DEVELOPMENT OF HYBRID LEARNING MANAGEMENT SYSTEM TO IMPROVE THE QUALITY OF LECTURES AT SAYYID ALI RAHMATULLAH STATE ISLAMIC UNIVERSITY TULUNGAGUNG

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Abstract: This article aims to develop a learning management system product as an effort to improve the quality of hybrid lectures at UIN Tulungagung. The development of information communication technology in the 21st century encourages the emergence of various learning innovations. This is an alternative in overcoming various conventional learning problems. One of the learning innovation products that adapt the utilization of information and communication technology is e-learning. E-learning is a learning model that utilizes internet technology in a very wide range. These innovations aim to improve the quality of learning. Therefore, the development and utilization of e-learning is important. This article is written based on research and product development with ADDIE model. This article produces an e-learning application in the form of a Learning Management System that can accommodate user needs and can be adjusted to the applicable roles. In this development research, valid, practical, and effective e-learning products are produced. Expert validation shows an average assessment of 92%. The practicality of the application assessed by users in the aspects of appearance, material, discussion, and ease of access reached an average of 86.39%. The effectiveness of the application is also good when viewed from student learning outcomes, where it is known that 82% of students exceeded the target of lecture completeness.

Keywords: Hybrid Learning, Learning Management System, LMS, Lecture Quality.

Introduction

Lecture activities between lecturers and students conventionally take place in the classroom and are held at a predetermined time period. Conventional model lecture activities like this are certainly considered less effective and efficient. This is because the interaction between lecturers and students is not maximized. In addition, if students experience learning difficulties, it is difficult to communicate with lecturers. Conversely, lecturers may also find it difficult to control lecture activities optimally.

The transition to the Industrial Revolution 4.0 era requires the orientation of human life to technology. Humans are required to master technology, cyberspace, big data, and others. This will inevitably become a challenge for today's society. In addition, people are very close to information and communication technology facilities. The use of information and communication technology such as e-banking, e-payment, e-commerce, online transportation, and other online services is very easy to find not only in big cities, but even small cities have connected online services. As a result, the problems faced by society are also increasingly complex. Therefore, education, one of which is higher education, is expected to be a solution to this problem. Learning in Higher Education is certainly expected to utilize information and communication technology to facilitate the lecture process, without reducing the quality of education itself.¹

New literacies are thus expected to be possessed by the academic community and society in general, namely technological literacy, data literacy, and humanitarian literacy. Of course, the presence of information and communication technology is increasingly becoming a land to sow the seeds of local wisdom and humanity as a nation that still holds noble ethics with Pancasila values.

The development of information and communication technology utilization encourages the emergence of learning innovations in higher education. The emergence of learning innovation is an alternative in overcoming various conventional learning problems. One of the learning innovation products that adapt the utilization of information and communication technology is E-Learning. E-Learning is a learning model that utilizes internet technology in a very wide range. There are at least 3

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¹ Layanan Informasi Direktorat Jenderal Pembelajaran dan Kemahasiswaan Kemenrisrekdikti,

[&]quot;Menristekdikti Luncurkan E-Learning/ Hybrid Learning, Strategi Pendidikan Tinggi Untuk Kaum Milenial," accessed August 22, 2020, https://spada.kemdikbud.go.id/berita/menristekdikti-luncurkane-learning-hybrid-learning-strategi-pendidikan-tinggi-untuk-kaum-milenial.

criteria that become the foundation of the importance of E-Learning: (1) E-Learning is a network that can update, store and distribute teaching materials; (2) E-Learning delivers information to the last user with a computer connected to a standard internet network; and (3) E-Learning focuses on wider learning than conventional learning.²

Covid-19 has more or less forced campuses around the world to use Learning Management System (LMS) in conducting lectures. Research in the Southern European region shows that the majority of students can continue to actively interact with lecturers and fellow students during lectures, either through asynchronous content or interacting in real time.³ In some large campuses, an LMS has been used to support online lectures. For example, on several campuses in Saudi Arabia, students' LMS usage preferences are influenced by various conditions such as performance expectations, effort expectations, social influence, and facilitating conditions.⁴

Research at Mehralborz University in Iran also shows that students' continued use of the LMS is influenced by the perceived benefits. So far, the use of LMS has become a reliable and flexible option for students to stay connected to the lecture process on campus.⁵ LMS development should be tailored to individual needs and at the same time respond to stake holders' demands. Personalized learning is likely to be the main choice in the future.⁶

In the Indonesian context, for example at IAIN Surakarta, an LMS based on the Moodle platform has been developed. However, the use of Moodle-based e-learning is less than optimal in the implementation and evaluation of learning. Therefore, it is necessary to improve the quality of applications, supporting facilities and user capabilities.⁷ Based on this

² Marc J. Rosenberg, *E-Learning: Strategies for Delivering Knowledge in the Digital Age* (New York: McGraw-Hill Education, 2001), 28.

³ Mark Anthony Camilleri and Adriana Caterina Camilleri, "The Acceptance of Learning Management Systems and Video Conferencing Technologies: Lessons Learned from COVID-19," *Technology, Knowledge and Learning* 27, no. 4 (December 1, 2022): 1311–33, https://doi.org/10.1007/s10758-021-09561-y.

⁴ Yaser Hasan Salem Al-Mamary, "Understanding the Use of Learning Management Systems by Undergraduate University Students Using the UTAUT Model: Credible Evidence from Saudi Arabia," *International Journal of Information Management Data Insights* 2, no. 2 (November 1, 2022): 100092, https://doi.org/10.1016/j.ijimei.2022.100092.

⁵ Amir Ashrafi et al., "Exploring Factors Influencing Students' Continuance Intention to Use the Learning Management System (LMS): A Multi-Perspective Framework," *Interactive Learning Environments* 30, no. 8 (July 4, 2022): 1475–97, https://doi.org/10.1080/10494820.2020.1734028.

⁶ Deepak Kem, "Personalised and Adaptive Learning: Emerging Learning Platforms in the Era of Digital and Smart Learning," *International Journal of Social Science And Human Research* 05, no. 05 (March 4, 2022): 385–91, https://doi.org/DOI: 10.47191/ijsshr/v5-i2-02.

⁷ Imam Makruf, Andi Arif Rifa'i, and Yunika Triana, "Moodle-Based Online Learning Management in Higher Education," *International Journal of Instruction* 15, no. 1 (January 2022): 135–52.

description, innovations to improve the quality of learning by utilizing E-Learning are important.

This study aims to develop and determine the feasibility of Hybrid Learning applications in lecture activities at UIN SATU Tulungagung, so the suitable approach is research and development. Research and Development is research conducted to produce certain products with the steps of analyzing needs and testing the effectiveness of products in the hope that they can function in society.⁸ In this research, the product is a Hybrid Learning Management application.

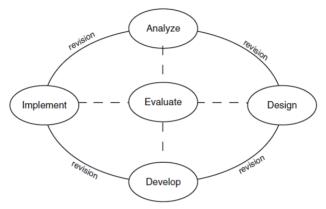


Figure 1. ADDIE research flowchart

The development model used in this research is the ADDIE model: Analysis, Design, Development, Implement, and Evaluation. This model has often been applied in educational institutions that are designed in accordance with learning objectives. Referring to the philosophical foundation of education, the ADDIE model is student centered, innovative, authentic and inspirational. Making learning applications that use ADDIE is an activity that uses effective tools. The flow of using the ADDIE development model is described in Figure 1.¹⁰

The development procedure in this study can be explained as follows. a. *Analysis*

Research at this stage aims to analyze the need for the development of Hybrid Learning applications in the lecture system at UIN SATU Tulungagung. At this stage of the analysis, the characteristics of students and lecturers were analyzed. Analysis of students is carried out to find out the

⁸ Sugiyono, Metode Penelitian Kuantitatif Kualitatif Dan R&D (Bandung: Alfabeta, 2016), 615.

 $^{^9}$ Robert Maribe Branch, *Instructional Design: The ADDIE Approach* (Boston: Springer, 2009), 2, https://doi.org/10.1007/978-0-387-09506-6.

¹⁰ Ibid., 6.

character of students during the learning process. While the analysis of lecturers is carried out to find out the desired lecture model.

b. Design

This stage aims to design the appearance of the Hybrid Learning application. The planning of this Hybrid Learning application consists of 3 stages, namely navigation structure design, display design, and application storyboard.

c. Development and Implement

This stage is the development and implementation stage of the Hybrid Learning application. The process at this stage is divided into 3 activities, namely:

- 1) Application development, namely making Hybrid Learning applications according to the design and storyboard that has been determined.
- 2) Expert validation, the developed application is validated by IT experts and learning technology experts.
- 3) Revision. The stage of improving the Hybrid Learning application after being given input by experts during validation activities.

d. Evaluation

This stage is the stage of testing the Hybrid Learning application. The trial was carried out on regular lecture classes with lecturers teaching courses at the Faculty of Tarbiyah and Teaching Sciences UIN SATU Tulungagung. Data collection techniques in this study used questionnaires, observations, and interviews to obtain qualitative data and quantitative data. Qualitative data analysis was carried out during the data collection process and after the data collection process. Quantitative data is in the form of scores from instruments in the form of assessments from IT/application experts, as well as application users. The scores from the assessment of the results of the instruments that have been distributed are then analyzed with the following steps: (1) tabulate letter data into scores, (2) calculate the average score, and (3) convert data from the average score.

Hybrid Learning Application Development Process

The steps of making the application start from problem analysis, design, product draft, and final product.

1. Analysis

Since the covid-19 pandemic, the lecture system at UIN SATU Tulungagung has been implemented online using a Learning Management System (LMS). The LMS developed is based on moodle with some content adjustments according to the characteristics of the learning system and student characteristics. Content or menus that can be adjusted to the

characteristics of the learning system and students are only some, not all. So that the LMS developed is only limited to the facilities provided by moodle. The developed LMS is available on the page https://elearning.uinsatu.ac.id.

Based on observations of lecturers and students, it was found that the LMS developed by UIN SATU Tulungagung still needs further modification according to the learning system and the characteristics of students and lecturers. From the aspect of the learning system, this LMS needs to be continuously developed to support lectures, both as a means of supporting online and offline learning. In the aspect of lecturers and students, this LMS needs modification so that the facilities, content, and menus available can be adjusted to the characteristics of lecturers and students and are easy to operate.

Because the previously developed LMS cannot be customized according to the characteristics of the learning system that applies at UIN SATU Tulungagung and is less easy to operate, not user friendly, it is necessary to develop an LMS that supports the characteristics of the learning system and the wishes of lecturers and students. With the complex facilities available in moodle, lecturers and students find it difficult and operate moodle-based LMS. Therefore, in this development research, an LMS will be developed that can be customized according to the characteristics of the learning system that applies at UIN SATU Tulungagung and is easy to operate, user friendly.

2. Design

This stage aims to design the appearance of the Hybrid Learning application. The planning of this Hybrid Learning application consists of 3 stages, namely navigation structure design, display design, and application storyboard.

The navigation structure is intended to organize website pages or link between pages on the website with hypertext. The navigation structure used in this development research uses a series or network structure, which is the connection of one website document that has little or no overall structure. Hypertext is built with a hierarchy that is clearly visible and arranged in stages.

In the design stage, specifications are made regarding the LMS architecture, style, appearance, and LMS requirements. This stage clearly describes the guidelines for the design of the admin, lecturer, and student account displays. Next, a storyboard is created to explain the plan for the visual appearance of the website for each page or menu on the website. One column in the storyboard represents one visual display on the website screen. This storyboard is used to facilitate the product development process. At this

stage is the activity of making a rough plan for the appearance of the application as the basis for website development. The storyboard of the developed website is shown in Table 1 below.

Table 1. E-learning Website Storyboard

No	Visual Display	Description
1	Dasboard Login Selamat Datang di E-Learning Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Initial visual display of the LMS application
2	Profil User e-learning Admin TA/Semester Dasboard Jumlah Kelas Jumlah Mhs Jumlah Dosen Jumlah Prodi Kelas Selamat Datang di E-Learning Pengguna Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung Master Data Semester Fakultas Prodi **XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Visual display of the center/university super admin account
3	Profil User e-learning Dosen TA/Semester Dasboard Jumlah Kelas Jumlah Prodi Kelas Selamat Datang di E-Learning Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung ***XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	Visual display of lecturer account
4	Profil User e-learning Mahasiswa TA/Semester Dasboard Kelas Selamat Datang di E-Learning Universitas Islam Negeri Sayyid Ali Rahmatullah Tulungagung **********************************	Visual display of student account

3. Development and Implement

This stage is the development and implementation stage of the Hybrid Learning application. The process at this stage is divided into 3 activities, namely:

a. Application Development

This step is the creation of Hybrid Learning applications according to the predetermined design and storyboard. Based on the previously determined design and storyboard, the researcher/developer

began compiling the appearance of the LMS and the content of each menu in accordance with the roles that apply at UIN Sayyid Ali Rahmatullah Tulungagung. The development results are shown in Figure 2 to Figure 28.

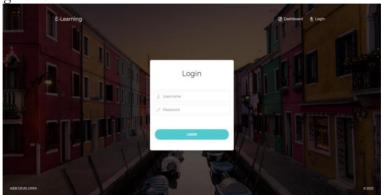


Figure 2. Initial view of the LMS

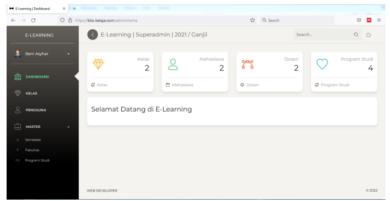


Figure 3. Initial view of the super admin account

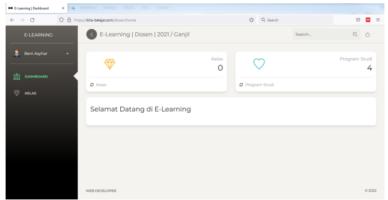


Figure 4. Dashboard view of lecturer account

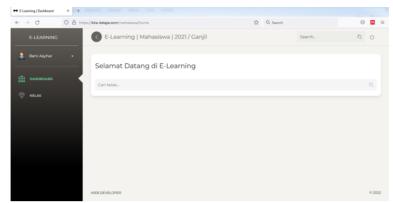


Figure 5. Student account dashboard view

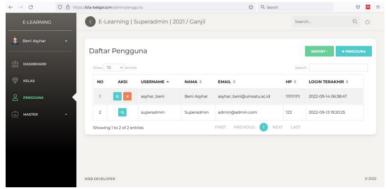


Figure 6. Dashboard view of super admin account adding users



Figure 7. Dashboard view of the process of adding users

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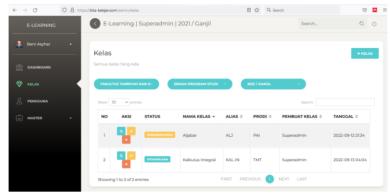


Figure 8. Lecture class view

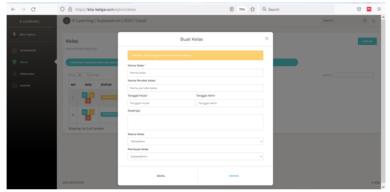


Figure 9. Dashboard view of the process of adding a class

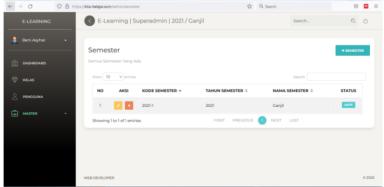


Figure 10. Semester dashboard view

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Figure 11. Dashboard view of the process of adding a semester



Figure 12. Faculty dashboard view



Figure 13. Dashboard view of the process of adding faculty

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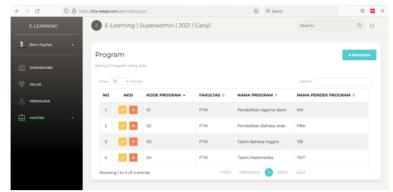


Figure 14. Study program dashboard view



Figure 15. Dashboard view of the process of adding study programs

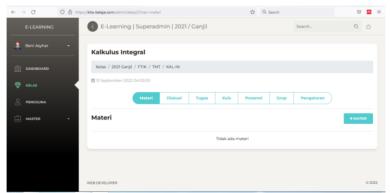


Figure 16. Initial dashboard view of course class

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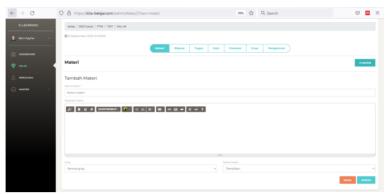


Figure 17. Course class dashboard view: material

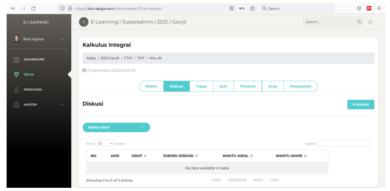


Figure 18. Course class dashboard view: discussion

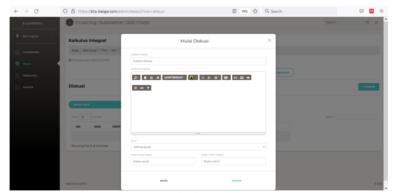


Figure 19. Course class dashboard view: add discussion

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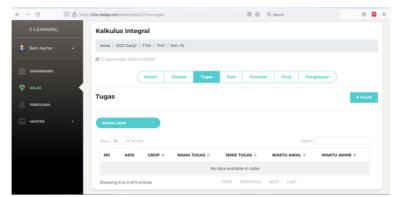


Figure 20. Course class dashboard view: assignment

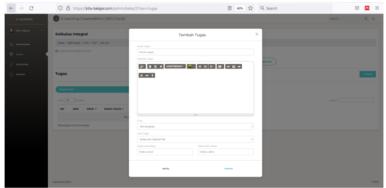


Figure 21. Course class dashboard view: add assignment

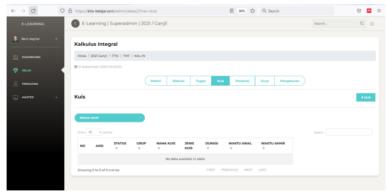


Figure 22. Course class dashboard view: quiz

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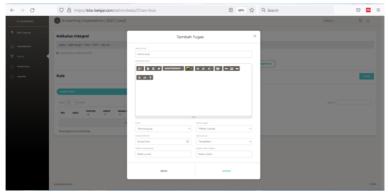


Figure 23. Course class dashboard view: add quiz

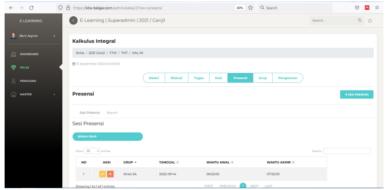


Figure 24. Course class dashboard view: attendance

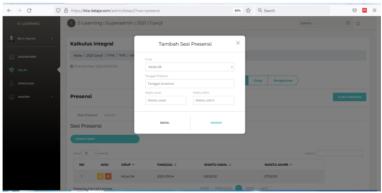


Figure 25. Course class dashboard view: add attendance



Figure 26. Course class dashboard view: parallel class

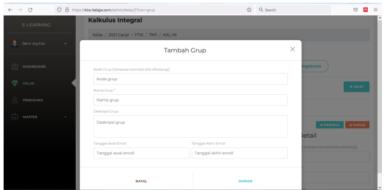


Figure 27. Course class dashboard view: add parallel class

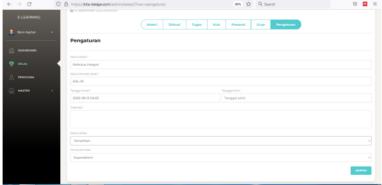


Figure 28. Dashboard view of course class general settings

b. Expert Validation

Validation data is obtained from the validation results of IT experts and learning technology experts. The validation question items are shown in Table 2 below.

Table 2. LMS application assessment question items

No	Assessment Aspect	Maximum
		score
In te		
1	This LMS application is easy to access/operate	5
2	This LMS application is not easy to crash/stop when used	5
3	This LMS application is not complicated to use	5
4	Each button on this LMS application provides the correct output	5
5	There is no pause/delay that is too long when running the application	5
6	Moving screen by screen in the application is smooth / no freezes / lags occur	5
In te	rms of graphics	
7	The use of letters (type, size, and color) is clear and appropriate	5
8	Attractive layout design (coloring and image illustrations)	5
9	Layout arrangement and layout are balanced and do not overlap	5
10	The color display used in this LMS is clear and appropriate.	5
11	The images used in this LMS support the words/terms.	5
12	Fonts and backgrounds do not overlap	5
13	The application icon is attractive	5
In te	rms of content and material feasibility	
14	The words used are easy to understand	5
15	The data displayed is in accordance with the data in the database	5
16	The code that is made is done sequentially	5
17	Illustrations, punctuation and symbols used are correct	5
18	The language used is appropriate and easy to understand	5
	Total	90

c. Revision

The improvement stage of the Hybrid Learning application after being given input by the experts during the validation activity. At this stage there are several inputs and suggestions for improvement from experts, both from IT experts and learning technology experts, including: 1) Class data is tried to be integrated with siakad; 2) username and password try to use the SSO system, integrated with siakad so that it is not separate from IRS programming that has been done by students; and 3) Can accommodate the writing of symbols, Arabic writing, etc.

4. Evaluation

This stage is the stage of testing the Hybrid Learning application. The trial was carried out on regular lecture classes with lecturers teaching courses at the Faculty of Tarbiyah and Teaching Sciences UIN SATU Tulungagung. To evaluate the application, researchers distributed a field test questionnaire as shown in Table 3 below.

Table 3: Field test question items

No	Assessment Aspect	Maximum
	•	score
1	The color display used in this LMS is clear and	15
	appropriate.	
2	The images used in this LMS support the words/terms	15
	searched for.	
3	The transitions contained in the LMS are interesting	15
4	The display design of each page of this LMS is	15
	interesting	
5	The button design on the LMS is attractive	15
6	Buttons on the LMS are easy to use	15
7	The writing/font used on this LMS is clear and	15
	appropriate	
8	This LMS application is not complicated to use	15
9	Fonts and backgrounds do not overlap	15
10	The language used in words/terms is easy to understand	15
11	The color display used in this LMS is clear and	15
	appropriate	
12	This application can help lecture data management:	15
	download materials, quizzes, upload assignments, and	
	online communication	
	Total	180

Feasibility of Hybrid Learning Application

The feasibility of this application was assessed by learning technology experts and IT experts (programmers). The experts were given a validation sheet questionnaire to measure the feasibility of the developed application.

Based on the data obtained from the validation results of IT experts and learning technology experts, it can be analyzed as follows. (1) Application aspects. Indicators of application aspects include whether or not the application is easy to install on a computer or accessed online, the application is not easy to stop, easy to use, buttons work as expected, there is no pause when opening the application or transition from one command to another. IT experts gave scores sequentially 5, 5, 4, 3, 5, 5 and learning technology experts 5, 5, 4, 4, 5, 5 with an average percentage of 91.7% categorized as valid. (2) Graphic aspects. Indicators of graphic aspects include the use of letters, layout design, layout settings, color display, image display, non-overlapping letters and backgrounds, and attractive application icons. IT experts gave scores sequentially 5, 4, 5, 5, 5, 4, 4, 4 and learning technology experts 5, 4, 5, 5, 5, 5 with an average percentage of 95.7% categorized as valid. (3) Aspects of content and material feasibility. Indicators of content feasibility aspects include words used, data displayed, code created, illustrations, punctuation, symbols, and language used. IT experts gave scores sequentially 4, 5, 4, 4, 5 and learning technology experts 4, 5, 4, 4, 5 with an average percentage of 88% categorized as valid. The overall results of the validation of IT experts and learning technology experts obtained an average of 92% which means that this application is valid and feasible to use.

Practicality of Hybrid Learning Application

The practicality of the developed Hybrid Learning application is assessed by application users, both lecturers and students. Lecturers and students will provide an assessment related to appearance, material, language, and ease of access.

Based on the data obtained from the results of the student and lecturer assessment questionnaire, it can be seen that the average assessment of students and lecturers regarding the appearance, material, language, and ease of access to the LMS application is 86.39%, which means that this LMS application is in the practical category.

Effectiveness of Hybrid Learning Application

The effectiveness of the developed Hybrid Learning application is analyzed by data on the learning outcomes of students who use this application in the learning process. The learning outcomes of students who use this LMS are taken from the results of the Midterm Exam (UTS) of the

Integral Calculus Class B course, S1 Tadris Mathematics Study Program, UIN Sayyid Ali Rahmatullah Tulungagung. The UTS results are shown in Table 4 below.

Table 4. List of Integral Calculus exam results

	Student	egral Calculus exan	Middle
No	Identification	Name (Initials)	Test
	Number		Score
1	126204211009	AC	50
2	126204211018	DAAK	80
3	126204211020	DNH	100
4	126204211021	EY	100
5	126204211022	EN	25
6	126204211023	EA	100
7	126204211024	FU	95
8	126204211025	FS	90
9	126204211026	FLM	100
10	126204211028	FW	100
11	126204211029	HMS	100
12	126204211031	НА	85
13	126204211034	IKH	100
14	126204211035	IKHA	70
15	126204212100	AAI	45
16	126204212101	AAP	85
17	126204212104	MLA	100
18	126204212105	RLF	75
19	126204212106	DNR	100
20	126204212107	AHA	100
21	126204212108	FZ	100
22	126204212109	WI	40
23	126204212110	AEN	100
24	126204212111	SFP	95
25	126204212112	SF	60
26	126204212113	NAK	75
27	126204212114	PAN	70
28	126204213175	MRA	100
29	126204213176	MS	45

30	126204213180	SF	100
31	126204213182	FAVY	45
32	126204213183	SH	45
33	126204213184	RM	80
34	126204213185	UFS	55
35	126204213186	ZRH	65
36	126204213188	DTPL	65
37	126204213189	SN	75
38	126204213191	FA	100

Based on the UTS results data in Table 3, it can be seen that 7 students scored less than 55 or as much as 18% less than 55, while the remaining 31 students scored 55 or more or as much as 82%. Learning media, in this case a website-based application (LMS) is said to be effective if $\geq 75\%$ of students are able to achieve the Minimum Completion Criteria (KKM) score. The KKM score (minimum score for passing the course) that applies at UIN Sayyid Ali Rahmatullah Tulungagung for all Study Programs is 55. Because students who score 55 or more are 82%, meaning $\geq 75\%$, the Hybrid Learning application developed is effective for use in the learning process.

One of the key factors in organizing lectures in higher education, especially in the current digital era, is the readiness of the institution. Tsani and his team's research shows that leadership support, institutional financial capability, lecturer competence in using IT, and online learning infrastructure readiness are some crucial things that must be maximized. Meanwhile, broadly speaking, there are two main factors in developing mobile learning, namely technology-related factors and factors related to the culture of using technology itself. technology-related factors include all aspects of hardware and software. Meanwhile, the factor of technology use culture includes the extent to which a person can maximize technology in the online lecture process. 12

Hybrid learning is increasingly common for courses in various fields. Although there are some cases that occur, the hybrid lecture model is also

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¹¹ Iskandar Tsani, Rofik Efendi, and Sufirmansyah Sufirmansyah, "Evaluasi kesiapan lembaga pendidikan tinggi Islam dalam menghadapi era digital," *Ta'dibuna: Jurnal Pendidikan Islam* 9, no. 1 (April 4, 2020): 019–033, https://doi.org/10.32832/tadibuna.v9i1.2604.

¹² Violeta Chirino-Barceló and Arturo Molina, "Critical Factors in Defining the Mobile Learning Model: An Innovative Process for Hybrid Learning at the Tecnologico de Monterrey, a Mexican University," in *Handbook of Research on Mobility and Computing: Evolving Technologies and Ubiquitous Impacts* (New York: IGI Global, 2011), 774–92, https://doi.org/10.4018/978-1-60960-042-6.ch048.

effective in academic reading¹³ and Arabic vocabulary.¹⁴ The optimization of hybrid formats for distance learning was confirmed by Masalimova and her team. The results of their research show that post-pandemic, technological collaboration in supporting hybrid learning formats increasingly exists and shows better effectiveness.¹⁵

Blended learning has boomed before hybrid learning. ¹⁶ However, both are still very relevant to be developed in today's lectures. Taking into account this description, it is clear that the effort to develop a hybrid learning management system is a good breakthrough to be continued. Although of course there are still many shortcomings, the synergy of all stake holders is very important in supporting the success of the development of this distance learning application.

Conclusion

The Hybrid Learning application for lecture activities at UIN SATU Tulungagung was developed based on the ADDIE stages. The Hybrid Learning application developed for lecture activities at UIN SATU Tulungagung was declared valid by IT experts and learning technology experts with an average assessment of 92%. The Hybrid Learning application developed for lecture activities at UIN SATU Tulungagung is declared practical by application users, both lecturers and students. Lecturers and students provide assessments related to appearance, material, language, and ease of access with an average assessment of 86.39%. Moreover, the Hybrid Learning application developed for lecture activities at UIN SATU Tulungagung is declared effective based on the learning outcomes of students who use this application in the learning process. The learning outcomes of students who use this application are known as much as 82% obtained a score of 55 or more.

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¹³ Zhenyu Yang and Linnea Spitzer, "A Case for Hybrid Learning: Using a Hybrid Model to Teach Advanced Academic Reading," *ORTESOL Journal* 37 (2020): 11–22.

¹⁴ Nuril Mufidah et al., "HYBRID LEARNING DALAM PEMBELAJARAN KOSA KATA BAHASA ARAB PADA ANAK BERBANTUAN MEDIA AL-MUTHO," *Al-Mudarris: Journal Of Education* 2, no. 1 (April 30, 2019): 40–52, https://doi.org/10.32478/al-mudarris.v2i1.227.

¹⁵ Alfiya R. Masalimova et al., "Distance Learning Hybrid Format for University Students in Post-Pandemic Perspective: Collaborative Technologies Aspect," *Cypriot Journal of Educational Sciences* 16, no. 1 (2021): 389–95.

¹⁶ Zamzami Zainuddin and Cut Muftia Keumala, "BLENDED LEARNING METHOD WITHIN INDONESIAN HIGHER EDUCATION INSTITUTIONS," *Jurnal Pendidikan Humaniora* 6, no. 2 (July 30, 2018): 69–77.

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