



## Learning Management Training Management System at STKIP Pacitan as an Effort to Increase Learning Effectiveness

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### Abstract

STKIP Pacitan has adopted Moodle as its primary Learning Management System (LMS) to improve the quality of learning and teaching efficiency in the digital era. Adapting to educational technology requires the faculty's deep understanding and effective management skills. Therefore, Moodle management training was conducted to enhance the faculty's abilities in planning, targeting, and producing quality learning outcomes. Through interactive sessions and workshops, faculty members were taught how to design courses, organize content, and utilize Moodle's features for more dynamic and participatory learning activities. The main focus of the training was on integrating assessment tools and discussion forums to enhance interaction and effective feedback. The training evaluation was conducted by measuring the faculty's performance before and after the training using indicators of course planning quality and evaluation tools. The training successfully demonstrated that the use of Moodle not only supports the efficiency of the teaching and learning process but also improves the quality of education at STKIP Pacitan, with increases of 27%, 68%, and 77% over three months in May, June, and July 2024, respectively. In addition, several applied learning methods positively impact students; feedback to students is increasingly focused (LMS record), which shows that learning effectiveness is increasing. This training recommends ongoing training to ensure optimal utilization of educational technology and continuous adaptation to the latest developments in educational technology.

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### INTRODUCTION

STKIP PGRI Pacitan is a teacher training college located in Pacitan, East Java. It was established to produce competent and professional educators, and this institution offers various study programs in the field of education. Adequate facilities and a curriculum that is in accordance with national education standards, STKIP PGRI Pacitan, is committed to developing the potential of students to be able to face the challenges of the modern world of education.

As a school that produces professional educators, schools must be able to choose learning

strategies appropriate to their students' conditions. Therefore, in choosing a learning strategy, educators must consider the conditions of the students, the subject matter, and the available learning resources so that the selected learning strategy can be implemented effectively to support the learning success of their students (Aniuranti *et al.*, 2021). The progress of information technology that continues to develop is always in line with human thinking abilities. The acceleration in technological development should be utilized wisely to optimize it to achieve results that are in accordance with needs (Sihombing & Ambarita, 2022). In the era of digitalization 4.0,

information and communication technology (ICT) in education has begun, especially to make the learning process more interesting, practical, and effective in conveying learning objectives to students (Cholik, 2021).

Learning facilities need adequate information technology support, including internet connections. The Internet is an essential need for education providers. Based on the results of surveys and interviews, it can be seen that students tend to choose the Internet via computers or *smartphones* rather than using textbooks because it is more practical and can be accessed anytime and anywhere (Syafi'i et al., 2020). However, it is unfortunate that most teachers and students use laptops and *smartphones* more often for social media activities, playing games, and watching videos, while using these devices in the learning process is still underutilized. From observations, it was also revealed that there are still difficulties for some teachers in integrating Information and Communication Technology (ICT) in learning, especially in the *Learning Management System* (Jusriati et al., 2021). Usually, educators (lecturers and teachers) only use Microsoft PowerPoint as a learning media and presentation tool. The advancement of ICT, especially in the industrial era 4.0, is expected that teachers and lecturers can be more active in utilizing the Internet for distance learning or online classes (Al Arif & Handayani, 2023). Online classes, or those that can be accessed online, are expected to be used flexibly inside and outside the classroom because they are considered more practical than a computer laboratory. *Online learning* can increase flexibility and time efficiency, allowing students to access learning materials in various places and times (Muazzinah & Akhiar, 2022).

This allows students to learn at their rhythm and pace, stimulating their learning motivation comfortably and interestingly (Reichert-Schlaß et al., 2023). It is hoped that the use and management of online classes can be an effective option as a medium and additional learning resource for students, with the aim of increasing the effectiveness, efficiency, and attractiveness of learning (Rahim et al., 2023). To ensure that teachers and lecturers can properly understand how to use and manage online classes, ongoing socialization, training, and mentoring programs are needed (Teknowijoyo & Marpelina, 2022). This is expected to improve the professionalism of teaching staff in utilizing Information and Communication Technology (ICT) in the learning process. Innovation in learning by incorporating elements of science and technology into the learning process. Implementing learning activities can increase new motivation for students, foster students' desire to participate in learning activities, and psychologically affect students. If

educators innovate or renew in learning, students are certainly more interested in following the learning process. One of the innovations of the online learning process by utilizing technological means of information is electronic learning (e-learning). Learning model using E-learning implements the advancement of science and technology and uses electronic media to help students learn. E-learning is important for education because it can provide information related to students' learning patterns using devices such as computers or smartphones. This learning model innovation provides findings that one of the learning models that helps students who are used to conventional learning models can help overcome problems of time, distance and cost and be a way to facilitate the learning process. Educators can efficiently deliver learning materials through e-learning-based technology with the support of devices in the form of computers or smartphones that students can access online (Pratiwi et al., 2020). This e-learning technology is known as a *learning management* Moodle-based system (LMS).

Several previous studies have emphasized the transformative potential of e-learning and *blended learning*. Learning in the context of education (Inggriyani et al., 2019; Munir et al., 2024; Yanto et al., 2020). Findings from previous research have focused on the importance of technology tools such as Moodle and virtual labs in improving learning outcomes and professional development. Despite challenges such as internet connectivity, the overall impact of these technologies has been positive, leading to increased efficiency, better management, and better quality of education (Alfandi et al., 2021; Widyaningsih et al., 2020).

Results from the findings with the partner, namely, find a number of problems. Educators are Incapable of developing a learning distance Far through the system online or online. Besides, it is Still limited in giving Instructions to participants, and educators do not understand enough about application learning based on Moodle. Besides that, educators have no ability To use application e-learning as a form of learning distance far. Activities This is intended To increase innovation and effectiveness of learning as well as To give descriptions about concepts learning e-learning based on Moodle to help learning distance far away. There are two objective activities carried out between others: 1) For fulfill the obligation lecturer as Wrong One three dharma college tall in form devotion to society, 2) For increase educator ability on agency partner in apply e-learning based on Moodle, which makes efficiency work.

## MATERIALS AND METHODS

The following section will discuss materials and methods used in community service programs.

## Materials

The learning management training management system (LMS) at STKIP PGRI Pacitan requires tools in the form of hardware and software. The hardware used in this training is a set of computer servers with 6 core processors, 8 GB RAM, 120 GB SSD Storage, and Moodle software ( <https://moodle.org/> ). The software can be accessed for free.

## Methods

Completing community service activities uses a *Participatory approach Action Research* (PAR) (Latifah et al., 2023) with the concept of implementing training through actions that emphasize participant participation and action.

The implementation of the activity includes the delivery of materials related to Moodle installation techniques on the server and the use of LMS for offline and online lecture activities. Workshops and direct provision of materials to participants are carried out for 2 days, starting at 08.00 to 16.00 WIB. The location of the activity is at STKIP PGRI Pacitan, East Java; the details of the activity material are as follows:

1. Introducing a training program designed by lecturers from the Department of Electronic Engineering and Informatics Education, Yogyakarta State University, and STKIP PGRI Pacitan, East Java.
2. Conducting stage I training, namely providing technical instructions for installing Moodle on a server, including hosting rental, uploading LMS with a separate domain, and conducting trial access to the hosting address that has been installed.
3. Phase II training explains the introduction to Moodle, the system requirements for Moodle, and the addition and management of users (admins, lecturers, and students).
4. Stage III training is to create new courses, add teaching materials ( files, pages, books), and create and manage assessments (rubrics, scales, value categories).
5. Stage IV training is done by using forums, chats, and messages, customizing the theme and layout of the site, managing user and data security, and backing up and restoring courses.
6. Conducting training evaluation from stage I to stage III. The purpose of this evaluation is to find out whether the training participants can accept the material delivered. Thirty participants are estimated to be 35 participating in three activities. The training activities began according to the set schedule.

## RESULTS AND DISCUSSION

This community service activity is divided into 3 stages: 1) the activity scheduling and planning stage, 2) the activity implementation or material delivery

stage (workshop), and 3) the activity evaluation stage.

## Scheduling and Activity Planning Stage

The scheduling stage is carried out for the apperception of time and the presenters. This is done to align the assumptions, time, and location of several activities that have been agreed upon. Table 1 lists the names and times of activities the presenters and training participants planned.

**Table 1** Materials and activity time planning

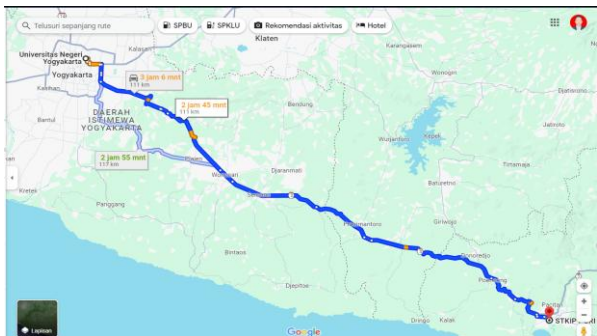
No	Material	Day/Date
1	PKM Material Apperception	Thursday, May 30, 2024
2	Training Phase – I analyze and deliver technical instructions related to the server, domain, hosting, and uploading requirements for Moodle LMS.	Monday, June 11, 2024
3	Training Phase II: Explanation about Moodle, system requirements for Moodle, and adding and managing users (setting user level) .	Monday, June 11, 2024
4	Stage III Training Presentation on creating new courses, adding teaching materials (files, pages, books), creating and managing assessments (rubrics, scales, value categories)	Monday, June 11, 2024
5	Stage IV Training Explanation of forum, chat and message management, customizing site themes and layouts, managing user and data security and backing up and restoring courses.	Monday, June 11, 2024
6	Training Evaluation	Tuesday, June 12, 2024

Participants are lecturers from STKIP PGRI Pacitan, both from the head of the study program, LPPM staff, and lecturer staff of the study program. The study programs available on the campus are elementary school teacher education, history education, mathematics education, sports and recreation education, Indonesian language and literature education, and English language education.

This activity implements cooperation in community service between Yogyakarta State University and STKIP PGRI Pacitan. Speakers from UNY were present one day before the implementation, and the leadership of STKIP PGRI Pacitan invited



participants. Furthermore, participants, through mentoring, conducted trials based on the material that had been given. The location of the activity is in the STKIP PGRI Pacitan Campus area, East Java, as described in Fig. 1, and Fig. 2. The distance between the Yogyakarta State University campus and the location is approximately 117 km, taking 2 hours and 37 minutes.



**Fig. 1.** Google Maps distance between UNY and STKIP PGRI Pacitan



**Fig. 2.** STKIP PGRI Pacitan Campus

### Activity Implementation Stage

E-learning training using Moodle is divided into 4 stages of activities. Stage-I and stage-II training explains the concept and understanding of CMS Moodle, Moodle installation requirements, how to install Moodle on hosting, login to the hosting account, softaculous technical installer, select CMS Moodle on softaculous, and configure Moodle installation. Phase III training activities include creating new courses, adding teaching materials (files, pages, books), and creating and managing assessments (rubrics, scales, grade categories). Participants learn the steps to create new courses, set basic and additional course settings, and add various teaching materials such as files, pages, and books. In addition, participants are also taught how to create and manage assessments through creating rubrics, assessment scales, and grade categories.

This training aims to improve skills in managing courses and assessments in Moodle so as to increase the effectiveness of online learning. Whatever offline.

Stage IV training exposure of forum management, chat, and messages, customizing site themes and layouts, managing user and data security, and backing up and restoring courses.



**Fig. 3.** Opening of 3-learning training Moodle

Fig. 3 is the opening ceremony of the training activity attended by the Yogyakarta State University, namely Nurkhamid, PhD, as the Coordinator of the Information Technology Study Program, Faculty of Engineering, UNY, along with the community service team. Dr. Mukodi, the Head of STKIP PGRI Pacitan, represented the STKIP PGRI Pacitan. In their remarks, the two institutions agreed to sign the MoU to sustain the activity for the next period.



**Fig. 4.** Training and presentation of e-learning management material Moodle



**Fig. 5.** Signing process of MoU for the sustainability of collaborative community service activities

Fig. 4 is the learning management training process. Management system (LMS), the lecturers are quite enthusiastic about this activity. Fig. 5 is the process of signing the MoU between the two institutions represented by the leaders.

### Training Process Using E-Learning Moodle

Moodle, as one of the most widely used learning management systems, offers a variety of features that support the effectiveness and efficiency of online learning. Managing accounts in Moodle is about ensuring access to users and involves settings that allow for personalization of learning experiences and secure data management. Therefore, account management modeling in Moodle becomes a crucial topic to ensure that all users can get the most out of the platform while maintaining their security and privacy. In this discussion, we will dig deeper into how account management modeling can be implemented effectively in the Moodle platform, highlighting the best practices as well as strategies that can be implemented to achieve optimal management.

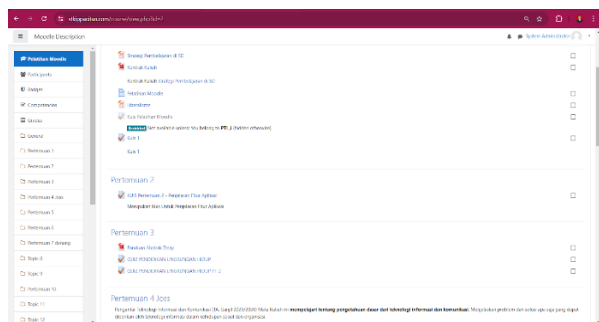


Fig. 6. E-Learning user account management Moodle

Fig. 6 shows the interface page related to Moodle user account management, which involves creating, setting up, and maintaining user profiles to ensure secure access and effective personalization in the digital learning environment.

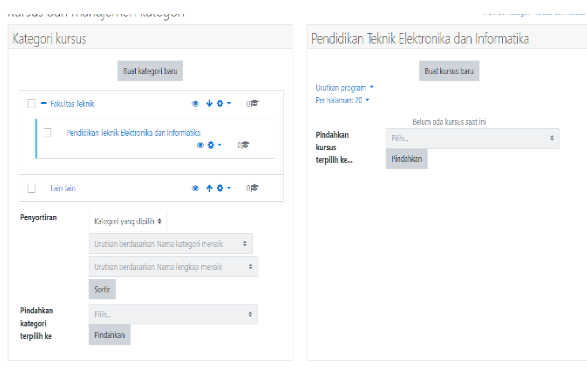


Fig. 7. Course category page

Fig. 7 shows the user interface of the Moodle system, especially in the course category management section. Users can add a course category by filling in the required information, such as category name and description. In addition, there is a list of courses relevant to the selected category. Users can search for existing courses in the category by using the search feature. There is also an option to filter the search results based on the desired category.

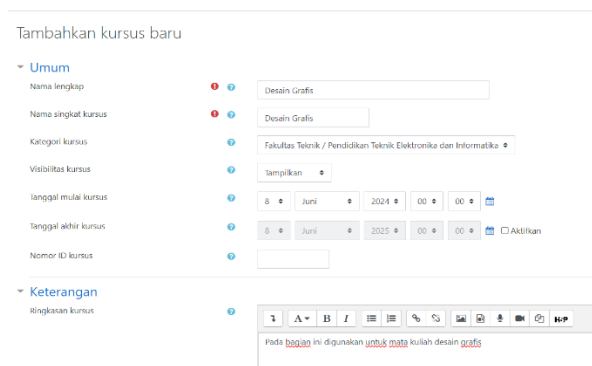


Fig. 8. Interface page for adding courses

Fig. 8 shows the interface for adding a new course in Moodle, which is useful for lecturers to manage learning efficiently. By filling in information such as the full and short name of the course, category, and visibility settings, lecturers can ensure that the course is well-organized and easily accessible to students. The feature of filling in the start and end dates of the course allows for clear planning, while the course ID number helps in identification and management. Overall, this interface supports a more structured and effective teaching process.

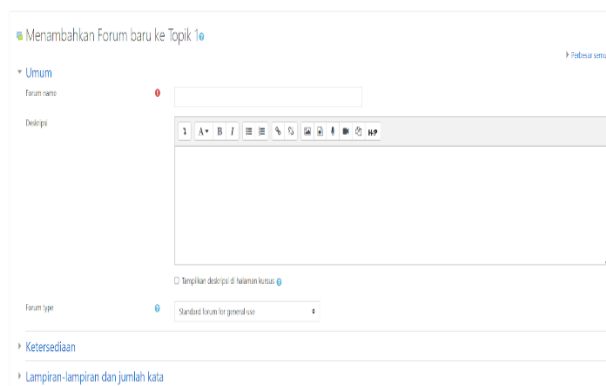


Fig. 9. Adding a forum to a course Page

Fig. 9 shows the interface for adding a new forum in Moodle, which enhances interaction and discussion between lecturers and students. Users can fill in the forum name and description, which helps explain the forum's purpose to participants. This

feature allows lecturers to choose the type of forum, such as a standard forum for general discussion, which can facilitate the exchange of ideas and questions. In addition, there is an option to display the description on the course page so that students can easily understand the context of the forum. With a forum, students can actively participate in discussions, share opinions, and get feedback, supporting a more collaborative and interactive learning process.

### Evaluation of Training Activity Implementation

At the evaluation stage, activities are divided into 3 sub-evaluations, namely 1) Making a table detailing problems, solutions, and outputs, 2) Making a table related to changes that occurred before and after the training activities, and 3) Making a table of pre- training survey results. Test and posttest with measurable instruments, and 4) Create a control table of LMS usage in May, June, and July 2024 to see the changes. Sub-evaluations in the form of tables are sequentially complete in Table 2 related to problems, solutions, and activity outputs, Table 3 in the form of changes resulting from PKM activities, and Table 4 in the form of increased participant knowledge output after participating in the activity.

**Table 2** Problems, solutions, and outputs of community service activities

Problem	Solution	Outer
The low level of activity of lecturers and students in using LMS as a learning medium in blended learning and teaching activities or learning or online.	Mentoring and training in creating e-learning Moodle to enhance blended learning system activities or learning or online.	Percentage increase in the number of active users of the Moodle LMS as a blended learning system tool learning or online. In June, it was 68%, and in July, 77%, whereas previously it was only 28%.

In Table 2, the identified problem is the low activity of lecturers and students in using LMS as a learning medium. The proposed solution is mentoring and training in creating e- learning using Moodle to improve learning activities with a blended system. Learning or online. The output of this activity is an increase in the percentage of activity in using the Moodle LMS as a learning tool in a blended system.

In Table 3, it is explained that the initial conditions showed a low number of LMS usage as a learning medium in teaching and learning activities with a blended system. Learning or online. The intervention carried out was education and transfer of

environmental skills to lecturers at STKIP PGRI Pacitan. After the intervention, there were positive changes in aspects of ecological knowledge and behavior in 35 lecturers, indicating increased understanding and use of e-learning Moodle.

**Table 3** Changes resulting from community service activities

Initial Conditions	Intervention	Conditions of Change
The number of LMS users as a learning medium in blended learning and teaching activities is still low in learning or online.	Conducting environmental education and skills transfer to educators/lecturers at STKIP PGRI Pacitan.	There was a change in aspects of ecological and behavioral knowledge (35 lecturers) after intervention using e-learning was carried out. Moodle

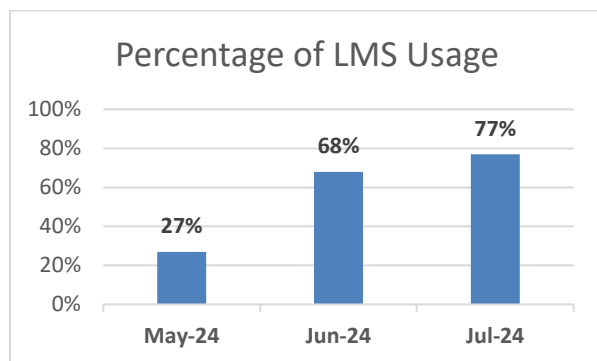
**Table 4** Pretest and posttest results of Moodle management training

No	Mark	Moodle Training Materials			
		Pretest		Posttest	
		Amount	Percent	Amount	Percent
1	20-29	0	0.00%	0	0
2	30-39	4	11.43%	0	0
3	40-49	12	34.29%	0	0
4	50-59	13	37.14%	0	0
5	60-69	6	17.14%	4	11.43%
6	70-79	0	0	22	53.30%
7	80-89	0	0	9	40.00%
8	90-100	0	0	0	0
Total		35	100%	35	100%

Table 4 shows the pretest and posttest results of the Moodle training material. Of the 35 participants, none scored 20-29 on the pretest, while 11.43% scored 30-39. A total of 34.29% of participants scored 40-49, and 37.14% scored 50-59. On the posttest, 53.30% of participants achieved a score of 70-79, 40% scored 80-89, and 11.43% scored 60-69. Overall, there was a significant increase in participant scores after the training, with the total number of participants remaining at 35 for both tests.

In Fig. 10, it can be explained that in May, the percentage of LMS usage only reached 27%. However, there was a significant increase in June, with the percentage reaching 68%. The increase continued in July, where the percentage of LMS usage reached 77%. This data shows a positive trend in LMS usage over time.





**Fig. 10.** Increased LMS usage before training (May 2024) and after training (June-July 2024)

## CONCLUSION

The conclusion that can be drawn from the community service program between Yogyakarta State University and STKIP PGRI Pacitan is that data was collected through surveys and interviews to evaluate the effectiveness of using Moodle in blended learning. Learning. Approach The method used is participatory, active research (PAR) with stages, a process that involves all relevant parties in reviewing and taking action for change. This process involves the stages of building relationships, initial mapping, problem identification, action planning, implementation, evaluation, and reflection. Implementing the method involves training lecturers in using Moodle (there are 4 stages of planning, pre-implementation, implementation, and post-implementation), improving learning quality and interactivity. The main contribution of this program lies in improving lecturers' competence in *e-learning* technology, which directly impacts the efficiency and engagement of student learning. However, limitations such as limited access to technology and resistance to change from some lecturers are obstacles. Based on this, the next community service activity recommends developing a more inclusive training program and providing more intensive technical support. This activity opens up the scope for future work in optimizing the use of LMS in a wider educational environment.

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