THE IMPACT OF IMPROVING USER EXPERIENCE ON UTTARAKHAND OPEN UNIVERSITY (UOU) LMS PLATFORM ON LEARNER RETENTION: A COMPARATIVE STUDY

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Abstract:
When it comes to helping students acquire new abilities and learn effective strategies for managing their knowledge and information, e-learning plays a pivotal role in the educational process. The Internet has been widely used by educational institutions because of its potential to revolutionize teaching and study methods. The Internet has made it possible to transform even the most antiquated classroom into an interactive learning space. Unfortunately, only a small percentage of schools have fully embraced e-learning in a way that promotes the institution-wide implementation of cutting-edge instructional technology. Learning management systems (LMSs) are used by many schools because they have been shown to increase student engagement, make group work easier, give students timely feedback, and help students improve as individuals. There are a wide variety of proprietary and open-source LMSs available. The process of creating and assessing LMSs has taken on greater significance as the number of LMSs has increased. This report explores how enhancing UOU's LMS platform's user experience influences student retention rates. Success, efficiency, assessment, evaluation, selection, and usability of LMSs are also threatened by this.

Keyword: User Experience, E- Learning System, Learner retention

1. Introduction:

With technology permeating every part of our lives, schools are under increasing pressure to incorporate technological concepts into their curricula. It's undeniable that e-learning technologies have allowed for a revolutionary shift in pedagogy in the world of higher education. Several aspects determine whether or not an organization is successful at adopting e-Learning, including the accessibility of technology, the quality of assistance provided to instructors, and the degree to which technology is integrated into the faculty teaching experience (1). Teachers can use e-learning to model and present a wide variety of material in engaging ways that encourage students to learn by doing rather than simply observing. The delivery, engagement, and facilitation of teaching and learning are all greatly aided by the use of electronic learning (2). Hence, e-learning has the potential to play a significant role in the evolution of higher education pedagogy. But schools that are serious about adopting e-learning must first ensure they are culturally and technologically ready for the shift. Opportunities presented by e-learning will be lost if the groundwork required to take advantage of it is not laid. This includes creating an institutional culture that supports and promotes e-learning at all levels, building a solid technological infrastructure, and offering technical assistance to faculty members [3].

Knowledge dissemination and educational policymaking have been profoundly affected by the development of information and communication technologies. Officials anticipate that ICT will be used more frequently to improve education quality and adaptability [4,5]. Learning efficiency, learner-cantered strategies, enhanced interaction, and online collaboration between students and teachers are all bolstered by technological advancements [6, 7]. Open distance learning (ODL) schools face a similar challenge when traditional educational practices such as paper-based curricula give way to digital communication. Blended learning utilizes a number of different approaches to creating and delivering content and facilitating learning. The faculty members may be well-versed in their fields of

study, but that doesn't mean they have the technical savvy to successfully provide courses via the web. As a result, people may doubt their abilities to manage educational content on a digital platform [8,9]. If users have a good time interacting with a system, they may end up using it more efficiently and effectively, which translates to better performance [10]. The time spent on creating and maintaining the online course could be reduced if the professor had access to an effective learning management system (LMS) [11]. Less studies of learning management systems have taken into account academic or lecturer concerns about UX or usability, despite the fact that many have examined the efficacy and benefits of eLearning [12].

2. LITERATURE REVIEW:

2.1 User Experience:

A learning management system, which is an interactive product, was used to study the paradigm of the user's experience. The goal of the study was to find out which user values are most important when facilitating ODeL (Open Distance e-Learning) in an online or blended setting. The user experience takes into account emotional responses, physical sensations, and the contextual significance and value of these encounters. Humans' wants and feelings as a result of using the product or system are of utmost importance. The ultimate worth of a product is tied to the results of an interaction, not the interaction itself [13].

The term "user experience" is used to describe the emotional response people have when engaging with or using a product. User experience is influenced by several factors, including but not limited to usability, functionality, aesthetics, content, appearance and feel, and sensual and emotional appeal[14]. This research lends credence to the view, articulated by Zaharias and Mehlenbacher [15] that UX is an evolving procedure incorporating not only the usability and accessibility concerns of conventional HCI but also the hedonic and affective design features advocated by Hassenzahl and Tractinsky [16]. In the field of human-computer interaction (HCI), "user experience" (UX) refers to everything that happens when an object or system interacts with a person in a certain setting. This indicates that the experience is also influenced by the surrounding environment [17].

2.2 E- Learning System:

Online learning management systems facilitate the integration of technological resources into the classroom. Less than a decade has passed since the first implementation of a software toolkit known as "e-Learning" in a school context. In addition, e-learning allows teachers to go beyond the constraints of time and place in the classroom [18].

To help direct research questions and establish the significance of studies, it is useful to evaluate the literature related to the implementation of such technology in higher education. Some professors have jumped on the technological bandwagon, but others have been far slower to adapt and use it in their classrooms. Some professors seem hesitant to embrace digital learning and implement technological tools in their classrooms [19]. Several studies have shown that the two most important criteria in determining whether or not universities adopt new forms of instructional technology are faculty development and institutional support (encouragement and incentive) [20].

(Gautreau, 2011) [21] revealed that while all polled professors used LMS communication tools in their personal lives, only roughly a third of those same professors actually used them in the classroom. Because of this, "some faculty members are just unable to tie technology use to their teaching" [22]. Researching the extent of faculty involvement and the difficulties involved with employing these technologies is warranted by the growing availability of useful tools. Several academic departments and schools don't yet have access to some of these technologies [23]. In addition, there are a number of challenges that employees may face when making plans to implement new or current technological solutions within their firm. Organizational leaders may be able to find ways to eliminate or at least make these challenges more manageable by giving some thought to the hurdles their companies confront [24].

3. Objectives:

- To Compare the users' experience of the online courses hosted on UOU LMS with other platforms.
- To identify various factors which influence the users' experience of using LMS platform hosted by UOU.
- To study the impact of improving users experience of UOU on learners' retention rate.

4. Hypothesis:

The following hypotheses were incorporated into the model based on the literature research and observations:

- H1: There is no significant effect of added features in UOU LMS's platform on instructor to leaner interaction.
- H2: There is no significant effect of added features in UOU LMS's platform on instructor feedback.
- H3: There is no significant effect of added features in UOU LMS's platform on learner-to-learner interaction.
- H4: There is no significant effect of added features in UOU LMS's platform on course content.
- H5: There is no significant effect of added features in UOU LMS's platform on course structure.
- H6: There is no significant effect of added features in UOU LMS's platform on perceived effectiveness.

5. Statement of the Problem:

The use of technology alone is insufficient. Students' participation and performance may not improve simply because they have access to cutting-edge technology. Technology in the classroom is also not a panacea. The researchers concluded that teachers' mentality toward technology was crucial to the use of new tools. Examining the faculty's views and experiences with e-learning and other forms of technologically enhanced education is crucial. In light of the potential roadblocks to e-learning deployment at the cited institution, the current study sought to assess the impact of enhancing the user experience on UOU's learning management system (LMS) on student retention.

6. Methodology:

The data that were gathered throughout the course of the study were analyzed, and the interpretation of the data that was gathered is reported in this paper. The learning portals of Uttarakhand Open University was used to collect the data. As was mentioned earlier, the primary objective of this research is to evaluate the Enhancing User Experience on UOU's Learning Management System (LMS) platform. A questionnaire in the form of a web-based survey with multiple sections was developed after Adding Additional Features in UOU LMS's platform.

7. Result and discussion:

Mixed methods of qualitative and quantitative approaches are used in this study for the data collection. All of the hypotheses were supported through Pearson correlation tests.

Table1. Basic Details of respondents for added features in UOU LMS's platform.

		Before Adding Feature	After Adding Feature
GENDER	MALE	201	232
	FEMALE	78	63
CATEGORY	Student	222	193
	Faculty Member	19	34
	Other	38	68
DISCIPLINE	Arts	15	19
	Science	170	225
	Commerce	15	10
	Professional Course	79	41
AGE GROUP	upto 24	198	146
	25-34	44	74
	35-44	24	57
	45-54	9	14
	55-64	4	4
	Above 65	0	0
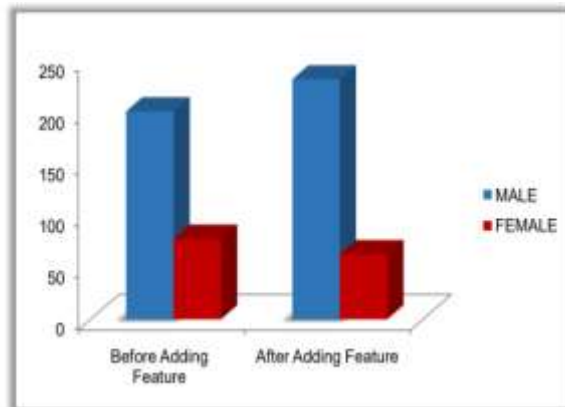
Fig 1: Gender Wise details of respondents
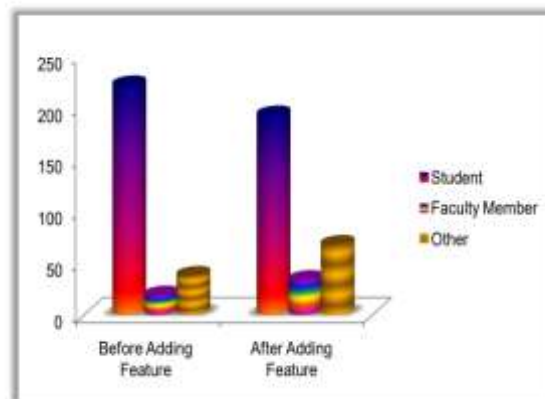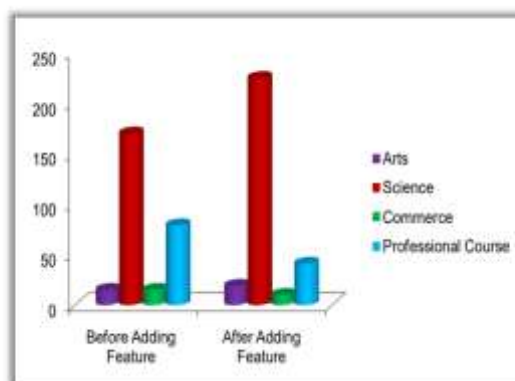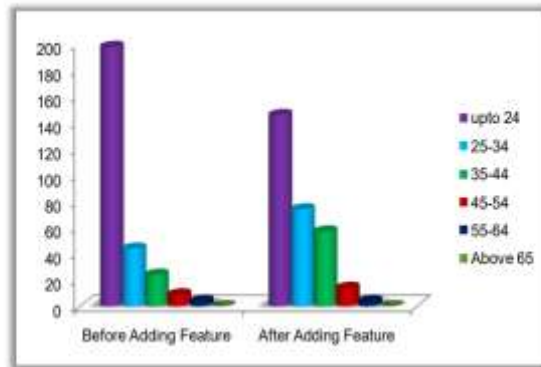

Fig 2: Category wise details of respondents

Fig 3: Discipline wise details of respondents

Fig 4: Age group wise details of respondents

Table 1 shows the basic details of respondents. In this analysis, before adding features in UOU LMS's platform 201 male respondents give response and after adding features in UOU LMS's platform 232 male respondents give response. Before adding features in UOU LMS's platform 78 female respondents give response and after adding features in UOU LMS's platform 63 female respondents give response.

We divide our data into three categories. First category for students, before adding features in UOU LMS's platform 222 students give response and after adding features in UOU LMS's platform 193 students give response. Second category for faculty members, before adding features in UOU LMS's platform 19 faculty members give response and after adding features in UOU LMS's platform 34 faculty members give response. Third category for other respondents, before adding features in UOU LMS's platform 38 other respondents give response and after adding features in UOU LMS's platform 68 other respondents give response.

We divide our data into four disciplines. First discipline for Arts students, before adding features in UOU LMS's platform 15 arts students give response and after adding features in UOU LMS's platform 19 arts students give response. Second discipline for science students, before adding features in UOU LMS's platform 170 science students give response and after adding features in UOU LMS's platform 225 science students give response. Third discipline for commerce students, before adding features in UOU LMS's platform 15 commerce students give response and after adding features in UOU LMS's platform 10 commerce students give response. Fourth discipline for professional course students, before adding features in UOU LMS's platform 79 professional course students give response and after adding features in UOU LMS's platform 41 professional course students give response.

We also divide our data according to age group. In first age group 'upto 24', before adding features in UOU LMS's platform 198 students give response and after adding features in UOU LMS's platform 146 students give response. In second age group '25-34', before adding features in UOU LMS's platform 44 students give response and after adding features in UOU LMS's platform 74 students give response. In third age group '35-44', before adding features in UOU LMS's platform 24 students give response and after adding features in UOU LMS's platform 57 students give response. In fourth age group '45-54', before adding features in UOU LMS's platform 9 students give response and after adding features in UOU LMS's platform 14 students give response. In 5th age group '55-64', before adding features in UOU LMS's platform 4 students give response and after adding features in UOU LMS's platform 4 students give response. In last age group 'Above 65', no students registered in any course programme.

H1: There is no significant effect of added features in UOU LMS's platform on instructor to leaner interaction:
Table 2: t-test for analysing the effect of added features in UOU LMS's platform on instructor to leaner interaction.

|	N	Mean	SD	df	t	Sig. (2-tailed)
Before Adding Feature	279	16.04	2.643	572	9.067	0.000
After Adding Feature	295	17.82	2.050			
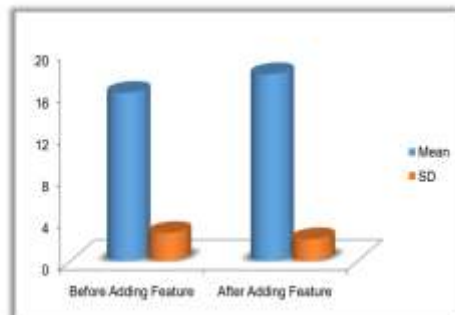
Fig 5. Mean & SD for effect of added features in UOU LMS's platform on instructor to leaner interaction

We conduct the t-test for testing the significant effect of added features in UOU LMS's platform on instructor to leaner interaction. Above Table 2 showed that the t value is 9.067 and p-value is 0.000 which is less than level of significance 0.05. P value is less than 0.05 so that the hypothesis, "There is no significant effect of added features in UOU LMS's platform on instructor to leaner interaction" is rejected and we conclude that the there is significant effect of added features in UOU LMS's platform on instructor to leaner interaction. This test reveals that added features in UOU LMS'a platform increase the instructor to leaner interaction. Learner felt free to ask questions throughout his course, instructor respond learners question timely, the instructor is more easily accessible to learner and learner more freely express and explain his views to instructor.

H2: There is no significant effect of added features in UOU LMS's platform on instructor feedback.

Table 3: t-test for analysing the effect of added features in UOU LMS's platform on instructor feedback.

	N	Mean	SD	df	t	Sig. (2-tailed)
Before Adding Feature	279	16.13	2.799			
After Adding Feature	295	17.57	2.257	572	6.821	0.000
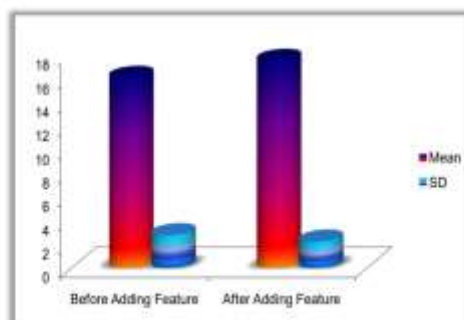
Fig 6. Mean & SD for the effect of added features in UOU LMS's platform on instructor feedback.

We conduct the t-test for testing the significant effect of added features in UOU LMS's platform on instructor feedback. Above Table 3 showed that the t-value is 6.821 and p-value is 0.000 which is less than level of significance 0.05. P-value is less than 0.05 so that the hypothesis, "There is no significant

effect of added features in UOU LMS's platform on instructor feedback" is rejected and we conclude that the there is significant effect of added features in UOU LMS's platform on instructor feedback. This test reveals that added features in UOU LMS'a platform increase the instructor feedback. After adding features in UOU LMS's platform the instructors are more responsive to students concerns. Instructor provides timely feedback on assignment, exam, and projects after adding some new features in UOU LMS's platform.

H3: There is no significant effect of added features in UOU LMS's platform on learner-to-learner interaction.

Table 4: t-test for analysing the effect of added features in UOU LMS's platform on learner-to-learner interaction.

|	N	Mean	SD	df	t	Sig. (2-tailed)
Before Adding Feature	279	19.89	3.404			
After Adding Feature	295	21.18	3.118	572	4.741	0.000

Fig 7. Mean & SD for the effect of added features in UOU LMS's platform on learner-to-learner interaction

We conduct the t-test for testing the significant effect of added features in UOU LMS's platform on learner-to-learner interaction. Above Table 4 showed that the t-value is 4.741 and p-value is 0.000 which is less than level of significance 0.05. P-value is less than 0.05 so that the hypothesis, "There is no significant effect of added features in UOU LMS's platform on learner-to-learner interaction" is rejected and we conclude that the there is significant effect of added features in UOU LMS's platform on learner-to-learner interaction. This test finds that added features in UOU LMS'a platform increase the learner-to-learner interaction. After adding features in UOU LMS's platform the learner-to-learner interaction increases significantly. Added features provide more opportunity to learners to learn from other learners.

H4: There is no significant effect of added features in UOU LMS's platform on course content.

Table 5: t-test for analysing the effect of added features in UOU LMS's platform on course content.

|	N	Mean	SD	df	t	Sig. (2-tailed)
Before Adding Feature	279	20.97	2.913	572	6.069	0.000
After Adding Feature	295	22.35	2.536			
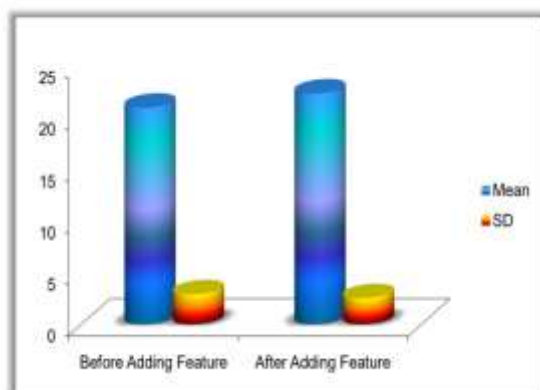
Fig 8. Mean & SD for the effect of added features in UOU LMS's platform on course content

We conduct the t-test for testing the significant effect of added features in UOU LMS's platform on course content. Above Table 5 showed that the t-value is 6.069 and p-value is 0.000 which is less than level of significance 0.05. P-value is less than 0.05 so that the hypothesis, "There is no significant effect of added features in UOU LMS's platform on course content" is rejected and we conclude that the there is significant effect of added features in UOU LMS's platform on course content. This test finds that added features in UOU LMS'a platform increase the course content effectiveness, applied learning, problem solving methods, student evaluation techniques like project, assignment, exams etc. Added features make course assignments more interesting, stimulating and up-to-date the course with recent developments in filed.

H5: There is no significant effect of added features in UOU LMS's platform on course structure.

Table 6: t-test for analysing the effect of added features in UOU LMS's platform on course structure.

|	N	Mean	SD	df	t	Sig. (2-tailed)
Before Adding Feature	279	12.81	1.804	572	4.621	0.00
After Adding Feature	295	13.46	1.549			
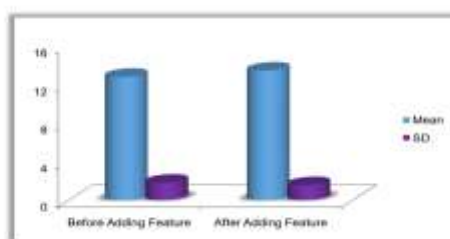
Fig 9. Mean & SD for the effect of added features in UOU LMS's platform on course structure

We conduct the t-test for testing the significant effect of added features in UOU LMS's platform on course structure. Above Table 6 showed that the t-value is 4.621 and p-value is 0.000 which is less than level of significance 0.05. P-value is less than 0.05 so that the hypothesis, "There is no significant effect of added features in UOU LMS's platform on course structure" is rejected and we conclude that the there is significant effect of added features in UOU LMS's platform on course structure. This test finds that after adding new features in course structure on UOU LMS'a platform the structure of the modules is more systematic and organized. Projects/assignments are more clearly explained to the learners.

H6: There is no significant effect of added features in UOU LMS's platform on perceived effectiveness.

Table 7: t-test for analysing the effect of added features in UOU LMS's platform on perceived effectiveness

	N	Mean	SD	df	t	Sig. (2-tailed)
Before Adding Feature	279	12.89	1.712	572	6.972	0.000
After Adding Feature	295	13.80	1.425			
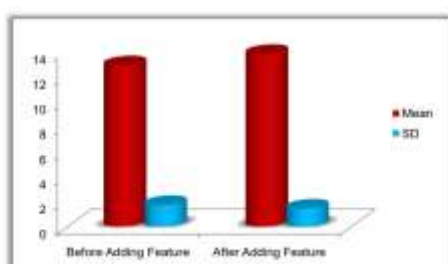
Fig 10. Mean & SD for the effect of added features in UOU LMS's platform on perceived effectiveness
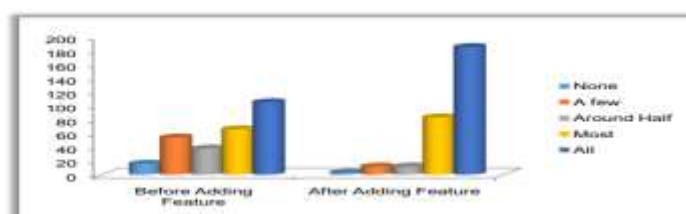
We conduct the t-test for testing the significant effect of added features in UOU LMS's platform on perceived effectiveness. Above Table 7 showed that the t-value is 6.972 and p-value is 0.000 which is less than level of significance 0.05. P-value is less than 0.05 so that the hypothesis, "There is no

significant effect of added features in UOU LMS's platform on perceived effectiveness" is rejected and we conclude that the there is significant effect of added features in UOU LMS's platform on effectiveness of the course. This test finds that added new features in course programme on UOU LMS'a platform increased the learners interest in course programmes. The added features increase the enjoyment of the learning. After completing the course more learners said that they are recommend the course to their friends and colleagues.

Table 8: Relationship between added features in UOU LMS's platform and learner retention in reference to watching or reading the MOOC content.

How much of the MOOC content do you estimate you watched or read?	Before Adding Feature	After Adding Feature
None	16	3
A few	54	12
Around Half	38	12
Most	66	83
All	105	185

Fig 11. Relationship between added features in UOU LMS's platform and learner retention in reference to watching or reading the MOOC content.

The above Table 8 shows that 16 respondents not watching or reading the MOOC content before adding new features in UOU LMS's platform and 3 respondents not watching or reading the MOOC content after adding new features in UOU LMS's platform. 54 respondents watching or reading few MOOC content before adding new features in UOU LMS's platform and 12 respondents watching or reading few MOOC content after adding new features in UOU LMS's platform. 38 respondents watching or reading around half MOOC content before adding new features in UOU LMS's platform and 12 respondents watching or reading around half MOOC content after adding new features in UOU LMS's platform. 66 respondents watching or reading most MOOC content before adding new features in UOU LMS's platform and 83 respondents watching or reading most MOOC content after adding new features in UOU LMS's platform. 105 respondents watching or reading all MOOC content before adding new features in UOU LMS's platform and 185 respondents watching or reading all MOOC content after adding new features in UOU LMS's platform.

8. Conclusion:

This study focuses on UOU and provides an accurate portrayal of the components of learning management systems. Its findings contribute to the growing body of literature on using LMS to raise standards in UOUs' educational institutions. More may be done to increase LMS adoption and utilization at UOU's educational institutions. The success and effectiveness of LMS usage are influenced not just by investing in design issues like Internet prices or system interfaces but also by applying techniques and tools that boost the user's self-efficacy and enjoyment. UOUs should pay close attention to training and the selection of the LMS brand to avoid hindering the successful implementation and acceptability of LMS usage for e-learning in UOU. Training should be provided for both students and teachers to improve LMS utilization and user efficacy. Students and teachers alike will come to view the LMS as indispensable after receiving adequate instruction on its use. The results of the study suggest that students' performance and the e-learning environment as a whole benefit from proper training. Teachers' fears of new technologies can be allayed, and resistance to e-learning tools can be overcome if they are given the proper training. When deciding which LMS to install, institutions should take into account user feedback and preferences. In addition, educational institutions should strive to raise the bar of LMS quality in order to satisfy their students.

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