



# Pre-Service Teachers' Perceptions of Using Moodle LMS as An Effective Teaching and Learning Resource

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## ARTICLE INFO ABSTRACT

The aim of the study was to assess students' perceptions about use Moodle as a learning management system in teaching learning resource. The research employed a descriptive survey design. The study population comprises pre-service teachers studying bachelor of education program from the colleges of education. The study appraised the pre-service teacher's perceptions on utilizing Moodle LMS in teaching learning. It aimed to address the pre-service teacher's perspectives on Moodle LMS for teaching and learning process. The results of the study revealed that there is a positive perception toward the role of Moodle based activity in improving teaching learning process. Educational interventions developed to meet the learners' requirements based on the findings of this study, while considering the current educational landscape.

**Key Words:** Learning Management System, Blended Learning, Modular Object-Oriented Dynamic Learning Environment, e-learning.

## Introduction

A nascent trend in higher education is blended learning, characterized by the deliberate amalgamation of traditional (i.e., face-to-face) and online instruction to optimize the advantages of each modality and thereby enhance student learning efficacy (Ayaia, 2009; Radenkovic et al., 2003). Rovai and Jordan (2004) assert that blended learning is a fundamental component of the 'new schoolhouse,' providing students with flexibility and convenience. The authors assert that blended learning is a versatile course design methodology that integrates various times and locations for learning, providing certain advantages of fully online courses while retaining some degree of face-to-face interaction.

Student satisfaction is characterized as the perceived worth of an individual's educational experiences within an academic institution (Astin, 1993). "Substantial disparities persist in students' perceptions of their online learning experiences" (Muilenburg & Berge, 2005). A student's impressions of their learning experiences can influence their decision to persist in a course (Carr, 2000) and impact their satisfaction with their entire online learning experiences (Kenny, 2003). Students should construct suitable online learning environments that enhance happiness and engagement, thereby improving learning outcomes (Hollis & Madill, 2006; Smart & Cappel, 2006; Upton, 2006). Students in integrated learning groups exhibit markedly higher satisfaction levels compared to those in conventional learning groups, although no significant differences have been observed between online learning and integrated learning groups (Lim, Kim, Chen & Ryder, 2008). Noel-Levitz (2004) indicates that contented students in higher education are more prone to attain academic success, and that the essential factor in assessing satisfaction lies in identifying what is significant to the learner.

The advancement of technology has compelled universities and other higher education institutions to integrate Learning Management Systems (LMS) to enhance student learning. (Mpungose & Khoza, 2020, p. 1). A Learning Management System is the predominant software utilized to facilitate online education; it assists in the creation, management, organization, and delivery of digital learning resources for students. Moodle, which stands for Modular Object-Oriented Dynamic Learning Environment, is an open-source course management system first developed by Martin Dougiamas. This platform enables educators to develop online courses, granting students continuous access similar to a virtual classroom. It possesses the benefit of a pedagogical approach and practice that underscores.

Online learning activities using Learning Management Systems (LMS) provide varied experiences and perceptions for students and educators. Nonetheless, distance education presented a drawback that could marginalize pupils via the utilization of this LMS. (Girik Allo, 2020). The absence of equitable internet access is becoming a significant inconvenience for numerous pupils. Muthuprasad et al., 2021. Moreover, altering the educational system may diminish opportunities for discussion and communication within the classroom (Xie Ling & L. Gao, 2020). Simultaneously, other concerns regarding the comprehension of online learning media utilization and adverse associations have been neglected. These issues diminish pupils' interest and motivation to learn.

The learning management system is a vital component of online education. Numerous institutions around have adopted the learning management system (LMS) to enhance communication between students and instructors beyond the conventional classroom environment. A digital software environment designed to provide educational materials and manage user learning interventions (Bartley and Golek 2004). Learning management systems (LMSs) are educational technologies that amalgamate various components to foster an enriched learning experience. They provide a functional platform that enables the creation and dissemination of educational resources, fosters user interaction, and promotes collaboration. A Learning Management System (LMS) is commonly employed as a repository for educational resources due to its provision of a cohesive interface for various stakeholders, including students, educators, content creators, and administrators. An LMS offers flexibility in terms of geography and time by enabling sophisticated interactions between educators and students, as well as providing convenient access to educational resources. Moreover, it functions as a focal nexus for all interactions among students, educators, and administrators, irrespective of their type or hierarchy. Moodle, an acronym for Modular Object-Oriented Dynamic Learning Environment, is an e-learning program developed by Martin Dougiamas in 2000, and it is accessible as an open-source platform at no cost. Moodle is recognized as one of the most often utilized learning management systems. The design is based on social constructivism ideas, highlighting the importance of interactive dialogues and the active participation of learners in second language acquisition. Moodle, theoretically associated with the social constructivist perspective, offers a variety of multimedia resources (audio, video, photos, and documents) designed for various educational requirements. These tools enable duties such as disseminating instructional materials, assigning and assessing homework, reviewing in-class courses, and participating in conversations through forums (Truong, 2021).

The e-learning platform offers users several communication tools, including a forum, chat, messaging system, and wiki space ([www.docs.moodle.org](http://www.docs.moodle.org)). Forums facilitate asynchronous conversation, permitting students to engage with peers or lecturers at any time, provided there is an internet connection. Forum conversations may encompass general interest themes or concentrate on specific subjects, initiated by any participant. Conversely, the Chat system enables real-time, coordinated conversation among users on the course platform. The messaging system facilitates private conversation among users. The Moodle wiki functions as a collaborative platform for students to participate in group activities, rendering it appropriate for seminars or project work.

### Review of Literature

Linda Khoo Mei Sui, Nurlisa Loke Abdullah, Subatira Balakrishnan, and Wan Sofiah Meor Osman (2024) disclosed that the majority of learners concurred that the Learning Management System (LMS) is an effective instrument for augmenting their educational experience. This demonstrates that LMS can serve as a tool to enhance and optimize their learning experience. The study's recommendations may serve as a framework for the university's administration in adopting relevant digital technologies, aiming to develop an effective implementation strategy to improve service delivery.

Faisal Rahim, M., Ahmed Skaikh, M., Ul Haque, S., Jabeen, S., and Ansari, T. In 2022, evaluate students' early perceptions regarding the utilization of the Moodle learning management system inside integrated modular systems at FRPMC. The majority of participants at Fazaia Ruth Pfau Medical College had a favourable opinion and experience regarding the utilization of the Learning Management System Moodle inside the medical curriculum.

Nura Bawa, Hafsat Yusuf Imam, and Aishatu Jibril Bello (2022) demonstrated that undergraduate students held favourable attitudes regarding the use of Moodle LMS. It was also determined that certain challenges related to the utilization of the platform for learning encompass power supply instability, as well as technical and psychological obstacles. The survey found that, given the students' good perception of the LMS, it is essential for the University to enhance its ICT capabilities and provide the required support and facilities for academic excellence.

Horvat, Ana, Marina Dobrota, Maja Krsmanovic, and Mladen Cudanov (2013) examine the disparities in student perceptions of the importance of Moodle learning management system (LMS) quality attributes and the variations in student satisfaction for these attributes. This study demonstrates that male and female students exhibit comparable satisfaction with the quality aspects of Moodle LMS, while also indicating a disparity in the significance attributed to these characteristics by the students. Observations of students concerning their age and year of study revealed that these groups attributed varying significance levels to quality features and exhibited differing degrees of satisfaction with them. A significant statistical difference was observed in the importance students attributed to quality characteristics and their overall satisfaction,

contingent upon the duration of their engagement with the Moodle application, which is highlighted as a crucial element of the research conducted.

### Need and Significance of the Study

The teaching and learning process will be profoundly influenced by online education in the near future. Given that learning management systems are essential for the online dissemination of information and student feedback, it is imperative to understand the perceptions of the educators who will utilize these systems in the near future. This will greatly assist players in tailoring products for the Indian education system. Additionally, it may assist stakeholders in formulating effective policies.

Moodle is the preeminent learning management system globally, offering a comprehensive suite of online learning tools. These include educational resources such as lectures in PPT or PDF formats, online assignments, blogs, forums, lessons, quizzes, workshops, chat, wikis, live streaming, and increasingly popular gaming tools like H5P, which enhance interactivity and student engagement during lesson delivery. Numerous studies indicate that the LMS Moodle enhances student learning primarily through tools that facilitate student interactions, such as discussion forums, timed assignments, and, most significantly, the utilization of computer-based testing in e-assessment tools.

Research on learning management systems significantly adds to the field of education by enhancing the understanding of information behaviours that facilitate effective learning. Users' perceptions are considered a crucial metric for assessing the efficiency and efficacy of LMS implementation. The acceptability of learning management systems (LMS) hinges on user perception; poor perceptions can lead to diminished utilization, ultimately undermining substantial corporate investments in information technology (Karahanna et al., 1999; Venkatesh & Davis, 2000). Hanson and Robson (2004) argued that linking perception with actual usage is challenging, based on their assessment of two commercial LMS (WebCT and Blackboard). The findings indicated that the students asserted these technologies enhanced their learning.

The above discussion gave an insight to the investigator to study the pre-service teacher's perception on Moodle LMS as an effective teaching and learning resources.

### Objectives and Research Questions

The study appraised the pre-service teacher's perceptions on utilizing Moodle LMS in teaching learning. It aimed to address the subsequent inquiries:

1. The pre-service teacher's perspectives on Moodle LMS for teaching and learning process is high.
2. Is there a positive perception toward the role of Moodle based activity in improving teaching learning process?
3. Is there an association between pre-service teacher's computer knowledge and perceptions on utilizing Moodle LMS?
4. Is there a significant difference between the demographic profile of pre-service teachers, and their Moodle LMS perspectives?
5. What educational interventions may be developed to meet the learners' requirements based on the findings of this study, while considering the current educational landscape?

### Methodology

The study population comprised all pre-service teachers at self-financing colleges of education affiliated to Tamilnadu Teachers Education University. The study's target population comprised only on Dindigul District. Students from each colleges of education located in Dindigul district were sampled. The purposive sampling technique was employed to choose all the colleges of education. Totally 171 samples were collected and analysed through SPSS Statistical Packages.

### Research Instruments

The research utilized a questionnaire as the primary instrument to gather quantitative data regarding the participants' perspectives on utilizing Moodle LMS as a learning resource. The investigator used the "Questionnaire Measuring Students' Perception of the Use of Moodle for Learning" (QMSPUML) developed and standardized by Nura Bawa, Hafsat Yusuf Imam, and Aishatu Jibril Bello (2022), was employed for data collecting.

### Analysis

#### Hypothesis 1

The level of pre-service teacher's knowledge on utilizing Moodle LMS in teaching learning process is high.

**Table 1: Pre-Service Teachers Knowledge on Utilizing Moodle LMS**

| Knowledge on Moodle LMS | Low |      | Moderate |      | High |      |
|-------------------------|-----|------|----------|------|------|------|
|                         | N   | %    | N        | %    | N    | %    |
|                         | 48  | 28.1 | 100      | 58.5 | 23   | 13.4 |

As shown in Table 1, pre-service teachers showed moderate level of knowledge on Moodle LMS (58.5%). This result indicate that there is a moderate level of knowledge on Moodle LMS utilization expressed by pre-service teachers.

### Hypothesis 2

There is a positive perception toward the role of Moodle based activity in improving teaching learning process.

**Table 2: Perception toward the Role of Moodle Based Activity**

| Perception on Moodle Based Activity | Low |      | Moderate |      | High |      |
|-------------------------------------|-----|------|----------|------|------|------|
|                                     | N   | %    | N        | %    | N    | %    |
| Extremely Useful                    | 12  | 7    | 98       | 57.3 | 61   | 35.7 |
| Very Useful                         | 10  | 5.8  | 78       | 45.6 | 83   | 48.5 |
| Moderately Useful                   | 15  | 8.8  | 104      | 60.8 | 52   | 30.4 |
| Slightly Useful                     | 114 | 66.7 | 46       | 26.9 | 11   | 6.4  |
| Not useful at all                   | 148 | 86.5 | 15       | 8.8  | 8    | 4.7  |

As shown in Table 2, pre-service teachers showed high level in their perception toward the role of Moodle based activity are very useful in teaching learning process and moderate level of perception toward the role of Moodle based activity as extremely useful (57.3%) and moderately useful (60.8%). Further the pre-service teachers expressed low level of perception toward the role of Moodle based activity in slightly useful (66.7%) and not useful at all (86.5%). This result specify that there is a moderate level of perception toward the role of Moodle based activity in teaching learning process.

### Hypothesis 3

There is a significant association between pre-service teacher's computer knowledge and perceptions on utilizing Moodle LMS.

**Table 3: Association between Pre-service Teacher's Computer Knowledge and Perceptions on Utilizing Moodle LMS**

|                              | Value               | df | Asymp. Sig. (2-sided) |
|------------------------------|---------------------|----|-----------------------|
| Pearson Chi-Square           | 26.480 <sup>a</sup> | 21 | .189                  |
| Likelihood Ratio             | 31.602              | 21 | .064                  |
| Linear-by-Linear Association | 2.311               | 1  | .128                  |
| N of Valid Cases             | 171                 |    |                       |

As shown in Table 3, computer knowledge of pre-service teachers not associated with the perception on utilizing Moodle LMS for teaching learning process. Because the p-value is greater than our chosen significance level ( $\alpha = 0.05$ ), we do not reject the null hypothesis. Rather, we conclude that there is insufficient evidence to suggest an association between computer knowledge on pre-service teachers not associated with the perception on utilizing Moodle LMS for teaching learning process.

### Hypothesis 4

There is a significant difference between the demographic profile of pre-service teachers, and their Moodle LMS perspectives.

**Table 4: Mean Score difference between the Demographic Profile of Pre-service Teachers, and their Moodle LMS Perspectives**

| Variables               | Demographic Nature | Mean  | SD   | 't' Value | 'p' Value |
|-------------------------|--------------------|-------|------|-----------|-----------|
| Moodle LMS Perspectives | Male               | 59.37 | 4.84 | 0.264     | .792      |
|                         | Female             | 59.17 | 4.66 |           |           |
|                         | Below 30 years     | 59.48 | 4.72 | 0.738     | .461      |
|                         | 30 years and above | 58.94 | 4.73 |           |           |
|                         | Rural              | 58.53 | 4.70 | 1.916     | .057      |
|                         | Urban              | 59.91 | 4.60 |           |           |

As shown in Table 4, Moodle LMS perspectives of pre-service teacher's demographic nature (Male and Female, below 30 years and 31 years and above, Rural and Urban) do not differed statistically, as the calculated 't' values of 0.264, 0.738, and 1.916 at 5% level of significance.



## Findings

1. The pre-service teacher's perspectives on Moodle LMS for teaching and learning process is moderate.
2. There is a positive perception toward the role of Moodle based activity in improving teaching learning process.
3. There is no association between pre-service teacher's computer knowledge and perceptions on utilizing Moodle LMS.
4. There is no significant difference between the demographic profile of pre-service teachers, and their Moodle LMS perspectives.

## Conclusion

Pre-service teachers express optimism on the implementation of the Moodle learning management system for an efficient instructional procedure. Moodle is an effective learning management system suitable for facilitating the development of 21st-century learning skills. Despite the platform's efficacy, technical challenges may impede its optimal utilization inside the colleges. Given that the majority of undergraduate students at Usmanu Danfodiyo University hold favourable views of the platform, it is imperative for the university to rectify the technical issues identified in the study, enhance its ICT capabilities, and provide students with all requisite support and facilities to achieve academic excellence. This would enhance the learner-platform relationship and equip students for global competitiveness.

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