

DESIGNING LMS AND CMS FOR CRITICAL LITERACY COURSE

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Abstract: This second-year study which took place in 2022 aims to design a learning management system (LMS) through Moodle and Content Management System (CMS) through Google Sites for Critical Literacy course in Prodi Pendidikan Bahasa Inggris UNJ. The course aims to prepare the students to have the ability to interpret text critically and communicate actively in the multimodal context in a hybrid learning process. The study was conducted with the qualitative approach with The Successive Approximation Model (SAM) iterative phase research design. Throughout the Savvy Start and Iterative Design Phase, the phase rotated through design, prototype, and review to make sure students and lecturers can contribute the design direction. Forty-four students and one lecturer generates as participants in this study. Two kinds of modules were developed during the study, namely: (1) LMS on www.onlinelearning.unj.ac.id and (2) CMS on Google Sites. LMS and CMS modules for the Critical Literacy course were: (1) Defining Critical Literacy, (2) Literacy, Critical Literacy, Multi-literacy, Multimodal, (3) Data Literacy, Fact and Hoax (4) Analyzing Multimodal Text (5) Reflective Notes (6) Mid-term Test (7) Analyzing Various Texts (8) Wrap Up (9) Final Semester Individual Project. The study's findings showed that LMS and CMS could handle the complexity of teaching Critical Literacy in the digital environment. The Critical Literacy course should have attracted interest or participation from the students to familiarize, encourage, fulfill, assess and comprehend the various texts. This LMS and CMS also provided students with class discussion, credible references, project-based activities, and criticism on literacy topics.

Keywords: *designing LMS and CMS, Moodle, Google Sites, SAM, Critical Literacy course*

INTRODUCTION

This study is the second phase of a three-years research project prepared to support the students in the Critical Literacy course to have the ability to interpret text critically and communicate actively in the multimodal context in a hybrid learning process. An in-depth study on the first year research was conducted with a particular focus on the needs analysis with forty-four students, and a lecturer participated in the qualitative study. Based on



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Hutchinson and Water's theory (1991), the research revealed the needs of the students, which could be divided into learning needs and target needs (necessities, lacks, and wants). The information was gathered via giving out questionnaires to the students and lecturers, interviewing the lecturers, and holding focus groups. The report of the first-phase study demonstrates a discrepancy between the predicted outcomes of the Critical Literacy course and students' comprehension of a variety of texts, particularly when it comes to comprehending the interpretation of data presented in the form of graphs, tables, and numbers. Also, students must be exposed to a wide range of texts, including news articles, writings that need critical analysis, and texts that address current problems in education. It was also discovered that the students hardly ever have trouble gaining access to online instruction. The format of class discussions in virtual synchronous meetings to explore current issues is also preferred by students. Moreover, the first year research reveals that students believe they receive credible and systematic references. Based on the data obtained through the first study phase, the students recommend adding more activities to the content delivery, namely themes and materials that are relevant to their interests. However, the diverse range of students' language abilities, particularly in reading, is a challenge for lecturers. The study also reveals that the lecturer and students require Critical Literacy materials that can get them to think critically about issues linked to the theory, strategy, and practice of Critical Literacy. The preferred course activities include discussions, debates, and critiquing social campaigns and commercials.

Based on the problems faced and all the potential possessed by students and lecturer in Critical Literacy class in Prodi Pendidikan Bahasa Inggris Universitas Negeri Jakarta, the researchers developed an instructional material for students using a learning management system (LMS) design through Moodle and Content Management System (CMS) through Google Sites. It was online instructional materials or e learning instructional material where all meetings were delivered via online or e-learning.

This second-phase study focuses on designing Learning Management System (LMS) and Content Management System (CMS) with The Successive Approximation Model (SAM) iterative phase research design as its end-product to address the following research questions:

1. How is the development of LMS and CMS for Critical Literacy course that integrates English learning materials, pedagogy and critical literacy to facilitate the students and lecturer to optimize their learning and teaching?
2. To what extent does the LMS and CMS facilitate teaching and learning?

Aligning the e-learning, pedagogy and critical literacy through LMS and CMS

Dabbagh and Ritland (2005) defined e-learning as an open and distributed learning environment that makes use of pedagogical tools that are activated by web-based and internet-based technology to encourage learning to develop knowledge through meaningful actions and interactions. According to this view, Genova (2019) stated that e-learning was described as a brand-new environment where teachers and students may engage with one another. Information technology can be utilized to enable collaboration, create learning media, and assist teaching and learning. E-learning, according to Clark and Mayer (2011), is instruction provided through digital tools like computers or mobile devices with the goal of facilitating learning. Following Dabbagh and Ritland (2005), e-learning is composed of a variety of connected elements. Infrastructure included teleconference equipment, internet network or intranet multimedia equipment, and computers (service and client). The e-learning program and system made up the second part. This component was software that virtualizes the learning process, which was known as Learning Management System (LMS) software, included Elisa, Moodle, Class Server, and others. E-learning material made up the final element. Textual content, web content, and multimedia content are all possible formats for this content.

Synchronous and asynchronous learning are two different types of online models. In order to facilitate direct engagement in the learning process through the internet or intranet, synchronous learning was a learning

procedure carried out by lecturers and students at the same time. Asynchronous learning, on the other hand, does not rely on time and allows all users—students and lecturers—to use the system and communicate on their own schedule. The continuum of online learning is further divided into three forms of delivery, namely adjunct, mixed/blended, and totally online, by Noirid, et.al. (2007). In the classroom, the face-to-face learning approach was supported by the adjunct model. The mixed/blended paradigm made e-learning an integral component of traditional classroom instruction. The supply of learning materials, learning interactions, and learning evaluation were all done using the completely online paradigm at the same time.

As previously indicated, Moodle was used to create the educational materials used in this study. Modular Object Oriented Dynamic Learning Environment, created by Martin Dougiamas, is referred to as Moodle. Moodle is also frequently referred to as a Learning Management System (LMS) or Course Management System (CMS)., according to Stanford (2009). Both CMS and LMS can be used for online learning systems. Wade (2018) thought that Moodle was an open source learning environment that supported a multimedia teaching style. According to Bader et.al (2019), Moodle enables the teacher, administrators, and students to create individualized learning plans. Moodle offers a range of modules to aid teachers and students in navigating and finishing their study. By the use of virtual classroom environments, Learning Management Systems (LMS) improve the learning process. A typical LMS facilitates a variety of learning environments for academic advancement with supplemental components that promote interactions between LMS users, professional training, online collaborative groups, and chats. Active learning, the use of LMS technology tools, and the usage of approved curricula guidelines should all be balanced by instructors. Instructors can design online activities, direct and model dialogues, set learning objectives, provide students options, and promote problem-solving through decision-making processes with the use of an LMS. An LMS with an instructor promotes an engaging learning environment. Students can keep their freedom, interest, and motivation by

using an LMS. Stakeholders in the educational community must find scientific evidence to support their LMS efforts.

Any learning contributor's primary responsibility, including lecturers, students, and the media, is to encourage the implementation of learning activities that will ultimately lead to the accomplishment of the learning objectives. In a number of high schools, the curriculum's implementation did not make the best use of technology, which prevented students from learning to the level of proficiency that was required. In addition, the technical tools utilized in the learning process so far have not entirely assisted in resolving the issues encountered. As a result, it's critical to develop an online learning process that finds novel solutions to these issues (e-learning). E-learning is now accepted as a form of learning activity in the vast majority of colleges worldwide.

According to Martin et al. (2012), the online teaching and learning process consists of a number of e-learning components as well as four different types of interaction between students: student-content, student-instructor, student-student, and student-interface. In accordance with the statement, electronic gadgets are used in e-learning, a form of online education delivered through computer networks, to enable students to connect with one another and their lecturers. E-learning is a media technology that employs an internet connection to help the learning process, as emphasized by Thapliyal (2014) and Horton & Horton (2003).

Ghirardini (2011) claims that using the internet and computer technology gives consumers a variety of learning chances. With the help of this technology, students can learn independently, whenever they want, from anywhere. According to Galy et al. (2011), e-learning can increase students' ability to function independently. Current research has been conducted to show the benefits of online education (Panyajamorn et al., 2018). The development of education has helped students obtain the information they need, but there are still numerous extra requirements that are taught about various competences and abilities that must be given jointly. Intensive reading courses are suggested as the e-course learning model using

Moodle as the Learning Management System to aid in the growth of the learning process with e-learning.

The academic community has taken notice of Moodle since it supports the implementation of education and all of its advantages (Martin-Blas & Serrano-Fernández, 2009).

One of the e-learning media that can be used to manage the teaching and learning activity is the Moodle Learning Management System, because of a number of benefits of Moodle, including the accessibility of various online sources, and exercise, distribution of learning materials with videos, URLs, modules, interaction rooms between lecturers and students, such as conference rooms, discussion forums, and chat, etc

The Moodle Learning Management System (LMS), according to Alier et al. (2010), is one of the e-learning tools that may be used to monitor teaching and learning activities. The educational system has undergone innovation due largely to Moodle (Oproiu, 2015). According to Akkoyunlu & Soylu (2008), online learning allows 24/7 learning that is accessible from any location at any time. It takes more time to wait for learning chances in class because discussion of the content is frequently incomplete with a set amount of time and is only done in class.

According to Sejzi and Aris (2013), a content management system (CMS) is a framework that enables the storage, administration, and reuse of online material through integrated database capabilities. Everything that teachers or students use to study a language is considered a material (Tomlinson, 2011), and this includes books, workbooks, cassettes, CDs, newspapers, and a variety of other printed materials. However, in this technological age, many educational resources are accessible online (Tosh et al., 2020), including e-books, websites, motion graphics, audio, and videos that are retrieved from a wide range of sources and applications. These digital learning resources offer possibilities to learn as a replacement for a face-to-face learning environment (Zwart, et al., 2017), to maximize instruction and give more varied learning experiences without the constraints of time and place (Lee & Hung, 2015).

The resources used in a language classroom may focus on instructional (language), experiential (language use), simulative (students' language use), or exploratory (discoveries about language use) (Tomlinson, 2011). The four modes can be included into a Content Management System (CMS) to give lecturer and students access to resources and to improve students' critical literacy. More crucially, there was an increasing need for lecturers to provide their students with e-learning resources as a crucial part of language training when the Covid-19 pandemic unexpectedly struck the entire world. Students will be closer to integrating technology into their learning process if they are given access to critical literacy and e-learning resources.

METHOD

While the focus of the study is on designing a CMS for learning materials for Critical Literacy course, the Successive Approximation Model (Allen & Sites, 2012) was adopted. The model is a recent derivation of several instructional design models which address more effective learning experiences, collaboration, engagement, iterations, and agile e-learning development processes for performances (Jung, Kim, Lee, & Shin, 2019). The three simple yet iterative stages of SAM—preparation, design, and development—were used to create the CMS.

This second year research focuses on iterative phase research design. Throughout the Savvy Start and Iterative Design Phase, the phase rotated through design, prototype, and review to make sure students and lecturers can contribute and support the design direction. The second year research was developed through three simple but iterative phases of SAM:

preparation, design, and development as described in the following figure.

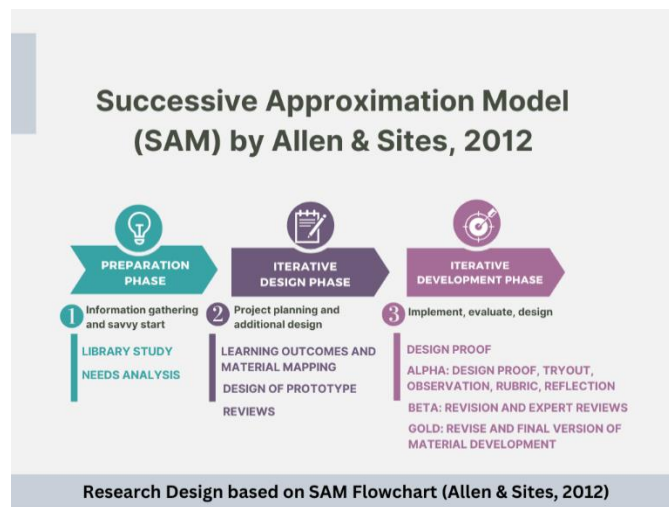


Figure 1. Research Design

An in-depth study on the first year research was conducted with a particular focus on the needs analysis with forty-four students, and a lecturer participated in the qualitative study. Based on Hutchinson and Water's theory (1991), the research revealed the needs of the students, which could be divided into learning needs and target needs (necessities, lacks, and wants). The needs analysis was gathered via giving out questionnaires to the students and lecturers, interviewing the lecturers, and holding focus groups. A review on course outline implementation and related content area was simultaneously conducted to understand the context of the research. Phase 2, iterative design, included designing e-learning materials for the students and lecturer using LMS on Moodle based and CMS on Google Sites. Two kinds of modules were developed during the study, namely: (1) LMS on www.onlinelearning.unj.ac.id and (2) CMS on Google Sites. LMS and CMS modules for the Critical Literacy course were: (1) Defining Critical Literacy, (2) Literacy, Critical Literacy, Multi-literacy, Multimodal, (3) Data Literacy, Fact and Hoax (4) Analyzing Multimodal Text (5) Reflective Notes (6) Mid-term Test (7) Analyzing Various Texts (8) Wrap Up (9) Final Semester Individual Project. These nine headings were categorized into four topics namely: Theories, Tests, Reflection, and Projects. This second phase then ended with the review of the prototype through a validation process. Phase 3, iterative development, which will later be done in 2023, the verified

prototype will be developed and implemented through a series of try-out activities (alpha) and will be evaluated iteratively through a range of validation and revision (beta) until a final product of the CMS (gold).

RESULTS

The initial step in this research is the analysis of material mapping. Based on the findings of the data analysis in the first year, it can be said that there is a gap between the demands and desires of modifying the learning process by the circumstances and character of students and the current learning process. The findings of observations used to introduce the disclosure of issues, the analysis of student survey responses, and the results of interviews with lecturer all demonstrate the necessity for all this. The presentation of a thorough and systematic learning process, such as learning modules as materials that can be studied at home, learning videos as explanations for students, can access URLs as materials, or enriching learning materials, is what students and lecturers want shifted in the learning process. Direct input from lecturer on students' assignments and knowing the exam or evaluation results are further requirements. Students also need to participate in virtual meetings through live meetings using Zoom or Google Meet. The second step is designing. The researcher created the learning outcome in the course outline (Rencana Pokok Pembelajaran, or RPP) as the guide in designing learning process that evolved with e-learning Moodle.

In this second stage, topics of learning material in the Critical Literacy course are mapped. From this mapping a material prototype and a content management system were designed as a 'home' for students to study material and a learning management system on the website <https://onlinelearning.unj.ac.id/>.

The following is a mapping of topics, materials and assignment according to the demands of Course learning outcomes:

Table 1: The distribution of nine modules in LMS and CMS Critical Literacy

No.	Topics	Digital Materials	Assignments
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1.	Defining Critical Literacy	YouTube QR Code PDF Files	Analyzing Allen Luke' & Kushal Cakrabarti's concept on Literacy. Defining 21st Century Literacy by Lisa Guernsey Reporting the issues on Literacy from above concept and new paradigm on Critical Literacy
2.	Literacy, Critical Literacy, Multi literacy, Multimodal	YouTube QR Code PDF Files	The concept on Literacy, Multi literacy and Multimodal Multimodal text and analyzing the modes.
3.	Data Literacy, Fact and Hoax	PPT slides on data literacy, facts, hoax, hate speech, simulacra, post truth and propaganda. Websites.	Learn Statistic Indonesia (Badan Pusat Statistik) https://www.bps.go.id/ Pick a special issue of students' interest. Read, interpret, and evaluate the data. Write the conclusion and lesson learned Study the Provincial Education Profile (Neraca Pendidikan Daerah) 2020 published by MoEC. https://npd.kemdikbud.go.id/ Choose one province then analyze, interpret, and conclude. Study data literacy. https://youtu.be/RFf3JXydlJE Interpret and make sense of the data.
4.	Analyzing Multimodal Text	PPT slides on the modes, Steps of Critical Analysis, Writing Critical Analysis, Points to analyze Youtube and websites	Critically analyze the text based on the steps and point of critical analysis. Topic I: Steve Jobs and the elevator Topic II: Unspoken and Holocaust Museum in Indonesia Topic III: Huang Yi and Kuka Topic IV: Obama and The English Teacher

			<p>Topic V: Removed and Performance of Pixel</p> <p>Topic VI: Dananjaya Don't let Your Story Limits You and The most beautiful thing</p> <p>Topic VII: Dananjaya World Championship and</p> <p>Topic VIII: Emotional abuse and Metamorphosis</p>
5.	Reflective Notes		<p>Reflect on students' learning in Critical Literacy class. Write one-page reflective notes: what strategies that fit to your learning in improving your critical literacy skills. How do you make use of the strategies to learn other courses and new things?</p>
6.	Mid test	Debate	<p>Topic 1. Privacy rights. Are there any conflicts between individual privacy and public safety?</p> <p>Topic 2. Indonesia's New Capital. Is it important nowadays?</p> <p>Topic 3. Future jobs. Can they be predicted?</p> <p>Topic 4. Augmented reality in education. Do our students really need that?</p> <p>Topic 5. E-learning. Is face to face interaction more effective than online lectures?</p> <p>Topic 6. Artificial intelligent. Should conventional teaching be replaced with artificial intelligent-powered education?</p>
7.	Analyzing Various Texts	PPT slides Books Websites	<p>Critically analyze a certain type of text (online or paper-based, website, visuals)</p>

advertisement, social campaign, political campaign, image, dance, films, media release, television episode, amateur recording of an event, signs, pictures, paintings, sculptures, etc., in one of the areas (educational issues social issues political issues cultural issues global issues) by considering the predominant elements of the text.

Points to analyze:

1. intended audience
2. importance and relevance of the information
3. structure, the effectiveness of writing text
4. where and when the information is sent or published.
5. language use: strategies to present ideas, grammar, diction.
6. evidence and data presentation and sources
7. appropriateness and effectiveness of a 'quote' from a spokesperson
8. sponsor and/or contributor

8.	Wrap Up	PPT slides	Defining Literacy Critical Thinking Skills Literacy across Countries Learning Critical Literacy through English What is Critical Literacy? Hoax Model of a Literacy Practice
9.	Final Semester Individual Project	Project presentation and paper	Assignment 1

Create multimodal text and present it on the basis of:

1. intended audience;
2. importance and relevance of the information;
3. structure, effectiveness of writing text;
4. language use: strategies to present ideas, grammar, diction, etc.;
5. evidence and data presentation and sources; and
6. your messages.

Assignment 2
Theme: A Critical Review and Proposal for Social Action
Framework: Write a critical analysis on a text and question possible disparities, inequalities and challenge the power relations.

The design of a Critical Literacy courses both in LMS UNJ and in CMS Google Sites refers the results of needs analysis both from students' responses to questionnaires and the answers of lecturer's interview. Several themes connected to Critical Literacy material are covered in document analysis, include providing an overview of the nine general learning modules listed in Table 1. The next step is to determine the learning objectives. Then, provide educational content via modules, videos, links, and other resources. Learning activities involve material presentation, exercise, summary/conclusion, virtual meeting/live meeting, discussion, reinforcement and reflection. The final step involves evaluation and assessment, which is done through debates, assignments, and tests. This design becomes the content of the Moodle e-learning design on the LMS UNJ and CMS Google Sites, which can be accessed by both students and lecturers.

The second step is the design of prototype of the learning process with e-learning Moodle for LMS UNJ and CMS by using Google Sites. The design of prototype of the learning process uses the e-learning UNJ which can be accessed on <https://onlinelearning.unj.ac.id/login/index.php>. This LMS UNJ is one of the developments of Moodle applications provided by the provider to make it easier for users to build learning with Moodle. Internal users (UNJ students and lecturers) can access it is free. The content of Critical Literacy course is based on the distribution of nine modules that has been developed (see Table 1). The developed e-learning consists of the initial feature, main page, and course page as shown in the following Figure 1 below.

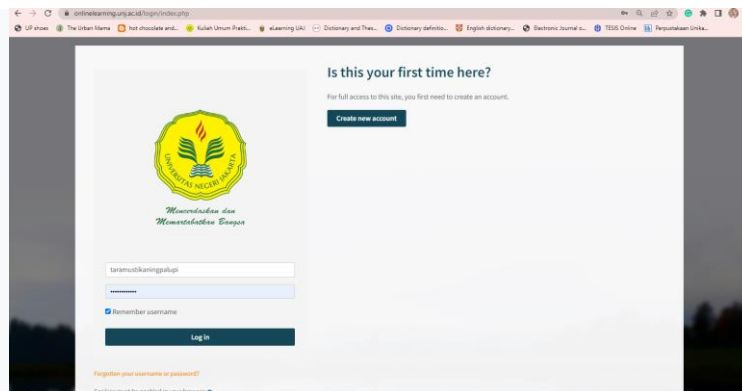


Figure 1. Login Page

Students who have been enrolled in the LMS UNJ course can directly log in with the username as their student password. They can access Critical Literacy course on the site home by choosing Fakultas Bahasa dan Seni, Prodi Pendidikan Bahasa Inggris and Critical Literacy. More details can be seen in Figure 2 and 3 below.

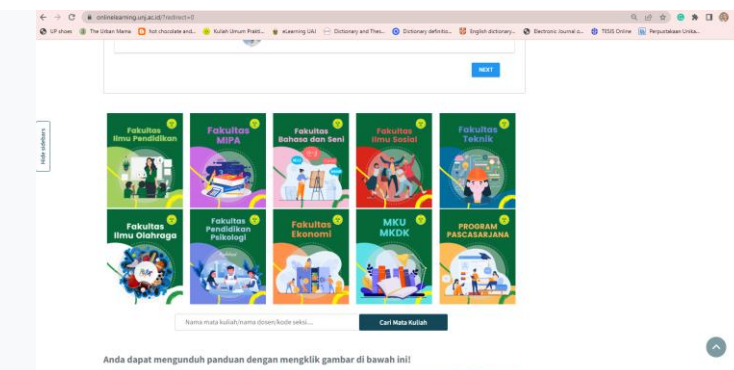


Figure 2. The selection of faculties in LMS UNJ

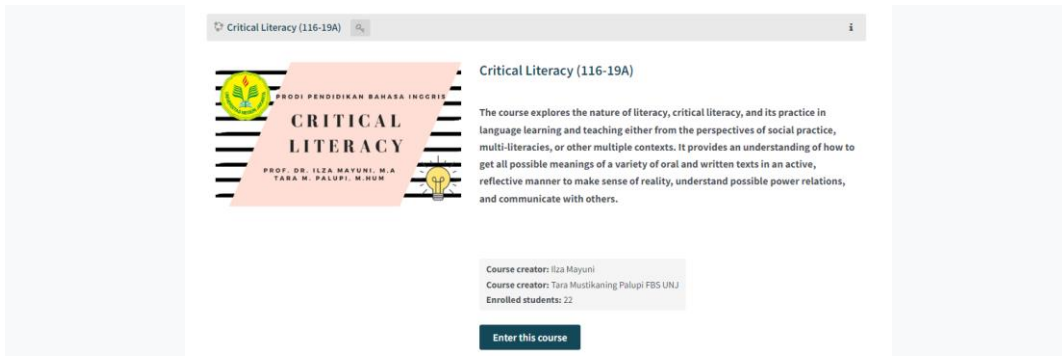
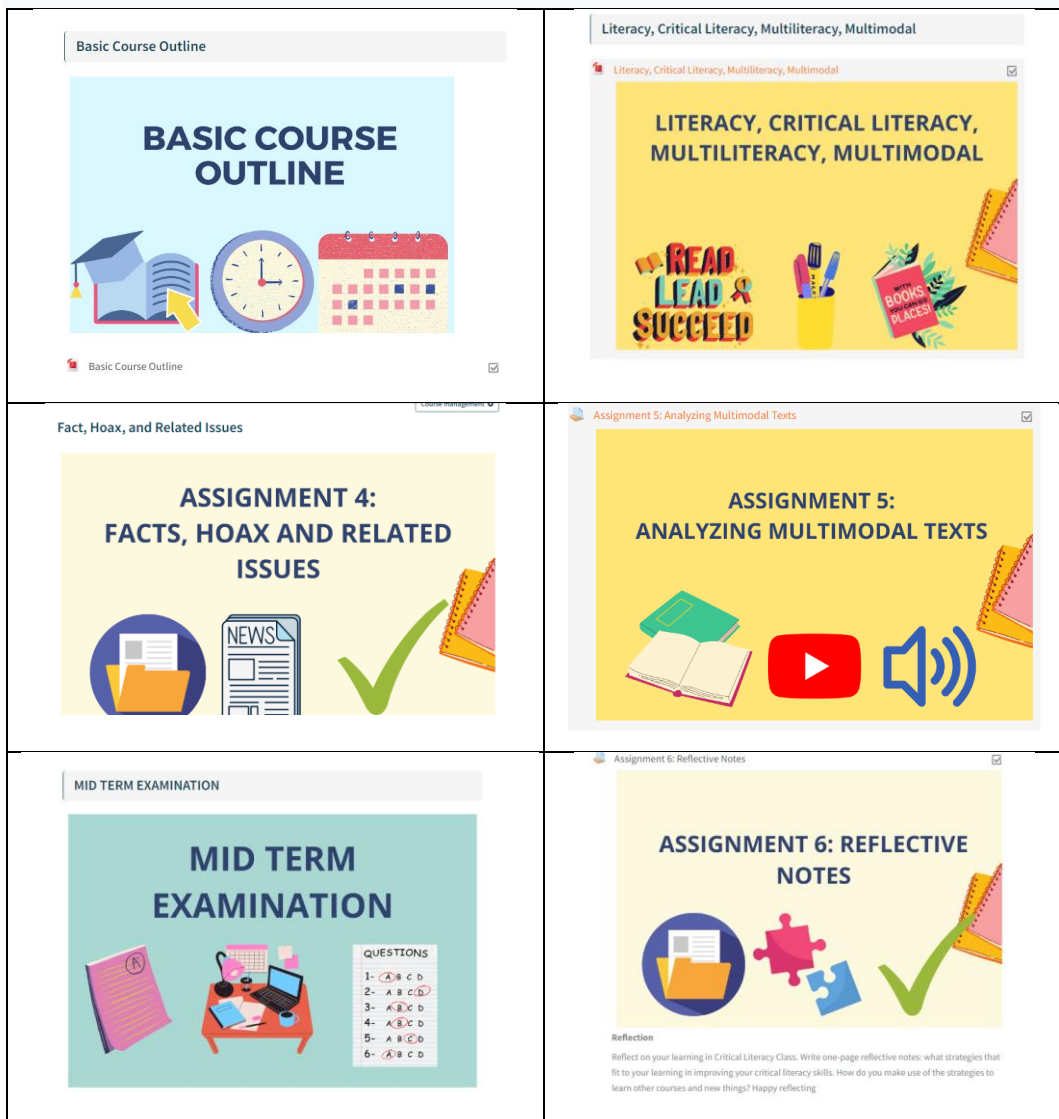


Figure 3. Critical Literacy course in Prodi Pendidikan Bahasa Inggris



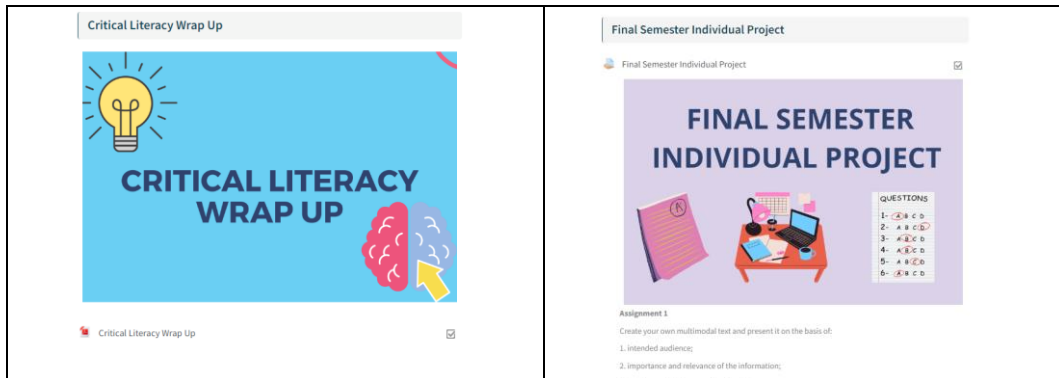


Figure 4. The Moodle e-learning LMS UNJ workflow (Main page Basic Course Outline – Learning materials by module in PDF – Learning activities with case study - Learning assignment with YouTube – Mid-term examination: Debate – Reflective notes – Wrap up – Individual Project

The students log in with the username and password (Figure 1) then select the available faculties and study program (Figure 2 and 3). Further, the lecturer set the enrollment code for Critical Literacy course as a method of having students beside the teacher determine if a particular student can self enroll in the course assigned. Students who have enrolled in Critical Literacy course can attend the course online using various facilities provided in the LMS.

While for the CMS on Google Sites, the students can access it without login to the account, online anytime anywhere. The following figures are the detailed content available from the CMS.

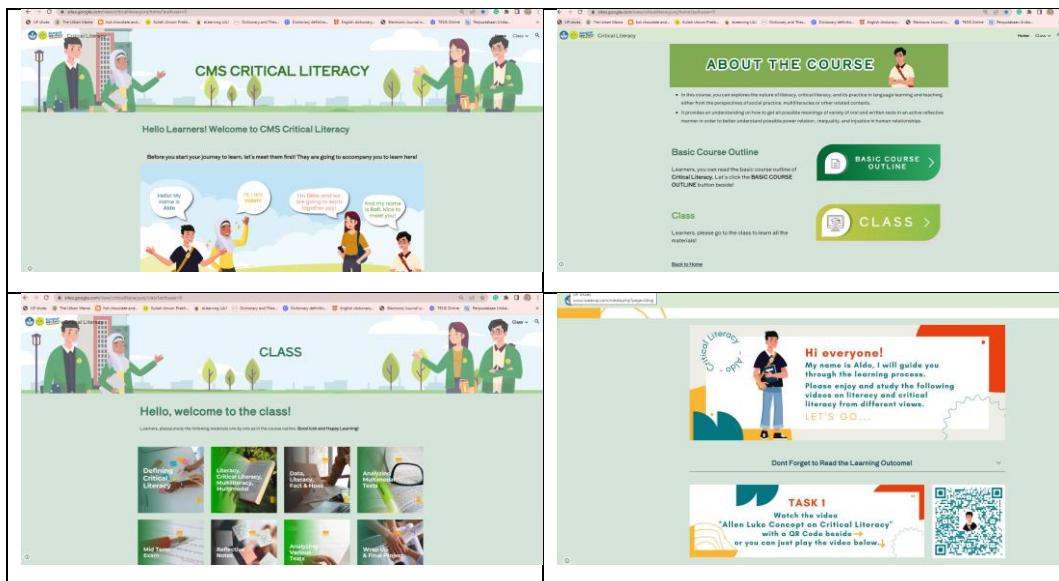




Figure 5. The Google Sites CMS Critical Literacy UNJ workflow (The homepage include the introduction to the virtual assistants who will help the learners – About the course – Eight modules on Critical Literacy – Module Defining Critical Literacy – Task after the stimulus watching the video – Module Literacy, Critical Literacy, Multi Literacy and Multimodal – Reading task – Module Data Literacy, Facts and Hoax – Module Analyzing Multimodal Text – Debate Topic – Reflective Notes – Final Assignment

DISCUSSION

The need for literacy as a component of 21st-century skills has increased dramatically. Students must therefore possess both linguistic proficiency, content knowledge and technological proficiency. Today's lecturers face a problem in enhancing their pedagogical performance in language, content as well as digital literacy so they can instruct both to their respective students. The focus has shifted significantly in the 21st century

from conventional teaching and learning techniques to more avant-garde ones. The transformation in teaching/learning methodologies was helped by the development of information and communication technologies (ICTs) in education. A new educational program called hybrid learning which combines Internet-based learning with traditional classroom methods and aims to bring the digital world into the teaching/learning environment, is beginning to gain favor in educational settings. So, the quick emergence of hybrid learning as a course design methodology is a result of the need to utilize new technological trends in educational contexts (Krasnova and Vanushin, 2016). E-learning, according to Dabbagh and Ritland (2005), consists of a number of interconnected components. Infrastructure comprised computers, internet network or intranet multimedia equipment, and teleconference equipment (service and client). Online learning turns becomes a haven for students looking to escape the face-to-face learning environment, which is teacher-centered and built on live, synchronous, high-fidelity contact environment between individuals (Graham, 2004). Due to the fact that all students receive the same learning experience during face-to-face instruction, digital learning can accommodate students who have varying levels of expertise, prefer various learning strategies, or are self-directed learners. This new course design on Critical Literacy for students in Prodi Pendidikan Bahasa Inggris UNJ began to take shape as a result of the convenience and information flexibility that the internet has to offer—where the learner controls their own time and pace. Studies have shown that using technology in the classroom, particularly through the use of computer or Internet-mediated platforms, improves the quality of learning and expands students' critical thinking abilities (Caner, 2012). Because to the ease of learning access and flexibility, the blended learning approach to course design's focus on the use of numerous materials and methods offers an enhanced pedagogy that might suit the learning needs of specific students.

CONCLUSION

This research reports the design of Learning Management System and Content Management System for Critical Literacy course in Prodi Pendidikan Bahasa Inggris UNJ to assist students to enrich their ability to interpret text critically and communicate actively in the multimodal context in a hybrid learning process. The design is based on the results of the initial need analyses of students and lecturer to identify the gap and needs of both parties between the demands and desires of modifying the learning process by the circumstances and character of students and the current learning process. The findings of observations used to introduce the disclosure of issues, the analysis of student survey responses, and the results of interviews with lecturer all demonstrate the necessity for all this. It was identified that both teachers and students have had limited learning materials and unstructured experiences in integrating technology into learning. Guided by this discovery, the Learning Management System and the content management system were designed to answer the problem. The websites consist of integrated learning materials to facilitate the students with literacy and as well as content mastery. Two kinds of modules were developed during the study, namely: (1) LMS on www.onlinelearning.unj.ac.id and (2) CMS on Google Sites. LMS and CMS modules for the Critical Literacy course were: (1) Defining Critical Literacy, (2) Literacy, Critical Literacy, Multi-literacy, Multimodal, (3) Data Literacy, Fact and Hoax (4) Analyzing Multimodal Text (5) Reflective Notes (6) Mid-term Test (7) Analyzing Various Texts (8) Wrap Up (9) Final Semester Individual Project. These nine headings were categorized into four topics namely: Theories, Tests, Reflection, and Projects. The theories can be used to deliver learning materials and examples in the form of text, video, slides, QR codes, and websites. Meanwhile, the test could be used to provide assignments, exercises, and learning evaluations. Reflection was used to provide the students with opportunities to do both self- and peer-reflection on the learning processes. Finally, the projects were used to involve the students with problem-solving skills and self-regulated learning. This second year research was developed through three simple

iterative phases of SAM: preparation, design, and development then ended with the review of the prototype through a validation process. The study's findings showed that LMS and CMS could handle the complexity of teaching Critical Literacy in the digital environment. However, there are areas for improvement to be identified which require further improvement in the third phase of iterative development phase (Year 3) namely design proof, alpha stage (tryout, observation, rubric and reflection), beta (revision and expert review) and gold (revise and final version of material development). The report of the second-phase study demonstrates that literacy materials if they are combined with the SIOP model enhanced the teacher's pedagogical competence pertinent to critical literacy (Mayuni, et.al., 2022). Hence, the effectiveness of using LMS and CMS and the integration of this online material with literacy coaching for both students and lecturers needs also to be evaluated giving space for future research in this area.

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