



ICT SYSTEM DEVELOPMENT IN THE LEARNING PROCESS BASED “MERDEKA BELAJAR” IN IMPROVING THE QUALITY OF STUDENT LEARNING OUTCOMES REPORTS

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Article history:

Received: January 24, 2023

Revised: June 6, 2023

Accepted: June 18, 2023

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Keywords:

ICT;

learning process;

Merdeka Belajar;

outcome reports.

Abstract

A good learning process is ideally able to follow the existing social dynamics, so there is a need for development in learning management. The initial exploration needed for teachers and students is the condition of ICT information systems in learning, the designed ICT systems development based on independent learning, and the quality of student learning outcomes reports. This research aims to develop an ICT information system for independent learning-based learning. This development had carried out to improve the quality of student learning outcomes reports. The research method is research and development (R&D), which is a research method of developing web-based online learning management and testing the effectiveness of products. The research was conducted in Vocational High Schools. The subjects under study are teachers and students. Data collection uses observation, interview, and documentation methods. Based on the results of the study, it is known that this research develops media that can manage learning for teachers and students. Learning is managed online on a website, which includes teacher learning tools and student assignments. Learning tools that are managed for teachers include student attendance, lesson schedules, lesson materials, assignments and homework, practice questions, and midterm and end-of-semester questions. The learning tools that students can access in online learning management include subject matter, assignments, homework, practice questions, and midterm and end-of-semester questions. This application is not a medium for learning, but a medium used to support learning activities in the classroom, both online and outside the network.



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1. INTRODUCTION

The development of technology is currently developing more and more rapidly [1], so that competition in various fields is also increasing [2]. One of them is in the field of education [3]. In the field of education, currently utilizing the existence of technology, especially in the application of information technology systems and computers. The use of information technology systems and computers should be able to provide a better learning-outcomes reporting system. The learning process requires the support of media and methods so that learning outcomes are obtained. Media is used as a means of

providing material delivered by teachers to students. While the learning method regulates how to organize teaching materials and material delivery strategies. Furthermore, learning outcomes can be measured by effectuids and efficiently to determine students' abilities and interests in subjects[4].

The use of learning media aims to improve the quality and quality of learning. Media in the learning process has a function as a means to convey information / messages that will be conveyed by the sender of the message to the recipient of the message, in this case what is meant as the sender of the message

is the teacher and the recipient of the message is a student[5].

The evaluation of learning carried out by teachers today still uses manual assessments. Teachers of vocational secondary education must have creativity, in order for students to have good skills. Teachers are also expected to be able to create an assessment model on project-based independent learning and the assessment model is rubric-based[6].

The form of this assessment also varies, including authentic assessments based on aspects of attitudes, knowledge, and skills. Independent learning emphasizes activity-based learning, so the assessment emphasizes more on process assessment both in aspects of attitudes, knowledge, and skills. In the Education Assessment Standards, it is stated that the report on the results of the assessment by educators is in the form of: (1) values and / or descriptions of competency achievement, for the results of the assessment of knowledge and skill competencies including assessment of learning outcomes (2) description of attitudes, for the results of the assessment of spiritual attitudes and social attitudes competencies (3) Assessment by each educator as a whole is then reported to parents / guardians of students in the form of a Learning Outcomes Report Student[7].

II. LITERATURE

2.1. Assessment of Effective Learning

Griffin and Nix (1991) in Abdul Majid's book define judgment as a statement based on a number of facts to explain the characteristics of someone or something [8]. Meanwhile, Popham defines assessment as a formal attempt to establish the status of learners related to a number of variables of interest in education.[9]. The assessment process includes collecting evidence or information that shows the level of student learning achievement. The results of this assessment can be used as a reference for making decisions on student learning outcomes to be developed or improved [10].

2.2. Learning of Merdeka Belajar

Merdeka Belajar is a new policy program of the Ministry of Education and Culture of the Republic of Indonesia (Kemendikbud RI) launched by Minister of Education and Culture Nadiem Anwar Makarim. Nadiem also made a breakthrough in assessment in minimum abilities, including literacy, numeracy, and character surveys[11]. Merdeka belajar is freedom of thought and especially the essence of freedom of thought is in the teacher first. Without it happening in the room it is impossible to happen in the [12].

Overall independent learning was launched by Nadiem, namely the replacement of the format of the National Examination (NE), Return of authority National Standardized School Examinations (NSSE) to their respective schools, Learning Implementation Plan (LIP) which is only one sheet, and the increase

in the quota of the merit line on Admission of New Learners (ANL) from the previous 15% to 30%. Of these four important points, the point according to researchers is to provide ease and flexibility of learning without anxiety to teachers and students in learning.

III. RESEARCH METHODS

The Research and Development (R&D) is a research method used to produce a particular product, and test the effectiveness of a product [13]. Based on the opinion, Research and Development (R&D) Method In the field of education is research that aims to produce or develop and validate an educational product effectively.

The development model used is the Borg & Gall model [14] which is arranged in 10 stages, namely: (1) research and information collecting; (2) planning; (3) develop preliminary form of product; (4) preliminary field testing; (5) main product revision; (6) main field testing; (7) operational product revision; (8) operational field testing; (9) final product revision; dan (10) dissemination and implementation. Furthermore, Sugiyono modified the stages of research and development of Borg & Gall into 10 (ten) steps of using research and development (R & D)[14]. Figure 3.1 below.

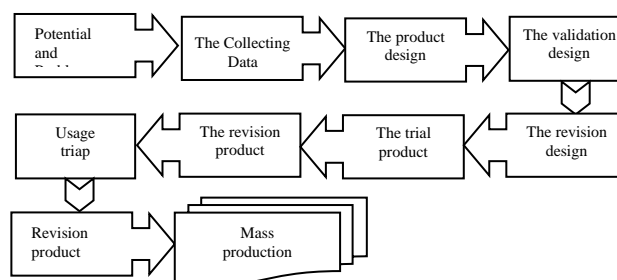


Figure. 1 Steps for Using Research and Development (R&D) Sources: Sugiyono (2016) [14]

A study starts from the identification of potentials and problems. The identification is by analyzing the needs used in the study. The needs analysis was carried out by preliminary observation to find potential and problems at SMK Negeri 9 Surakarta related to the school information system.

3.1 Exploration Studies

Exploration Studies are scientific studies or studies by exploring or field observations to obtain more knowledge. Exploration in question is the activity of an observation and exploration of the field in search of a specific goal. The purpose of this study is to identify potential and learning problems at SMK Negeri 9 Surakarta.

3.1.1 Exploratory design

Exploratory design is carried out when there is no or little research study of a problem. The purpose

of this design is to collect, verify and synthesize evidence from the past in order to construct facts so as to accept or reject a hypothesis. The exploration design used is to identify potential problems with needs analysis to teachers and students.

3.1.2 The data source

The data source is the subject from which the data can be obtained. If the researcher uses questionnaires or interviews in his data collection, the data source is called the respondent (= the person who responds to or answers the researcher's questions, both written and oral questions).

According to Lofland (in Moleong, 2013: 157) "The main data sources in qualitative research are words, and actions, the rest are additions such as documents and others". Data sources will be taken from documents, interview results, field notes and results from observations.

3.1.3 Data Type

There are types of research data that are divided into two, if based on their nature. The data is qualitative data that has the form of accompanying sentences and quantitative data, namely data with the form of numbers. Qualitative data types are data made using words and sentences.

Data types based on sources are divided into 2, namely primary data and secondary data. Primary data or original data is data directly from the object or its source. While secondary data or additional data comes from sources outside the object such as journals, books, media and others.

3.2 Data Collection Techniques

Data collection techniques are one of the main things that affect the quality of research data. The data collection techniques used in developing a website-based school information system are as follows:

3.2.1 Literature Study

Literature study is any effort made by researchers to collect information that is relevant to the topic or problem under study. In this study, literature studies were carried out by looking for sources of information, both in the form of scientific books, research reports, provisions and written sources both printed and electronic.

3.2.2 Interview

Interviews are used as a data collection technique if the researcher wants to conduct a preliminary study to find the problem that must be studied, and is also used to obtain other supporting information. The interview process conducted in the study was a direct question and answer with the speakers.

The purpose of this interview technique is to obtain information directly about the problems that occur and the potential possessed at SMK Negeri 9 Surakarta in relation to the school information

system, as well as obstacles that hinder the process of finding the latest and accurate information.

3.2.3 A questionnaire

A questionnaire used to collect data is a list of several questions that aim to collect data from experts and respondents. The questionnaire filled out by experts aims to find out the validity of the website-based school information system at the product validation stage, while the questionnaire filled out by respondents aims to find out the practicality and efficiency of the website-based school information system at the product trial stage.

3.3 Design Development

Design (Concept) Development is the process of preparing certain steps that can overcome problems that occur by utilizing certain media and methods. Product development in this study is to expand the use of multimedia and technology products into informatics and computer technology systems for the learning process based on independent learning.

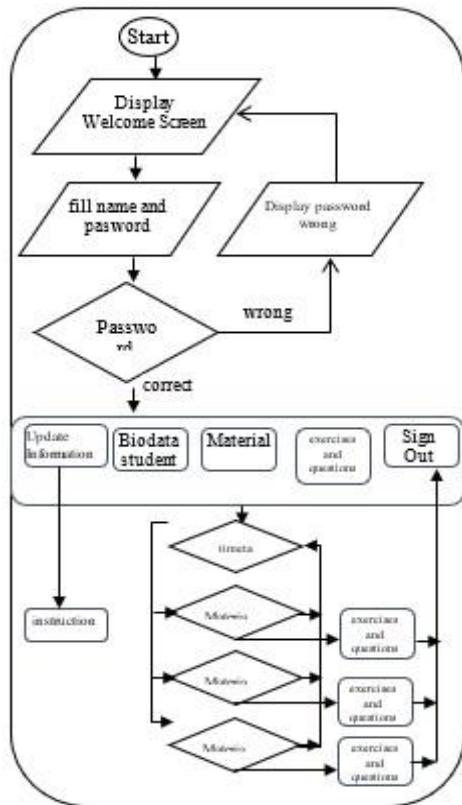
The validation process in this study consists of validating tools for collecting exploratory studies and validating product or prototype development. Product improvement is an activity to improve data collection tools and prototypes that have been evaluated in the validation process.

3.4 Product effectiveness trials

Product effectiveness trials are tests carried out to determine the success of products developed in meeting the needs of teachers and students. The trial of the effectiveness of the product in this development research is to find out the quality of the research report at SMK.

IV. RESULTS

Based on the results of the study, it is known that this research develops media that can manage learning for teachers and students. Learning is managed online on a website, which includes teacher learning tools and student assignments. The link to the learning management media is <https://pjj.smkn9-solo.sch.id>. The design of the developed learning media tool can be described in this flowchart.



merdekabelajar @SMK Negeri 9 Surakarta



Figure 4. Accessible subject matter

In these tools, accessible subject matter includes 1) Interactive Media Design; 2) Network System Administration; 3) Multimedia; 4) Tatabusana; 5) Textiles; 6) Metal Crafts; 7) Wooden Crafts; 8) Visual Communication Design and 9); Animation.

The learning tools developed can be used by teachers and students ranging from schedules, student biodata, subjects, practice questions to learning assessment results. This learning tool can be used face-to-face in the classroom or outside the network or online.

The use of face-to-face learning tools is carried out in the classroom at school, and teachers and students can access teaching and learning activities according to a predetermined schedule. Online,

students can access learning activities from anywhere through these learning tools. Students can also do exercises and questions to then find out the achievement of learning outcomes.

Based on the results of the effectiveness test, there are differences in learning outcomes between classes whose learning is managed conventionally and those whose learning is managed using website-based learning tools. The results of the assessment of learning outcomes using learning tools show better value than learning that applies conventional methods. The website-based learning tool developed is not specifically for online learning only, because this development is carried out so that learning management can be comprehensively prepared by teachers and students can also use the learning tool sequentially according to the education and learning tools that should be implemented.

V. CONCLUSION

Based on the results of the research, it is known that the development of learning is in the form of making learning tools that include managing learning components based on a website. All learning components are integrated and prepared online, starting from student biodata, schedules for the series of lessons to be given, lesson materials, exercises and questions along with the results of learning assessments. The learning tools developed are online media that summarize and manage online learning that can be used in face-to-face direct learning or online learning. Based on the results of the effectiveness test, there are differences in learning outcomes between classes whose learning is managed conventionally and those whose learning is managed using website-based learning tools. The results of the assessment of learning outcomes using learning tools show better value than learning that applies conventional methods.

As the research concludes, there are several suggestions that need to be considered when using this learning tool. The development of website-based learning tools requires the support of computer devices and internet networks, so that the school should prepare these needs, so that the learning process does not experience obstacles. For students, they should convey the obstacles experienced to the school so that the obstacles to support learning with these learning tools can run smoothly.

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