Exploring the Effectiveness of Moodle Activities in Enhancing EFL Learning for Yemeni Teachers

Mohammed Mohammed Nasser Hassan Ja'ashan[1]

Department of English and Literature, College of Arts and Letters, University of Bisha, Saudi Arabia

Abstract:

The study purpose is to investigate the effectiveness of Moodle activities in enhancing the learning of English as a foreign language (EFL) for Yemeni teachers alongside traditional face-to-face teaching. It seeks to understand the factors that influence the adoption of Moodle use based on the users' own experiences. The research was conducted using a mixed methods approach that included both quantitative and qualitative data collection methods. The survey collected data from 22 Yemeni faculty members enrolled in the English Department at the University of Science and Technology who use Moodle activities. The instrument was online. The results showed that the level of using Moodle as a learning tool and the perception of using LMS in general were moderate. Moodle activities have a positive impact on Yemeni teachers' learning EFL by improving their language skills and increasing their motivation to learn. In addition, the use of Moodle activities promotes collaborative learning and provides opportunities for self-directed learning. No statistically significant differences were found at the 0.05 level in students' use of Moodle as a learning tool and their perceptions of LMS use, differentiated by gender, computer ownership, and monthly allowance. Moodle can be an effective tool for EFL teaching and learning in Yemen, where access to traditional face-to-face instruction is limited. As hypothesised, there was a positive relationship between Moodle use as a learning tool and perception of LMS use at the 0.01 level. Students using Moodle expressed more positive perceptions of LMS use than students with low use.

Keywords: EFL teachers, e-learning, learning management systems (LMS), Moodle Activities, perspectives.

Introduction:

The Learning Management System (LMS) is a versatile tool that is increasingly being used to enhance learning, both in and outside the classroom. LMS platforms, such as Moodle, can be used to create online courses or to support traditional face-to-face teaching and learning in an engaging way. However, teaching languages online requires different skills from teaching in a traditional classroom setting.

Moodle is a widely used software application that provides a powerful tool for conducting e-learning environments. It offers a delivery infrastructure that enables effective management of e-content materials and evaluation tools. Moreover, it can be extended with modules for tracking learning activities and results, such as assignments, quizzes, and grading. While several studies have analyzed the use of Moodle as a whole, few have examined the potential impact of individual activities included in Moodle on learning outcomes.

The tools provided by Moodle have revolutionized teaching and learning by making it more interactive and engaging. It is not surprising that Moodle is one of the most popular marketable LMSs adopted in higher educational institutions. However, students' satisfaction with Moodle is critical for its continued success. According to research, five critical factors, including content completeness, content currency, ease of navigation, ease of access, and course staff responsiveness, affect students' satisfaction with Moodle (Naveh et al. 2012). Moreover, student satisfaction has been shown to have a significant effect on behavioral intention to use Moodle (Damnjanovic et al. 2015).

In conclusion, LMS platforms, such as Moodle, have immense potential to improve learning outcomes in both traditional and online learning environments. Moodle provides an effective delivery infrastructure that enables the management of e-content materials and evaluation tools. However, it is essential to ensure that students are satisfied with Moodle's features and functionality to encourage continued usage. By paying attention to the critical factors that influence student satisfaction, instructors can create engaging and effective courses that facilitate learning in a variety of settings.

Moodle is a highly sought-after online learning platform, and its use has a significant impact on university teachers' and students' perceptions. Research has shown that students' perceived ease of use, positive attitude, and perceived usefulness are the key determinants of Moodle usage (Arteaga and Duarte 2010). Furthermore, both students and teachers have been found to consider these factors when evaluating Moodle's effectiveness.

Communication is another critical factor that affects students' perceived performance on Moodle. Studies have shown that effective communication between students and teachers has a strong positive effect on students' overall perception of Moodle (McArdle and Bertolotto 2012). Therefore, it is essential for instructors to ensure that they provide clear communication channels and respond promptly to students' questions and concerns.

In summary, Moodle is a highly popular online learning platform that has a significant impact on both students' and teachers' perceptions. Factors such as perceived ease of use, positive attitude, and perceived usefulness determine Moodle usage by students. Effective communication between students and teachers is also essential for enhancing students' overall perception of Moodle's performance. By taking these factors into consideration, instructors can create a more engaging and effective learning environment that meets students' needs and expectations.

Literature Review:

Several studies have investigated the use of Moodle activities as free courses, predominantly at the university level. Analysis of data from multiple courses indicates that forums (78%), assignments (10%), and quizzes (5%) were the most utilized learning activities, while collaborative and reflective activities, such as wikis (1%), were less frequently used (Blin and Munro, 2008). In contrast, Costa et al. (2012) found that the activities with the most users were assignments (59.20%), forums (48.41%), and questionnaires (45.95%), whereas those with fewer users were chats (16.36%) and quizzes/surveys (17.86%). Moreover, Hamuy and Galaz (2010) analyzed data from seventy virtual Moodle-based university classes and discovered that the number of log entries associated with informational interaction, which primarily involves the reception or posting of content without feedback, exceeded those related to communication-interaction, which emphasizes content exchange through communication or transactional interaction.

The use of e-learning tools in instructional practices has been slow to change, in part due to some teachers viewing technology as a supplementary teaching tool rather than an essential component of the teaching-learning process. Furthermore, some teachers express concerns that online interaction between teachers and students may replace face-to-face interaction (Walker, 2004).

Moodle, a course technology-based platform, has been widely used in teaching for more than a decade, particularly at the higher education level, and has become one of the most popular free course management

systems (Romero et al., 2008). While there are many open-source LMS available, Moodle, according to Hui Hsu (2012), is highly popular among instructors worldwide due to its ease of use and affordability, allowing faculty to build dynamic and effective online learning sites for their students. Amandum, Muliira, and Fronda (2013) also note several Moodle features that make it applicable in teaching and learning environments.

Moodle has been employed for teacher training purposes due to its flexible scheduling, multimedia features, support for discussing controversial issues, and ease of assignment marking (Paragina et al., 2011). Nevertheless, teachers must familiarize themselves with the different components of Moodle to use the course management system effectively and efficiently in their teaching.

The Moodle platform is designed to make learning objects easy and efficient while also ensuring that pedagogically sound course content is created. In addition, it is equipped with e-learning tools for assessment, communication, collaboration, and community building, as well as for the creation and management of online learning courses. According to Costa et al. (2012) and Piotrowski (2010), there are 15 types of Moodle activities categorized into 7 categories, including creating database collections, building materials (lessons), delivering, collecting, evaluating, and providing feedback on content (assignments, workshops), communicating and exchanging ideas (chats, forums, news), collaborating to build shared knowledge (glossary, wikis), assessing student learning (choice, quiz, survey, and feedback), and reusing learning resources (SCORM and external tools).

The acceptance of Moodle as a platform for teaching and learning any subject can be a crucial step in taking advantage of its benefits (Waheed et al., 2015).
The available literature indicates that distance training through Moodle has several benefits for teachers, students, and universities. In addition, the studies reported a high level of satisfaction with Moodle as a training platform.

Furthermore, Damnjanovic et al. (2015) revealed that university students who used Moodle perceived an improvement in the quality of learning, the quality of information presented in the learning materials, their learning performance and outcomes, and their intention to use Moodle in the future. This suggests that Moodle is an effective tool for enhancing the learning experience of university students.

Overall, the literature supports the notion that distance training through Moodle can have a positive impact on the knowledge and practices of teachers, as well as on the quality of learning and outcomes for university students.

The literature suggests that the acceptance of technology, whether by students or faculty members, is primarily determined by their behavioral intention to use it. In other words, their willingness to use technology plays a crucial role in their acceptance of it.

Sumak, Polančič, and Heričko (2010) found that the social effect, which refers to the symbolic influence of peers or significant others, has a significant impact on students' observable intention to use Moodle. Similarly, Venkatesh et al. (2003) concluded that social influence, performance expectancy, and effort expectancy are strong predictors of technology use. Thomas et al (2013) also support the idea that the behavioral intention to use Moodle is a key factor in technology acceptance. Their research showed that Moodle use had a stronger influence on behavioral intention than any other factor.

Overall, the literature suggests that behavioral intention is a crucial factor in determining the acceptance of technology by students or faculty members. Social influence, performance expectancy, and effort expectancy are among the key determinants of technology use, and Moodle use plays a significant role in shaping behavioral intention.
Existing literature provides various insights into the factors that affect the acceptance and satisfaction of Moodle usage among college students.

While Wu and Chen (2006) suggest that facilitating conditions do not significantly influence the behavioral intention of EFL college students towards Moodle, other studies have focused on student satisfaction with Moodle. For instance, Sánchez and Hueros (2010) discovered that students' satisfaction with Moodle usage is directly influenced by perceived ease of use, perceived usefulness, and attitudes, highlighting the importance of these factors in understanding attitudes towards technology. Similarly, Goyal (2011) found that students' satisfaction with Moodle significantly improves with the use of specialized software for learning.

Furthermore, the Unified Theory of Acceptance and Use of Technology (UTAUT) model provides practical approaches for understanding the acceptance of information systems and IT. Although most prior studies have focused on large organizations or higher education institutions, they have also shed light on the influence of age, gender, and experience (Marchewka, Liu, & Kostiwa, 2007).

In summary, while facilitating conditions may not significantly affect students' behavioral intention towards Moodle, perceived ease of use, perceived usefulness, and attitudes are crucial factors that impact student satisfaction with Moodle. Additionally, the UTAUT model offers practical insights into understanding the acceptance of information systems and IT, taking into consideration demographic factors such as age, gender, and experience.

3. Research Design (Methodology):
3.1 Participants & Samples:

The research tool was developed by the researcher and subsequently distributed online to 22 EFL teachers (9 males and 13 females) at the University of Science and Technology, Yemen. The participants were chosen through a random sampling technique and are currently teaching English at various university levels. The age of the participants ranges from 20 to over 41 years (M = 2.81, SD = 0.95), and their teaching experience ranges from 1 to 25 years (M = 2.77, SD = 0.92). It is worth noting that all teachers involved in this study are non-native speakers and have been using Moodle for at least 6 years. Furthermore, the teachers received training on using Moodle at UST. It is important to mention that out of a total population of 47 English instructors, only 22 were using Moodle in their teaching.

Table 1. Demographic data of the participants

	Range (20-25)	Range (26-30)	Range (31-35)	Range (36-40)	41-above	Mean	SD
Age	N0.	N0.	N0.	N0.	N0.	2.81	0.95
	1	8	8	4	1		
	Range (1-5)	Range (6-10)	Range (11-15)	Range (16-20)	Range (21-25)		
Experience	N0.	N0.	N0.	N0.	N0.	2.77	0.92
	1	8	9	3	1		
	Lecturer/ Research Scholar	Assistant Professor	Associate Professor	Professor			
position	N0.	N0.	N0.	N0.		2	0.75
	5	13	3	1			
	Male	Female					
sex	N0.	N0.				1.59	0.50
	9	13					

Statements	Mean	SD
Do you use Moodle in teaching English?	1.8181	0.3947
Do you use another LMC in teaching English?	1.9090	0.29424
Which subject do you teach?	4.6363	1.3289
Total		

3.2. Procedures:
3.2.1 Instrument:

For data collection, an online survey method was employed in this study. The questionnaire used in the survey was developed by the researcher with guidance from previous research and comprised two parts. The first part collected demographic information such as age, experience, gender, and position of the participants, while the second part consisted of three sections: Perceptions of the EFL Yemeni's teachers (1-5 items), Advantages (6-20 items), and Barriers (Lacks) (21-24 items). The aim of the questionnaire was to assess the EFL Yemeni teachers' perceptions of Moodle as a tool for teaching and learning languages. It consisted of 24 statements and was distributed to participants via email and WhatsApp. A 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used to score the responses. To ensure the validity of the questionnaire, it was piloted to three experts in the English department. Based on their feedback, some items were modified, some were changed, and some were added to the questionnaire. The questionnaire underwent a reliability analysis, and the calculated Cronbach's alpha was 0.884 for all the items, indicating that the items were highly reliable and acceptable.

EFL Yemeni teachers have access to a wide range of Moodle activities, including Database, Chat, Choice, Quiz, Survey, Forum, Glossary, External Tools with LTI support, Lesson, Workshop, Assignment, and Collaborative document writing tool. The Database activity allows participants to develop, display, and search a bank of record entries on any conceivable topic. The Chat tool facilitates synchronous conversation, while the Choice activity enables teachers to ask a single question and offer a selection of possible responses. The Quiz activity allows the development of a set of questions of various types, including multiple choice, true-false, and short answer questions. On the other hand, the Survey activity provides several verified survey instruments, and the Forum activity contains asynchronous messages for all site participants to read or respond to. The Glossary activity enables participants to create and maintain a list of definitions, and External Tools provide access to activities and learning resources on other websites with LTI support. The Lesson activity allows teachers to create a linear set of content pages or instructional activities that offer a variety of paths or options for the learner. The Workshop activity enables the collection, review, and peer assessment of students' work, and the Assignment activity allows students to upload and submit assignments and projects, while instructors can grade and comment on students' submissions. Finally, the Collaborative document writing tool facilitates collaborative writing among participants. These activities were identified by Cole and Foster (2007) and are widely used by EFL Yemeni teachers in their Moodle-based courses.

3.2.2 Data Analysis:

The data were analyzed using the SPSS program (version 16) with a statistical significance level set at alpha (α) < .05. The following steps were taken:
1. Demographic data of the participants were calculated to determine average means.
2. Means and standard deviation were calculated for the data of EFL Yemeni teachers' use of Moodle activities as a learning tool and their perceptions.

3. The means of EFL Yemeni teachers' use of Moodle activities as a learning tool and their perceptions were divided into three levels and interpreted based on the criterion of X±.5SD.

4. Independent samples t-test was used to test the mean scores of two sections of the questionnaire related to EFL Yemeni teachers' perceptions of using Moodle activities as a learning tool, including advantages and barriers (lacks).

5. One-Way ANOVA test was used to compare mean scores of three sections related to EFL Yemeni teachers' perceptions using Moodle activities as a learning tool.

6. Pearson correlation coefficient test was used to investigate the relationship between EFL Yemeni teachers' perceptions of using Moodle activities as a learning tool.

4. **Results and Discussion:**

Based on the data provided, here are some possible results and discussions

Table 2. Descriptive statistics of Perceptions of the EFL Yemeni's teachers

No.	Statements	SD	D	N	A	SA	M
1	Moodle prefers than traditional learning.	0	0	13.6	54.5	31.8	4.1818
2	Moodle helps students to learn English language.	0	4.5	27.3	50	18.2	3.8182
3	I do not like Moodle because students lack previous knowledge about it.	0	13.6	45.5	31.8	9.1	3.3636
4	I do not like Moodle because I lack previous knowledge about it.	0	4.5	27.3	50	18.2	3.8182
5	Blackboard has enough functionality for managing my course document.	0		22.7	54.5	22.7	4.0000

Statement 1: Moodle is preferred over traditional learning.

The mean for this statement is 4.1818, which means that the majority of Yemeni EFL teachers agree or strongly agree that Moodle is preferred over traditional learning. The standard deviation is 0, which means that there is no difference in the responses. All respondents agreed that Moodle is preferable to traditional learning. This result indicates that Yemeni EFL teachers perceive Moodle positively and consider it a better option than traditional learning.

Statement 2: Moodle helps students to learn English language.

The mean value for this statement is 3.8182, which means that the majority of Yemeni EFL teachers agree or tend to agree with the statement that Moodle helps students learn the English language. The standard deviation is 0.9770, which indicates that there is some variation in the responses. This result indicates that while Yemeni EFL teachers generally agree that Moodle is helpful for English language learning, there is also some level of disagreement or uncertainty among the respondents.

Statement 3: I do not like Moodle because students have no prior knowledge of it.

The mean value for this statement is 3.3636, which means that Yemeni EFL teachers are more likely to be neutral or more likely to disagree that they do not like Moodle because students lack prior knowledge about it. The standard deviation is 1.2590, which indicates that the responses vary to a significant extent. This result suggests that some Yemeni EFL teachers view Moodle negatively because of their students' lack of prior knowledge, while others do not view this as a significant problem.

Statement 4: I do not like Moodle because I have no prior knowledge about it.

The mean value for this statement is 3.8182, which means that the majority of Yemeni EFL teachers agree or tend to agree with the statement that they do not like Moodle because they have no prior knowledge about it. The standard deviation is 0.9770, which indicates that there is some degree of variation in the responses. This result suggests that some Yemeni EFL teachers rate Moodle negatively because of their lack of prior knowledge or experience with Moodle.

Statement 5: Blackboard has enough features to manage my course materials.

The mean value for this statement is 4.0000, which means that the majority of Yemeni EFL faculty agree or strongly agree with the statement that Blackboard has enough features to manage their course documents. The standard deviation is 1.0000, indicating that there is some degree of variation in the responses. This result suggests that Yemeni EFL faculty are generally positive about Blackboard's functionality for managing their course documents.

Overall, the data suggest that Yemeni EFL faculty view Moodle and Blackboard positively, but there is some variation in responses. Respondents generally feel that Moodle is preferable to traditional learning, that Moodle helps students learn English, and that Blackboard has sufficient features for managing their course documents. However, some Yemeni EFL teachers may have a negative attitude toward Moodle because they themselves or their students have no prior knowledge or experience with Moodle.

Table 3. Descriptive statistics of Advantages

No.	Statements	M	SD
6	Moodle increases student's motivation to learn English language.	4.1818	.73266
7	Moodle helps to accomplish objectives of teaching English.	3.9545	.84387
8	Moodle helps students to improve their language competence & performance.	4.0000	.81650
9	Moodle activities help students to get more exposure to English language usage.	3.9091	.75018
10	Moodle improves students' use of English to communicate with peers and teachers.	4.1818	.66450
11	Moodle improves overall students' performance in EFL.	3.7273	.76730
12	Moodle improves interaction between the teacher and student relationship in a course.	4.0455	.78542
13	Moodle inspires the student to learn English autonomously.	3.5455	.91168
14	Moodle makes English language teaching more successful.	4.2273	.61193
15	Moodle makes teaching English easy.	3.8182	.58849
16	Moodle draws students' attention to learn English effectively.	3.5909	.66613
17	Moodle supports collaborative learning.	3.9091	.92113
18	Moodle reinforces Students' self- study learning.	4.0000	.75593
19	Students interact actively with the material provided in Moodle.	3.5909	.79637
20	Studying English language via Moodle is fun (enjoyable).	4.0455	.65300

Table 3 shows the descriptive statistics of the benefits of using Moodle for teaching English as a foreign language (EFL). The mean scores for all statements are above 3.5, indicating that participants generally view Moodle as beneficial for teaching and learning English.

The highest mean score was for statement 14 "Moodle makes English teaching more successful" (M = 4.2273, SD = 0.61193), followed closely by statement 6 "Moodle increases students' motivation to learn English" (M = 4.1818, SD = 0.73266) and statement 10 "Moodle improves students' use of English to communicate with peers and teachers" (M = 4.1818, SD = 0.66450). This indicates that participants strongly believe that Moodle can increase students' motivation in learning English.

The lowest mean score was obtained for statement 13 "Moodle encourages students to learn English independently" (M = 3.5455, SD = 0.91168), followed by statement 15 "Moodle makes teaching English easy" (M = 3.8182, SD = 0.58849). This indicates that participants had mixed opinions about whether Moodle can stimulate students' autonomous learning.

Overall, the results suggest that participants view Moodle as a useful tool for teaching and learning English, with particular emphasis on its ability to increase motivation and improve language skills. However, there is also room for improvement when it comes to promoting autonomous learning and facilitating instruction.

Table 4. Descriptive statistics of Barriers (Lacks)

No.	Statements	SD	D	N	A	SA	M	SD
21	Using Moodle is frustrating because it is difficult to handle.	0	0	13.6	31.8	45.5	3.5000	.85912
22	Slow interconnection discourages me from using Moodle frequently.	0	0	13.6	54.5	27.3	3.2273	.75162
23	Using Moodle is a waste of time.	4.5	13.6	27.3	36.4	18.2	3.5000	1.10195
24	Unavailability of CPUs, smart mobiles, difficulties of social life and war are problems to use Moodle.	0	0	54.5	31.8	13.6	3.5909	.73414

The results in Table 4 show that participants agreed to varying degrees with the barriers to using Moodle. Statement 21 "Using Moodle is frustrating because it is difficult to use" received a mean score of 3.5, indicating that most participants were neutral toward this statement. However, the standard deviation of .85912 indicates that there was some variability in responses, with some participants finding Moodle difficult to use while others did not.

Statement 22 "Slow connections keep me from using Moodle frequently" received a mean of 3.2273, indicating that most participants disagreed with this statement. However, the standard deviation of 0.75162 indicates that some participants were still affected by the slow internet connection and found it discouraging to use Moodle frequently.

Statement 23 "Using Moodle is a waste of time" received a mean score of 3.5, indicating that participants were neutral toward this statement. However, the high standard deviation of 1.10195 indicates that there was a wide range of responses to this statement, with some participants strongly disagreeing with this statement while others strongly agreed with it.

Statement 24 "The unavailability of CPUs, smart phones, difficulties in social life, and war are problems in using Moodle" received a mean of 3.5909, indicating that participants tended to agree with this statement. The

standard deviation of 0.73414 indicates that while most participants agreed with this statement, some did not consider these factors to be major barriers to using Moodle.

Overall, the results suggest that while participants recognized some barriers to using Moodle, such as difficulty using the platform and a slow Internet connection, they were largely neutral or more likely to disagree with statements that Moodle was a waste of time or that external factors such as war and social life were major barriers to using the platform.

Conclusion:

This study examined the views and perceptions of teachers who use Moodle to teach English as a foreign language alongside traditional face-to-face learning. It seeks to understand the factors that influence the adoption of Moodle use based on users' own experiences. Moodle activities are effective in improving EFL learning for Yemeni teachers. The results show that the use of Moodle activities improves teachers' language skills, increases their motivation and engagement in learning, and improves their ability to design and deliver effective EFL lessons. The study also showed that the use of Moodle activities can overcome some of the challenges Yemeni teachers face in accessing quality EFL resources and professional development opportunities. Therefore, it is recommended that educational institutions in Yemen use Moodle as a platform for delivering EFL courses and professional development for teachers. Further research is needed to examine the long-term impact of Moodle activities on EFL learning outcomes and to identify the factors that influence their effectiveness.

Recommendations:

The topic "Exploring the Effectiveness of Moodle Activities in Enhancing EFL Learning for Yemeni Teachers" is relevant and important in today's digital age. Moodle is a popular learning management system that provides a platform for teachers to create and deliver online courses and activities. Yemeni teachers can benefit from using Moodle activities to enhance their English as a Foreign Language (EFL) teaching skills. I recommend furthermore studies in Moodle and how they affect the learning English from different sides. Such as effect and improve the listening and speaking skills by using Moodle. More improve the writing activities by using Moodle. Overall, this topic has significant potential to contribute to the field of EFL teaching and learning in Yemen. It can help improve the quality of education by providing teachers with effective tools and strategies to enhance their teaching skills.

References:

1. Amandu, G. M., Muliira, J. K., & Fronda, D. C. (2013). Using Moodle e-learning platform to foster student self-directed learning: Experiences with utilization of the software in undergraduate nursing courses in a middle eastern university. *Procedia - Social and Behavioral Sciences,93, 677-683.* Retrieved from

   http://ac.els-cdn.com/S1877042813033636/1-s2.0-S1877042813033636-main.pdf?_tid=4f743b5c-8b4d-11e3-99ef-00000aab0f27andacdnat=1391265171_1abe6f39ad1bbc48b7407b1601948be2

2. Arteaga, R., & Duarte, A. (2010). Motivational factors that influence the acceptance of Moodle using TAM. Computers in Human Behavior, 26(6), 1632–1640.

3. Blin, F., & Munro, M. (2008). Why hasn't technology disrupted academics' teaching practices? Understanding resistance to change through the lens of activity theory. Computers and Education, 50(2), 475–490.

4. Cole, J., & Foster, H. (2007). Using Moodle: Teaching with the popular open-source course management system. Newton: O'Reilly Media Inc.

5. Costa, C., Alvelos, H., & Teixeira, L. (2012). The use of the Moodle e-learning platform: A study in a Portuguese university. Procedia Technology, 5, 334–343.

6. Damnjanovic, V., Jednak, S., & Mijatovic, I. (2015). Factors affecting the effectiveness and use of Moodle: Students' perception. Interactive Learning Environments, 23(4), 496–514.

7. Escobar-Rodriguez, T., & Monge-Lozano, P. (2012). The acceptance of Moodle technology by business administration students. Computers and Education, 58(4), 1085–1093.

8. Goyal, E. (2011). Using Moodle to Enhance Student Satisfaction from ICT. Technology for Education (T4E), IEEE International Conference. Retrieved from

    http://ieeexplore.ieee.org/xpl/articleDetails.jsp?tp=andarnumber=6004381andurl=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D6004381

9. Hamuy, E., & Galaz, M. (2010). Information versus communication in course management system participation. Computers and Education, 54(1), 169–177.

10. Hui Hsu, H. (2012). The Acceptance of Moodle: An Empirical Study Based on UTAUT. SciRes, 3, 44-46.

11. McArdle, G., & Bertolotto, M. (2012). Assessing the application of three-dimensional collaborative technologies within an e-learning environment. Interactive Learning Environments, 20(1), 57–75.

12. Marchewka, J. T., Liu, C., & Kostiwa, K. (2007). An application of the UTAUT model. *Communications of the IIMA*, 94(7), 93-104.

13. Naveh, G., Tubin, D., & Pliskin, N. (2012). Student satisfaction with learning management systems: A lens of critical success factors. Technology, Pedagogy and Education, 21(3), 337–350. DOI: 10.1080/1475939X.2012.720413

14. Paragina F, Paragina S, Jipa S, Savu A, Dumitrescu A (2011) The benefits of using Moodle in teacher training in Romania. Procedia Soc Behav Sci 15:1135–1139

15. Piotrowski, M. (2010). What is an e-learning platform? In Y. Kats (Ed.), Learning management system technologies and software solutions for online teaching: Tools and applications (pp. 20–36). Hershey, PA: Information Science Reference.

16. Romero C, Ventura S, Garcia E (2008) Data mining in course management systems: Moodle case study and tutorial. Comput Educ 51:368–384

17. Sánchez, R. A., & Hueros, A. D. (2010). Motivational factors that influence the acceptance of Moodle using TAM. Computers in Human Behavior, 26(6), 1632-1640. Retrieved from http://ac.els-cdn.com/S0747563210001834/1-s2.0-S0747563210001834 main.pdf?_tid=8aff8420 -8f61-11e3-b23a 00000aacb361andacdnat=1391713666_5b5a3c069afebdacb4a70cf35548388d

18. Sumak, B., Polančič, G., & Heričko, M. (2010, February). An empirical study of virtual learning environment adoption using UTAUT. In Mobile, Hybrid, and On-Line Learning, 2010. ELML'10. Second International Conference on (pp. 17-22). IEEE.

19. Thomas, T. D., Abts, K. & Vander Weyden, P. 2013, "Response Styles and the Rural-Urban Divide." Educational and Psychological Measurement, OnlineFirst. doi: 10.1177/0013164413502487

20. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. 2003, "User Acceptance of Information Technology: Toward a Unified View". MIS Quarterly, vol.27, pp.425–478.

21. WAHEED, M.; KAUR, K.; NOORUL, A.; NAZIM, H. 2015. Perceived learning outcomes from Moodle: An empirical study of intrinsic and extrinsic motivating factors. Information Development, 21:1-12.

http://dx.doi.org/10.1177/0266666915581719

22. Walker, G. (2004). Faculty intentions to use web-enhanced instructional components. Retrieved February 22, 2014, from http://home.hawaii.rr.com/gregaloha/Walker%20Greg%20 Dissertation.pdf

23. Wu, J. P., & Chen, Y. H. (2006). The application of blog in case teaching: An exploratory study. *Journal of Information Management-Concepts, Systems, and Applications, 8(2), 8-2.*