learning." *International Journal of Education and Development using Information and Communication Technology* 17.1.
- Al-Busaidi, K. A., & Al-Shihi, H. (2011). Key factors to instructors' satisfaction of learning management systems in blended learning. *Journal of Computing in Higher Education*, 24(1), 18–39. <https://doi.org/10.1007/s12528-011-9051-x>
- Coates, H., James, R., & Baldwin, G. (2005). A Critical Examination of the Effects of Learning Management Systems on University Teaching and Learning. *Tertiary Education and Management*, 11(1), 19–36. <https://doi.org/10.1007/s11233-004-3567-9>
- DiBenedetto, M. K., & Zimmerman, B. J. (2010). Differences in self-regulatory processes among students studying science: A microanalytic investigation. *The International Journal of Educational and Psychological Assessment*, 5, 2–24.
- Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, Online learning, and Distance Learning environments: Are They the same? *The Internet and Higher Education*, 14(2), 129–135.
- Oladejo, R.W., Lateef Olarewaju RAHEEM, & Fatimat Moriyike Bashir. (2023). Influence of Learning Management System on Students Learning Attitude among Undergraduates of Osun State University. *International Journal of Research and Scientific Innovation*, X(XI), 16–25. <https://doi.org/10.51244/ijrsi.2023.1011002>
- Odekeye, O. T., Fakokunde, J. B., Metu, D. V., & Adewusi, M. A. (2023). Perception of Learning Management System (LMS) on the Academic Performance of Undergraduate Students during the COVID-19 Pandemic. *International Journal of Education and Development using Information and Communication Technology*, 19(1), 7-19.
- Park, J. & Shon, J.G. (2023). Exploring the Impact of Motivational Factors on Learner Participation in E-Learning. *AAOU Annual Conference*. Istanbul, Turkey.
- Prasetya, R.K. (2023). The interplay between self-regulated learning behavioral factors and students' performance in English language learning through Moodle. *ELT Forum: Journal of English Language Teaching/Elt Forum*, 12(3), 145–156. <https://doi.org/10.15294/elt.v12i3.66613>
- Tan. S.F. (2023). Revolutionising Learning Management System with Aigc-Avatar: An Insights from Students' Perspectives. *AAOU Annual Conference*. Istanbul, Turkey.



Zimmerman, B. J. (1998). Academic studying and the development of personal skill: A self-regulatory perspective. *Educational Psychologist*, 33(2/3), 73–86. doi: 10.1207/s15326985ep3302&3_3