

Student Centered Learning Applied Using Digital Literation

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Abstract. The industrial revolution 4.0 was characterized by the use of online and digital technology in various aspects of life. Digital literacy is one of the capabilities that must be possessed by everyone, so they can understand and use information from various digital sources. Digital literacy is used to read, write, and search for information with digital technology that students need to gain knowledge and develop independent learning skills through a project based learning (PPA) model. The project given to students is to make learning media especially for information presentation / presentation, innovative and interesting. The media can contain text, video, audio, animation, using various applications and multimedia. The project encourages student creativity and teamwork to learn new things, and communicate to others. This learning is student-centered learning, while the lecturer is only a facilitator. Student centered learning can foster learning and innovation skills in students, have life skills, and information skills to construct their own knowledge through real experience. The results showed that student digital literacy grew well through various projects, students were very creative and innovative in developing learning media, with satisfying results.

1. Introduction

How 21st century students learn and perform academically is directly related to their way of life. Their personal perspective functions as their filter in how they interpret their academic responsibilities inside and outside the classroom. In addition, student confidence can influence other learning factors such as motivation, learning strategies, and academic performance.

In recent years there has been an unprecedented technological revolution and affects all fields of knowledge and has an impact on education. In this context, students born after 1980 are fully included in the digital era. They are the first generation that is completely surrounded by technology (Internet, video games, handphones, etc.). Logically they need a new strategy to access, manage and process information. This condition has consequences for their learning as digital students, among them they need certain abilities to handle technology (often referred to as digital literacy), they require constant internet use, and the ability to work simultaneously with different media. In particular, users increasingly need specific abilities to manage digital stimuli so that they can be efficiently channelled towards personal goals and subjective well-being, avoiding excessive multi-tasking, fragmentation of daily time and overconsumption of new media. Such skills are acquiring centrality in the public debate, as shown by recent publications focused on the side-effects of digital media [1].

On the other hand, digital technology continues to change, which has the advantage and speed of access is getting faster. Differences in the ability of digital literacy between generations will affect ability, and the habit of using information and communication technology. Digital literacy also influences education, especially in learning and interaction between students and lecturers. Digital literacy and technology are very related. Many daily activities are mediated by literacy through technology that has developed rapidly beyond printing technology, and encourages the emergence of new literacy. New literacy supports social interaction, participation, taking an active role, connectivity, collaboration, teamwork and creativity. New literacy related to networking, collaboration, interaction and creativity is supported by digital technology. Digital literacy means having the skills you need to live, learn, and work in a society where communication and access to information is increasingly through digital technologies like internet platforms, social media, and mobile devices [2]. Digital literacy is also an integral part of education. Digital literacy carried out in the classroom needs to be empowered optimally and centered on students including problem based learning models, or project-based to produce graduates who are competent in their fields and able to adapt to the complexity of ICT. Student-centered learning emphasizes responsibility, discipline, creativity in completing projects.

The Project Based Learning (PBL) model is student-centered learning. PBL will succeed well if students already have deep conceptual knowledge of the project to be completed, independence, creativity, and high motivation. PBL is defined as students who work collaboratively to design project solutions for authentic and meaningful problems in the real world. Students who learn with the PBL model are more intrinsically motivated, and use far higher critical thinking skills, can work with teams, and value people's opinions. Procedure in PBL with problems that have been provided by the lecturer, and students do the following steps: 1) Make a list of what is known about the problem; 2) Develop and analyze problem statements; 3) Design a possible solution for the problem and then choose the best; 4) Make a list of actions to be taken with the time specified to complete the project; 5) Write a solution to the problem, including supporting documents in the portfolio. With PBL, assessment is authentic. We measure a child's performance via rubrics, but a critical aspect of this model includes self-evaluation and reflection. Children learn from their processes. They reflect on how well they worked in a collaborative group and how well they contributed, negotiated, listened, and welcomed other group members' ideas. Students also self-evaluate their own projects, efforts, motivations, interests, and productivity levels. Students become critical friends by giving constructive feedback to each other, which helps them become aware of their own strengths and improve on their interactions with each other.[3]

Gisbert & Bullen, [4] classify literacy in four different literacy groups: 1) Informational literacy: Digital information management. 2) Technological literacy: Data processing in different formats. 3) Multimedia literacy: Analysis and creation of multimedia messages. 4) Communicative literacy: Participation, public spirit and digital identity. Students with PBL are more intrinsically motivated, show much higher critical thinking skills, and learn to respect the opinions of friends and help in group work, are responsible for the tasks assigned. Some of the results of research project based models have shown academic success, motivation and commitment to face complex problems. With PBL students are able to achieve process skills such as collaborative skills, project management skills, and are able to display evidence of innovation and creativity, and report feeling more motivated to actively learn by looking for outside sources to complete the project [5].

2. Method

This study uses classroom action research, with 2 cycles. The first and second cycles use the Project based learning model. The target in the first cycle is that students are competent to make presentation media, by optimizing the animation of the PowerPoint application. The second cycle target, is that students can use various presentation software, to create learning media that are in accordance with the curriculum of 13 Vocational High School, especially Computer Networking Engineering, or Software Engineering, and Multimedia.

The sample of this study was 20 students from the Information Technology Education study program, which consisted of 6 students graduating from vocational high schools, and 14 students graduating from high school. The instrument used was a questionnaire to find out student opinions about the assigned project, and performance assessment of the process and results of the learning media. The data analysis technique was carried out descriptively, where cycle 1 was to assess individual competencies, while the project in the second cycle was to assess group performance.

The project encourages student creativity and teamwork to learn new things, and communicate to others. This learning is student-centered learning, while the lecturer is only a facilitator. During the class, for the project 1 students design new presentation material that becomes the project individually. Project selection is done randomly, and they do it seriously and with responsibility. The second project is given a week to work with the team, and then is presented alternately.

3. Results

The project given to students is to create learning media especially for innovative and interesting media presentations. The media can load text, video, audio, animation, and use various applications. Project 1 is carried out individually where students are responsible for developing ideas and creativity to develop presentation media in a new look. The assessment aspect is based on the process of developing ideas and experiences using digital literacy, and the results are assessed based on attractiveness, message clarity, and animated creativity. The second project, made a new presentation media with content taken from the curriculum of the vocational school majoring in Computer Networking Engineering, or Software Engineering, and Multimedia. This project is carried out in groups, using certain presentation applications. The assessment is carried out by several other relevant aspects which include media design, related content and the ability of the group to communicate how the media is made.

The results showed that student digital literacy grew well through various projects, students were very creative and innovative in developing learning media, with satisfying results. Experience using a variety of applications obtained in secondary school, and the skills students develop ideas are very helpful in building media design ideas.

The results of the assessment of the two projects illustrate that prior knowledge and student experience greatly assist students in completing their projects. Student experience is not very different from secondary and vocational high schools, all of which contribute significantly to the results of the presentation media. But more important is the experience of students in using digital literacy and motivation to learn new applications. High school graduate students, more difficult to work on the project, they need to learn self-taught, try it yourself first. In contrast to students who graduated from vocational schools who can work on the project directly, because of past experience in school. Students enjoy learning with a project based learning model. Learning models like this make students superior in their skills so that they are better prepared to face a much more difficult world of work.

4. Conclusion

This paper presents the learning experience of students with the project based learning model in the classroom. This study aims to improve student motivation, independent learning and group learning, and the ability to develop learning media.

The proposed project aims to design and implement learning media with various presentation software whose topics are taken from the basic competencies of subjects in Vocational High Schools, especially multi-media vocational programs, Computer Networking Engineering, or Software Engineering. This project was conducted so that students were able to develop ICT-based media presentations and explain to their friends how to use these media. As a result, students can develop media presentations that include material content, media design, and communication skills with satisfying results. The

results of the questionnaire illustrate that students do not find it difficult to learn in groups, because they like to interact socially with others, and are able to build chemistry with their friends. so that good teamwork is created.

Team work can simplify work because the tasks can be shared and do not charge one person, and if there are difficulties can be helped and can work together so that the task is completed quickly. Digital literacy is very important now, for anyone. It will also be very important in the future when entering the professional world. In working, we will be asked to interact with people in the digital environment, use information in the right way, and create new ideas and products collaboratively. Above all, we must improve our digital capabilities to live in prosperity, because digital knowledge and technology is constantly changing rapidly. Digital literacy is needed to bring together the knowledge and experience gained in each learning with your analysis and ideas about a topic or problem, which leads to the creation of innovative solutions and interesting communication

5. References

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