Using SPADA Brightspace to Enhance Pedagogical Skills in Teacher Professional Program

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Abstract—SPADA Brightspace is an e-learning platform designed for online Teacher Professional program learning activities. This platform has become a virtual learning environment with no boundaries of space and time between educators and students for a long time. It is equipped with various learning features and learning progress recorded by the system. This paper aims to determine the effectiveness of using SPADA Brightspace in improving pedagogical skills of participants in the Teacher Professional program. This research uses a quantitative approach using One Group Pretest-Posttest Design. Also, the effectiveness was measured by the result of pre and post-test given to the participants based on several indicators such as the ability to design course plan (RPP), to compile teaching materials, to produce learning media, to create student activity sheets (LKPD), and to make evaluation instruments. By using descriptive statistical analysis, this study found that the SPADA Brightspace platform was effectively used for improving pedagogical skills of participants.

Keywords—Online learning, SPADA Brightspace, Professional Teacher Program, pedagogical skills.

1 Introduction

In the Era of Industrial Revolution 4.0, education has increasingly developed in direct proportion to technological developments. It is said that online learning is a way that allows eliminating the boundaries of space and time [1]–[3]. It means that flexible education has been created [4], [5] in various parts of the world. This situation is due to the rapid development of information and communication technology. Blended learning gives new colors to the world of education. This also means that online learning does not necessarily shift the existence of face-to-face learning models such as project-based learning models [6], [7], problem-based learning [8], [9], cultural value-based learning [10]–[12], and outdoor learning for experiential skills [3], [13]. All of this must be considered as progress that makes it easy to achieve the goals of education.

Various forms of online learning that often sound like web-based learning [14], [15] as well as application or platform-based learning such as e-learning [16], [17], Google Classroom [18], [19], game quiz [20], and MOOCs [21]–[23]. In addition, widely-known application or platform-based learning is Edmodo [24]–[26].
In Indonesia, online learning also has excellent potential. One of them is to facilitate professional education as used in the Teacher Professional Program (PPG). Participants spread across various regions in Indonesia were met in virtual classes that had been designed in the Brightspace SPADA platform (see figure 1-3) and, furthermore, learning continued with face-to-face classes. This blended learning spearheaded the achievement of the goals of the Teacher Professional Program (PPG) in Indonesia to make teachers professional [27], [28]. Nevertheless, there are several things that need to be considered regarding the readiness of the participants who take part in this program. Considering the geographical participants of this program are teachers spread across various regions in Indonesia, of course, their quality and abilities will be different. Also, in terms of age, 81% of the participants of this program were birthed between 1964-1980, which meant they were generation X who needed adaptation in joining the program [29], [30]. They are the new generation of information technology development and computer use. Thus, it is not surprising if among them, there are still difficulties in operating the computer independently.

2 Method

2.1 Research subject

Overall, this study involved all participants of the Teacher Professional Program (PPG) in Phase 2 of the Social Studies Course, which were 49 people (2 participants did not complete the online learning process). Based on the characteristics of the subject, there were 26.5% of the participants were male, while 73.5% were women. All participants are teachers who have taught in several years and have a Unique Educator and Education Personnel Number (NUPTK) determined by the government. Participants obtained five main independent learning programs that were repeated in 2 sessions including the preparation of lesson plans (lesson plans), teaching materials, learning media, student activity sheets (LKPD), and evaluation instruments. The entire indicator has been assessed by instructors who are qualified in the education sector, and the entire process is executed online.

![Log in SPADA Brightspace](image-url)
2.2 Data analysis

To analyze data that had been collected through One Groups Pre and post-test design, descriptive statistical analysis was used. The results of the data were transferred and tabulated into the worksheet and analyzed using SPSS 16. Reliability was determined based on Cronbach Alpha. Also, to see the significant value between pre and post-test seen based on the results of the T-test. The result is as follow:

| Assessment Factor          | M   | SD  | Reliability |
|----------------------------|-----|-----|-------------|
| Lesson Plan (RPP)          | 76.21| 16.82| 0.960       |
| Learning material          | 75.88| 17.66| 0.915       |
| Learning Media             | 75.22| 17.35| 0.949       |
| Student activities sheets (LKPD) | 79.439| 20.53| 0.846       |
| Evaluation Instrument      | 80.74| 18.81| 0.924       |
3 Result and Discussion

Overall assessment of indicators generally indicates that there are changes in pedagogical skills obtained by online training participants after using SPADA Brightspace. The first assessment is the practice of designing a lesson plan (RPP). It was found that there was an increase in the ability of training participants with a significance value of 0.000 < 0.05 with a strong correlation value of 0.934 (see table 2). The second assessment shows an increase in ability in the practice of preparing teaching materials of 0.000 < 0.05 with a correlation value of 0.844. Increasing the ability of participants to produce learning media is equal to 0.000 < 0.05 with a correlation value before and after the treatment of 0.905.

Furthermore, for the assessment of the preparation of student activity sheets (LKPD), the significance values obtained were 0.003 < 0.05 with a correlation of 0.825. Finally, the ability of participants in compiling learning evaluation instruments, the results of data analysis showed a significance value of 0.000 < 0.05 and a correlation value of 0.948. The details can be seen in table 2.

Table 2. The Result of T-test

| Assessment Factor                  | Correlation | Sig. (2-tailed) |
|-----------------------------------|-------------|-----------------|
| Lesson Plan (RPP)                 | 0.934       | 0.000           |
| Learning material                 | 0.844       | 0.000           |
| Learning Media                    | 0.905       | 0.000           |
| Student activities sheets (LKPD)  | 0.825       | 0.003           |
| Evaluation Instrument             | 0.948       | 0.000           |

To understand in-depth about the findings of this study, it seems necessary to compare the results of previous studies and verify existing theories. Online learning has indeed been included in various education and training programs that were traditionally carried out. Training programs in the fields of health, business, education, language institutions, everything has been directed online, and various platforms have been used to simplify their programs.

The use of e-learning for training programs in companies has provided benefits in the form of cost-effective, convenient, and effective ways to deliver education for company employees (Ozturan & Kutlu, 2010). This is a valuable bonus when the program is carried out as expected and with low costs. Also, online learning platforms such as Semantic Web-Based Learning (SWBL) have provided significant learning outcomes and learning satisfaction for participants in pre-service teacher training programs. The participants enjoyed the learning features available on the platform. In addition, ease of access and flexibility also much helps participants [31].

It seems that the support from the government is getting higher when online education programs can be a smooth way to take policies and continue them. An interesting thing was also found in the utilization of smartphone applications in childcare training programs. The use of smartphone applications in the program proved to support the retention of knowledge about child trauma for caregivers [32]. Today's parents may not need to worry; they have reliable and professional caregivers. In Bangladesh, there is a
platform called Open Source Technology (OST) that has pedagogical capabilities. OST is said to be a suitable alternative for educational institutions in developing countries [33]. Some platforms also allow for online training assessment processes in language writing [34]. Now we can become chefs who have good and healthy nutrition knowledge just by attending online classes at MOOCs [35]. The evidence is not constructed only for business purposes, and our eyes are increasingly wide open to see it all. There is no need for anyone to be hostile to things that are traditional or contemporary.

The effectiveness of using the platform in online learning should be technically reviewed. At least several important factors support the success of online learning, including:

1) Technology
2) Instructors
3) Students [36].

Additional other supporting factors that are not less important are support from institutions [37]. In addition, technology is the top factor, which is usually the main factor. The ease of access to using platforms is essential. Learners and instructors, as users of online learning technologies, become a reference indicator for assessing accessibility. The most important, of course, is the aspect of student satisfaction in using the online learning technology [38]. The instructor, as the ruler of the virtual class, will certainly try his best in designing the material and instructions. In order for the virtual class to function properly, of course, the controller must function effectively and optimally. Stakeholders at the university also need to provide material support needed in the online learning process. Material aspects of support are certainly not cheap, but stakeholders should be aware of this.

4 Conclusion

The SPADA Brightspace facilitates participants to demonstrate effective learning outcomes. Overall, the results of the study prove that the use of SPADA Brightspace as an online learning platform is effective in improving training participants’ pedagogical skills. These learning outcomes are based on the behavioristic learning process. In each session, training participants get feedback for improvement in the next session. Errors and shortcomings of work at each session provide insight to students about how the most appropriate way of doing assignments in the next session. This cycle is like the pattern of trial and error in behavioristic learning. Also, this research is supported by previous studies on various relevant platforms used for educational and training activities, both theoretical and practical.
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Short Paper—Using SPADA Brightspace to Enhance Pedagogical Skills in Teacher Professional Program

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