

# INFORMATION AND COMMUNICATION TECHNOLOGY MEDIA MANAGEMENT IN IMPROVING THE QUALITY OF LEARNING IN VOCATIONAL MIDDLE SCHOOL (SMK)

*Journal of Islamic Studies, Vol. 5 No. 1, 2022, pp: 45-54*  
<http://journal.islamicateinstitute.co.id/index.php/jois>  
DOI: <https://doi.org/10.32506/jois.v5i1.723>



**(Case Study at the Jakarta Lektor Foundation Graphic Vocational School and Yadika 4 Tangerang Vocational School)**

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*Received: 3 January 2022 | Accepted: 11 February 2022 | Published: 30 June 2022*

### **Abstract**

Information and Communication Technology (ICT) is currently experiencing very rapid development and has fundamentally brought significant changes in the acceleration and innovation of education. One of them is for the education system, especially distance education learning, namely ICT media management using the Learning Management System (LMS) where the concept is very influential on the quality of education. This is due to many things, including distance education learning (PJJ) with ICT media in the ICT media management system using LMS to improve the quality of learning in Vocational Schools (SMK Graphic Lektor and SMK Yadika 4) which are not maximized and inadequate so that the aim of improving the quality of education is to improve the quality of education. not achieved. This research resulted in a innovation (novalty), namely the development of the concept of an ICT media management model to improve the quality of learning in Vocational Schools which has implications for achieving quality graduates in Vocational Schools so that they are worthy of being recommended in Vocational Schools throughout Jabodetabek.

**Keywords:** *ICT media, descriptive qualitative, PDCA, EKD-CMM, National Education Standards, SMK, LMS, distance education learning model.*

### **INTRODUCTION**

In the context of educational science, what is meant by the notion of quality, in this case only leads to the educational process and the results of education. In the "education process" quality will be closely related to various inputs, such as; teaching materials (affective, cognitive or psychomotor), methodology (varies according to the ability of educators), school infrastructure, support for the administration (administration) and available resources and the creation of conducive conditions

(atmosphere). It is inseparable from classroom support which functions to synchronize various inputs and synergize the availability of components in the interaction (management process) of teaching and learning activities (KBM) both between educators, students and supporting infrastructure in the classroom and outside the classroom, both in the classroom and outside the classroom. curricular and extra-curricular contexts available, both limited to the scope of academic and non-academic substances in situations, atmosphere, conditions and those that support the learning process, all of which are school management.

To support the implementation of a good educational process in a school, a good learning system is also needed. Because in society's opinion, learning is the most important factor when we talk about education. In producing quality learning, good management is needed that can support the achievement of educational goals. Learning that is structured and carried out neatly will also support the achievement of learning objectives, which include improving the quality of the learning media itself. Recognizing the importance of the process of improving the quality of learning media, many parties seek to build quality education through quality education services, curriculum development and evaluation systems, improvement of educational facilities, development and procurement of teaching materials, as well as training for teachers and other education personnel. But in reality these efforts have not been significant enough in improving the quality of education. The quality of educational products will be influenced by the extent to which schools are able to optimally manage all potentials ranging from educational staff, students, learning processes, educational facilities, finances and including their relationship with the community. On this occasion, schools must be able to change the new paradigm of education to be more oriented to the quality of all the activities in it. The form of the activity itself is an effort developed in improving the quality of education.

One form of effort to improve the quality of education is to organize education management through ICT media management. With ICT-based media management in schools, it is possible to reduce obstacles or obstacles in the context of achieving quality education. Meanwhile, one form of education management that is urgent to do is learning management. Learning management is a process of managing, which includes PDCA activities, namely planning, implementing, evaluating and following up activities related to the process of teaching students by involving various factors in it, in order to achieve educational goals. Thus, it can be seen that learning management is an activity to manage the learning process, so that learning management is one part of a series of activities in education management. This will be closely related to the media that will be used in learning, where learning will improve its quality if its implementation is integrated with ICT, especially in schools.

There is no research that discusses ICT-based learning media and there are no SMKs that are able to independently fully implement learning with ICT-based learning media. Based on the constraints as well as the obstacles in Vocational Schools that have been described above by the researcher, of course all of this will disrupt the current learning media management system (in progress, namely conventional/traditional forms of learning) which will have an impact on the quality of school learning (output) and will ultimately result in the quality of graduates (outcomes) that do not match expectations.

Today's computer technology support is unavoidable and undeniable, this is because information technology or known as Information and Communication Technology (ICT) will be able to assist and support the use of learning media to analyze information, evaluate decision alternatives,

communicate and collaborate with others. The teacher includes students and parents and controls a process including elements of other units and many other management systems involved in it. All of this is very fast and can come from anywhere and at any time. Specific assistance needed and supported by ICT-based learning media depends on many factors ranging from the managerial level at which the business process is carried out, and the size of the organization and the various types, situations and conditions and decisions that can be involved in it.

Leading to the quality of learning in education management, then the management of ICT media with LMS using the PJJ learning model to improve the quality of learning promoted by researchers is the main thing that must be processed and completed completely. However, the management of ICT media is not only structured as the provision of new tools or tools but also needs to be interpreted and interpreted as a new paradigm in order to view the future of current education. The media model of information systems based on the latest educational information technology (the era of the industrial revolution 4.0) cannot only be oriented to meeting the needs of vocational school (school) facilities and infrastructure, but by optimizing the quality resources available and those in schools including ICT-based learning which of course relies on the concept of sustainability (sustainability).

This sustainability is very important as the school's efforts to maximize all the potential of SMK to improve the quality of learning. It should be noted that one of the obstacles that are often experienced by educators in learning activities is to determine the learning model that is in accordance with the environmental conditions of teaching and learning activities (Widiastuti 2014: 1). This can happen along with changes in the environment in society which is starting to be diverse and modern-minded. The increasing demands of society on education as well as the advancement of science and technology have made it impossible for education to be managed only with traditional patterns (Danim 2013: 1). The pattern of education must be managed with a complex and integrated pattern and technology-based education is an alternative pattern of education that needs to be tested.

## **METHOD**

This study uses a qualitative research approach where qualitative research as a scientific method is widely used and carried out by various groups of researchers in the social sciences, information technology fields as well as education sciences. A number of reasons were also put forward by several researchers, the point being that qualitative research can also enrich the results of quantitative research. Qualitative research is carried out to build knowledge through the understanding and findings of researchers.

## **RESULT AND DISCUSSION**

### **1. Planning of ICT media to improve the quality of learning.**

For making ICT media through LMS using the Moodle application with the PJJ learning model and applying ideas and innovations as well as changing demands that are combined between concepts and methods by a) planning to create an integration framework between PDCA concepts (according to the theory written in chapter 2 which will be applied to chapter 2). 4 this is about PDCA), Education Quality and National Education Standards (SNP) (according to the policy basis from the government as written in chapter 2 which will be applied in this chapter 4 regarding SNP), namely Process

Standards; b) planning the application of the PDCA concept in Information System Modeling with the EKD-CMM method (according to the theory written in chapter 2 which will be applied in chapter 4 about EKD-CMM); c) planning activity diagrams for improving the quality of education from the Process Standard points; d) planning to make a business process model of information systems for the three PJJ learning models (according to the theory written in chapter 2 which will be applied in chapter 4 about PJJ Learning); e) planning a model of ICT media management information system architecture using LMS; and f) planning a hypothetical model of management information systems from the ICT media PJJ learning model on the LMS (according to the theory written in chapter 2 which will be applied in chapter 4 of this on LMS). Thus, the Learning Management System (LMS) management modeling was formed in order to achieve improving the quality of learning.

## **2. Implementation of ICT media through to improve the quality of learning.**

Implementing the creation of ICT media through LMS with the Moodle application using the PJJ learning model and applying ideas and innovations as well as changing demands that are combined between concepts and methods by a) planning to create an integration framework between the PDCA concepts (according to the theory written in chapter 2 which will be applied to chapter 2 4 this is about PDCA), Education Quality and National Education Standards (SNP) (according to the policy basis from the government written in chapter 2 which will be applied in this chapter 4 about SNP) namely Process Standards, b) planning the application of the PDCA concept in Information System Modeling using the EKD-CMM method (according to the theory written in chapter 2 which will be applied in chapter 4 of this about EKD-CMM), c) planning activity diagrams for improving the quality of education from Process Standard points, d) planning to create a business process model for information systems for three PJJ learning models (according to the theory written in chapter 2 which will be applied in and chapter 4 is about PJJ Learning), e) planning a model of ICT media management information system architecture using LMS, and f) planning a hypothetical model of management information system from the ICT media PJJ learning model on LMS (according to the theory written in chapter 2 which will be applied). in chapter 4 is about LMS). Thus, the Learning Management System (LMS) management modeling was formed in order to achieve improving the quality of learning.

## **3. Evaluation of ICT media to improve the quality of learning.**

Evaluation of the results of implementing ICT media management using LMS with the Moodle application using the PJJ learning model as well as ideas and innovations including the demands for change combined between concepts and methods by a) planning to create an integration framework between PDCA concepts (according to the theory written in chapter 2 which will be applied to this chapter 4 is about PDCA), Quality of Education and National Education Standards (SNP) (according to the policy basis from the government written in chapter 2 which will be applied in this chapter 4 about SNP) namely Process Standards, b) planning the application of the PDCA concept in System Modeling Information using the EKD-CMM method (according to the theory written in chapter 2 which will be applied in chapter 4 about EKD-CMM), c) planning activity diagrams for improving the quality of education from the Process Standard points, d) planning to create a business process model for information systems for the three PJJ learning models (according to the theory written in chapter 2 which will be applied in chapter 4 on PJJ Learning), e) planning an architectural model of ICT media management information system using LMS, and f) planning a hypothetical model of ICT media management information system on LMS (according to the theory written in chapter 2 which will be

applied in chapter 4 it's about LMS) . Thus, ICT media management modeling is formed using the Learning Management System (LMS) in order to achieve improving the quality of learning.

#### **4. Follow-up on ICT media to improve the quality of learning.**

Follow-up on the results of the evaluation of the implementation of ICT media management using LMS with the Moodle application of the PJJ learning model with ideas and innovations as well as changing demands combined between concepts and methods by a) planning to create an integration framework between the PDCA concepts (according to the theory written in chapter 2 which will be discussed later). applied in chapter 4 on PDCA), Quality of Education and National Education Standards (SNP) (according to the policy basis from the government written in chapter 2 which will be applied in chapter 4 on NES), namely Process Standards; b) planning the application of the PDCA concept in Information System Modeling with the EKD-CMM method (according to the theory written in chapter 2 which will be applied in chapter 4 about EKD-CMM); c) planning activity diagrams for improving the quality of education from the Process Standard points; d) planning to make a business process model of information systems for the three PJJ learning models (according to the theory written in chapter 2 which will be applied in chapter 4 about PJJ Learning); e) planning a model of ICT media management information system architecture using LMS; and f) planning a hypothetical model of management information systems from the ICT media PJJ learning model on the LMS (according to the theory written in chapter 2 which will be applied in chapter 4 of this on LMS). Thus, ICT media management modeling is formed using the Learning Management System (LMS) in order to achieve improving the quality of learning.

#### **5. Problems encountered in the management of ICT media to improve the quality of learning.**

The discovery of the absence of making ICT media management using LMS with Moodle applications in order to achieve improving the quality of learning. An in-depth discussion regarding the design of ICT media in SMK is needed, namely:

- a. The use of ICT media is not uniform and inadequate and has poor quality when used by students and teachers as teachers, including ICT media which need to be adjusted to the administrative curriculum in both vocational schools.
- b. Incomplete and non-uniform learning media used by students and teachers in both vocational schools, in addition to the need for administrative adjustments to the curriculum.
- c. The network is incomplete and inadequate for the needs and implementation of a series of infrastructure in the Learning Management System (LMS) application in both vocational schools.
- d. Inadequate internet in both SMKs that have collaborated with internet service providers (Internet Service Providers / ISPs) including operators as telephone companies that need to be re-controlled.
- e. Costs that are considered in equipping and purchasing ICT devices, ICT media, learning media in order to design appropriate and adequate ICT media management in Vocational Schools.
- f. Currently available electricity in vocational schools is also a consideration for the smooth implementation of making ICT media management plans using an LMS with the Moodle application.

g. The age and education of teachers are also discussed in this ICT media design considering that teachers are a factor in the success of learning in order to achieve quality learning. Teachers who are above 46 years of age are dominant in both vocational schools and teacher education, which on average is not a computer background.

h. For learning media that will be used by teachers and vocational students who still do not have adequate specifications, there will be problems and obstacles in their use..

## **6. Solutions to ICT media management problems to improve the quality of learning**

The solution to the problem of ICT media management to improve the quality of learning using LMS with the Moodle application is to provide solutions to problems in the implementation of the following ICT media management designs:

a. Uniform ICT media that will be held and must be adequate and of good quality to be used by students and teachers as teachers, including ICT media which need to be adjusted to the administrative curriculum in both vocational schools.

b. Completing and uniform learning media that will be used by students and teachers in both vocational schools, in addition to the need for administrative adjustments to the curriculum.

c. Completing existing and inadequate networks for the needs and implementation of a series of infrastructure in the Learning Management System (LMS) application in both SMKs.

d. Checking the Internet in both Vocational Schools to ensure that it is adequate and also the cooperation between Vocational Schools and internet service providers (Internet Service Providers / ISPs) including operators as telephone companies that need to be re-controlled.

e. Recalculate the costs that will be spent with the need to complete ICT tools, ICT media, learning media in order to design appropriate and adequate ICT media management for the design of ICT media in both vocational schools.

f. Provide seminars and workshops for all regardless of age and teacher education, who are diverse and do not have a computer background so that they do not become obstacles or problems as well as in implementing ICT media management designs in Vocational Schools.

g. Provide direction and advice so that learning media that will be used by teachers and vocational students who still do not have adequate specifications to immediately adjust so that obstacles and problems in learning with ICT media management through LMS run smoothly.

h. Electricity in SMK is not sufficient at this time to be immediately adjusted to the needs for the smooth implementation of learning with ICT media management using an LMS with the Moodle application.

## **7. Triangulation**

This triangulation aims to compare interview data in the form of examining data such as documents and information (data) with comparisons of data from different sources to anticipate incomplete, lost or damaged data and whether the data and documents obtained are mutually supportive. In addition, it is also necessary to look for other facts from direct observations during the implementation of

learning such as facilities and infrastructure, namely using ICT media and learning media which then compares with information or documents in the document storage area. The following are two things that support the purpose of triangulation that the researchers did to Graphic Lektor Vocational School and Yadika 4 Vocational School which were used as case studies by researchers. Data or information and documents submitted to researchers, in this case are not archived directly anymore considering that they will be double documents except for information or data related to discussions which are needed as comparison material.

a. Peer checks through discussion

The researcher held discussions with several heads of different study programs and different administrative staff regarding research questions packaged in the form of interview guidelines, observation guidelines and documentation guidelines on PJJ learning management in schools in different study programs, especially the problems that arise. faced by each learning implementation in order to compare the data (information) obtained and the hardcopy and softcopy documents that exist in the SMK study program.

The results of the peer examination through discussions conducted by researchers to these two vocational schools provide almost the same facts, both regarding existing problems and supporting hardcopy and softcopy documents used in the implementation of PJJ learning management. This is because the sources of data, information and documents indicated (shown) by researchers through colleagues in study programs, all procedures must go through a leadership policy which in this case is the principal as the person in charge of implementing PJJ learning management in SMK.

b. Negative case analysis

In this case the researcher collects evidence in the form of examples of hardcopy and softcopy documents owned by researchers at the time of the implementation of the PJJ learning process obtained through interview guidelines, observation guidelines and the same documentation guidelines for the two SMKs through administrative staff (admin) which incidentally do not match. management and evidence of problems that occur (arise) during the implementation of learning such as the implementation work pattern for comparison of researchers with implementation guidance documents and supporting documents including accreditation documents.

The results of the negative case analysis are that there are instructional documents that are neglected by the teacher (HR) such as not properly controlled teaching documents, tucked documents, missing documents, busyness of teachers, busy finding replacements if lecturers do not teach, schedules that are shifted (rescheduled) by teachers, the teacher is unable to attend due to personal matters, illness, permission, leave and others so that the reporting and running of the learning system causes system delays that should be continuous in the implementation of PJJ learning management in schools. In addition, cases were found such as the incompatibility of the learning agenda with the learning program unit which had an impact on the deviation of teaching materials, not achieving teaching materials. The absence of integrated application support has the effect of slowing down the need for information on these problematic situations and other conditions during implementation that are not realized by teachers and the head of study programs to the principal, which if left unchecked will reduce the quality of learning which ultimately has an impact on the quality of graduates from SMK.

c. Reference adequacy

Researchers have collected many references, both from literature (books), journals and the internet in accordance with the theoretical sources owned by researchers in this writing and also the need for data sources on ICT media management through LMS and PJJ learning models in schools, especially vocational schools. The researcher re-checked the theory on the source of the data obtained by comparing the results of interviews with the results of observations (observations) and available documentation in the form of documents and data (information) in each Vocational School.

The result of the adequacy of the reference in question is the adequacy in terms of use by researchers for these two SMKs which have a match between theory from references, journals and the internet with existing data sources in ICT media management research through LMS and PJJ learning models. All methods, concepts, innovations, ideas, information and communication technology (ICT), government regulations including laws and other theoretical foundations in the research are in accordance with the implementation of data and documents used in the implementation of ICT media management through LMS and learning models PJJ.

The results of the triangulation described by the researcher are technical triangulation and source triangulation with structured, semi-structured and unstructured observations carried out for the validity of the data in the description section providing a clear picture of peer examination through discussions that open up the researcher's thoughts that were not thought of at the time of the interview with the Deputy The principal (Vice Principal) of the curriculum includes comparing the information and documents available to researchers with information and documents stored on the administrative and departmental shelves so as to provide the interpretation of additional information as input for researchers in the writing of this dissertation.

As for the negative case analysis, the researcher has succeeded in interpreting the case findings in the two vocational schools which will be no different from the initial research on the incidence of cases as described in the description above, both when starting preparations, during the implementation of online PJJ learning. by the teachers. The last is about the adequacy of references, which researchers interpret by documenting and comparing many references (books), journals and materials from the internet used in this study.

This is considering that there are many sources of data and information that need to be conveyed in writing and selected by researchers between the reality in the field and existing theories. As has been described in the description and from the results of the triangulation test above, the researcher interprets the three SMKs to provide information in the form of answers about the description of the situation in schools, namely about archives and documentation, explanations of the advantages and disadvantages of the system (procedures), problems (negative cases) when implementation of PJJ learning, supporting documents (hardcopy and softcopy) that are incomplete or tucked away and are not neatly arranged in accordance with the position and as appropriate, as well as other document attachments as supporting evidence of management of PJJ learning implementation in schools and also direct field surveys (observation). ) all of which can be said to be almost the same case, only the format (layout/display) is different and several other things are different, especially in terms of document completeness (filling system) as well as several advantages from the network side and the use of ICT media such as HP, laptop and others and learning media such as application programs (google apps, Google doc., Ms.office and software and others).

## **CONCLUSION**

ICT media through a web-based Learning Management System (LMS) platform is a learning media using open source applications available on the internet such as Moodle which is one of the learning media for Distance Education (PJJ) learning models both offline, online and blended using ICT media where PJJ learning is a consideration and government policy (in this case the Ministry of Education and Culture) during the Covid-19 pandemic to enforce PJJ learning throughout Indonesia, especially online so that it can be carried out properly to help overcome problems or obstacles faced by teachers, parents of students, and students in learning at school.

In general, online PJJ learning has only been carried out at the Graphic Lektur Vocational School in Jakarta and Yadika 4 Tangerang Vocational School without LMS learning media, but to be able to improve the quality of learning so that the quality of graduates is achieved, so far, no one has proven it. This problem is because the application of online PJJ learning in schools only focuses on learning, but the problems and obstacles faced by teachers, parents and students have not been accommodated by Vocational Schools, so that the goals expected by the government are regulated in Permendikbud RI Number 28 of 2016 concerning the Quality Assurance System for Elementary and Secondary Education Chapter III article 7 paragraph (3) has not been implemented according to expectations where the goal has not been achieved.

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