



The Need Assessment of Digital Learning Resources for Online Learning in Vocational High Schools

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Abstract. Learning resources are an essential component in administering education and considering current technology development, creating digital learning resources capable of fulfilling learners' needs is a high possibility. The purpose of this research is to analyze the need for digital learning resources in online learning for productive subjects at Vocational High School. This research was conducted at Vocational High Schools in three Indonesian Provinces. This research used a qualitative approach and descriptive method. The data used in this research were qualitative and collected through questionnaire, literature study and field study. The data collected were then analyzed using qualitative data analysis technique, producing an overview of which digital learning resources were needed by Vocational High School students in online learning, especially for productive subjects. The research results show that the digital learning resources needed in online learning for productive subjects at Vocational High School were audio-visual based digital learning resources with substance in the form of theoretical materials of productive subjects and of basic practical material for practice.

Keywords: Digital Learning Resources · Productive subjects · Vocational High School

1 Introduction

Covid-19 influences most of human's life aspects [1] including educational aspect, especially in Indonesia. One of the Indonesian Government's measures to prevent the virus from spreading is to issue the policy of restricting interaction and crowd and physical distancing. Consequently, teachers and learners at school are required to adapt to the pandemic situation and condition and perform learning process online.

On the other hand, current development of Information and Communication Technology (ICT) and the presence of internet have enabled learning activities to be performed online, including for productive subjects at Vocational High School. Integration of modern learning technology such as online learning makes quality plays a substantial role

in the success of learning and certainly contributes to improved innovation and quality of education [2, 3].

In practice, however, online teaching-learning activities in Indonesia can be assumed unprepared. This is based on the quality of supporting elements of online learning implementation in Indonesia that can still be considered low. This is the case especially in online learning for productive subjects at Vocational High School in which qualified learning resources and teacher's innovation are greatly needed, that even if students do not perform practice directly but they can imagine or understand how a good, effective and Standard Operating Procedures (SOP) compliant practice is done.

In Indonesia, there are actually many e-learning platforms existing as learning media and resources, but they have not met the needs of Vocational High School. Based on preliminary observation, in view of Vocational High School curriculum, the e-learning platforms developed by the government and private sector have not met Vocational High School's need for learning resources, that in some subjects the display is still empty/no content, and if there are contents but only few. If the issue of minimum learning resources is left as is, there is a concern that it will lead to declined quality of educational process output, in this case graduate's ever declining competence [4].

Learning resources have some functions and roles, including increasing education productivity, providing more scientific fundamentals of learning, providing learners the opportunity to develop as per their ability and potential and increasing stabilization of learning with various communication media. Based on the functions of learning resources above, we are then aware of the importance of learning resources availability.

With regard to the current development of digital technology, creation of various learning resources is quite a possibility, especially digital learning resources with potential to solve learning issues and facilitate learning activities [5] and meet each of learner's characters and that is accessible to any individual anytime and anywhere.

The development of digital learning resources and their platform in this research is the response to the government's program in revitalizing of Vocational High School, which may boost vocational education in Indonesia. The aim of this research is to analyze the necessity to develop digital learning resources for online learning at Vocational High School, especially for productive subjects. The analysis is focused on the analysis on the need for system (hardware and software) and the analysis on users (students and teachers).

2 Method

This serves as a preliminary study in analyzing the need for digital learning resources in online learning, especially for productive subjects at Vocational High School. This research used a qualitative method to describe the facts based on the condition of objects researched.

This research was conducted for 6 (six) months from March-August 2022. The data used in this research were qualitative data. The data were collected through questionnaire, literature study and field study. The literature study was conducted by collecting relevant research results and references and reviewing the concepts of digital learning resources, while the field study was conducted through observation, interview and Focus Group

Discussion (FGD) involving the Department of Education and Vocational High Schools in 3 (three) Provinces in Indonesia: Vocational High School in Bandung City, Vocational High School in Palembang City and Vocational High School in Purworejo. The three schools were chosen since they represented the condition of Vocational High School in Indonesia.

The research's key informants were the principals and productive teachers of each Vocational High School that were the research objects. The data collected were analyzed using qualitative data analysis technique to produce an overview of what kind of digital learning resources was needed by Vocational High School students in online learning, especially for productive subjects.

3 Result and Discussion

Technology advancement in learning should ideally be used to develop learners' potential. Regardless of the Covid-19 Pandemic, learning with information technology application is performed as the implication of development of Science and Technology which adds value to and supports student's learning in class, thus teaching-learning process will run effectively and efficiently.

Learning information technology is used as learning media and learning resources [6]. Learning resources are the very essential element in learning process [7] in order to improve education productivity, provide more scientific fundamentals of learning, provide learners the opportunity to develop as per their ability and potential and increase stabilization of learning with various communication media.

Moreover, in (online) learning process for productive subjects at Vocational High School, the development of digital learning resources and their platforms at Vocational High School is very urgent and includes revitalization of facilities and infrastructures and institutional areas through building a Management Information System based School Administrative System in the field of learning curriculum [8]. All of this leads to more effective and efficient learning implementation, creating links and Matches with business/industrial world.

The implementation of learning related to the availability of digital learning resources and their platforms includes three forms of learning models feasible to be taken into consideration as the basis of online learning development, namely [9, 10]:

- a. Web course, is a teaching-learning process that is fully performed asynchronously through the use of internet facilities.
- b. Web centric course, is a learning process with some materials of learning, discussion, consultancy, assignment and practice delivered via internet, while examination and a portion of consultancy, discussion and practice performed face to face.
- c. Web enhanced course, is using internet for education, with position only as support in improving the quality of teaching-learning activities in class.

The three models above can basically be applied at Vocational High School, either web course, web centric course or web enhanced course. Based on the results of focus group discussion with educators, for practice of productive subjects at Vocational High School, face-to-face (direct) meeting is recommended for maximizing ultimate goal of

learning. Therefore, based on field needs, the development of application is focused on fulfilling learning resources with theoretical substance of Vocational High School of productive subjects.

Moreover, with regard to productive subjects, for real practice display of certain skills and to provide students experience for them to feel a certain condition of practice, it is necessary to develop audio-visual digital learning resources or video media. Developing audio-visual based digital learning resources (digital learning resources) is needed to improve information system based teaching-learning process, improve learning quality, and provide better user experience [11–13]. In addition, video can present information, present process, explain complicated concepts, teach skills, shorten or extend time and influence attitude [14]. In other words, the use of audio-visual digital learning resources or video can provide learners experience in cognitive, affective and psychomotor domains.

Furthermore, in this stage an analysis on the need for system was conducted, containing hardware and software specifications needed by users (students and teachers). Hardware needed by users to access the applications or digital learning resources includes computer/laptop/smartphone or other supporting devices, while software needed includes operating system and browser. Based on the observation results, it is found that the schools that are the research samples have adequate ICT facilities.

With regard to users (students and teachers) needs analysis, the researchers find that the quality of vocational learning online directly influences students' satisfaction. Meanwhile, an important structure supporting the quality of online learning consists of communication, digital media, interaction, facilities, and tutorials. This result shows that the construct of online learning quality serves as the determinant of student's satisfaction in online learning that teachers need to pay attention to in administering a better teaching-learning process.

From the analysis results, it is also found that one of the main determinants of the quality of vocational learning online is tutorial. In this case, at least, teacher with IT skills is needed to optimize digital learning resources in learning process. The researchers identify the extent of teacher's ICT competence in teaching adopted from ICT Competency Framework for Teachers [15]. According to UNESCO, teacher's ICT competence is divided into six aspects: understanding ICT in education, curriculum and assessment, pedagogy, application of digital skills, organization and administration, and teacher professional learning. The results show that the teachers actually have qualified ICT competence or, in other words, the teachers have good digital literacy.

For effective learning, however, the sharing ability to collaboration and creativity to collaboration are still low. The researchers, in analysis on teacher's role as the facilitator of online learning show that teacher's ability is needed to guide and design activity-oriented class. Moreover, based on interview with productive teacher:

“Teachers' ICT competence needs to be optimized with available sufficient learning resources. In my opinion, during pandemic, teachers find it difficult to gather that it is difficult to match their schedule. As can be seen with asynchronous teaching hours, that some teachers did not gather in time, since they were still teaching in other places for insufficient teaching schedule. During pandemic, we (teachers) searched for appropriate materials and platforms. That may be the problem. Right

now that the pandemic is over, we readapt to face-to-face learning. Not to mention the new curriculum (kurikulum merdeka). Thus, we adapt first, and collaborate then.”

Based on the analysis results, changes in criteria and class design are needed for online learning and the existing audio-visual based digital learning resources developed should facilitate users to collaborate with one another.

4 Conclusion

Based on the results and discussion, we may conclude that the digital learning resources needed in online learning, especially for productive subjects di Vocational High School are in the form of audio-visual based digital learning resources with substance in theoretical form or introductory materials.

Acknowledgments. The researchers would like to show their gratitude to all respondents and informants contributing to the research. They would also thank the Ministry of Education, Culture, Research and Technology for its funding in this research.

Authors' Contributions. The authors confirm their contribution to the research activity and paper writing. Lastly, all authors review the results and agree on the final version of script.

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