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Teaching Science with BeSmart E-Learning Technology at SMA Negeri 1 Tanjung Sari, South Lampung

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Abstract

The learning process that has been done face-to-face in class has turned into a new habit, which is done online. Education must continue to be carried out considering that Indonesian children are the hope of the nation's future which we must prepare by learning. Information technology is one of the technologies that is growing very rapidly, even during this pandemic. SMA Negeri 1 Tanjungsari is a school located in the South Lampung area and is a superior or advanced school. However, in these schools, the lack of knowledge in the field of information technology can cause obstacles to the learning and teaching process, so it is necessary to be equipped with knowledge in the field of information technology to improve digital literacy skills and learning platforms for students in schools. In connection with the problems that have been described, this service provides a solution by holding a training and creating a learning platform based on e-learning for schools and students based on information technology. This platform was created by the team with the hope of contributing to the school as a learning centre for students. The result of this PkM program is a B-Smart application product as a learning medium for high school students and training is carried out in its operation so that it can be implemented immediately. Digital literacy skills training provides an increase in understanding in the community, seen from the pre and post tests showing an 86% increase in understanding.

Keywords: Application, BeSmart, Learning, School, E-Learning

INTRODUCTION

Partners in this service are the teachers of SMA N 1 Tanjung Sari. This partner is located on Jl. Tritunggal Raya Wonodadi, Kec. Tanjung Sari, Kab. South Lampung, Lampung Province. SMA N 1 Tanjungsari is headed by Mrs. Gusti Heni Endrawati with a total of 182 students (http://school.data.kemdikbud.go.id). At SMA N 1 Tanjung Sari there are two majors, namely IPA (Natural Science) and IPS (Social Sciences). The distance of SMA N 1 Tanjung Sari from ITERA is approximately 28 KM. SMA N 1 Tanjungsari was founded in 2017 and only graduated students in 2020, this school is relatively new so that it is necessary to increase the capacity of human resources. In addition, the thing that creates disparities and new problems is the distance teaching and learning process due to the Covid-19 pandemic. Ibu Gusti said that many teachers and students were not ready with this method. "Under these conditions, it takes creativity from teachers and the community, including students, so that educational goals can work.

One of the problems faced by most schools today is the gap in teacher skills in using technology (Simanjuntak et al., 2020). The principal of SMA N 1 Tanjung Sari, Mrs. Gusti Heni Endrawati, said that it was very important to master the skills of teachers in using information technology. In addition, the thing that creates disparities and new problems is the distance teaching and learning process due to the Covid-19 pandemic (Hutami, 2021)(Zaitun et al., 2020). Ibu Gusti said that many teachers and students were not ready with this method. In conditions like this, creativity from teachers and the community, including students, is needed so that educational goals can work (Praseptiawan et al., 2021).

The solution offered to solve the problems that occur at SMA Negeri 1 Tanjungsari is training to improve the ability to use the BeSmart teaching platform. The platform used is based on

network-based website technology (Ashari & Muharram, 2022)(Ashari, Zuhdi, et al., 2022). Where this platform can make it easier for teachers to improve the quality of their learning, where students and teachers can access the platform from anywhere and anytime (Ashari & Adhelia, 2022). To improve the skills of teachers in operating the platform, it is necessary to provide training on the use of the Be Smart platform (Ashari, Alfarizi, et al., 2022) . The training has a target, namely teachers so that later it will be very useful for student learning. To achieve this goal, the program used in the training is the BeSmart application. BeSmart application is used for teaching science to students. The application can be run in a browser.

METHOD

The steps to solve the problems faced by partners, the solution offered is to carry out socialization activities related to the use of be smart applications at SMAN 1 Tanjung Sari. This service activity is described in Figure 1 below.

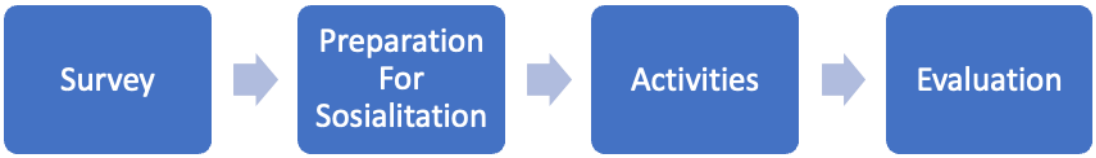

Figure 1. Stages of Community Service Implementation

Survey Stage

The survey team conducted surveys and observations at the service location. Where the survey team is looking for information related to the problems faced by SMA Negeri 1 Tanjungsari. Discussions to get important points related to the technical implementation of service, days, participants, and the needs needed for the implementation of service (Agustriyana et al., 2022).

Preparation for Socialization

The team of service members made preparations related to socialization materials, applications, supporting equipment such as laptops, modems, and banners the day before the socialization.

Carry Out Socialization Activities

In training to build a website-based information system at SMA Negeri 1 Tanjungsari, the activities carried out consisted of: pre-test, core training, and post-test. Pre-test was given to participants at the beginning of the event to determine the level of knowledge and understanding of participants about using the BeSmart teaching platform before. After the pre-test activity ended, the next activity was core training, namely understanding and practice activities in using the BeSmart teaching platform. The init training is divided into three parts

Discussion about the BeSmart application

This part of the activity was conducted to discuss the BeSmart application and the role of the application in science teaching. BeSmart acts as a place to upload various kinds of materials, besides that, it can also be done to provide and collect assignments to students. In this activity section, the BeSmart installation process is also carried out on each laptop and running the application.

BeSmart teaching platform usage training

This part of the activity is carried out to practice the participants' understanding that has been obtained from the previous activity section for the use of the BeSmart teaching platform. The BeSmart application is used for science learning by teachers to their students. From this part of the activity, the outputs obtained by the participants were learning videos and the use of the BeSmart teaching platform.

The last activity is the post-test activity. Post-test was conducted to measure participants' understanding in using the BeSmart teaching platform after the training was given.

Activity Implementation

The implementation of activities is carried out according to the analysis and planning as written in Sub Chapter 3.1. The technical guidance activity will be held on Friday, November 26, 2021, from 08.00 WIB until at 16.00 WIB. The method of delivering material and messages to participants is by means of lectures and demo programs, and training practices using laptops.

Evaluation

Evaluation needs to be carried out so that the objectives of implementing training on the use of the BeSmart teaching platform can be achieved properly. The evaluation was carried out by giving a post-test to the participants after the training ended. The post-test is given as a reference for the success of the training and is followed up and will be compared with the Pre-test.

RESULTS

Training to improve the ability to use the BeSmart teaching platform, the main target is that trainees can use the BeSmart application quickly and accurately, starting from logging in, accessing pages, uploading materials and assignments, to delivering materials. Here are some results from the description of the application interface, which can be seen in Figure 1 and Figure 2. During the training, the trainees were trained to understand the use of the BeSmart application. One of the things that participants can understand is how to upload teaching materials which can be seen in Figure 2. By uploading these materials, teachers are able to convey materials to their students.

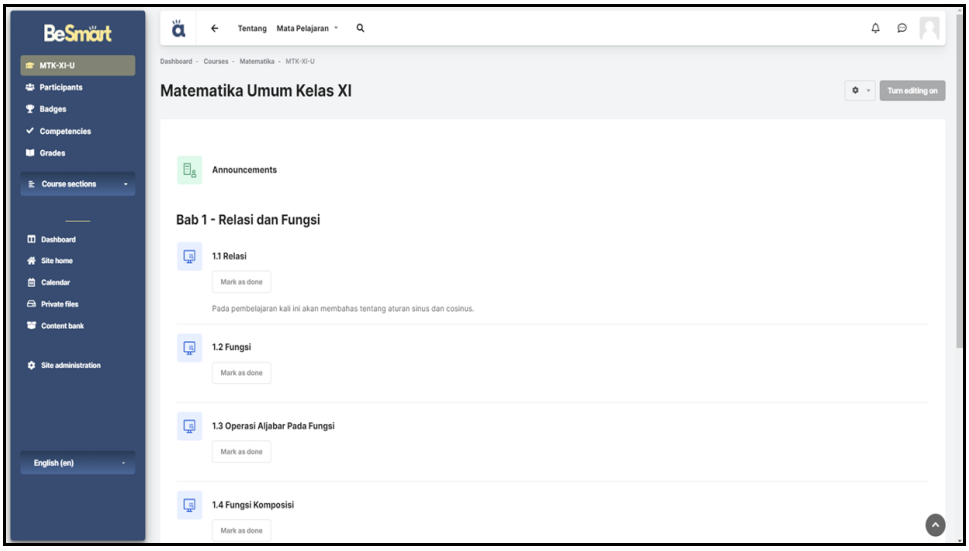

Figure 2. Display Upload Material

After understanding the use of uploading teaching materials, the second stage that participants must understand is uploading assignments and their assessments. Training participants are provided with how to upload assignments and assess them. One of the results of this activity is shown in Figure 3 and Figure 4.

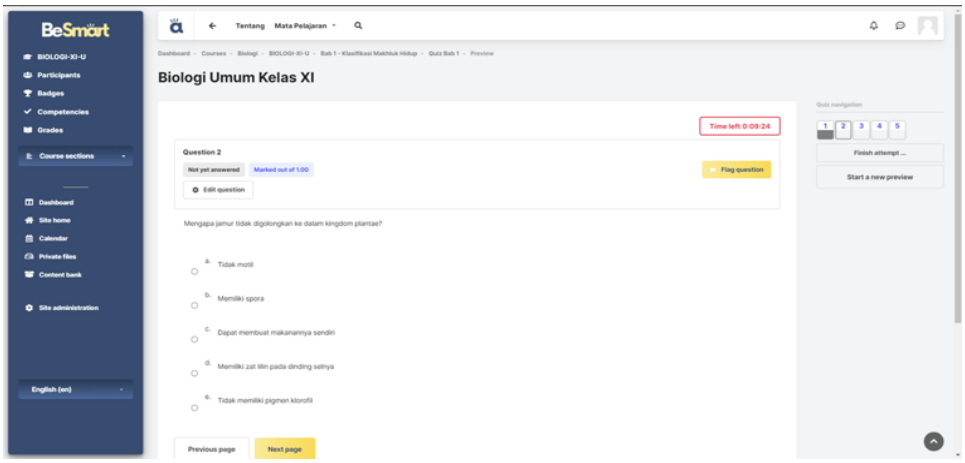

Figure 3. Upload Tasks and Ratings

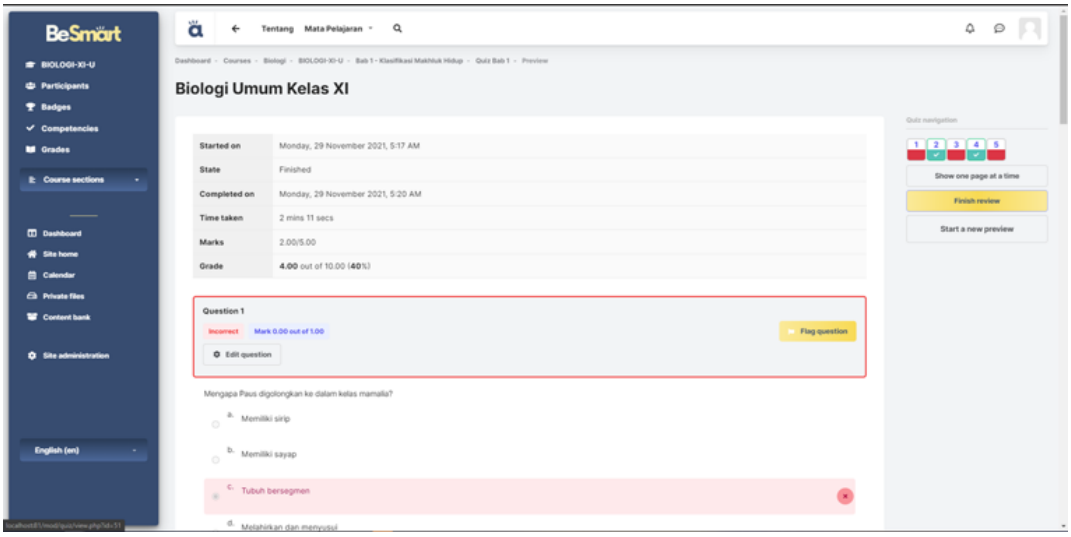

Figure 4. Upload Tasks and Ratings

Analysis of Outcomes of Outcomes against Outcome Targets

In accordance with the planned output targets, namely applications, PkM journals, video documentation, and media publications. In its implementation, the planned targets have been successfully implemented in the form of applications, PkM journals, video documentation, and media publications. The display of the BeSmart application can be seen in Figure 5 and Figure 6.

Figure 5. Main Display of the BeSmart Application

The output in the form of a video documentation can be seen on YouTube with the link: https://www.youtube.com/watch?v=y1gB87rUnCY. As for media publications, it can be seen in Figure 8.


PENDIDIKAN | 8 — SATU UNTUK SEMUA — RADAR LAMPUNG — SENIN, 29 NOVEMBER 2021

Tim Dosen Itera Luncurkan Aplikasi BeSmart

LLDikti Bina Mahasiswa Penerima Beasiswa KIP

Polinela Ciptakan Lulusan Terampil dan Berdaya Saing

IKLAN BARIS PROPERTY

Figure 6. Media Publications

From Figure 5 and Figure 6 which are the results of the training. The training objectives have been achieved because the trainees are able to use the BeSmart application properly.

DISCUSSION

Pre-Test and Post-Test Analysis

The number of participants who did the training was 14 people. The participants will be given 7 questions for the pre-test and 7 questions for the post-test. The pre-test questions were used to determine the initial understanding of the test participants. The pre-test was given before the participants received the training. Post-test questions are given after participants take the post-test. The pre-test and post-test questions can be seen in table 1 and table 2.

Table 1. Pre-Test Questions

No	Pre-Test
1	How much do you know about the Moodle platform?
2	How much do you know about the ispring platform?
3	If you have used it, do you think the Moodle platform is easy to use?
4	If you have used it, do you think the iSpring platform is easy to use?
5	How often do you use online learning media?
6	Do you think the Moodle platform can help learning in the classroom?
7	Do you think the iSpring platform can help learning in the classroom?

Table 2. Post-Test Questions

No	Post-Test
1	After you have attended the training, how much do you know about the Moodle platform?
2	After you have attended the training, how much do you know about the ispring platform?
3	After you have attended the training, do you think the Moodle platform is easy to use?
4	After you have attended the training, do you think the iSpring platform is easy to use?
5	How often do you use online learning media?
6	After you have attended the training, do you think the platform helps learning in the classroom?
7	After you have attended the training, do you think the iSpring platform can help learning in the classroom?

The rating scale for the pre-test and post-test can be seen in table 3.

Table 3. Question Scale

Scale description
1: Very Unaware
2: Not Knowing
3: Knowing Enough
4: Knowing
5: Very Knowing

Each question from the pre-test and post-test will be recapitulated to see the percentage of participants' level of understanding. The results of the pre-test recap can be seen in tables 4 and 5.

Table 4. The results of the recapitulation of the percentage of assessments for the pre-test

		Scoring scale					Percentage				
No.	Parameter	1	2	3	4	5	1	2	3	4	5
1	Question 1	5	6	3	0	0	36%	43%	21%	0%	0%
2	Question 2	7	3	3	1	0	50%	21%	21%	7%	0%
3	Question 3	6	3	3	2	0	43%	21%	21%	14%	0%
4	Question 4	6	2	4	2	0	43%	14%	29%	14%	0%
5	Question 5	2	3	6	1	2	14%	21%	43%	7%	14%
6	Question 6	2	3	6	1	2	14%	21%	43%	7%	14%

The results of the post-test recapitulation can be seen in table 5.

Table 5. The results of the recapitulation of the percentage of assessments for the post-test

		Scoring scale					Percentage				
No.	Parameter	1	2	3	4	5	1	2	3	4	5
1	Question 1	0	0	2	12	0	0%	0%	14%	86%	0%
2	Question 2	0	0	3	10	1	0%	0%	21%	71%	7%
3	Question 3	0	0	3	10	1	0%	0%	21%	71%	7%

4	Question 4	0	0	2	7	5	0%	0%	14%	50%	36%
5	Question 5	0	0	1	9	4	0%	0%	7%	64%	29%
6	Question 6	0	0	1	8	5	0%	0%	7%	57%	36%

The visualization chart for the pre-test can be seen in Figure 7 and the visualization chart for the post-test can be seen in Figure 8.

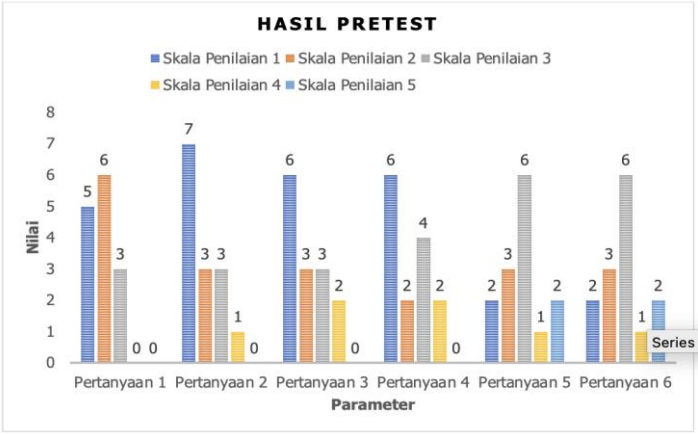

Figure 9. Graphic Visualization of pre-test results

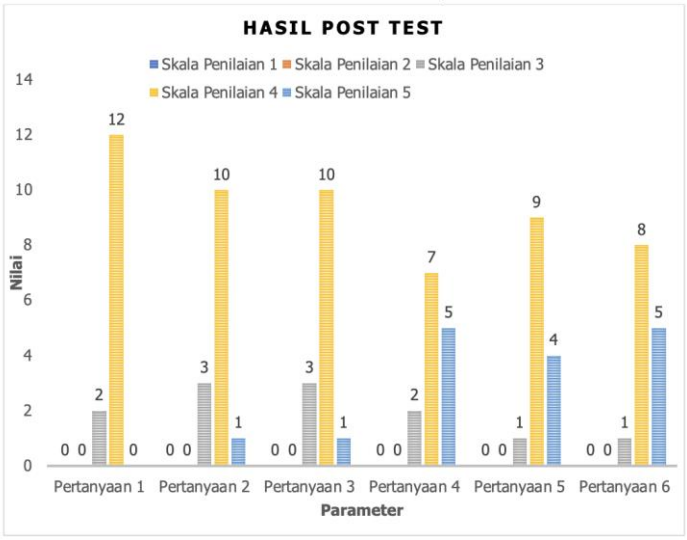

Figure 10. Graphic visualization of post-test results

The graphs in Figures 7 and 8 explain that after the training related to understanding and operating the Moodle and iSpring Platforms it can be concluded that all participants are able to understand and operate the learning platforms both Moodle and iSpring with significant changes. Most of the increase occurred on a rating scale of 4 and 5 with the highest increase occurred on a scale of 4 with an increase of 86%.

CONCLUSIONS AND RECOMMENDATIONS

PkM activities in the form of training on the use of the BeSmart teaching platform at SMA Negeri 1 Tanjungsari have been carried out well. There are several conclusions that can be drawn from the running of the BeSmart Application training and development activities, including:

- The teacher's level of understanding increased, especially regarding the operation of moddle and iSpring, with an average increase of 86% understanding.
- The BeSmart application helps both teachers and students in the teaching and learning process, especially during the unfinished Covid-19 pandemic.

- The BeSmart application can help in managing teaching materials for teachers
- The BeSmart application supports schools in implementing IT in the industrial era 4.0

His future recommendation is to enrich the features and integrate with all schools in the Lampung area.

ACKNOWLEDGMENTS

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