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## Management of learning based information and communication technology in Christian vocational school 2 tomohon

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### Abstract

The development of Information and Communication Technology has a major influence in the world of education. Especially during this Covid-19 pandemic where schools are required to inevitably adapt to technological advances and run learning programs by utilizing information and communication technology. This study aims to describe the planning, implementation and evaluation of information and communication technology-based learning. This research is a type of qualitative research with research procedures that produce descriptive data. The method used by researchers for data collection is observation, interviews and documentation studies. The primary data sources in this study were 8 people, namely the Principal, Deputy Principal and teachers. After the data is collected then the data is analyzed using the data reduction method and drawing conclusions. The results showed that in the learning planning stage, the school determines the curriculum and the teacher makes annual plans, semester plans and lesson plans. In planning this lesson, it has utilized information and communication technology as a reference source for learning planning. The implementation stage of learning has also utilized information and communication technology to its full potential. This technology is used as a learning resource and learning media. In the evaluation phase of learning carried out by the teacher on student learning outcomes and also the principal directly controls. This stage is also inseparable from the role of information and communication technology as a medium for evaluating and monitoring learning.

**Keywords:** Learning management, information and communication technology

### 1. Introduction

World civilization continues to change from day to day. These changes are in line with the development of science and technology. The development of this technology has fulfilled all lines of human life. Therefore, humans are greatly helped to do things quickly, efficiently and maximally. For example in the field of transportation and communication, previously a distance of 500 KM could be covered in 3 months by foot, now with the presence of a car the distance can be covered in only 12 hours or only 1 hour by airplane.

The influence of the development of information and communication technology on the world of education is very large. The paradigm in the world of education has also undergone changes, namely previously in the teacher centered learning process (teacher-centered learning), now it becomes student centered (student-centered learning). In the old learning process, the teacher becomes a source of information for students. However, currently the teacher centered paradigm has changed so that students can learn independently wherever and whenever without having to be accompanied by a teacher.

In addition, changes that occur in the learning process related to information and communication technology, namely previously learning carried out in schools was in the form of conventional and now towards modern learning or based on technological developments. In line with this, the world of education requires innovation to always adapt to the development of information and communication technology. One of the efforts to remain able to adapt to the world of technology is that the educational process must utilize information and communication technology in learning.

Responding to the issue of the progress of information and communication technology that is currently developing, the Ministry of National Education has responded by including a learning curriculum that prioritizes information and communication technology.

This policy provides great benefits for students in collaborating in the field of information and communication technology. Therefore, schools as educational institutions under the Ministry of National Education must also utilize technology in the teaching and learning process. This requires management functions. Management of learning in schools can be defined as an effort to manage the learning environment intentionally so that someone learns certain behaviors under certain conditions. Thus, learning management is limited to one element of school management, while education management covers all components of the education system, and can even reach a wider and larger system. So the learning process is a process in which there is interaction between teachers and students and reciprocal communication that takes place in educational situations to achieve learning goals. In the learning management process, we will see how learning management in educational institutions runs in an orderly, smooth and integrated manner with information and communication technology so that it can achieve goals effectively and efficiently.

One form of utilization of Information and Communication Technology in education is the use of the internet in the learning process. One of the goals of using the internet is to overcome the limitations of learning resources that have only been provided by schools and libraries. With the internet everything that happens in the world can be seen and known right away. That way, the purpose of learning is to develop the creative thinking of students can be achieved. The obstacles experienced by schools to be able to implement information and communication technology-based learning are that schools do not yet have adequate infrastructure, few human resources in the field of technology, the dense curriculum load that must be met, the number of sites that can threaten the morale of students. The many obstacles faced by schools need attention from various parties, especially because online learning that is currently running is very dependent on the use of information and communication technology. In addition, there is a need for careful preparation and improvement in the education component, both teaching staff, curriculum, facilities and infrastructure, learning, management and other components. According to observations at SMK Kristen 2 Tomohon, researchers found that the online information and communication technology-based learning process is currently running well. Although according to interviews with school leaders, the learning that is currently running is not easy to implement. At the beginning of the learning implementation process, there were many obstacles and problems that occurred in the learning process, namely there were still many teachers who were limited in terms of access or use of their communication tools. Because not all teachers are able to use or utilize the technology they have. For teachers who follow technological developments, of course this is easy, but for teachers who are technologically stuttering, of course this becomes an obstacle. Whereas in the learning process based on information and communication technology really needs creativity from the teacher. Creativity is not only in terms of making interesting learning content, but also in utilizing the media used. This means that the teacher must be able to create the content of the subject matter so that it is easily digested and understood by students by utilizing existing media.

The principal of SMK Kristen 2 Tomohon added in his interview that the curriculum used in the school is project-based learning. So in every learning process as a result (output) of learning it is a project from students either individually or in groups. The resulting project, of course, relates to the majors followed by each student. Information and communication technology is very influential and helps in creating and producing the project. One example is the results of student-made projects presented at schools and marketed through social media platforms. This shows that in learning at SMK Kristen 2 Tomohon, the use of information and communication technology has become a must, one other reason is because current learning in schools is via online which requires the use of information and communication technology.

The reason the researcher chose SMK Kristen 2 Tomohon as the research site is because SMK Kristen 2 Tomohon is a Vocational High School Center of Excellence (SMK PK) where the school becomes a reference school in the vocational development program with certain expertise competencies in improving quality and performance as well as through partnerships and alignment with the business world. The world of industry and also the world of work. In addition, SMK Kristen 2 Tomohon also in its management and learning system has implemented information and communication technology. Based on this explanation, researchers are interested in conducting in-depth research on the implementation of information and communication technology-based learning in schools.

The purpose of this thesis research is to identify, analyze and describe:

1. The information and communication technology-based learning planning process at SMK Kristen 2 Tomohon.
2. The process of implementing information and communication technology-based learning at SMK Kristen 2 Tomohon
3. The process of evaluating and monitoring information and communication technology-based learning at SMK Kristen 2 Tomohon.

## 2. Literature Review

**2.1 Concept of learning management:** Learning management is all efforts to regulate the learning process in order to achieve an effective and efficient learning process. Management of learning programs is often referred to as curriculum and learning management. Learning management can be distinguished between the notion of management in the broad sense of the management of a series of processes of managing learning activities carried out by students, where this begins with the process of planning, organizing, directing and evaluating in the form of assessment. Meanwhile, learning management in a narrow sense is an activity process that requires a teacher or educator management during the interaction process with students or students in learning (Zainal, 2011:31) <sup>[1]</sup>.

According to Sutikno (2012:10) <sup>[16]</sup>, learning management is all efforts to regulate the learning process in order to achieve an effective and efficient learning process. Basically learning management is the regulation of all learning activities, both learning activities categorized in the core and supporting curriculum, based on the curriculum that has been previously determined by the Ministry of National Education.

From some of the definitions above, it can be concluded that learning management is an effort towards achieving goals through the activities of other people, or making things done by other people in the form of increasing interest, attention, pleasure and student backgrounds by expanding the scope of activities and leading for future lifestyle development.

The implementation of learning is the result of the integration of several components that have their respective functions to achieve the expected goals. Rusman (2011:41)<sup>[18]</sup> reveals that the learning components can be described as follows:

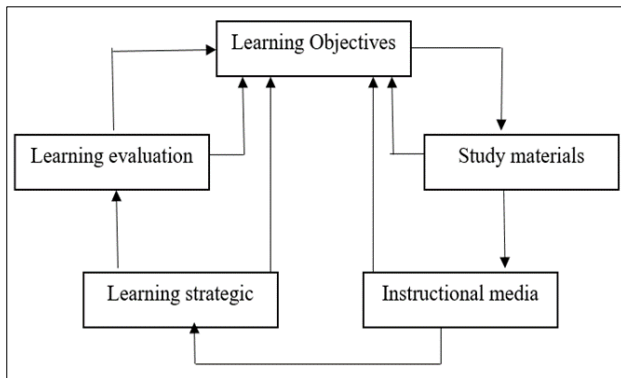


Fig 1: Relationship between Learning Components

According to Wahidpure (2010:23), the functions of learning management are:

- a. Organizing function in the learning process. The organizational function in the desired learning process is in determining the duties, authorities, fields of study and responsibilities of each must be in accordance with their expertise in accordance with the knowledge they have.
- b. The function of motivation in the learning process. Motivating or motivating is a process of how to foster enthusiasm in teachers and employees to be able to work and foster them in carrying out plans so that they are more focused as expected. In the context of the learning process in schools, the task of motivation needs to be carried out by the principal together with the teacher or educator. However, in learning, a student needs to carry out learning activities to achieve the planned learning objectives. In this regard, the role of the principal of course also has an effect on moving teachers and educators in optimizing their function as managers in the classroom.
- c. Facilitation function in the learning process. The facilitation function includes how a leader's efforts in developing creative ideas are owned by his co-workers. In the learning process, the facilities provided such as learning facilities in the form of learning media, teaching aids and other things that can support the learning process run well, so that the infrastructure and teaching aids can support and facilitate the learning process. The availability of existing facilities is very helpful in achieving learning objectives, especially the media used in accordance with the learning materials.
- d. Supervision function in the learning process. Supervision is carried out so that it can be useful for members of an organization in carrying out something that has been planned by reducing all information from the results of analysis and evaluation and functioning it to control an organization that will be managed.

Supervision in the learning process is carried out by a person in charge in this case is the principal. Supervision is carried out on all activities in the learning process in each class and also on all related parties, as well as providing services for the needs of the intensive learning process. For this reason, it is necessary to carry out supervision where the teacher is tasked with collecting, analyzing and evaluating information on learning activities and using it so that it is controlled properly.

## 2.2 Concept of Information and Communication Technology in Education

Definition of information and communication technology is as follows:

1. Technology (technology). Technology is knowledge of procedures for using technical devices (both computer hardware and software) used by humans to solve problems so that the equipment used can work efficiently, easily and well. (Fauziah and Hedwig, 2010:3)<sup>[4]</sup>
2. Information (Information). Information is the result of data processing activities that are presented in such a way and provide a more meaningful form of an event and give meaning to its users. Or information can be interpreted as a message that is received and understood its meaning for the recipient of the information. (Fauziah and Hedwig, 2010:3)<sup>[4]</sup>
3. Communication (Communication). Communication is all activities related to the process of transferring the flow and sending of information to the recipient of the message, both verbally and in writing using transmission media. (Fauziah and Hedwig, 2010:3)<sup>[4]</sup>

The information technology component is a sub-system formed in connection with the use of information technology. According to Seesar (2010: 6-8)<sup>[21]</sup> information technology consists of 3 (three) main components, namely: hardware, software, brainware.

## 3. Research Method

This study uses a qualitative approach with research procedures that produce descriptive data in the form of written words. Thus, this research report will contain data excerpts to provide an overview of its presentation. The research process in question includes observing people in everyday life, interacting with them and trying to understand their language and interpretation of the world around them. For that researchers have to go into the field with a long enough time.

The main purpose of qualitative research is to describe (to describe), understand (to understand) and explain (to explain) about a unique phenomenon in depth and complete with special procedures and techniques according to the characteristics of qualitative research, so as to produce a grounded theory. Namely the theory that is built based on the data obtained during the research. (Arifin, 2011: 143)<sup>[11]</sup>. The use of qualitative research in this study is based on the following considerations:

1. Adapting qualitative methods is easier when dealing with multiple realities.
2. This approach teaches directly the nature of the relationship between the researcher and the research subject.

3. This approach is more sensitive and more adaptable to many shared sharpening of the patterns encountered. (Moleong, 2002: 5)

This research was conducted at SMK Kristen 2 Tomohon which is located on Jalan Kampus Talete Dua, Kec. Central Tomohon, Tomohon City, North Sulawesi. Website: <http://www.smkkr2tomohon.sch.id/>. Research subjects are subjects that are intended to be studied by researchers. In this study, the research subjects were the principal and all existing human resources. And the object of research is information and communication technology-based learning management at SMK Kristen 2 Tomohon. Informants are people who are used to provide information about the situation and conditions of the research setting (Moleong, 2002: 90). Determination of research subjects or informants selected based on the first subject as a key informant, namely informants based on certain considerations qualify as informants who are very familiar with the aspects of the problems studied. The subjects as informants in this study were all related and had the information needed in the research, namely the Principal, Deputy Principal for Curriculum, Deputy Principal for the Field, Deputy Principal for Student Affairs, Head of the Department of Computer Network and Telecommunications Engineering, Head of the Department Health Services, Chair of the Department of Office Management and Business Services, Chair of the Department of Online Business and Marketing, and Master of the Clinical and Community Pharmacy program of expertise. For secondary data sources in the form of documents related to research such as school profile documents, evaluation documents and others that are considered related to technology and information-based learning. The key informant in this research is the Principal of SMK Kristen 2 Tomohon.

The interactive analysis model (component of analysis: Interactive model) can be described as follows:

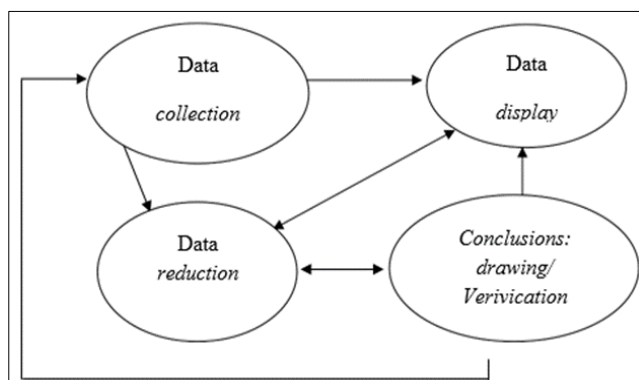


Fig 2: Miles and Huberman's Interactive Analysis Model

## 4. Result and Discussion

### 4.1 Description of the research site

Christian Vocational High School 2 Tomohon is a private school under the auspices of the GMIM Dr. Foundation. A. Z. R. Wenas in Education and Schooling. Location of Christian Vocational High School 2 Tomohon on Jl. Kampus (Kuranga), Talete Dua, Central Tomohon District, Tomohon City, North Sulawesi. Christian Vocational School 2 Tomohon as a Center of Excellence Vocational School has an A Accreditation based on certificate 032/BAN-SM/SK/2019.

The stages to realize the mission of implementing quality management in an accountable, transparent digital-based manner as well as providing integrated vocational services for the community, namely, implementing new student admissions according to Standard Operating Procedures (SOP), implementing work-based learning, fulfilling quality according to Graduate Competency Standards (SKL) and according to the KKNI level, carry out institutional development of Center of Excellence Vocational Schools, increase public trust, create independent schools and provide access to administrative services in an efficient, effective, accountable and transparent manner.

## 4.2 Research Findings

### 4.2.1 Information and Communication Technology Based Learning Planning

The results of the study stated that learning management based on information and communication technology begins with learning planning. The first stage made by the school was choosing the theme of the project to strengthen the Pancasila student profile and work culture. The choice of this theme is in accordance with the curriculum used by the school, namely the Independent Learning Curriculum. The curriculum used by the previous school was the 2017 Revised K13 Education Unit Level Curriculum, then in the early days of the Covid-19 pandemic the curriculum used was the School Operational Curriculum or abbreviated as KOS. This KOS is used in schools because Christian Vocational School 2 Tomohon is a Central Vocational School of Excellence, where for the Center of Excellence school no longer uses KTSP. The School Operational Curriculum became the forerunner to the use of the Independent Curriculum used in schools today. In accordance with the researcher's interview with the Deputy Principal for Curriculum at SMK Kristen 2 Tomohon.

The Ministry of Education and Culture determines the project theme for strengthening the Pancasila student profile and work culture for each strengthening activity implemented in the vocational education unit. For the 2021/2022 academic year, there are 9 (nine) themes that were developed based on the priority issues stated in the 2022-2035 National Education Roadmap and the needs of the world of work. The 9 themes of the project to strengthen the profile of Pancasila students and work culture are: 1) sustainable lifestyle, 2) local wisdom, 3) Bhinneka Tunggal Ika, 4) Build the Spirit and Body, 5) Voice of Democracy, 6) engineering and technology to build the Unitary State of the Republic of Indonesia, 7) Entrepreneurship, 8) Work, 9) work culture. Themes 1-7 apply to all education units and themes 8-9 are typical themes for SMK.

### 4.2.2 Implementation of Information and Communication Technology-Based Learning

The results obtained by the researchers found that at the beginning of learning in class, the teacher gave problems or questions that were in accordance with the needs or objectives of a particular skill program, then from the problems or questions that existed, students discussed the problem. Students can determine what strategies will be used to solve problems, what products will be produced and how to produce these products.

The teacher involves students in finding sources of information about the project that has been planned. Activities carried out by students to find this information are



reading books or looking for other references via the internet. In this implementation, it can be seen that the learning process requires internet access and also technological tools as a medium for exploration. This shows that the learning process utilizes information and communication technology in finding reference sources. The following is the answer from the Principal of the interview with the author.

"For today's learning, information and communication technology is of course very much needed. In the past, it was forbidden to hold gadgets in class, now students can use existing gadgets but remain under supervision. The use of mobile phones is to help find information about learning. Because at this time learning is no longer oriented to the teacher and students must be active in their learning. So students can learn independently through their gadgets. Of course with a supervisor. The teacher remains in the classroom and supervises the learning process."

At the end of the lesson, the teacher draws conclusions by asking questions with students about the conclusions of the material being studied. After that the teacher conducts an assessment of learning. Assessment is carried out at the end of the learning material by providing an evaluation, both orally and in writing. Teachers also reflect on learning by providing opportunities for students to ask questions and take positive messages from the material that has been studied. The teacher provides feedback on the process and student learning outcomes by providing rewards and punishments. In addition, the teacher provides follow-up learning by giving homework. The teacher then conveys the lesson plan that will be carried out at the next meeting.

#### **4.2.3 Evaluation of information and communication technology based learning**

Learning evaluation is carried out by assessing the results or products made and developed by students. The purpose of the assessment of student learning outcomes is to measure student success, measure student abilities and evaluate learning process materials. The form of assessment that is assessed in this evaluation process includes three aspects, namely cognitive, affective and psychomotor. This is shown by the results of an interview with the Principal of SMK Kristen 2 Tomohon. "For assessment, we tend to assess students' soft skills. Because the hard skills of students are easy to form. But for personality, manners, honesty are very important, both at school now and when you graduate from school and start working in companies or other agencies."

The evaluation and monitoring stages can also be carried out by school leaders, in this case the school principal. With CCTV in all school practice rooms, and a CCTV control center located in the principal's room, the principal can monitor and control the course of learning. If there is learning that is not in accordance with the planned program, the principal can intervene directly.

From the research above, it can be concluded that the learning evaluation process at SMK Kristen 2 Tomohon utilizes information and communication technology as a medium to share and present the results or outputs of learning, also in terms of monitoring learning programs which are also carried out through information and communication technology media.

### **4.3 Research result**

#### **4.3.1 Information and Communication Technology Based Learning Planning**

Planning is a number of pre-determined activities to be carried out at a certain period in order to achieve the stated goals. Planning is also a process of systematically preparing activities that will be carried out to achieve certain goals (Usman, 2006:48). In the context of learning, planning is defined as the process of compiling subject matter, the use of teaching media, the use of learning methods, in an allocation of time carried out in one semester to achieve the specified goals. The initial stage is the school chooses a theme according to the themes that are already available in the Merdeka Learning curriculum. The theme chosen to be used during the current semester is chosen according to the needs of the school, according to the circumstances and conditions found in the school. After selecting the theme for the Pancasila student profile strengthening project and the work culture selected, the next activity is planning covering what the teacher will do, when, and how to do it in the implementation of learning. The learning plans are written in the Annual Program, Semester Program and learning implementation plans or abbreviated as RPP.

Information and communication technology-based learning planning at SMK Kristen 2 Tomohon is carried out by planning everything needed in learning. The making of learning plans is carried out by each teacher according to the subject or program of expertise that is their responsibility. The lesson plans made by the teacher are contained in the Annual Program, Semester Program and lesson plans. The lesson plans made are of course adapted to the curriculum used in schools which consists of subject identities, learning activities and learning tools and resources as well as assessments.

In this stage of making lesson plans, apart from receiving training in making lesson plans for teachers, on the Merdeka Mengajar platform there are also various references to teaching materials to support teaching and learning activities. These include teaching materials, teaching modules, project modules or test books. The teacher also looks for other references in making this lesson plan through the use of gadgets that have internet access. After the Annual Program, Semester Program and lesson plans are made, the lesson plans are then sent to the school leadership to review the lesson plans that have been made. The process of sending this document is via email or electronic mail or via whatsapp and telegram applications.

#### **4.3.2 Implementation of Information and Communication Technology-Based Learning**

Implementation of learning is the implementation of planning implementation of learning. The course of the learning process is determined by the teacher with an educational atmosphere so that students can learn with enthusiasm and optimize their abilities well. The teacher's role is very important in moving and motivating students to do learning activities. The teacher does not only try to attract attention according to the material being studied.

Implementation of learning is a learning process in the classroom which is the core of activities at school. So the implementation of learning is the interaction of teachers

with students in order to convey teaching materials to students to achieve these teaching goals. This implementation function contains various management and leadership activities. The learning carried out by the teacher in the classroom and the management of students. Therefore, in terms of the implementation of learning includes two things, namely, classroom management and students, and teacher management (Zainal, 2013:48-49)

The methods used by the teacher in the learning process are discussion, question and answer, demonstration, exploration and so on. All of these methods can take advantage of the use of information and communication technology. Teachers can use various learning media based on information and communication technology to teach the material. Examples include the use of video tutorials, both those made by teachers and video tutorials via the internet. For other methods, teachers and students can look for references from various sources on the internet.

For accounting and finance majors, learning practice institutions in schools, one example is the Accounting Cycle in Trading Companies. The school has prepared an accounting computer laboratory where there are computers, LCDs and projectors also equipped with test papers, worksheets and so on to make it easier for students to learn. In the Department of Health Services, one of the practices of this skill program is caring for patients. The school provides a practice lab for this nursing department, where the room is shaped like a room in a hospital. There are various equipment that we can find in the hospital. The school provides facilities such as several beds that meet nursing practice standards, pelvic pantoms, human body pantomimes, sterilizers, infusion poles, wheelchairs and so on that can support student learning practices.

#### 4.3.3 Evaluation of Information and Communication Technology Based Learning

Teachers need to supervise the program that has been implemented, whether it has been successful in accordance with the plans that have been made previously. The success or failure of the learning process in achieving its goals can be seen from the evaluation of the resulting output. So that teachers need to conduct an evaluation of information and communication technology-based learning. The information and communication technology-based learning evaluation system carried out at SMK Kristen 2 Tomohon is through the assessment of student learning outcomes.

The results showed that the program carried out by the teacher in the context of assessing learning outcomes was the main thing about the personality of the student, how the student behaved, manners, discipline and honesty. Because the main output in school learning is the character of the students. Then the assessment is also the tasks given by the teacher. In giving this assignment, the teacher utilizes the use of information and communication technology, namely Google Classroom and also as a medium, namely whats app and telegram, where the teacher sends assignment links to students via conversations in whats app groups or telegrams, and students collect their assignments via the link provided. namely Google Classroom. The tasks given by the teacher are also available on the Merdeka Mengajar platform created by the Ministry of Education and Culture. In this platform there are various examples of questions that can be a reference for teachers in giving assignments.

## 5. Conclusion

Based on the results of research and discussion in the previous chapter, the following conclusions can be drawn:

1. This learning plan applies the principles of information and communication technology as seen from the components of media and learning resources that will be used in learning, namely the use of the internet. In preparing the lesson plans the teacher looks for references from various sources to complete the material, the teacher also plans learning in the form of online and offline. This shows that the learning planning process in schools is a learning planning based on information and communication technology.
2. Information and communication technology-based learning is carried out in the learning process both online and offline. In the online learning process, teachers and students use platforms for video conferencing. An example of the platform used is Google Meet. Even in offline learning, information and communication technology is still used, namely by the teacher showing learning tutorial videos, both those made by the teacher and references via the internet.
3. The learning evaluation process is carried out regarding the assessment of student learning outcomes. The program carried out is to assess the affective, cognitive and psychomotor aspects. The tasks given by the teacher utilize information and communication technology as a medium. That is through whats app and telegram, and using google classroom as a medium for collecting assignments.
4. Schools provide support for implementing information and communication technology-based learning, namely in several ways, including training for teachers on the use of information and communication technology, providing free internet access that can be used by all elements of the school, providing technological facilities in classrooms and classrooms. practice at school and so on.

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