



Utilization of Web-Facilitated Learning to Improve Teacher Skills in Identifying Basic Competencies

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Abstract: The use of technology has the potential to build more intensive learning and make it easier for teachers to carry out student learning assessments. The present study was aimed to analyze the extent of the benefits of web-facilitated learning as a form of technology product to grow teacher skills incorrectly identifying basic competencies. This study surveyed the activities of the Islamic Religious Education Teacher in Surabaya and Madura, and analyzes it using the Miles and Huberman model. The results showed that the use of web-based facilitated learning in this study is quite effective. This was based on five main factors, namely usability 83%, usefulness of content 86%, adequacy of information 87%, accessibility 82%, and interaction 81%. The total average score was 83% and shows very good quality. Several issues regarding the barriers to implementation were discussed.

Keywords: web-facilitated learning, assessment, learning

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INTRODUCTION

The development of Information and Communication Technology (ICT) is an unavoidable aspect of this 21st century. Almost everyone in this century practically uses technology, because technology does promise to provide facilities that can facilitate users in the practical activities of daily life (Larsson Lund et al., 2011). Technology penetrates and provides convenience in every aspect of human life, starting from the economic aspect (Mostafa et al., 2020; Pradhan et al., 2018), communication (Guzman & Lewis, 2020), social (Barbosa Neves et al., 2019), politics (Campante et al., 2018), and education (Henriksen et al., 2018; Jääskelä et al., 2017; Lai & Bower, 2019).

Specifically for education, Bond et al (2020) stated that the use of technology has the potential to make the learning process more intensive, can increase student motivation (Alioon & Delialioğlu, 2019), stimulate students to be more actively involved in the learning process and motivate students to study independently (Rashid & Asghar, 2016). Furthermore, Dunn and Kennedy (2019) provide information that the use of technology provides the possibility for students to explore learning content according to their interests and indirectly encourages students to do self-learning. Even Deeley (2018) in his research reveals that the use of technology can facilitate the implementation of effective assessment and feedback for students. This means the technology can cover the entire learning process itself to the learning evaluation process.

Many terms later emerged after education tried to take advantage of technology. TPACK (Technological Pedagogical Content Knowledge) for example, is an important framework for determining how well teachers integrate technology into classroom learning (Baran et al., 2019); STEM (Science, Technology, Engineering, and Mathematics) which carries the concept of integrating the four elements of the STEM acronym in a single learning unit (Leung, 2020); SMART Education Technologies (SET), where SMART itself is an acronym for Self-directed (independent), Motivated, Adaptive, Resource-enriched, and Technology-embedded education; the principle of SMART is to carry out open education that is not limited by time and certain facilities, integration between fields of knowledge, and continuous learning (Galimullina et al., 2020); OER (Open Educational Resource) which provides learning materials and students/teachers can access them for free, including textbooks, videos, course modules and evaluation tools (Ren, 2019); and so forth.

Education that specifically tries to use technology products such as the internet, computer devices, or smartphones in the learning process in the end also gives birth to many terms. For example online learning or e-learning; digital learning or computer-based learning where the learning instructions are in digital form (Mayer, 2019); blended learning where this learning carries the concept of combining face-to-face learning and online

learning (Hrastinski, 2019); the use of the website gave birth to the term web-based learning where learning instructions and student interactions can run by utilizing website facilities (Lin et al., 2020); some even use games so that the term game-based learning was born (Tokac et al., 2019).

The use of technology in education provides opportunities for the education itself to be more varied. George and Sanders (2017) state that technology provides educational opportunities to be more effective and efficient, and Purnami et al (2021) state that technology is effective to enhance critical thinking skill. If so, the teacher should have a positive perception of the use of technology in education, especially the learning that the teacher is running (Regan et al., 2019). Teachers must always be able to keep up with technological developments so that teachers can develop innovative ways to use technology as a tool to improve learning effectiveness. In addition, the use of technology in learning is also important because it can provide students with provisions regarding technological literacy to face the challenges of the '21st-century' society (Uerz et al., 2018).

In addition to learning, technology can assist teachers in carrying out student assessments. Dawson and Henderson (2017) revealed that technology does have a very significant role, including in the student assessment process; technology allows the provision of richer and more efficient feedback information although it cannot be separated from several challenges and obstacles; Bennett et al (2017) continue that technology and assessment have a long history, ranging from programmatic instructions and computer-based quizzes to richer forms of interaction and content creation, even to newer assessment tools which already support the delivery of assignments online, peer and self-assessment online, and integrated correction.

Along with technology that makes learning more varied, at the same time technology provides opportunities for assessment to be more varied (Soffer et al., 2017). For example, assessment with technology can use various devices, such as computers or laptops, portable communication devices such as smartphones, or even through the use of electronic game devices; The formats also vary, such as text documents or portable document formats, multimedia formats such as sound, video or images (Sangle et al., 2020). Assessments that try to adopt technology are usually called e-assessments where this assessment can indeed present variations such as automated administrative procedures, digital-based systems, and online testing that includes multiple-choice tests and problem-solving skills with the latest method facilities, accurate, effective, and efficient assessments (Alruwais et al., 2018). In addition, this e-assessment can ensure that the assessment can run correctly and authentically (Okada et al., 2019).

The integration of technology into assessment activities is indeed very interesting. Many researchers have already done so; Dalby and Swan (2019) attempted to develop formative assessment using iPads; Nikou and Economides (2017) in their research try to present empirical evidence about the use of mobile in the assessment process which was later named Mobile-Based Assessment (MBA); Potdevin et al (2018) tried to investigate the effect of using video feedback (VPB) on improving students' skills, self-assessment ability and motivation; Hummel et al (2017) revealed the possibility of developing game-based assessments with high validity; Yerushalmy et al (2017) tried to develop an e-task which has the potential to provide a wider and diverse response space for students.

The integration of technology in the assessment process does promise a lot of things but the teacher's competence is not aligned with that. Teachers as the main actors in the assessment process itself, it turns out that there are still many who are not capable, do not believe in themselves, or do not have the passion to use technology (Wachira & Keengwe, 2011). Many studies reveal that teachers lack/do not have the assessment literacy needed to manage/implement assessments appropriately and effectively (Hopfenbeck, 2020; Joachim et al., 2020; Lam, 2019; Napanoy & Peckley, 2020; T.-H. Wang et al., 2008). Specifically for the case of Indonesia, Indaryanti et al (2019) analyzed that it turns out that teachers are still weak in adjusting the level of basic competence with achievement indicators; Palobo and Tembang (2019) also stated that the difficulties of teachers in the assessment include developing indicators of competency achievement and drafting basic competency achievement schemes; Suwama and Apriyani (2022) stated that teacher need more practice on creating analysis, comparing, evaluating, and generalizing activities. Thus, teachers are very weak in terms of assessment literacy, especially how to identify basic competencies and then translate them into indicators of student achievement.

Therefore, this study aims to develop a website-based product as an embodiment of technology and teachers can use the website to improve their abilities related to assessment literacy, especially in identifying basic competencies. The use of the website presents several advantages, including implementing the assessment more innovative and authentic (Nguyen et al., 2006), more flexible because it does not require the presence of a teacher in every assessment process (Liang & Creasy, 2004), and the website facilitates continuous learning or independent learning (Barak, 2017). There have been many studies that use the website as a learning media or assessment medium. Lin et al (2020) for example try to develop a website where the website is expected to be able to facilitate students who are less active in arguing; Wang et al. (2019) developed a Web-Based Multimedia Assessment System (WMA system) to facilitate students in conducting self-assessment and

provide sources of teaching materials that are appropriate to students' shortcomings; Own (2010) offers a website as a conducive learning environment; Güzeller (2012) tested whether a web-based portfolio can effectively improve students' academic achievement or not; and so forth.

However, so far there has been no research that tries to develop a website as a teacher learning medium to grow or improve their skills on how to identify students' basic competencies properly and correctly. This study aimed to analyze the extent of the benefits of web-facilitated learning to improve/grow teachers' skills in identifying basic competencies. Therefore, this research is entitled Utilization of Web-facilitated Learning to Improve Teacher Skills in Identifying Basic Competencies.

METHODS

This research is qualitative research with a descriptive-qualitative approach. The data collection technique used a survey on the activities of the Islamic Religious Education Teacher Working Group (KKG) in Surabaya. The informants in this study were 20 PAI teachers in Surabaya and Sumenep Madura with details of 10 teachers at Al-Hikmah Surabaya, 5 teachers at SMPN 1 Surabaya and SMPN 1 Lenteng Sumenep Madura. The data analysis using the Miles and Huberman model consisted of data reduction, data presentation, and conclusion drawing. While the research instrument refers to research conducted by Yang et al. (2005), in which there are 5 factors, including, (1) usability, (2) usefulness of content, (3) adequacy of information, (4) accessibility, and (5) interaction.

The five factors have indicators, the details of which are as follows (Table 1);

Table 1. The survey grid for the use of web-facilitated learning

Factors	Indicators
Usability	<ul style="list-style-type: none"> a. Well-organized website links b. Adequacy of features c. Search facility d. Easy to understand presentation of information
Usefulness of content	<ul style="list-style-type: none"> a. The uniqueness of the website content b. The content on the website is relevant to user needs c. Clear instructions for use d. Up-to-date
Adequacy of information	<ul style="list-style-type: none"> a. Easy navigation to find the information you need b. Clarity of website description c. Availability of additional services (enrichment) d. Hyperlinks to relevant websites
Accessibility	<ul style="list-style-type: none"> a. Login speed b. Page loading speed c. Server response stability d. Download speed
Interaction	<ul style="list-style-type: none"> a. Facilitates interactive feedback between teachers and students b. Facilitating discussion forums either between students and students or teachers and students

Furthermore, the determination of whether the website provides benefits for growing teacher skills in identifying basic competencies is based on the total score of respondents' answers compared to the number of ideal scores then converted into a percentage (100%) (Arikunto, 2006, p. 75);

Meanwhile, the conclusion based on the percentage results above can follow the results interpretation guidelines as shown in the following percentage interval table (Sudijono, 2005, p. 35) (Table 2);

Table 2. Percentage interval

Percentage	Value
80% - 100%	Very good
66% - 79%	Good
56% - 65%	Enough
40% - 55%	Not good
< 40%	Not good

RESULT AND DISCUSSION

The following is a table of survey results through questionnaires based on the survey grid for the use of web-facilitated learning (Table 3);

Table 3. Results of a survey on the use of web-facilitated learning

Factors	Percentage
Usability	83%
Usefulness of content	86%
Adequacy of information	87%
Accessibility	82%
Interaction	81%
Average	83%

Based on a survey through a questionnaire, the results show that the overall usability factor of the four items is 83% (very good), where teachers consider that this website product can grow their skills in identifying basic competencies in assessment. The second factor, namely the usefulness of content from the average of the four existing items is 86%, which means it meets the "very good" quality. The teacher considers that the website content has uniqueness, relevance to assessment, clarity, and novelty. The third factor, namely the adequacy of information, got an average score of 87%, which means that in terms of facilities in the form of navigation, descriptions, enrichment features, and others regarding other features, the quality is "very good". The fourth factor is accessibility which is related to the quality of access to log-in, page loading, response, and download getting an average score of 82% which means it is still in "very good" quality. Finally, the interaction factor relating to website facilities regarding interactions that teachers can do through the website gets an average score of 81%, thus the quality is also "very good".

From the total score, the use of this website to grow the teacher's ability to identify basic competencies in assessment gets an average score of 83%, which when referring to the percentage interval, still shows very good quality. However, even though the results state this, it does not mean that the use of this website is without gaps. There are several suggestions and inputs from several teachers that are of concern, for example regarding the content of the assessment itself where the teacher hopes that the HOTS (Higher Order Thinking Skills) questions are even richer, there is a summary of the material in each chapter where both students and teachers can read it as a reference enrichment. In addition, the teachers suggested that there should be more features related to assessment, such as displaying question numbers in the form of tables, which can save data automatically and periodically.

The findings show that the first factor, namely usability, has met very good quality with a percentage of 83%. This usability factor is important because several studies such as Fang and Holsapple (2007), Lam et al (2009), and Alqahtani (2019) show that usability on the website will affect the flexibility of learning practices. Thus, this one factor must have good quality. This research itself also aims to teach teachers to be more skilled in identifying basic competencies.

The second factor, namely the usefulness of content, is a factor that is no less important than the usability factor. Website content in this study is related to assessment content. Integration of the right content with technology (website) is a profitable thing, namely converting the content from data into metadata. This will lead users to the proper use of information resources with the help of technology in the form of this website (Kanishcheva et al., 2018). Next, namely the adequacy of information related to the completeness of the information itself. That is, the website needs to provide sufficient information and even provide additional relevant information services (Yang et al., 2005). Research from Nassar (2020) reveals that the quality and wealth of information on the website have a major effect on learning and even on the education system itself.

Another factor is accessibility, which is a factor related to the convenience of using the website as an information center. The power of this accessibility is quite large because this factor can expand users, for example, users who come from people with disabilities (Acosta-Vargas et al., 2018; Raymaker et al., 2019). Thus, the accessibility function can disseminate content so that all groups can access and consume it. The last is the interaction related to interactive feedback. The use of technology certainly provides this interaction facility, meaning that technology facilitates fair and reciprocal two-way-communication, collaboration (Wang et al., 2017), and even encourages the motivation of the users themselves (Serhan, 2019). However, the website product must of course be following its purpose. While this research tries to build a website to facilitate teachers to develop their skills in identifying basic competencies.

This website product is one of the technological innovations which then education tries to adopt and use for certain interests. Technology brings various benefits, one of which is changing the impossible into possible, presenting something that was initially unable to be present, making the distant become close, turning

complex things into simple, and so on (Dinc, 2019). This website also helps teachers to simplify complex assessment tasks. The curriculum that applies in Indonesia, namely the 2013 curriculum, requires a very complex assessment where the assessment must cover four dimensions of competence at once, namely the competence of spiritual attitudes, social, knowledge, and skills as a whole and comprehensively (Setiadi, 2016). Therefore, the presence of this website is to help teachers work related to the complexity of assessment matters.

The 2013 curriculum assessment system also demands an authentic assessment, namely an assessment that refers to existing and improvised situations and realities (Koh, 2017; Wuryani & Irham, 2014). Authentic assessment requires that the overall development of students can develop, therefore the assessment technique that teachers can use cannot be just one technique. In addition, the teacher before assessing students must know in advance what type of evaluation to be carried out, the teacher must be able to determine whether the assessment is attitude, knowledge, or skill (Kusaeri, 2014, p. 22). Based on this, it is absolute that teachers must have sufficient knowledge and understanding regarding assessment and how to conduct assessments. Meanwhile, to determine what type of evaluation the teacher will do, the teacher must first have the ability to determine the right basic competencies and translate them appropriately into several indicators of achievement.

The use of this website to develop teacher skills in identifying basic competencies is not without obstacles. Utilization of the website requires socialization as an effort so that the use of the website runs effectively and efficiently. As mentioned earlier that the website is a product of technology, while according to Mercader (2020) the use of technology in education must experience obstacles, one of which is technophobia which means the systematic rejection of some parties to the project of integrating technology into education/learning, and lack of time available for teachers to combine (digital technology and learning) of that magnitude, this is also supported by factors such as the lack of training for teachers in the field of educational technology, the pedagogical conception of the teacher itself which sometimes contradicts the concept of technology integration. Therefore, even though in this study the website was proven to be able to grow teacher skills in identifying basic competencies, teachers still need continuous training to continue to use this technology.

The indicators in this study refer to the research conducted by Yang et al. (2005), even the model is almost the same. However, the difference in this research is more on website development and how the website can grow teacher skills in certain aspects. While the research of Yang et al. (2005) focuses more on the development of a validation instrument that can be used to measure website usage. Thus, this study is a follow-up study of Yang et al.'s (2005) research, this study tries to take advantage of what Yang et al. (2005) have built in the form of the earlier instrument.

CONCLUSION

Although the use of this website is considered effective, teachers still need ongoing training to always hone their abilities, both skills related to the assessment techniques themselves or the use of technology. Technology is constantly evolving and teachers don't have to be content with just mastering one technology product. Teacher mastery of a technology product should not hinder teachers from developing, mastering, and utilizing other technological products. This means that teachers should not rely on only one technology product to develop, teachers should continue to be able to carry out learning independently through any source, and the website is one of them.

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