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Exploring the Student Experiences of LMS (Learning Management System) in Higher Education

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Abstract
The study aims to investigate the student experience and perception of blending LMS (Learning Management System) with the traditional classroom instructional strategy. It also analyses the impact of LMS on students' engagement and evaluate their satisfaction with it. The research used quantitative design with single group post-test only experimental design. The study used complete enumeration design where all 47 students of Masters in Education (M.Ed.) programme were exposed to experiment but only 42 students became part of study by responding to post test. Moodle was used as LMS and participants responses were sought on a reliable and valid self-developed instrument including twenty statements. The findings of the study reveal that students had a positive experience with the Learning Management System (LMS) and they found it easy to use, user-friendly, flexible, and beneficial for their studies. However, it was found that by giving better orientation to LMS and expediently resolving technical glitches, blended instructional strategy can be made more effective.

Keywords: LMS (Learning Management System); Moodle; Moodle Mobile; Blended Learning; Experience; Perception

Introduction

Technology has become a crucial component of education system in recent times and is contributing as effective platform for the delivery of online, blended, and traditional classroom instruction. The use of LMS has greatly expanded the opportunities for learning and has made education more flexible, personalized, and engaging. "*A Learning Management System (LMS) is a software application for the administration, documentation, tracking, reporting, and delivery of educational courses, training programs, or learning and development programs*" (Ryann, 2009). LMS offers great advantages to the learners by providing convenience in access, organised content, ease in communication, opportunity for collaborative learning, opportunity to track and report students' progress, equal access and opportunity to learn at own pace.

The use of LMS technology has become increasingly popular in education, and many universities and schools now use an LMS to deliver course content, assign and collect assignments, facilitate communication between students and instructors, and track student progress. Some popular LMS include Blackboard, Canvas, and Moodle. The present study only uses Moodle as the university where the investigator is employed uses it for teaching learning transactions.

Moodle is an open-source Learning Management System (LMS) that is widely used in universities and schools in recent times. It was first developed by Martin Dougiamas, an Australian educator, in 2002. It is designed to assist the delivery of online, blended, and traditional classroom instruction by supplying tools and features to support the management and delivery of course content. It also enables creation and organisation of quizzes, assignments, multimedia content, assessment of students' progress, managing and grading students' performance.

There are numerous studies conducted on the use of Moodle as a Learning Management System (LMS) in several educational settings. Gómez, Pérez-Sanagustín, & Delgado Kloos (2013) explored the use of Moodle in a blended learning environment in higher education and found that the use of Moodle had positive impact on student engagement. Also, it improved students' academic performance in comparison to traditional face-to-face teaching methods. Al-Samarraie (2013) found that the use of Moodle in a higher education setting improved students' communication and collaboration skills.

Chen, Wang, & Liang (2014) used Moodle in a K-12 education setting and; found that student learning and engagement increased with its adoption. Al-Harthy & Al-Harthy (2015) found that the use of Moodle in a distance education setting improved student satisfaction and participation. A study by Vuorikari, Punie, & Carretero (2016) found that the use of Moodle in a higher education setting improved student satisfaction with the learning experience and increased their participation. Vargas-Quesada, Fernández-Cano, & García-Peñalvo (2016) highlighted that students with higher level of interaction with Moodle platform were academically better than those who had lower level of interactions.

Charalambous & Kyriacou (2018) concluded that Moodle through flexible, accessible learning environment and by facilitating communication increases positive impact on education. Alharbi (2019) suggested the insight into the Moodle adoption in Saudi Arabian universities and found that the student perceives Moodle as helpful tool in their learning.

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Simanullang & Rajagukguk (2020) found that students learning activity and engagement in course material was elevated with the use of Moodle. Rahayu, Mustofa, & Rahmah (2022) highlighted that Moodle heightened students learning even through online mode and students had positive attitude towards Moodle in learning English.

There are many more studies that have demonstrated that Moodle can be an righteous tool in higher education, as it can improve student engagement, communication, collaboration skills, motivation, academic performance, and satisfaction with the learning experience. However, developing the learning experiences of the students through use of LMS is still a topic of debate and for adequately understanding this, the present study undertakes to study the experience and perception of pre- service teachers especially master's pupil teachers, regarding the newly implemented blended instructional strategy (LMS and traditional classroom instruction) of their university.

Rationale of the study

The present study is an in-depth exploration of the students' experiences and perceptions of LMS Moodle Mobile. This will provide insights into how LMS (specifically Moodle) can be effectively blended with traditional teaching and can provide support to students learning. The study will be useful for educators, education leaders, and policy makers as it will provide important insights into the ways in which LMS are being used, the benefits and challenges of using LMS, and the impact of LMS on student engagement with the course. This information can be used to make informed decisions about the use of LMS in education, and to ensure that LMS are being used as resource that is beneficial for students. Additionally, the study can also help to identify areas for improvement, and to suggest propositions on how LMS can be augmented to support student.

Research Objectives

- To investigate the students' experiences and perceptions of using Moodle as an LMS in their education.
- To analyse the impact of Moodle on the students' engagement with the course.
- To evaluate the level of satisfaction of students with the LMS for their learning.

Research Questions

- What are the students' experiences and perceptions of using Moodle as an LMS in their education?
- How has Moodle impacted the students' engagement with the course?
- What is the level of satisfaction of students with the LMS Moodle for their learning?

Research Design

The present study is experimental research and uses single group post-test only design. Such a design implies measurement of dependent variable only after the intervention. In this research independent variable is using LMS Moodle Mobile as instructional strategy by blending it with traditional classroom teaching and the dependent variable is students' experiences of LMS Moodle Mobile. By exposing the single group of students to the blended instructional approach, the investigators have manipulated the independent variable, and this meets the criteria of experimental research design.

The study was conducted for the duration of two semesters and period of total 7.5 months (15 May 2022 to 31 Dec 2022). The research uses sequential systematic research design that is described below in four stages.

Stage 1 - Orientation and Motivation: The students were provided the access to LMS Moodle Mobile by providing Login Id and Passwords. They were informed about the add-ons of using it in their learning process. Also, the virtual orientation of its various features was given and students queries were resolved.

Stage 2- Development of Resource Library: The investigator regularly uploaded the assignments, course content, supplementary and other related material on the LMS along with the teaching in classroom. During this research, the investigator uploaded course content for two semesters (Semester 2 and 3 of same batch) and 4 subjects (Curriculum Planning and Development, Education Studies, Historical and Political Perspectives of Education, and Mathematics Education). The development of resource library continued for period of 7.5 months (15 May 2022 to 31 Dec 2022).

Figure-1: Screenshot of courses taught via LMS Moodle Mobile

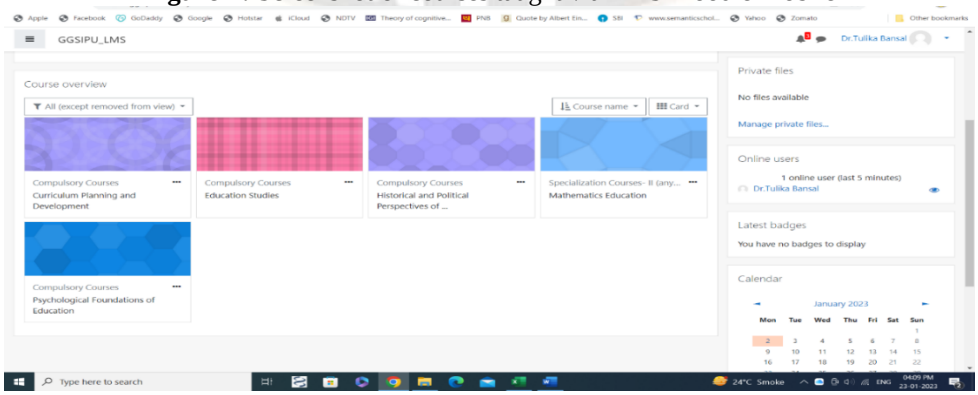

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Figure-2: Screenshot of LMS Content of Curriculum Planning and Development Course

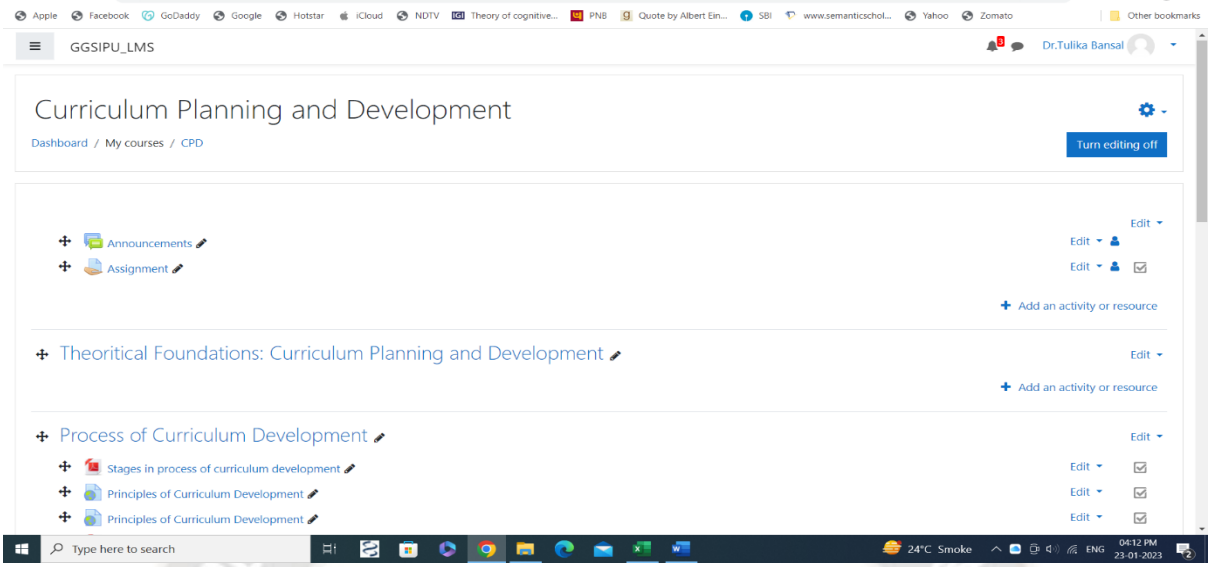

Figure-3: Screenshot of LMS Content of Education Studies Course

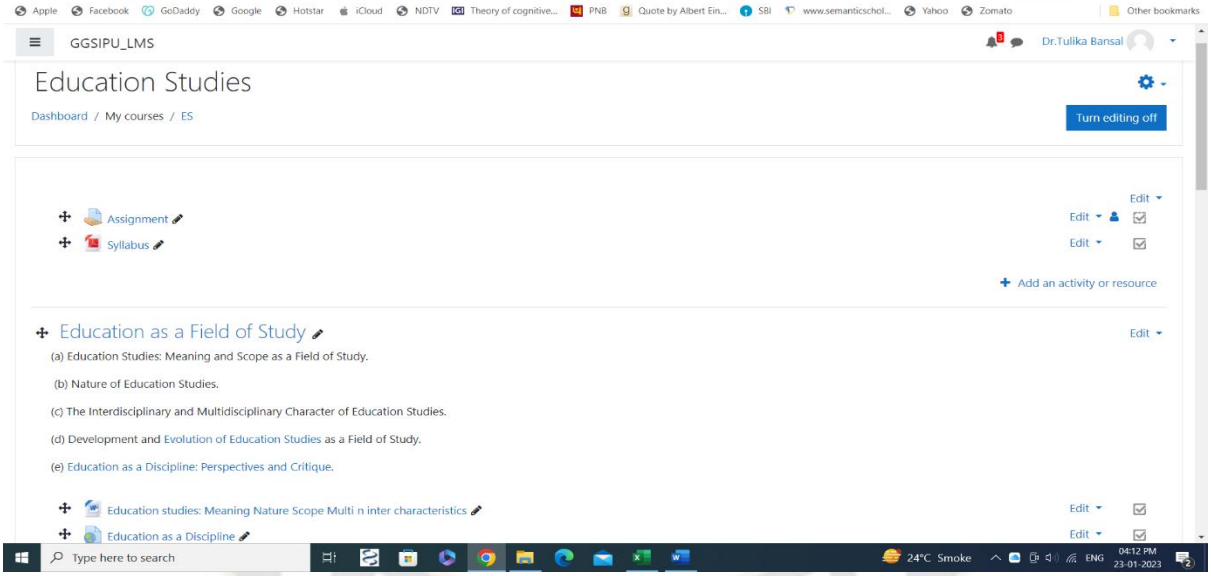

Figure-4: Screenshot of LMS Content of Historical and Political Perspectives of Education Course

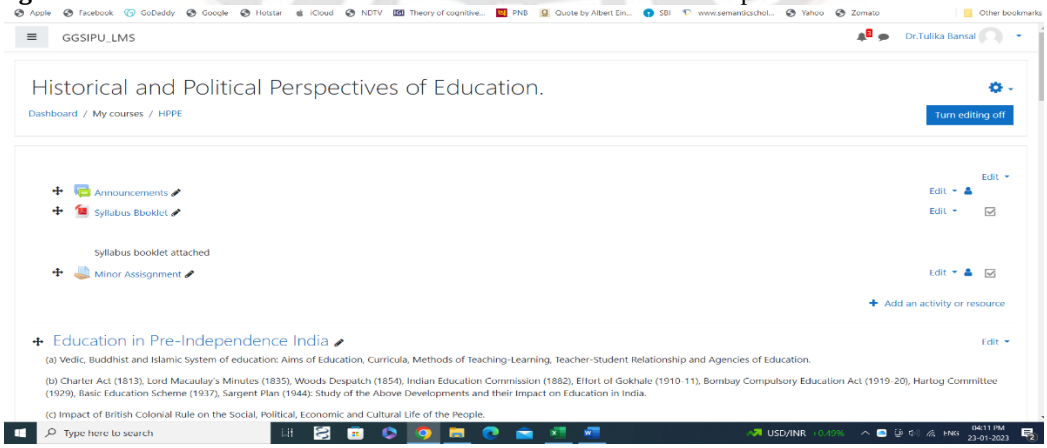

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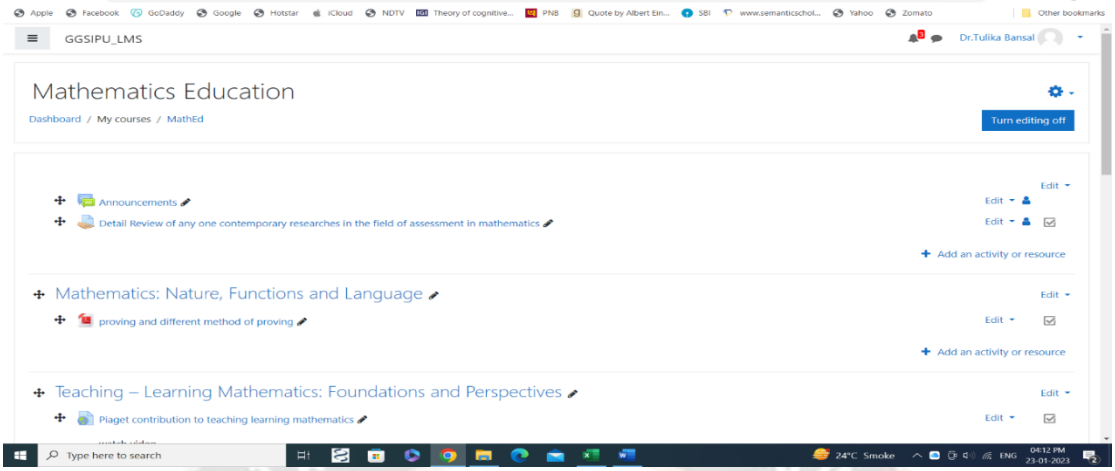
Figure-5: Screenshot of LMS Content of Mathematics Education Course



Stage 3- Socialisation and Follow up: The students were continuously given information related to upload of content on LMS and were frequently motivated to use it. It was ensured by the investigator that students submit their assignments for grading on LMS and; also comments and suggestions on assignments were given via LMS only. Investigator made sure of grading the assignments on LMS. Students were also provided technical support in case of technical issues encountered.

Stage 4- Seeking Data on Students Experiences: A Questionnaire was designed for collecting data on students' experiences of LMS Moodle Mobile. The questionnaire was distributed to students via google forms and continuous reminders were sent to fill it via WhatsApp group.

Figure-6: Screenshot of WhatsApp communication related to LMS content upload

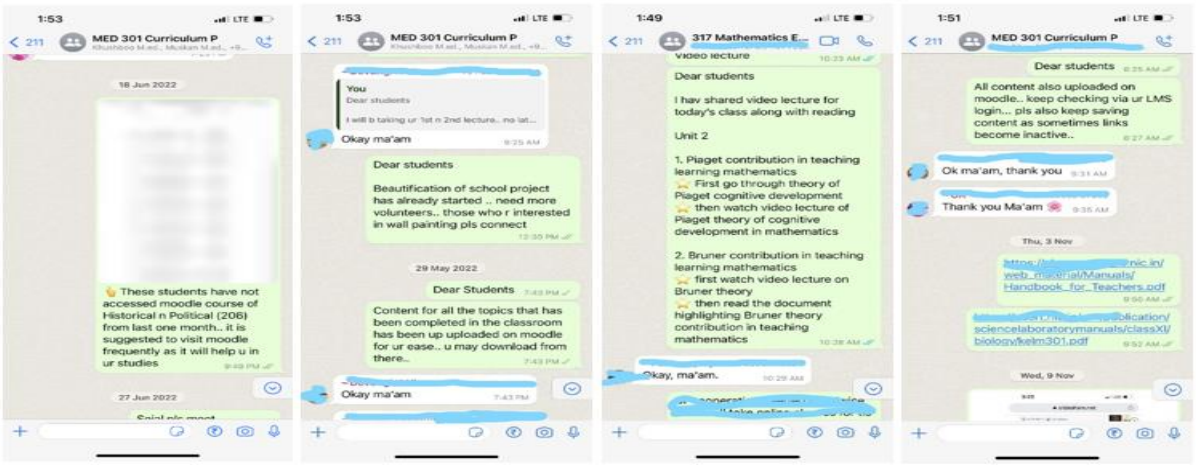


Figure-7: Screenshot of assignment comments given on LMS

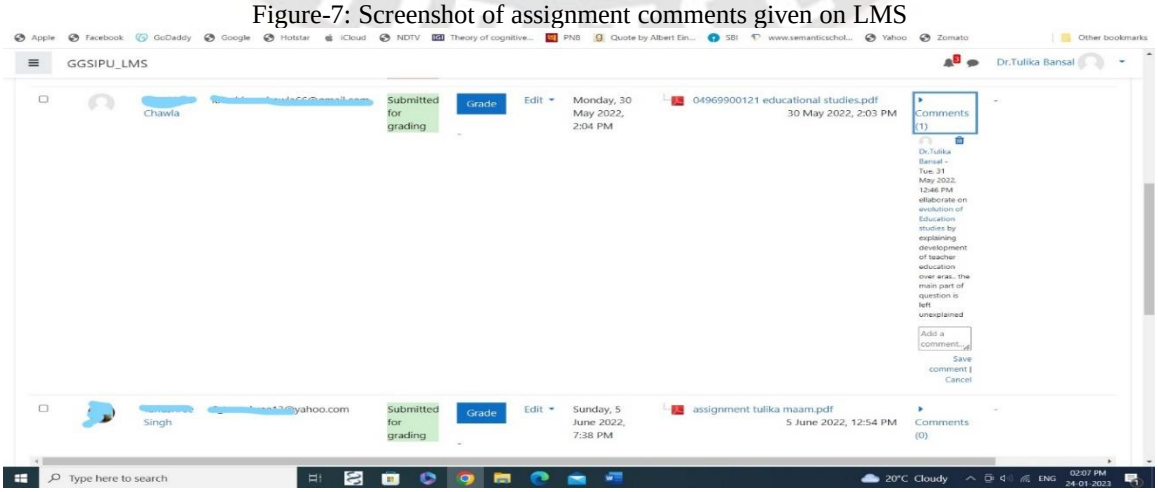


Figure-8: Screenshot of grading given on LMS

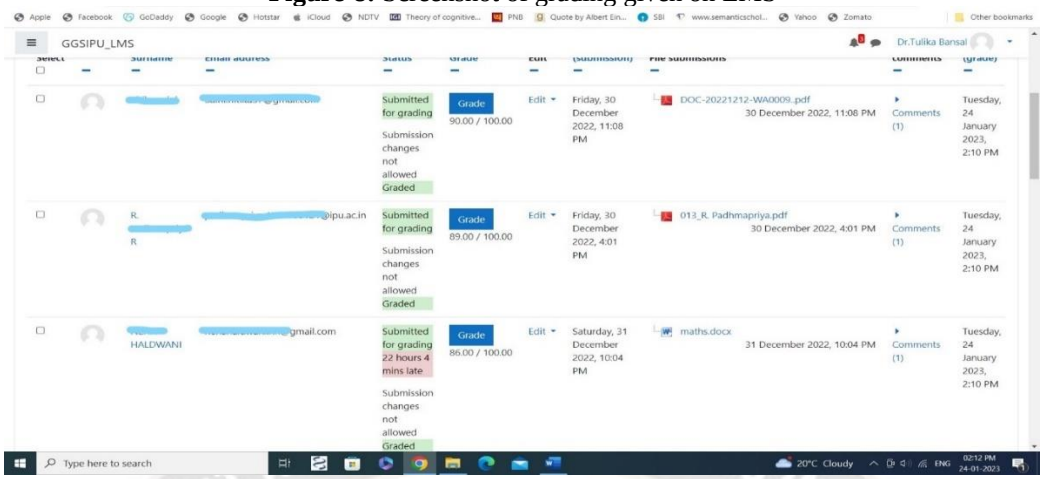


Figure-9: Screenshot of technical support communication

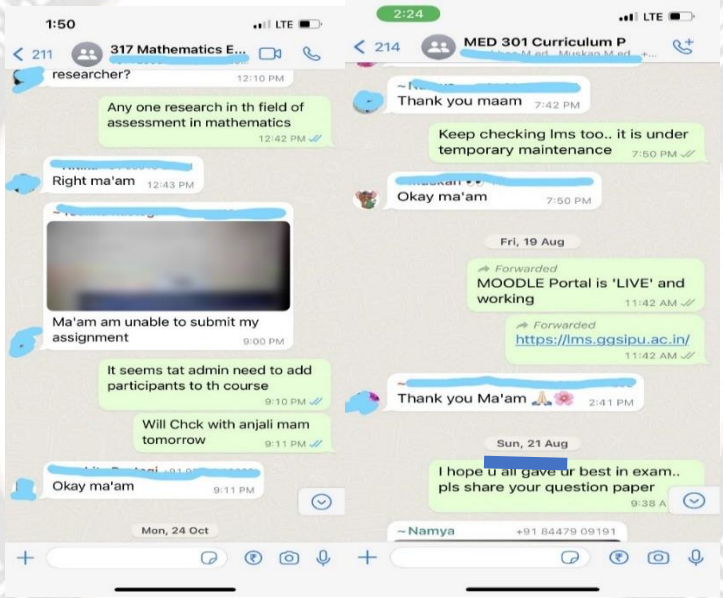


Figure-10: Screenshot of responses on Google form designed for Data Collection

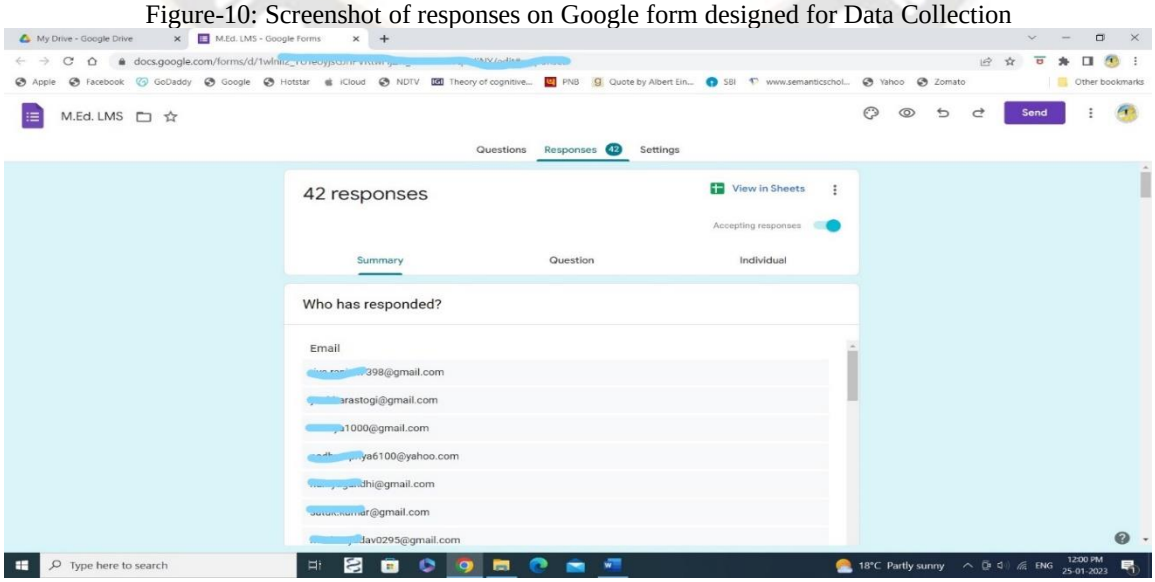


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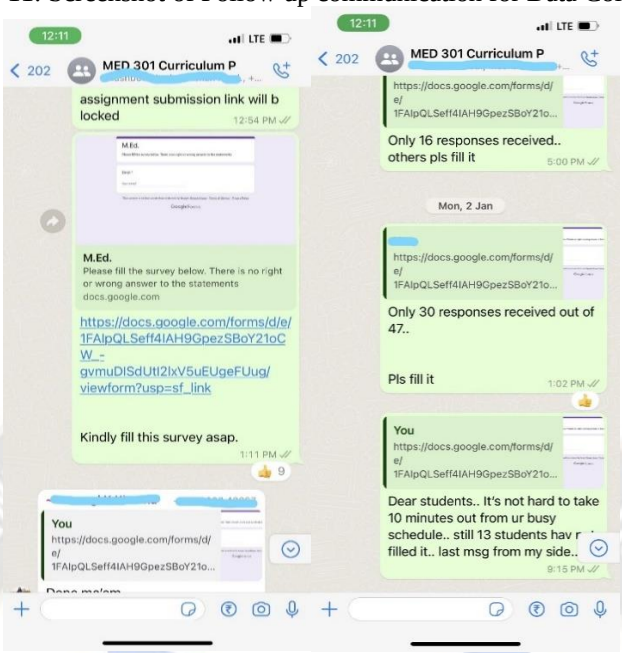
Figure-11: Screenshot of Follow up communication for Data Collection



Sample of the study

The study used complete enumeration (census) technique for data collection, where all 47 students of classroom were included in experiment and were taught blending LMS Moodle Mobile and traditional classroom teaching technique. However, only 42 students became part of study by completing survey instrument on experience. During the research, Moodle Mobile as LMS was used and it was selected on the basis of convenience as the university where investigators are employed introduced it as a part of for its instructional strategy.

Research Instrument

An instrument including two sections was constructed for obtaining experience of the students on LMS. Section A of the instrument was related to collating descriptive data like email id, age, qualification and Section B had 20 statements on experience of LMS. The statements were to be rated on Likert five-point rating scale ranging from Strongly Agree to Strongly Disagree.

The validity of the instrument was established by content and face validity. The instrument was sent to experts and their suggestions were incorporated. For reliability, Cronbach Alpha was calculated that turns out to be 85.72 and as per George and Mallery (2003) table of reliability, it is good level of reliability.

The instrument was circulated via google forms to the students. However, there was no time limit to complete the survey but students were requested to complete and submit in the period of 2 days. The instrument was submitted by students on 31 Dec 2022 and 01 Jan 2023.

Results

The results of the study reveals that the participants age ranges from 22 to 30 years old, with most of the ages around 24-26 years old. The average age of participants is 25.24, with the median age being 24.5. This suggests that the ages are moderately spread out and not greatly skewed in one direction or the other. The mode age is 24, indicating that 24 is the most frequently occurring age in the data set. The youngest age in the sample is 22 and the oldest age is 30. The demographic composition of the Master of Education (M.Ed.) programme revealed that only 2 male participants were present among a total of 42 participants. This implies that the majority of students pursuing a career in education are females, displaying the gender imbalance in the field.

The collected data from the participants was analysed and represented in the form of percentage for a clear and concise presentation.

Table-1: Percentage Distribution of Responses

S.No.	Statement	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1.	I find LMS (Learning Management System) easy to use.	33.3%	57.1%	4.8%	4.8%	0%
2.	I find LMS features user friendly.	26.2%	57.1%	11.9%	4.8%	0%
3.	LMS provides me flexibility in time and location for learning.	21.4%	64.3%	9.5%	4.8%	0%
4.	I can easily navigate through various features of LMS used by my university.	16.7%	54.8%	28.5%		0%

5.	I find it convenient to download learning material from LMS.	26.2%	61.9%	7.1%	4.8%	0%
6.	I prefer submitting assignment on LMS.	28.6%	50%	11.9%	9.5%	0%
7.	LMS is beneficial in my studies.	23.8%	47.6%	19%	9.6%	0%
8.	LMS organizes my course material.	31%	57.1%	11.9%		0%
9.	LMS makes it easy for me to access study material while learning.	28.6%	59.5%	11.9%		0%
10.	I prefer downloading content from LMS than going to library.	23.8%	47.6%	21.4%	7.2%	0%
11.	LMS saves my time by providing reference material for study.	17%	61%	22%		0%
12.	Use of LMS has increased my engagement with course material.	11.9%	45.2%	28.6%	11.9%	2.4%
13.	Orientation to use LMS was given to us by Technical/Teaching staff.	33.3%	59.5%	4.8%	2.4%	0%
14.	I was made aware about the benefits of LMS.	19%	64.3%	11.9%	4.8%	0%
15.	We are provided support by Technical/Teaching staff in case we forget username and password.	23.8%	57.1%	9.5%	7.1%	2.5%
16.	Technical glitches faced by us while using LMS has been effectively resolved by Technical/ Teaching Staff.	23.8%	61.9%	11.9%	2.4%	0%
17.	I have got a new experience of learning using LMS.	19.2%	42.3%	34.6%	3.9%	0%
18.	In general, I am satisfied using LMS for my learning	11.5%	77%	11.5%		0%
19.	I wish continuous use of LMS by my teachers for teaching learning.	15.4%	69.2%	11.5%	3.9%	0%
20.	I recommend other students or teachers to use LMS	30.8%	57.7%	7.7%	3.8%	0%

The data shows that the majority of students had a positive experience with the LMS, with more than three fourth agreeing that it was easy to use (33.3% strongly agreed and 57.1% agreed) and user-friendly (26.2% strongly agreed and 57.1% agreed). Additionally, a large percentage of students felt that the LMS provided them with flexibility in terms of time and location for learning (21.4% strongly agreed and 64.3% agreed). However, a significant percentage of students (28.5%) reported difficulties in navigating the various features of the LMS and some found the orientation and support provided by technical/teaching staff to be lacking (33.3% agreed and 59.5% agreed that orientation was given, but only 23.8% agreed that technical glitches were effectively resolved).

When it comes to convenience, more than three fourth of the students found it easy to download learning materials from the LMS (26.2% strongly agreed and 61.9% agreed) and preferred to submit assignments through the system (28.6% strongly agreed and 50% agreed). Additionally, most students felt that the LMS was beneficial for their studies (23.8% strongly agreed and 47.6% agreed) and helped to organize their course material (31% strongly agreed and 57.1% agreed).

Overall, students were satisfied with the LMS, with 77% of students agreed that they are satisfied with the LMS for their learning, and 69.2% of students wish for continuous use of LMS by their teachers. Additionally, many students recommended the LMS to other students and teachers (30.8% strongly agreed and 57.7% agreed).

Discussion

The findings of the study disclose that students had a positive experience with the Learning Management System (LMS) during the course of the study. They found it easy to use, user-friendly, and beneficial for their studies. They also appreciated the flexibility in terms of time and location for learning that the LMS provided. However, there were some areas where students had difficulties, such as navigating the various features of the LMS and ineffective resolution of technical glitches. Overall, students were satisfied with the LMS, and many recommended it to other students and teachers. In conclusion, LMS has been a positive tool for student's learning experience but some domains need specific attention for making it more effective.

Conclusion and Recommendation

Derived from the result of data analysis, the investigators came to the conclusion that LMS can improve students' engagement with the course and students have positive perception towards it. Students prefer continued adoption of LMS and wants other teachers to use it in their instructional strategy. However, by giving better orientation to LMS and focussing on resolution of technical glitches promptly, blend of LMS and traditional classroom can be made more effective.

The investigators offer several recommendations to the future study. Future investigations are advised to undertake the perception of teachers also. The study has included one university, future studies are suggested to take perception from other universities too. It is also suggested to observe the

effect of age and gender on blending of technology in classroom.

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