

Utilization of Chamilo LMS in Learning Media Courses as an Effort to Digitalize Education

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ABSTRACT

The number of online learning platforms available for free makes it easier for lecturers to deliver teaching materials but difficult for students. The use of different LMS by each lecturer causes almost all LMS on students' mobile devices. In order to make the learning process easier to organize, educational institutions should have one LMS that is the choice to be used together. Only now, Universitas Sembilanbelas November Kolaka has no LMS, especially the Indonesian Language Education study program. Therefore, this research will produce a Learning Management System that can support online learning systems synchronously, asynchronously, and mixed learning in the Indonesian Language Education study program at Universitas Sembilanbelas November Kolaka. The LMS that will be created is open-source-based so that it can be developed according to user needs. Specifically, the subjects included in the system are Educational media subjects at the college level. However, this LMS will be developed into a Faculty LMS that can be used to support learning management in all study programs. Five interrelated stages are needed to develop this LMS: Analysis, Design, Development, Implementation, and Evaluation. These development stages are known as the ADDIE model. An LMS meets the standard criteria for use in Learning Media courses through these stages. The resulting prototype is very useful for learning management, so its use can be expanded and developed to improve learning management within the faculty.

Keywords:

Ispring; Chamilo;
Development; LMS

INTRODUCTION

Since the start of limited face-to-face learning, learning conditions have been slightly better than during the pandemic. The suggestion of limited face-to-face learning has made teachers rearrange learning strategies. One of the strategies used is to implement online and offline learning alternately. This strategy is commonly called Blended Learning, or the latest term is Hybrid Learning (Aloni et al., 2022). This learning model can be a future learning trend because it supports the development of digital literacy skills for educators and students (Hanna et al., 2022).

To implement a Hybrid Learning model, of course, a Learning Management System is needed. Currently, there are many Learning Management Systems available for free that educational institutions can utilize. Two of the biggest are Google Classroom for Education and Microsoft Teams for Education (Ventayen et al., 2018). These LMS are free for education but must be registered for the institution that needs it. The reality is that although these LMS are free for education, there are still many Educational institutions that do not have them, especially at Universitas Sembilanbelas November Kolaka.

To support implementing a good Hybrid Learning-based learning process, an educational institution should have one or more LMS that study programs can use. However, if the facility is unavailable, each study program should take its own initiative to procure one LMS. Using one LMS in one study program will greatly help learning management, especially for students. The use of different LMS by lecturers causes students difficulties because one smartphone device must install various LMS applications, which will greatly affect the performance of their mobile devices.

The potential of digital skills, such as web-based learning, must be maximized to support the transformation of education towards a better direction. Moreover, the network in the Kolaka area is already 4G, meaning that online learning should have no obstacles in terms of network. Therefore, LMS facilities should already be available.

Universitas Sembilanbelas November Kolaka needs a special LMS for distance learning. Lecturers who will conduct online learning must try to find their own LMS. Many LMS are available for free such as Google Classroom (Ak. Nasrum & Subawo, 2022), Schoology (Mashuri & Nasrum, 2020), Edmodo, Microsoft Teams (A. Nasrum & Subawo, 2021) and others, but this will be very burdensome for students. A lecturer may only choose one LMS that he considers easy. However, students must have all the LMS due to lecturers' use of different LMS. Instead of helping, this condition makes it difficult for students. Therefore, LMS on a campus to support the learning process and digitalization is necessary.

In this research, an open-source Learning Management System will be developed. In this LMS, the Learning Media course will be included as an example/prototype in the application of LMS. This LMS can later be developed into a faculty LMS so that lecturers in the study program can use it to improve the learning process. One of the most famous open-source LMS in education is Moodle, but in this research, the LMS that will be used is Chamilo.

Chamilo is an open-source LMS that still needs to be used in universities. When Chamilo is compared to Moodle, the popularity of Chamilo is very behind. This difference can be seen from the research results published in several databases. For example, in the dimension database, on May 05, 2023, in the same database and filter, the number of Moodle research from the last 10 years was 6497, while Chamilo had only about 47 publications.

This research shows that Chamilo users are still very few compared to Moodle LMS. Even though in terms of age, Chamilo has been developed long enough, namely since 2010. In terms of appearance, Chamilo is more attractive than Moodle because the menus are icon-based. In terms of features, it is equal to the features provided by Moodle. However, it can be seen from the list of published articles that there still needs to be more research on Chamilo. The small number of studies allows researchers to explore more interesting topics related to using Chamilo.

Table 1. Last 10 Years Publication Data in Dimension Database

Year	Number of Publications	
	Moodle	Chamilo
2023	191	1
2022	1102	7
2021	1251	10
2020	894	7
2019	686	6

Year	Number of Publications	
	Moodle	Chamilo
2018	593	5
2017	547	3
2016	423	4
2015	430	3
2014	380	1
Total Publications	6497	47

Several previous studies have stated that Chamilo is very feasible to use as an e-learning media (Bakri & Mulyati, 2017; Febryana & Pujiastuti, 2020; Yulita et al., 2018). The use of Chamilo, according to the respondents, also includes practical media (Nurkhofifah et al., 2022; Rosmandi et al., 2021; Tiari et al., 2020). Apart from being feasible and practical, several researchers also revealed that the use of Chamilo with a combination of several learning methods is effective in improving understanding or learning outcomes (Aloni et al., 2022; Chasani & Sari, 2023; Wati et al., 2022). However, in reality, using Chamilo still needs to be improved among academics.

One of Indonesia's Chamilo LMS user universities is Hasanuddin University Makassar, which may be the only university in Indonesia that uses Chamilo. The front view of this LMS can be seen directly on the page <https://sikola.unhas.ac.id/>. Chamilo, just like Moodle, is an open-source LMS software that must be installed on a web host to be used. However, Moodle provides a free website, <https://www.gnomio.com/>, so that someone who wants to try the features in Moodle can use it without having to install it themselves. Chamilo does not have that facility, so this may be one of the reasons for the lack of Chamilo users.

This research will use Chamilo LMS as a tool for online learning management in the Learning Media course. We will find out and analyze the features of Chamilo that are used in managing online learning. Does Chamilo have all the facilities that an LMS should have? How good are the facilities? How effective is its use? Is Chamilo good to use for institutional LMS in supporting the implementation of the Merdeka learning curriculum? All answers will be found in this research.

METHOD

This research is included in the type of development research. The development model used is the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). In the first stage, the feasibility of product development will be analyzed. How much benefit can be obtained by developing this platform? How strong is a server needed to run the platform so that it does not go down if accessed by many students simultaneously? What kind of CMS (Content Management System) is used to suit the learning media course and so on? In the next section, the learning system included in the platform will be designed after the feasibility analysis. For the initial step, only utilize PDF and PPT modules provided by lecturers and exercises and assignments. The modules are developed specifically for learning in the Learning Media course. The exercise feature sharpens knowledge, and assignments measure students' ability to master the material. The plan prepared in the design stage is then developed. This development stage includes making all components in the design stage. In addition, product validation will be carried out in this stage to measure feasibility before implementation. This stage is the longest because it always requires product trials to

see the shortcomings. Once the product is declared valid, the product can be directly implemented into the sample taken. The purpose of implementation is to see the function of the product. In addition, it will also measure the product's usefulness in learning outcomes in learning media courses.

The sample plan to be taken is all Indonesian language education students who program learning media courses in the odd semester of the 2023/2024 academic year. The number of students is 31 people. After implementation, it will be evaluated if shortcomings still need to be addressed. It should be fixed in the current research year to be used properly in the following year. The flowchart of the development model can be seen in Figure 1.

The instruments needed in this research are media validation sheets, lecturer response questionnaires, student responses, and checklists. Usually, the material validation sheet is also included, but in this study, the lecturers who act as teachers and material makers are experienced course lecturers. Therefore, the material is considered valid. The media validation sheet was used to collect data related to the readiness of the media used. Student and lecturer response questionnaires are needed to see student interest in the platform developed. The checklist is used to determine the facilities and infrastructure used in learning.

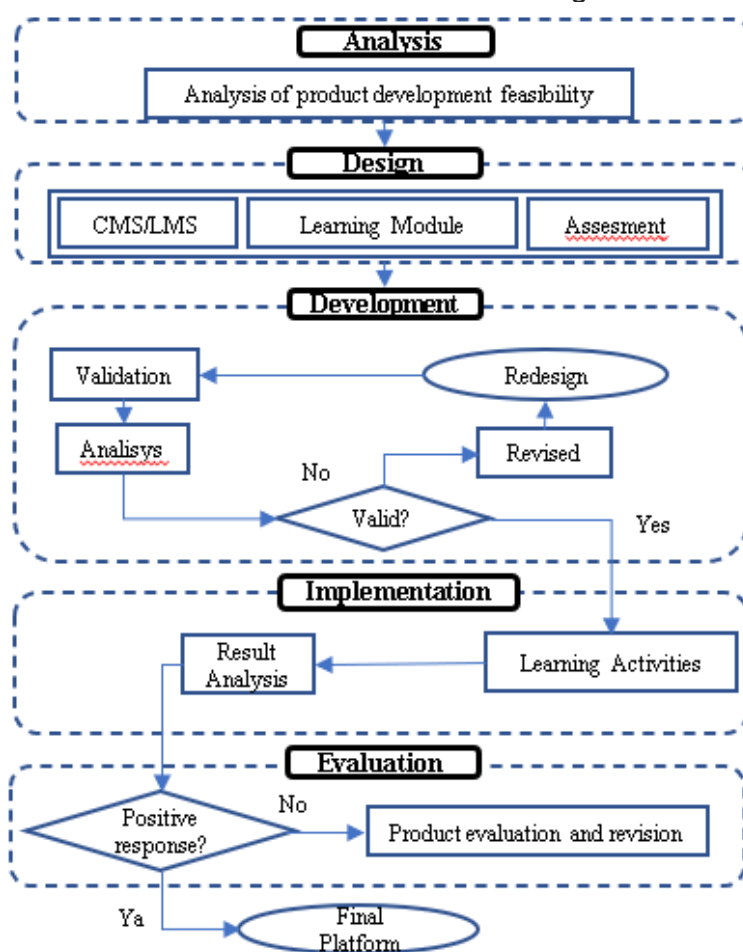


Figure 1. ADDIE Development Model

RESULTS AND DISCUSSION

The results of this study will be explained by the stages in the development as follows.

3.1 Analysis Stage

Information collected in this stage is in the form of facilities and infrastructure that support online learning in the Indonesian Language Education Study Program. Information was obtained through brief interviews from several sources, such as the Vice Dean I for Academic and Student Affairs and the Teaching Campus Coordinator, which can be seen in Table 2.

Table 1. Facilities and infrastructure to support online learning

Facilities	Description
Curriculum used	KKNI integrated MBKM
Availability of LMS	None
Network Quality on campus and surrounding areas	Good (4G)
Wifi facilities	Available
MBKM	Implemented in teaching campus programs and taking credits outside the University

Based on information from the Dean of FKIP USN Kolaka, until now, there has yet to be a single LMS used to support the implementation of online learning. Even though since the outbreak of COVID-19, this LMS should have been available to support online learning. Currently, with the "Merdeka Belajar" program, an LMS is needed so that innovation in the development of teaching media is needed. This condition provides many benefits, including digitizing learning and making accessing material easier for students. In addition, the quality of learning is highly dependent on the availability of adequate educational facilities and infrastructure. This research will only produce a prototype of an online learning platform so that the web hosting capacity used is still standard. Suppose the benefits felt from the results of this research are very large. In that case, the web hosting capacity will be increased so that this LMS can be used for all students at the Faculty of Teacher Training and Education, consisting of nine study programs. The LMS that will be used is Chamilo, by considering the sustainability of the research. The topic of Chamilo is still open to development because research on this topic is still little.

3.2 Design Stage

From the preliminary analysis results, the Learning Management System will then be designed, which will then be used. For the LMS development to run smoothly, full control of the LMS development is needed. Therefore, it is planned to create a separate domain that can be fully controlled. Because this LMS will be the forerunner of the Faculty LMS, the website that will be created is the faculty website with the name <https://fkipusn.ac.id>. Chamilo LMS will be installed on the faculty web subdomain, which will later become the center of the FETT LMS. In this research, teaching materials are planned to use 3 methods: reading modules, exercises, and assignments. The module was developed specifically for the Learning Media Course. Compiled based on the RPS used to match the learning plan previously set.

3.3 Development Stage

The development stage requires a long time, starting from managing the domain name to be used, selecting the subdomain name, and installing and setting up the LMS. The subdomain name used for the Chamilo installation is MEAMBO. MEAMBO is taken from the local language of Mekongga land (Kolaka), which means "Good." Because this word will be used as the gateway to the LMS, an extension of MEAMBO is made, namely "Management of Education and Online Learning." The LMS that has been built can be seen at the link <https://meambo.fkipusn.ac.id>, either through a smartphone or through a laptop.



Figure 2. Home View of MEAMBO LMS on Smartphone

After the installation, it is continued by inputting students who will attend lectures used as test subjects. A total of 31 students of the 3rd semester of Indonesian language education at the Universitas Sembilanbelas November Kolaka were inputted into the system, plus 2 instructors, namely lecturers teaching Learning Media courses. The cut picture can be seen in Figure 2.

Photo	Code	First name	Last name	Login	Group	Status	active	Action
<input type="checkbox"/>	-	AGZARA FAJRIAH	PALAWA	220120015	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	ALAM IKHSANUL	AMANAH	220130025	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	ANDI	HARYUDI	220130021	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	ARDIYANTI	WARDANA	220110002	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	CERIA NUR	MUALIMIN	220130023	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	FINY	AFRIANI	220130026	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	FITRI	NURFITASARI	220110004	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	GESTI	ENDAH UTAMI	220130022	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	IIN	FADILLAH	220130018	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	IRMAYANTI	IRMAYANTI	220120012	-	Learner	✓	Convert to assistant Unsubscribe
<input type="checkbox"/>	-	KETUT TIA	APRILIANI	220130030	-	Learner	✓	Convert to assistant Unsubscribe

Figure 3. List of some of the student subjects

Furthermore, by the lecturer's agreement, the lecturer's making of modules, exercise questions, and course assignments is carried out by the course lecturer. The finished modules, assignments, and exercises are inputted into the system.

Before the implementation of the LMS, media validation was carried out to see the feasibility of using the media. This process takes quite a long time because several processes require revision, including the following:

1. PDF modules shared via the Google Drive link cannot be accessed via Learning Path. Therefore, the module is uploaded to the system via the document menu.
2. The material restriction feature was initially not visible.
3. Quiz features without a maximum score limit cannot be graded, so this needs to be fixed.
4. The assessment feature, which initially could only include assignment aspects, was revised so that all assessed aspects could be included in the assessment.
5. The questions presented are not limited by time so they can be done anytime within an unspecified time limit. The problems are also not limited to the number of attempts, so they can be done many times. All of this was revised by providing time limits and experiment limits.

The results of these revisions finally provide good learning media validation results. The assessment questionnaire is taken from LORI (Learning Object Review Instrument).

Table 2. Media Validation Results

No	Item	Validator	
		Validator 1	Validator 2
1	Content Quality	4	4
2	Learning Objective Alignment	4	3
3	Feedback and Adaptation	3	4
4	Motivation	4	4
5	Presentation Design	5	5
6	Interaction Usability	4	4
7	Accessibility	4	4
Average		4	4

The average value of the validation results from two validators is 4 on a scale 5. This value indicates that the learning media, in this case, is Chamilo LMS, worth using as an online learning platform.

3. 4 Implementation Stage

The LMS built on the website <https://meambo.fkipusn.ac.id> has been used in learning media lectures since the first lecture of the odd semester of the 2023/2024 academic year. Some of the important features owned by Chamilo include administration features, delivery of teaching materials, quizzes/tests, assessments, and communication.

Administration Features

The administration feature works very well. This feature is related to lecture administration, such as lecture registration, scheduling, and information about lectures, including lecture attendance. Lecture attendance is specifically provided through the attendance menu. The results of lecture attendance can be exported to pdf, as shown in Figure 4, to facilitate the administrative affairs of lecturers.



The screenshot shows the MEAMBO (Manajemen Edukasi dan Pembelajaran Online) interface. At the top left is the MEAMBO logo. At the top right is the user name 'Agus Nasir'. Below the logo is the title 'Media Pembelajaran Bahasa Indonesia dan TI'. Below the title is a table with three rows: 'Teacher' (Agus Nasir), 'Course' (Media Pembelajaran Bahasa Indonesia dan TI (BINDO)), and 'Date' (September 27, 2023 at 01:12 PM). Below this is a large attendance table with 10 columns: '#', 'Name', and eight dates/times. The attendance table has 4 rows of data. The first row shows 'FINY AFRIANI' with attendance 'P' for the first four dates and 'NP' for the last six. The second row shows 'ALAM IKHSANUL AMANAH' with attendance 'P' for the first four dates and 'NP' for the last six. The third row shows 'MUH. Anang' with attendance 'P' for the first four dates and 'NP' for the last six. The fourth row shows 'KETUT TIA APRILIANI' with attendance 'P' for the first four dates and 'NP' for the last six.

#	Name	15/09 02:00 PM	22/09 02:00 PM	29/09 02:00 PM	06/10 02:00 PM	13/10 02:00 PM	20/10 02:00 PM	27/10 02:00 PM	03/11 02:00 PM
1	FINY AFRIANI	P	P	P	P	NP	NP	NP	NP
2	ALAM IKHSANUL AMANAH	P	P	P	P	NP	NP	NP	NP
3	MUH. Anang	P	P	P	P	NP	NP	NP	NP
4	KETUT TIA APRILIANI	P	P	P	P	NP	NP	NP	NP

Figure 4. Print out the attendance list

Teaching Material Delivery Feature

The teaching material delivery feature in Chamilo works well but needs to be optimized. In Chamilo, a document menu is provided to save the necessary files on the website. There is a link menu to store various files or video links in Google Drive, YouTube, or other external storage places. There is also a Learning Path menu to organize the order of the material to be displayed. This material can be taken from documents or links, so these two menus may not be displayed on the student page. However, some learning path problems are minor but quite annoying. First, the teaching material files that can be opened in the learning path using links are only Word, PPT, and video format files. If the pdf file is stored on Google Drive, the connection is linked, and the file cannot be opened through the learning path. However, this is fine for some LMS, such as Classroom or Moodle. Therefore, the material file in PDF form must be uploaded to the Chamilo website and placed in the document section. The next problem

is that if using a mobile device, the file can only be opened if downloaded. It is different if using a laptop device. The file can be opened without downloading.

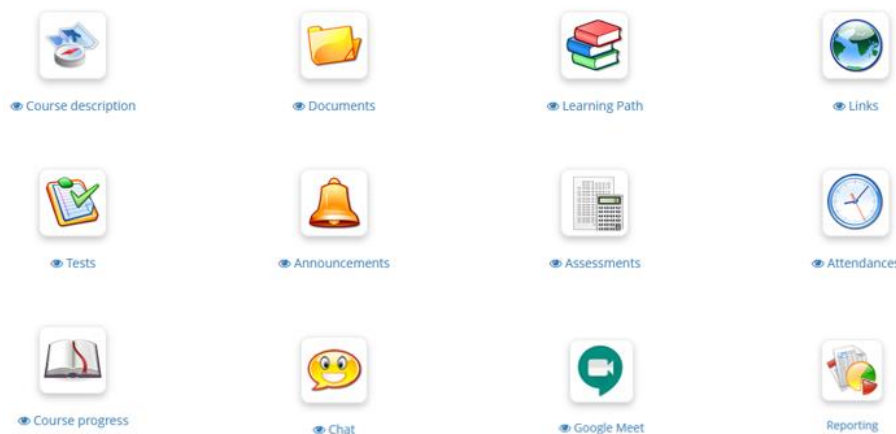


Figure 5. Menus on the Chamilo LMS

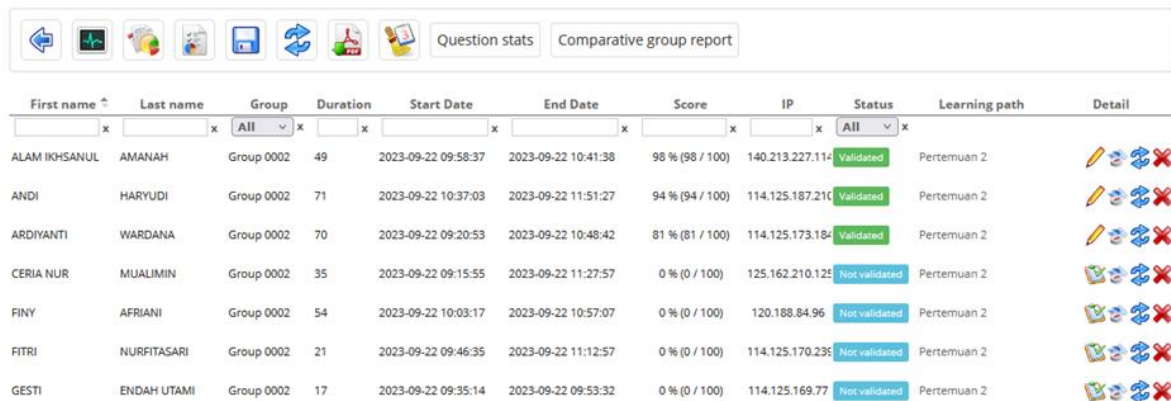
The Learning Path's function in learning is excellent because it guides the learners to learn the teaching materials the lecturer provides sequentially. There are materials that the learners must complete before opening another lesson. The next session lesson will open automatically if the required lesson has been completed. Otherwise, the next lesson will not open. Every time a learner accesses the material, the percentage of the learning process done by the learner will be recorded and can be monitored by the instructor. However, the use of learning paths cannot be used as a reference because the percentage of the learning process will be calculated immediately, even if just clicking without reading or viewing the material. A good system should count the learning status if the material has been read or watched. Chamilo does not currently have this setting.

Quiz/Testing features

The quiz feature in Chamilo is very comprehensive. There are about 27 types of quizzes that can be selected depending on your needs. If registered, the types of quizzes or types of questions in Chamilo include *Multiple choice, multiple answers, fill blanks or form, fill blanks with exact selection, matching, matching with exact selection, open question, oral expression, image zones, image zones with exact selection, hotspot delineation, exact answer combination, unique answer with unknown, multiple answers true/false/do not know, multiple answer True/false/degree of certainty, combination True/false/, Global Multiple answers, calculated question, Unique answer image, sequence order, match by dragging, match by dragging with exact selection, annotation, reading comprehension, upload answer, multiple answer dropdown, dan multiple answer dropdown with exact selection.*

In this study, the quizzes or exercises used were essay test type (open question), multiple choice type, and upload answer. There are no obstacles in using these three types of questions; everything works as it should. Validation or checking is required, just like an offline exam, to assess open questions and upload answer questions. The good thing is that the tests/quizzes are very well documented. This condition is

different from multiple-choice or true/false questions. These questions can be set up so that they give immediate results after the quiz is taken. The values of these quizzes and exams will be processed and then entered into the assessment feature as the final assessment of students. The following is an image of the validation process of description questions that must be validated individually.



First name	Last name	Group	Duration	Start Date	End Date	Score	IP	Status	Learning path	Detail
ALAM IKHSANUL	AMANAH	Group 0002	49	2023-09-22 09:58:37	2023-09-22 10:41:38	98 % (98 / 100)	140.213.227.114	Validated	Pertemuan 2	
ANDI	HARYUDI	Group 0002	71	2023-09-22 10:37:03	2023-09-22 11:51:27	94 % (94 / 100)	114.125.187.210	Validated	Pertemuan 2	
ARDIYANTI	WARDANA	Group 0002	70	2023-09-22 09:20:53	2023-09-22 10:48:42	81 % (81 / 100)	114.125.173.184	Validated	Pertemuan 2	
CERIA NUR	MUALIMIN	Group 0002	35	2023-09-22 09:15:55	2023-09-22 11:27:57	0 % (0 / 100)	125.162.210.125	Not validated	Pertemuan 2	
FINY	AFRIANI	Group 0002	54	2023-09-22 10:03:17	2023-09-22 10:57:07	0 % (0 / 100)	120.188.84.96	Not validated	Pertemuan 2	
FITRI	NURFITASARI	Group 0002	21	2023-09-22 09:46:35	2023-09-22 11:12:57	0 % (0 / 100)	114.125.170.235	Not validated	Pertemuan 2	
GESTI	ENDAH UTAMI	Group 0002	17	2023-09-22 09:35:14	2023-09-22 09:53:32	0 % (0 / 100)	114.125.169.77	Not validated	Pertemuan 2	

Figure 6. Task validation/checking process of description type

Assessment Feature

Chamilo has an assessment feature to give students an assessment of all aspects, including attendance, assignments, quizzes, or even surveys of learning activities that have been done. The value of this assessment feature is the final grade for students so that they are declared to have passed or not in the course. In Chamilo, a certificate feature is provided to provide a certificate of completion for students who have taken the course. A good assessment system connects all the elements assessed in one assessment form. The assessment in Chamilo fulfills the aspects of good assessment. The instructor can control what aspects will be included in the assessment. Uniquely, the final grade will automatically come out after all aspects of the assessment have been assessed so that the teacher no longer needs to calculate the final grade manually.

Type	Assessment	Weight
	Latihan 1 Test	25
	Latihan 2 Test	25
	Pertemuan 2 Courses	4
	Attendances Attendance	15
	1 Assignments	25
	Pertemuan 1 Courses	2
	Pertemuan 3 Courses	4

Figure 7. Online Course Activities, Tests, Attendance and Assignments included in the Assessment feature.

Communication Features

The chat feature also works well, can be used for private chats, and can be used for group chats. However, it still has many shortcomings. First, the messaging feature in Chamilo can only send text messages, not files or images. Second, because the mobile version of Chamilo has yet to be available in the Play Store, the messages sent can only be seen when the user is online. No notification appears when the user is not online. Therefore, the use of Chamilo still requires communication aids such as WhatsApp when there is important information related to lectures to be conveyed to students.

3.5 Evaluation Stage

After the implementation process for four meetings, a questionnaire was given to students to determine the student response to using the Chamilo platform. The results of the questionnaire can be seen in the table. Students' response to using Chamilo LMS in learning is generally good.

Table 3. Student response to the use of media

No	Indicators assessed	Average	Criterion Score
1	Ease of use	4,26	Very good
2	Interaction in learning	3,33	Not good
3	Accessibility of subject matter	4,25	Very good
4	Assessment and feedback	3,89	Good
5	Technical support	4,06	Good
Average		3,96	GOOD

Based on the research results presented above, some of the features provided by Chamilo LMS can be grouped into five main parts: administration features, teaching material delivery features, testing features, assessment features, and communication features. These five features are the minimum main features that an LMS must have. This opinion aligns with what was said by (Retnoningsih, 2017). Therefore, Chamilo fulfills the criteria of a Learning Management System. However, some of these features function well, and some need to be improved.

Furthermore, student responses to using Chamilo in learning are generally good. However, some features are considered less suitable, such as communication features. Student response to the use of communication features is unfavorable. Messages delivered by lecturers to students or students to other students can only be seen when opening the Chamilo platform. There is no notification to the recipient if there is an incoming message. This is because the mobile version of Chamilo has yet to be made accessible. With the mobile version, this platform will be very well used for Learning Management Systems in Educational Institutions.

Furthermore, the assessment and feedback aspect of Chamilo is excellent. However, only some questions examined were given feedback, so student response to this aspect was also not optimal. Technical support is also the same. There are still some obstacles encountered by students that cannot be overcome by the admin, such as using the survey feature so that the user response is also not optimal. However, the last two indicators in the learners' responses have been categorized as good.

The results of the validation and evaluation of media use show that Chamilo LMS is very feasible to use as an online learning platform to support digitalization in education. This case is in line with previous studies that have been mentioned earlier. Some previous studies have also mentioned that Chamilo is very feasible to use as an e-learning media (Bakri & Mulyati, 2017; Febryana & Pujiastuti, 2020; Yulita et al., 2018).

In addition to the feasibility issue, based on the student response questionnaire, Chamilo is practical for the learning process. This condition is based on the student response questionnaire regarding the aspects of ease of use and accessibility of material, which is very good. Ease of use includes ease of access through various devices. Because Chamilo is website-based, it can be accessed via a smartphone that can be carried anywhere. Material access can be done anywhere and anytime while connected to the internet. This condition also aligns with previous research stating that using Chamilo as an online learning platform is efficient (Tiari, Zulkardi, & Siahaan, 2020). This was tested by assessing three student categories: high, medium, and low. In line with that, Nurkhofifah also mentioned that the platform's practicality is measured by students' ability to use the media in the learning process. A quantitative value of 88% was found in the measurement of practicality, indicating that the Chamilo platform is convenient (Nurkhofifah, Setriani, & Suryani, 2022).

In the research, the teaching lecturer wanted the following material open only if the student had passed the assignment/quiz. This condition was not initially found, so the learning process was implemented without such restrictions. However, such a setting can be done in Chamilo. If the lecturer wants to pursue material completion, this feature is not good to apply.

CONCLUSION

This research produces a website-based online learning platform that is open source. The community of learners in the Indonesian language education study program at Universitas Sembilanbelas November Kolaka can directly use this platform. This platform has all the features that an LMS should have. All the features in it work well, including the communication feature. Unfortunately, there is no free mobile version of this platform. If a mobile version that supports English or Bahasa Indonesia is available, then this platform will be one of Indonesia's best digital learning platforms. This learning platform will certainly play a major role in supporting the implementation of the Merdeka learning curriculum. There are still many topics of study about Chamilo. The effectiveness of Chamilo and Moodle will be compared in the next research. It is also possible to combine these two platforms.

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