Research Article

Development Of Website and Moodle Learning Management Systems at a YPPI-II High School

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Abstract.

In the midst of the Covid-19 pandemic, school management continues to strive to maintain the quality of academic services so that Teaching and Learning Process (TLP) activities always run as they should. However, there are some barriers to TLP with the Distance Learning (DL) pattern, either from the preparative aspect of Human Resources (HR) or network technical aspects. Also, the partner schools do not yet have the official website facilities and significant DL media. Meanwhile, Information and Communication Technology (ICT) is currently the main medium to reach students in DL. Teachers need to reconsider when, where, and how online learning occurs, and adapt their methodological approach. Therefore, through the Community Partnership Program (CPP), the implementation team offers the development of a school website and the use of a Moodle-based Learning Management System (LMS) in partner schools at SMA YPPI-II Surabaya. This community service activity is done to support the website as a medium of information and promotion and to maintain an efficient and effective existence. Likewise, the Moodle application is used as a support for online TLP in addition to direct learning through video conference with the digital platform, like Zoom or Google meets. The method of implementing CPP is by presenting, training, and mentoring the Moodle application and website for teachers and partner staff who will later act as users. The results of this activity made a positive contribution to the improvement of HR skills and access to school information with the related parties.

Keywords: distance learning, community partnership program, learning management system, Moodle

1. Introduction

In the era of the industrial revolution 4.0, Information and Communication Technology (ICT) is very influential in all fields, including in the world of education. There is a need for schools so that the existing Human Resources, both teachers, staff and students are ready to be acquainted with technology. The level of ICT capabilities possessed by HR supports the activities of the Teaching and Learning Process (TLP)[1]. Currently Distance Learning (DL) is still being implemented by the government during the Covid-19 pandemic. Although there are obstacles to TLP with the DL pattern, both from the aspect of readiness of Human Resources (HR) and technical aspects of the network. In the implementation of online learning, not a few teachers experience difficulties in explaining the teaching material and on the contrary, students also have difficulty understanding the material[2], [3]. The problem is mainly on the competence and mental readiness of teachers and students in adapting to DL. The survey results show that 67 percent of the obstacles in DL are caused by the teacher's lack of ability to operate digital devices. Meanwhile, 71 percent of students find it difficult to concentrate in online learning[4].

In the new academic year, the government, through a Joint Decree of 4 Ministers, will implement Face-to-face Learning (FL). The limited FL in question is not applied evenly. In the new academic year 2021/2020, according to the Instruction of the Minister of Home Affairs No. 14 of 2021, the government encourages regions that are included in the green and yellow zones of Covid-19, to be able to hold limited FL. As for the red and orange zoned areas, students continue to undergo the learning process from home [5]. Basically, schools still have the option to organize FL, DL, or both in line with the conditions they face. Government policy requires every education unit that provides limited FL services while still implementing strict health protocols and DL services. However, every school must prepare everything carefully so that FL activities take place optimally and safely [6].

Learning constraints during the pandemic also impacted SMA YPPI 2, as a UWIKA PKM partner. In addition to human resource constraints and technical factors, partner schools so far do not have the official website and significant DL media facilities. However, partners, continue to strive to maintain the quality of academic services so that TLP activities always run as they should.

Seeing partner problems, the PKM implementation team offered a solution to the need for school website development and the use of Moodle-based Learning Management System (LMS) media [7]. This media is a web-based online learning application that is free and the most popular today with a high level of effectiveness [8]. This community service activity is to support the website as a medium of information, promotion and to maintain an efficient and effective existence. Likewise the Moodle application as a support for DL as well as direct learning through video conferencing with the digital platform Zoom or Google meet[1].

The method of implementing PKM is through outreach activities, training and mentoring of the Moodle application and website for teachers or partner staff who will later act as users. It is hoped that teachers will reconsider when and how online learning occurs and adapt their methodological approach to adapt to Moodle applications. The atmosphere of intimate interaction between teachers and students greatly supports their virtual collaboration model [7]. The adaptability of teachers in applying learning technology can affect student learning outcomes.

2. Methods Implementation

The system implementation stage is the stage of placing the system application so that it is ready to be operated technically and systematically. Some of the activities required include:

1. Coordinate with partner teams related to website development and implementation of socialization, training and mentoring of the Moodle application.

2. Preparation of physical facilities for application requirements, including space, supporting software and a set of hardware and networks to install applications.

3. Preparation of training module materials for using the application.

4. Installation and configuration of the application, so that it can be operated correctly and correctly.

5. Preparation and implementation of education and training.

6. Monitoring and evaluation of training activities.

The trainee teachers had a variety of initial skills with the Moodle application. So it needs a training strategy for users, especially those who are not familiar with the

complexity of this media. The Moodle application training method to participants uses a combination of approaches. The PKM implementation team as instructors shows users how to operate the Moodle application. Furthermore, each user performs their duties by practicing the application directly [9]. During practice, each teacher is still directed by a team of instructors assisted by their admins. Besides also serving questions related to the material and practice of designing learning assignments for a subject that must be completed (Individual hands-on instructor).

3. Result and Discussion

The main activities of PKM in the form of training and partner assistance are carried out in the period June to July 2021. Prior to the implementation of the activities, the two UWIKA teams and partners held meetings with other members who were involved both as supporters of activities in the field and as administrative staff. The training is intended for personals who will later act as website and Moodle admins as well as for teachers who provide online learning. The training materials include Moodle admin management, website management, resource management and Moodle activities. After the training, it is continued with the stage of mentoring for deepening knowledge and operating applications.

3.1. Education and Website Management Practice

The YPPI 2 High School website is designed according to the functions and needs of the school. Starting the website development activities, the PKM team together with website management personnel attempted to analyze the needs of the system to be built. Identification of needs was obtained from the results of profile observations and interviews with school principals, academic curriculum representatives, teachers and Information Technology personnel. Referring to the results of the needs analysis, the PKM team makes a design document. This website was built with a WordPress Content Management System (CMS) platform based on open source. Considerations for this CMS option include its flexible design, Search Engine Optimization (SEO) Friendly and easy to reach (*https://wordpress.org/*).

Website management as a medium of information and communication requires several people who will later act as Web Designers, Administrators, and Content Editors

[10]. Due to the limited human resources of partners, this role is given to a small team with two personnel who will later take care of hosting and web administration needs as well as managing content.

During the educational stage, the PKM team coordinates with partners for the process of creating a web domain and web hosting. Next, a school website is generated which can be accessed through the site https://smayppi2sby.sch.id/, as shown in Figure 1. The website menu includes the home page and profile containing school information, ranging from the identity and history of the institution, vision and mission, organizational structure, school programs, human resources, facilities and infrastructure, libraries, documents and partnerships. This website is also a means of accessing Moodle-based LMS e-learning to support online learning.
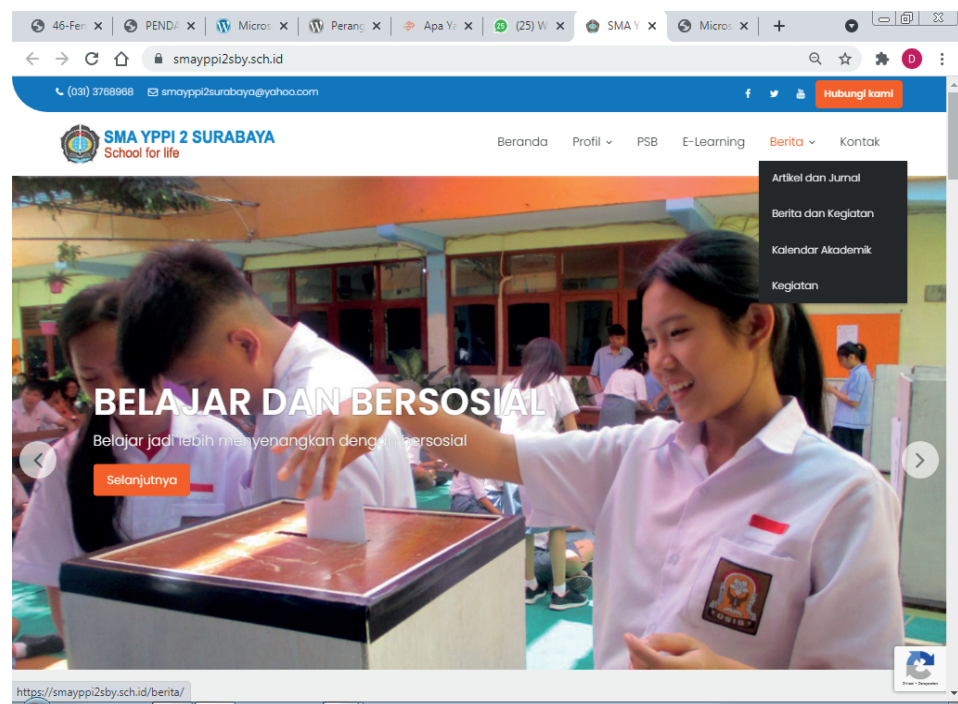

Figure 1: School Website Development.

During the practice of managing the website, the PKM team shared knowledge and information with the school team regarding content management and its management, such as the use of posts and pages and their categories for profile updates, news and other features. Besides, setting the role of editors and contributors related to the content to be published. Likewise, adding, changing or deleting other content can be done analogously by the admin or editor to process data or profile information or other activities.

3.2. Moodle Admin Management Training

Admin management training includes defining initial configuration and managing users. Among the duties of an admin is to manage: site display, menu on the site, user privileges, and so on. The training activities were carried out face-to-face for 3 days at different times with an average duration of about 3.5 hours. The training on material presentation and practical activities for the Moodle application as an admin was attended by 4 partner participants, consisting of the Principal, teacher and two others who represented the role of the Moodle administrator. The activity began with the presentation of the PKM team material and continued with the practice of using the Moodle administrator module. Users directly practice it under the guidance of the team through a demo of the implementation of the available modules. The material provided includes the creation and setting of user access rights as Manager, Course Creator, Teacher and Student as well as application features. Participants are given the opportunity to interact, discuss and ask questions directly with the team to increase operational understanding of each user's role.

3.3. Subject Management Training and Evaluation

The next training activity after user admin training, conducted socialization and training for teacher users for 2 days divided into 2 groups of users in order to remain in accordance with health protocols. Teacher training for subject management (subjects) in the Moodle application is divided into the category of material presentation, adding the names of the subjects to be given as well as material adding supporting content. In the initial process, all teachers were given a username and password to enter into their respective accounts. Then they are asked to open the website: http://workshopelearning.widyakartika.ac.id/ or through the school website with the elearning module.

After successfully logging in, the teacher users were demonstrated how to manage folders for TLP by the PKM team. Starting from choosing the category of subjects that have been designed by the admin, for example Compulsory, Mathematics and Natural Sciences for certain classes. Completing the description of the course, the teachers are asked to add their supporting material sources (resources) by downloading learning documents in the form of PDF, Word, PPT, Video or other files. The next step after making the map and its attributes, the teachers were guided to make assignments

and attendance attendance. The responses from the teachers were good enough to discuss and ask questions regarding the practical material for this module, especially those who used the Google classroom application. The training activities were carried out at partner schools with a total of 24 participants according to teacher accounts for 2 groups with a duration of about 4 hours.

The next session, followed by training on management material for evaluation of subject matter. Activities are a group of features in Moodle, as a medium for student interaction with their friends or teachers. The forms of activities that are often used by teachers in addition to attendance (attendance) and assignment (Assignments) include chat, forums for asynchronous discussions and giving quizzes to evaluate student learning.

After demonstrating the practice of making attendance and assignments in the previous session, the participants were guided on how to make quizzes with various types of questions. Examples that are often used by teachers are in the form of multiple choice questions and essays. On this occasion, the participants were asked to try the task of making simple quizzes according to the subjects they were taught. The quiz design is also socialized in the form of Minimum Competency Assessment (AKM) questions in the form of multiple choice, matchmaking, essays or descriptions, complex multiple choice and short answers or drag and drop questions and word games. Participants were quite enthusiastic in responding to the various types of questions provided by the application. It could be that they have never used it as a practice question, test or exam. After the next period of time, after socialization and training, it is continued with the mentoring stage. Mentoring activities for deepening Moodle's material and practice are carried out online considering the increasing spread of the Covid-19 virus.

3.4. Evaluation

The evaluation stage is carried out to determine the level of understanding of the socialization, training and application assistance activities. The measurement media uses a questionnaire given to participants after the training and mentoring process. This questionnaire was distributed to the teacher and admin user respondents. The first part of the questionnaire contains respondent profile data and general responses.

Furthermore, in the second part there are 14 questions and 4 of them are for admin participants. Four items admin questions regarding the characteristics of feature settings, content maintenance, user role settings and the effectiveness of using the application. Meanwhile, the items asked by the teacher were about display characteristics (features), material modules, data correction, and the level of flexibility in using the application.

School policy states that the application will be implemented in this new academic year as the process of mentoring the PKM team is still ongoing. During the training there were 24 teacher accounts and up to the mentoring period, 26 accounts had been distributed. However, 23 accounts (88.4%) have succeeded in creating classes and supporting materials.

Based on the results of the questionnaire there were 18 respondents who gave feedback from the given time limit. In general, the participants have used Google classroom as a medium for DL and some have even used the Edmodo application. As a starting skill it is good enough for participants to transition to the Moodle application. They are also familiar with the use of video conferencing via Zoom and Google meet. Referring to the respondent's input from general questions, there are 12 teachers (66.7%) stating that their confidence in interactive DL media can help students learn. Based on the question items, the admin's response stated that the average was quite good with a score of 3.13 Likert scale ranging from 1 to 5, ranging from 1 = Disagree to 5 = strongly agree about the characteristics of the application [11]. Meanwhile, the admin's view of the theme selection and school web site design is quite representative. While input from teacher user respondents to the application is quite significant with an average score of 3.88.

4. Conclusion

Based on the results of the discussion on the implementation of PKM activities, for the provision of websites and media based on the Moodle LMS DL, several conclusions can be drawn including:

1. The school's official website is representative enough to be used as a means of information and communication. Ease of admin through CMS Wordpress to manage and maintain content, so that the information is more accurate.

2. The Moodle-based LMS platform has started in schools as an E-Learning learning medium in this new academic year. Even with a short training time span, along

with the adaptation process of teachers in using the Moodle application, various obstacles can be overcome together.

3. Basically, users as admins and teachers are quite significant in understanding the operation of the modules and features provided by Moodle. The packaging of learning content created by teachers is increasingly diverse and interesting. The teachers feel confident that this media can help and improve student learning.

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