

LAPORAN TUGAS METODOLOGI PENELITIAN

LITERATURE REVIEW

JUDUL : PENGUKURAN PEMANFAATAN LEARNING MANAGEMENT SYSTEM (LMS) SEBAGAI E-LEARNING

Oleh:

NADIA LAYRA AZIZA (1941720061)

SHELYCA SURRAYENSIH (1941720021)

TITA WIJAYANTI (1941720053)



**PROGRAM STUDI TEKNIK INFORMATIKA
JURUSAN TEKNOLOGI INFORMASI
POLITEKNIK NEGERI MALANG**

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Tabel *State-of-The-Art* Penelitian Terdahulu

No	Judul	Penulis/ Nama Jurnal	Penerbit/ Tahun	Permasalahan	Metode			Hasil
					Penelitian	Pengukuran	Pengumpulan data	
1.	Comparative Analysis Of Usability Learning Management System In Politeknik Lamandau	Faizal Widya Nugraha, Hamid Muhammad Jumas/ Jurnal ilmu pengetahuan dan teknologi komputer	Universitas Nusa Mandiri/2020	Politeknik Lamandau khususnya jurusan Teknologi Rekayasa Komputer sebagai perguruan tinggi berkembang telah menggunakan beberapa LMS diantaranya,Edmodo, Schoology dan Google Classroom.Dalam penerapannya, tidak semua pengguna mengerti dengan baik pengoperasiannya dikarenakan menemui masalah kebergunaan/ Usability seperti, tampilan yang rumit, letak menu yang tidak ramah pengguna, kecepatan dalam	-	System Usability Scale	-	Hasil penelitian yang dilakukan diketahui bahwa secara usability ,LMS Edmodo berada pada kategori acceptable dengan nilai 70 sedangkan Google Classroom dan Schoology berada pada kategori almost acceptable dengan nilai 67,6 dan 64,4.

				pemrosesan, Kesulitan untuk mengingat fungsi menu, kesalahan dalam pengoperasian yang akan mempengaruhi kepuasan pengun				
2.	Analisa Usability Aplikasi e-LMA Sebagai e-Learning Menggunakan Metode USE Questionnaire	Noordin Asnawi/Journ al of Computer, Information System, & Technology Management.	Universitas PGRI Madiun/2021	Di UNIPMA aplikasi ini masih baru digunakan, maka dalam penelitian ini akan dilakukan pengukuran usability (kebergunaan) untuk mengetahui tingkat kebergunaan dari aplikasi ini.	-	-	Questionnaire	aplikasi e-LMA yang digunakan sebagai e- learning di Universitas PGRI Madiun memiliki nilai usability yang baik.
3.	Analisis Kesulitan Belajar Mahasiswa Secara Online (E- learning) Selama Masa Pandemi Covid-19.	Muhammad Turmuzi, Arifman S. Haji Dasing, Baidowi, Junaidi./Jurna l ilmu pendidikan	Pendidikan matematika FKIP Universitas mataram/ 2021	Kesulitan yang dihadapi oleh mahasiswa pendidikan matematika FKIP Universitas mataram selama pembelajaran online yang terletak pada efektifitas proses belajar mengajar dan juga faktor kendala teknis seperti jaringan internet yang tidak stabil, kuota yang	deskriptif kualitatif	-	Angket/ Kuesioner	Berdasarkan hasil angket yang disebar terdapat beberapa faktor kesulitan yang dihadapi oleh mahasiswa yakni terkait proses belajar mengajar secara online yang diberikan oleh dosen dan faktor kendala teknis yang terjadi ketika proses kuliah secara online sedang berlangsung.

				terbatas dan juga interaksi yang minim ketika proses pembelajaran daring berlangsung.				
4.	Evaluasi Usability pada Learning Management System Open Learning Menggunakan System Usability Scale	Azizah Fatmawati/ Jurnal Inovtek Polbeng	Universitas Muhammadiyah Surakarta/ 2021	Salah satu dampak covid-19 pada bidang pendidikan adalah proses pembelajaran harus diselenggarakan secara dalam jaringan (daring). Berbagai bentuk Learning Management System (LMS) digunakan oleh Perguruan Tinggi untuk mendukung kelancaran proses pembelajaran sehingga dilakukanlah evaluasi usability pada LMS OpenLearning dikarenakan banyak pengguna pernah mengalami masalah dengan kegunaan LMS.	deskriptif	System Usability Scale	kuesioner SUS	Hasil pengujian menunjukkan skor penilaian berada pada angka 61.03. Aplikasi memiliki nilai usability cukup, dengan keterangan acceptability marginal, grade scale D dan adjective rating ok. Berdasarkan nilai akhir System Usability Scale (SUS) dapat disimpulkan bahwa LMS OpenLearning secara kebergunaan masih diterima oleh mahasiswa dan berfungsi dengan baik.
5.	Evaluasi Ketergunaan Website Perpustakaan	Muhammad Lazuardi	<i>Center for Scientific</i>	Evaluasi ketergunaan pada website	Kuantitatif deskriptif	System Usability	kuesioner	Nilai ketergunaan website Perpustakaan

	Universitas Indonesia Menggunakan System Usability Scale	Nuriman, Nina Mayest/ Jurnal Dokumentasi Dan Informasi	<i>Data and Documentation - Indonesian Institute of Sciences/ 2020</i>	perpustakaan Universitas Indonesia (UI) penting untuk dilakukan agar pengguna tetap setia mengunjunginya dan hasilnya dapat dijadikan dasar untuk pengembangan lebih lanjut. Penelitian ini bertujuan untuk mengevaluasi ketergunaan pada website Perpustakaan UI antara angkatan 2016 dan 2019 serta membandingkan hasilnya.		Scale		UI belum dapat diterima dengan baik oleh mahasiswa angkatan 2016 dan 2019, meskipun terdapat perbedaan skor antara kedua angkatan. Karena skor SUSnya tergolong di bawah rata-rata dan di bawah acceptable, maka penelitian lebih lanjut dapat dilakukan untuk mengidentifikasi masalah yang ada menggunakan metode atau instrumen yang berbeda.
6.	Interpretasi Pengujian Usabilitas E-Learning di Masa Pandemi COVID-19 Menggunakan System Usability Scale	Rini Nurlistiani, Neni Purwati./ Seminar nasional darmajaya	Fakultas Ilmu Komputer ,Institut Informatika dan Bisnis Darmajaya Lampung/ 2021.	Tingkat pemahaman dosen dan mahasiswa dalam menggunakan LMS, kemudahan akses dengan fitur-fitur (UI/UX) yang disediakan, serta kepuasan dosen dan mahasiswa dalam menggunakan LMS sebagai media pembelajaran.	-	System Usability Scale (SUS)	-	Hasil dari penelitian tentang usabilitas layanan LMS di IIB Darmajaya ditemukan bahwa interpretasi SUS pada LMS dari sisi user ini dikatakan cukup baik, hanya saja dosen maupun mahasiswa kurang antusias terhadap pengalaman mereka selama menggunakan LMS. Hal ini tentunya menjadi perhatian bagi

								institusi agar lebih meningkatkan layanan LMS dimasa pandemi bahkan ketika pandemi telah berakhir.
7.	Analisis Kualitas Learning Management System Universitas Negeri Makassar Menggunakan Metode Metriks Kualitas Perangkat Lunak	Hasrul Bakri, Firdaus, Dyah Vitalocca./ Proceedings of national seminar research and community service institute Universitas Negeri Makasar.	Universitas Negeri Makassar/ 2021	bagaimana cara mengetahui kualitas Learning Management System (LMS) Universitas Negeri Makassar menggunakan metode metriks kualitas perangkat lunak,	-	ISO/IEC 25010	Kuesioner	1) faktor functionality (fungsionalitas) dengan nilai 0,48 dalam kategori medium atau cukup, 2) faktor Usability dengan nilai 0,54 dalam kategori medium atau cukup, 3) faktor efficiency dengan nilai 0,53 atau masuk ke dalam kategori medium yang berarti perangkat lunak ini cukup efisien, 4) faktor maintability dengan nilai 0,21 yang berarti perangkat lunak ini termasuk dalam kategori low, 5) faktor portability dengan nilai 0,55 yang berarti perangkat lunak ini termasuk dalam kategori medium atau cukup, 6) nilai akhir kualitas eksternal yaitu 0,45 termasuk ke dalam kategori medium atau cukup.
8.	Pengukuran Usability	Rachmah	Teknik	Sebuah sistem media	-	Pengukuran	tool	Hasil pada penelitian ini

	Pada E-Learning Politeknik Negeri Jakarta	Nanda Kartika, Emmidia Djonaedi/ Seminar Nasional TEKNOKA	Grafika dan Penerbitan, Politeknik Negeri Jakarta/ 2020	<p>pembelajaran dikatakan baik apabila kebutuhan pengguna dapat terpenuhi seperti kemudahan penggunaan tools pada E-learning. E-learning harus memenuhi pencapaian kompetensi baik mata kuliah teori maupun praktek. Program studi yang menjadi target penelitian adalah teknik grafika, teknologi industri cetak kemasan, teknik mesin, konstruksi gedung, dan konversi energi. Namun saat ini, pencapaian kompetensi pembelajaran praktek tersebut belum bisa terpenuhi seperti pada saat proses perkuliahan luring.</p>		usability	kuesioner USE	<p>diperoleh hasil dari 150 responden adalah tingkat usability pada e-learning PNJ sebesar 0,609. Angka tersebut termasuk kedalam kategori level usability baik. Namun, nilai tersebut masih berada dalam kriteria nilai minimum untuk kategori baik. Adapun nilai untuk setiap variabelnya yaitu variabel usefulness sebesar 71,4%, variabel easy of use sebesar 72,8%, variabel easy of learning sebesar 48,25% dan kepuasan sebesar 51,2% akan proses pembelajaran jarak jauh teori dan praktek menggunakan E-learning. Adapun system e-learning yang diperbaiki yakni pada bigbluebutton, attendance, login, serta tambahan fitur notifikasi untuk tugas dan attendance mahasiswa..</p>
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9.	Evaluasi Purwarupa Sistem Informasi Program Pengembangan Desa Menggunakan System Usability Scale	Dimas Setiawan, Pujiati, Nurul Kusuma Dewi/ Seminar Nasional Teknologi Informasi dan Komunikasi-2020	Universitas PGRI Madiun/ 2020	Dalam pembuatan Purwarupa Sistem Informasi Program Pengembangan Desa Mitra Desa puntukdoro perlu dilakukan uji usability agar sesuai dengan kebutuhan pengguna.	kuantitatif	System Usability Scale (SUS)	Questionnaire	Berdasarkan hasil evaluasi usability menggunakan SUS Questionnaire terhadap 30 responden masyarakat aktif dalam kelompok untuk purwarupa sistem informasi PPDM mendapati skor rata-rata sebesar 80 dengan rating “Baik” dan Nilai huruf B. Berdasarkan hasil rating tersebut dapat disimpulkan bahwa rancangan sistem memiliki tingkat usability yang masih baik, Namun ada rekomendasi masukan dan saran dengan memperbanyak galeri dokumentasi, serta video kegiatan dari program abdimas agar konten dari sistem tersebut menjadi lebih lengkap dan informatif.
10.	Evaluasi Pengukuran Teknologi Pembelajaran Elearning di Perguruan Tinggi Menggunakan UTAUT	Kraugusteeliana Kraugusteeliana, Lomo Mula Tua/ Konferensi Nasional Ilmu	Sistem Informasi , Universitas Pembangunan Nasional Veteran Jakarta/	Bagaimana cara mengukur aktivitas kegiatan pembelajaran yang ditentukan standar kuliah online di Lingkungan UPNVJ.	-	Unified Theory of Acceptance and Use of Technology (UTAUT)	-	Keseluruhan penerapan teknologi pembelajaran menggunakan Elearning pada perguruan tinggi studi kasus UPNVJ

		Komputer (KONIK)	2021					memiliki nilai positif oleh para mahasiswa sebagai user pengguna elearning
11.	Medical students' acceptance and perceptions of e-learning during the Covid-19 closure time in King Abdulaziz University, Jeddah	Nahla Khamis Ibrahim, Rajaa Al Raddadi, Moroj AlDarmasi, Abdullah Al Ghamdi, Mahmoud Gaddoury, Hussain M.AlBar, Iman Kamal Ramadan/ Journal of Infection and Public Health	Community Medicine Department, King Abdulaziz University, Jeddah, Saudi Arabia/ 2020	Nowadays, there is a paradigm shift in medical education. This shift occurred following the Covid-19 crisis. The world uses digital e-learning to support the public health response to this pandemic. The study's objective was to determine the medical students' acceptance and perceptions of e-learning during the Covid-19 closure time in Jeddah.	cross-sectional	E-learning acceptance measure (ElAM)	questionnaire	Blackboard and Zoom were the most preferred Learning Management Systems (LMS) by our medical students. The mean score of ElAM was 102.82 ± 24.102 . Better achievers obtained significantly ($P < 0.001$) higher scores in all ElAM constructs. About three-fifths of the students confirmed that e-learning substituted classical on-campus learning and was an adaptable, and less time-consuming method. The educator's good e-learning skills, the subject, instructional design, interaction, motivation, and good LMS were agreed as enablers of e-learning. However, most students accepted that clinical teaching is the most challenging

								learning outcome and that exams could be affected by low internet quality.
12.	A study on satisfaction of users towards learning management system at International University – Vietnam National University HCMC.	Nhu-Ty Nguyen/ Asia pacific Management review	Vietnam National University, HCMC Quarter 6, Linh Trung Ward, Thu Duc City, Ho Chi Minh City, Viet Nam/ 2021	Learning management system (LMS) is considered as an important means of knowledge acquisition and learning management in the digital era. Because of that, need to explore the factors influencing learner's satisfaction towards learning management system, specially Blackboard and Edusoft.	quantitative	assumption's forecasting	-	Blackboard and Zoom were the most preferred Learning Management Systems (LMS) by our medical students. The mean score of ElAM was 102.82 ± 24.102 . Better achievers obtained significantly ($P < 0.001$) higher scores in all ElAM constructs. About three-fifths of the students confirmed that e-learning substituted classical on-campus learning and was an adaptable, and less time-consuming method. The educator's good e-learning skills, the subject, instructional design, interaction, motivation, and good LMS were agreed as enablers of e-learning. However, most students accepted that clinical teaching is the most challenging learning outcome and

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13.	Perceived usability evaluation of Microsoft Teams as an online learning platform during COVID-19 using system usability scale and technology acceptance model in India	Debajyoti Pal, Vajirasak Vanijja/ Children and Youth Services Review	School of IT, King Mongkut's University of Technology Thonburi, Bangkok, Thailand/ 2020	The COVID-19 pandemic has resulted in a physical shutdown of all types of educational institutes worldwide due to which the education delivery has now shifted to an "online only" exclusivity model. In this perspective, perceived usability of the online learning platforms that are currently being used is an important aspect, especially due to the absence of any physical classes. In this work Microsoft Teams is used as the reference platform for which the perceived usability is evaluated.	-	System Usability Scale (SUS) and Technology Acceptance Model (TAM)	-	Results that are obtained from a large-scale survey of university students show the similarity and equivalency between the two methodologies, with the Perceived Ease of Use (PEOU) construct of TAM having greater similarity with SUS. Moreover, this work also considers the digital-divide aspect (mobile vs. web environment) that is prevalent particularly in developing countries like India, and whether it has any effect on the perceived usability. Results show that the consumption platform does not have any effect on the usability aspect.
14.	Effectiveness of	Budiyono	Journal for	what approaches can	-	-	questionnaire	The scientific-based

	Learning Management System (LMS) on In-Network Learning System (SPADA) Based on Scientific	SAPUTRO, Andriani TRI SUSILOWA TI/ Data in Brief	the Education of Gifted Young Scientists, 7(3), 481-498/ September 2019	be taken in learning of e-learning				LMS in the SPADA can be implemented on other courses, and also on other education levels.
15.	Measuring e-learning systems success: Data from students of higher education institutions in Morocco	Abdelaziz Ouajdouni, Khalid Chafik, Omar Boubker/ Data in Brief	Elsevier Inc./ 2021	The COVID-19 pandemic has forced Higher Education Institutions (HEI's) to rethink the teaching approach taken. In response to this emergency state, Moroccan universities switched to the e-learning approach as an alternative to face-to-face education. At this level the assessment of e-learning systems success becomes a necessity.	-	Partial Least Squares approach (PLS-SEM)	questionnaire	system quality has a positive and significant effect on perceived usefulness, and e-learner satisfaction. On the other hand, social influence has a significant effect on e-learning systems use. In the same, the perceived usefulness contributes to the explanation of e-learner satisfaction. In contrary, learner computer anxiety has a significant and negative effect on e-learner satisfaction. Finally, the perceived usefulness, e-learning systems use, and e-learner satisfaction greatly contributes to the explanation of e-

								learning system success
16.	Analysis of Learning Management System Features based on Indonesian Higher Education National Standards using the Feature-Oriented Domain Analysis	Galih Wasis Wicaksono, Ghina Arih Juliani, Evi Dwi Wahyuni, Yus Mochamad Cholily, Hari Windu Asrini, Budiono/ International Conference on Information and Communication Technology (ICoICT)	IEEE/ 2020	Learning Management System (LMS) have not examined the suitability of LMS features with the educational standards applicable in a country/region.	-	Feature-Oriented Domain Analysis (FODA)	-	The results of the analysis in this study found the suitability of the three LMS and recommended LMS features for Lecturer and Student users.
17.	Quality of Service Evaluation of a Learning Management System using ISO/IEC 25011: A Prioritization Strategy	Jaime Medina, Abraham Dávila/ International Conference in Software Engineering Research and Innovation (CONISOFT)	IEEE/2020	Although an LMS platform can be interesting and useful, its adoption has not always been feasible in some contexts		ISO/IEC 25011	questionnaire	The work done is born from a real need of a company and using the knowledge of software engineering, it has been solved in a systematic way and reducing subjectivity. On the one hand, the ISO/IEC 25011 standard for Quality of service

								(QoS) as a service attribute was applied, including the stakeholders view, and then the application of the Analytic Hierarchy Process (AHP) to prioritize the Functional services was carried out by the top management.
18.	Uncovered User Engagement Pattern in LMS During COVID-19 Pandemic Using Temporal Visualization Matrix	Aziman Abdullah, Adzhar Kamaludin, Awanis Romli/ Emerging Technology in Computing, Communication and Electronics (ETCCE)	IEEE / 2020	Movement Controlled Order (MCO) during COVID-19 pandemic causing global higher education to intensify the use of online learning to keep student engage with their study, so that causing bottleneck performance of Learning Management System (LMS). Therefore, the aim of this paper is to study the pattern of user engagement in LMS during pandemic.	Quantitative	Temporal Engagement Matrix (TEM)	digital footprinting in LMS Moodle used	Both student and instructor are still highly engaged in LMS even after midnight. This insight is useful and significant for the institution (1) to deploy effective Quality of Service (QoS) of LMS operation and (2) to design a policies related to quality assurance during pandemic by addressing the wellbeing aspect of student and instructor.

19.	Usability and UX of Learning Management Systems: An Eye-Tracking Approach	Ilia Maslov, Shahrokh Nikou/ International Conference on Engineering, Technology and Innovation (ICE/ITMC)	IEEE/ 2020	Learning Management Systems (LMSs) are widely used in higher education. Eye-tracking technology is one technology that could help objectively evaluate the influence of familiarity with an LMS on the usability and user experience (UX) of the LMS. This study utilized such technology to measure user efficiency, user effectiveness, eye-movement patterns, and the quantitative area of interest (AOI) metrics of eye-movement patterns that show how fast the correct area for the task is located.	-	Eye-Tracking Approach	-	The results showed that those who were familiar with the course performed about half of the tasks more efficiently and had better AOI metrics. Additionally, it was found that the participants' eye movement patterns tended to be correlated with their AOI metrics, efficiency and effectiveness of accomplishing the tasks in the usability tests. However, the correlations were not absolute. We found different eye-movement patterns among participants regarding some user interface elements, such as text hyperlinks or images.
20.	E-Government Usability Evaluation: Insights from A Systematic Literature Review	Ria Lyzara, Betty Purwandari, Muhammad Fadhil Zulfikar ,	Association for Computing Machinery (ACM)/ 2019	E-Government aims to deliver benefits to government and citizens by improving transparency,	Systematic Literature Review	Automated testing and System Usability Scale (SUS)	-	The results show that the most common non-user methods were automated testing and heuristic evaluation. These method have

		Harry Budi santoso , Iis Solichah/ International Conference on Software Engineering and Information Management		efficiency, trust, and citizen participation. However, e-government initiatives face several barriers. One of them is poor usability. To advance quality of usability, literatures indicate that usability evaluation is a key success factor.				been widely used, because it was costefficient, quick, and easy to evaluate. Besides, automated testing and heuristic evaluation only required a small number of participants. Moreover, it could be implemented with a single evaluator. Oher methods such as interview and focus group could provide valuable information about users in-depth. Some studies also combined these methods with another usability evaluation, such as performance measurement and heuristic evaluation.
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Link File Literatur : https://drive.google.com/drive/folders/15kL9FPNtexFM_Wo1V1EOBQvTFHbIg_y?usp=sharing

Diagram Venn Posisi Penelitian

