

Application of ICT-Based New Instructional Paradigm Used by Teachers

Sa'imah¹

¹SMA Negeri 2 Kayuagung, Ogan Komering Ilir, Indonesia

Corresponding author e-mail: sondimah@gmail.com

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Abstract: The purpose of this study is to describe instructors' abilities to apply a new ICT-based learning paradigm. Data gathering methods include interviews, documentation, observation, and a review of the literature. The descriptive qualitative analysis was performed to analyze the data. Teachers are now expected to be capable of carrying out ICT-based learning. Teachers confront several challenges while establishing ICT-based learning, including: the various circumstances of pupils and aspects of teaching experience, the capacity to operate learning media; and the availability of school infrastructure. Teachers must be able to use material from the internet as well as teacher discussion forums to overcome obstacles in the development of a new ICT-based learning paradigm.

Keywords: Application, ICT, Instruction, New Paradigm, Teacher

A. Introduction

Indonesian education has internal obstacles, such as many schools failing to achieve the eight National Education Standards (NES). The capacity to manage effective learning at the planning, implementation, and control stages is one of the variables that contribute to increasing educational quality. As a result, in order to obtain the desired results, the administration of learning programs must be completely rebuilt (Manopo, 2014). In attempts to improve learning quality, the teacher's teaching performance becomes extremely important. The teacher's capacity to use information technology is one of the aspects that can impact teacher performance improvement, particularly in the learning process (Wiyani, 2013).

One of the abilities required of teachers is the ability to handle learning media. Any instrument that may be utilized as a route for messages to achieve learning objectives is referred to as media (Djamarah, 2012). Knowledge sharing will occur where students are engaged as learners and learning is not concentrated on the instructor but a two-way learning interaction happens through leveraging media in learning between teachers and students. Tools based on information and communication technology (ICT) are required to create knowledge exchange.

In terms of benefits and advantages, ICT plays a big part in the field of education, providing broad access to education and being able to increase the quality and quality

of learning between teachers and students (Hafizatul, 2020). The use of ICT has been adopted at all levels of education, from elementary to secondary to university.

The growth of information and communication technology has begun to have a good influence in the world of education, particularly in learning, since the world of education has begun to display major changes as a result of the development of information and communication technology. According to Darmawan (2015), educational institutions should quickly introduce and begin employing information and communication technology as a more current base for learning. This is significant, given that the usage of ICT is one of the key elements enabling the rapid transition of knowledge to students and, more widely, the generation of this nation (Nasrulloh & Ismail, 2018).

Learning has an influence during the learning process if it is well planned systematically, communicatively, and interactively. The present issue is a lack of teacher understanding in developing a curriculum to assist learning, as a result of teachers' lag in the operation or use of the internet and ICT (Munir, 2013). According to (Suripah, 2017), there are various requirements that must be addressed in order to stay up with ICT changes, including (1) having adequate human resources. Teachers must be prepared as the primary consumers of technical innovations in this situation; (2) enough availability of computers and internet connectivity; and (3) availability of LCD in each classroom.

Teachers' technological illiteracy prevents the development of content and learning approaches for pupils. The similar problem has previously been reported: a teacher system that operates independently has an influence on the lack of content delivered by the instructor to pupils, owing to the teacher's feeling overwhelmed by having to prepare the information independently without leveraging available technology (Nuswowati et al., 2019). On the other side, this backwardness renders the learning method obsolete, and teachers are unable to keep up with the trends of today's kids, who are constantly distracted by cellphones and video games.

As a result, pupils' enthusiasm in listening to and learning in class drops. The same phenomenon is felt by teachers at SMA Negeri 2 Kayuagung, where students' interest in the learning process is dependent on the material being taught; if the material is easy to understand, students are more enthusiastic about learning, whereas material that is extremely difficult to understand causes students to be disinterested in learning. Based on preliminary research, it was discovered that students were still not skilled at problem solving, with those who could not understand what was known and what was being asked from the questions, students who were incorrect in determining formulas, and students who did not check back on their answers. As a result, it will have an effect on the ultimate outcome computation.

Pre-research findings indicate that pupils are less adept at solving mathematical issues. As a result, learning alternatives that may boost problem-solving abilities and make students joyful while learning is required, one of which is the use of audio-visual media. To produce interest, learning activities, motivation, and student learning outcomes, suitable and ideally supported media, methodologies, models, and

learning strategies have been established. Several prior research concluded that the use of interactive electronic teaching resources in the learning process improves accomplishment and makes students more autonomous.

B. Methods

SMA Negeri 2 Kayuagung, Jl. Lt. Gen. H.M. Yusuf Singedekane No. 13 Ex. Jua Jua Kayuagung, was the site of this study. SMA Negeri 2 Kayuagung is one of the senior high schools in Kayuagung District, Ogan Komering Ilir Regency, South Sumatra Province. It is recognized SMA Negeri 2 Kayuagung has been in operation for the past 36 years. Its activities began in the 1985/1986 academic year, while the school building was finished in April 1986 and utilized for teaching and learning beginning in May 1986. SMA Negeri 2 Kayuagung has strong facilities and infrastructure, and is backed by external elements that make it suitable for use as a research facility. The study was conducted from July 2022 to November 2022.

In this study, we identified informants who could offer reliable information regarding the topic under investigation, also known as the key person. The researchers interviewed school administrators, teachers and education professionals, students, and any other school stakeholders who might offer reliable information regarding this study.

The descriptive qualitative approach is used in this investigation. Qualitative research is a research procedure that generates descriptive data from people and observable behavior in the form of written or spoken words, with the method used emphasizing the process of tracing data/information until it is felt that it has been sufficiently used to make an interpretation (Moleong, 2014).

Qualitative research is study that adheres to a naturalistic or phenomenological paradigm regarding what research participants understand, such as perceptual behavior, motivation, actions, and so on, holistically and via descriptions in the form of words and language in a specific context. natural and via the use of numerous scientific approaches (Iskandar, 2018). The findings of researchers connected to the principal's attempts to enhance the teaching skills of teachers at SMA Negeri 2 Kayuagung will be described in this study.

In this study, data was gathered by observation, interviews, and documentation. According to Fauzan (2014), the quality and completeness of the records obtained through observation, interviews, documentation, and literature review are critical to the success of naturalistic research. The following data gathering procedures are described: observation, interviews, and documentation.

Qualitative data analysis is an effort done with data, organizing it, dividing it into manageable pieces, synthesizing it, looking for and identifying patterns, determining what is significant and what can be taught to others (Moleong, 2014). Data analysis is typically performed concurrently with data collecting until a result is reached. This study's data analysis approaches included data reduction, data presentation, and generating conclusions.

C. Results and Discussion

Based on the findings of the study, it is possible to conclude that the teacher's capacity to carry out new IT-based paradigm learning activities, particularly those using audio-visual media, can be effective. According to the findings of observations and interviews with teachers, the ability to prepare Learning Implementation Plans (teaching modules), administrative tools for implementing learning, and learning evaluation was in a fairly good category, with teachers able to prepare learning based on Google Slide media with reference to the teaching module components. According to the research data description, the implementation of the teacher's capacity to produce ICT-based learning media has been progressing fairly well.

In general, teachers at SMA Negeri 2 Kayuagung understand the aim of adopting ICT-based learning medium. According to the instructors, the prepared learning media were of course extremely beneficial in supporting the learning process since they provided as a direction, reference, and control for the teacher to carry out the learning process. It is envisaged that with the use of ICT-based learning media, learning activities may be created systematically, making it easier for instructors to carry out learning.

Based on the findings of data collecting undertaken by us via interviews, recording, and observation, it can be stated that the following are the teacher restrictions in adopting ICT-based learning at SMA Negeri 2 Kayuagung.

According to the study's findings, instructors who are designing IT-based learning tools would almost surely encounter one hurdle that causes a problem. Time limits are a barrier that teachers experience while producing learning resources. As a result, teachers are unable to create IT-based learning tools to their full potential. Time limits are the teacher's impediment to creating instructional media. Teachers don't have a lot of time to create learning media. Even when the instructor has other job at home, teaching takes up a large portion of the teacher's time. This is why learning media is rarely produced. According to (Wiyani, 2013), teaching using learning media necessitates extensive preparation, even when the instructor is already overburdened with family responsibilities. Another barrier is that the teacher's teaching experience is still relatively new, limiting the teacher's ability to prepare instructional modules optimally.

A teacher's teaching experience will undoubtedly influence the teacher's capacity to carry out duties in his job. Of course, if the teacher's experience is still limited, the possibility of encountering difficulties in building teaching modules increases. Internal variables, which emerge from inside the instructor, determine the level of teacher competence. The tenure and job experience of the instructor are two internal criteria (Hasanah, 2012).

Teachers have challenges in developing learning tools due to the conditions and characteristics of their pupils. Understanding each student's personality is critical for a teacher so that the teaching modules produced can suit all students and allow them to participate in learning to the fullest. The following factors are required in ICT-based

learning: 1) the ability to design online-based learning; 2) the importance of implementing teacher training as an effort to improve teacher quality will have meaning and contribute to the quality of education; 3) the ability to apply concepts to new situations in various ways; 4) make the school a learning organization; 5) schools are capable of managing in planning, organizing, coordinating, and supervising; 6) the capacity to address difficulties in learning design through methodical procedures; and 7) the ability to construct and assess products (Nasrulloh & Ismail, 2018).

The availability of inadequate learning facilities or media is the next barrier. Teachers at SMA Negeri 2 Kayuagung are frustrated with the school's insufficient learning media. There is a limited amount of learning media available, and not all learning materials are available with learning media. According to (Musfah, 2020), the fundamental amenities that must be satisfied include classrooms, teacher rooms, school health business rooms, places of worship, sports facilities, and labs.

Another impediment is that the teacher has not ventured to change the learning method. Teachers who do not use technology as learning media such as laptops and LCDs do so because they find it difficult to use the tools themselves. Teachers also believe that using learning media will cause learning activities to fail. As a result, teachers are hesitant to explore new things when carrying out learning activities. According to multiple elements that impact ICT advancement, including (1) human resources (teachers) who do not completely comprehend computers and the internet due to different paradigms such as older instructors who are not computer literate and do not want to acquire or enhance their computer abilities. Instructors are not used to utilizing computers in the learning process; teachers find it more difficult if learning requires the use of computers; and teachers are unsatisfied with transmitting subject matter since it is not taught directly. Teachers do not want to change their teaching method, and they do not understand how to communicate with the internet. Such paradigms actually impede teachers' development in the use of computers and the internet in the learning process. Despite the fact that computers and the internet are continually evolving and advancing; (2) a lack of computer and internet connection availability. Teachers who do not have a computer may feel burdened if they are required to use a personal computer. Furthermore, if the finances available are insufficient to purchase a computer or similar item. Schools, for example, lack particular procedures that would make it simpler for instructors to obtain computers. The government also did not make things easier. This will result in instructors not being able to have personal computers, which would cause numerous following difficulties; (3) Not all classrooms are provided with LCD equipment. As a result, teachers are frequently hesitant to develop learning media because they believe that some learning media cannot be exposed to pupils. As a result, the job of developing learning media is futile since students cannot see the impact of utilizing the medium (Suripah, 2017).

Based on the findings of data collection conducted by researchers, it is possible to conclude that teachers' efforts in overcoming teacher challenges in integrating ICT-based learning just require the adjustment of some fundamental abilities to be

accomplished for numerous sessions. According to the Directorate General of Quality Improvement of Education and Education Personnel, the time allocated for each teaching module is determined by the breadth and depth of the topic covered. As a result, as a teacher, you must be able to recognize the breadth and depth of learning content in each fundamental skill. So that the instructor can estimate the time required to teach students.

This is connected to the teacher's efforts to overcome the teacher's difficulties in choosing the suitable learning technique, namely through searching for information on various learning methods that are acceptable for pupils on the internet. The capacity of the instructor to select learning techniques is critical in the learning process because learning methods can assist pupils grasp the content delivered by the teacher. The instructor should be able to implement a learning innovation that will keep pupils interested and pleased while they are studying.

The instructor also makes an attempt to conduct dialogues with colleagues. As a result of the discussion, the instructor can exchange information and ideas about the preparation of learning tools. So that one instructor and another teacher can assist one other. This is consistent with (Wiyani, 2013), who stated that a teacher should always be learning. Teachers can also form teacher organizations such as Teacher Working Groups and Subject Teacher Consultations to exchange information through discussion activities. Another effort made by the instructor is to always attempt to learn; in this situation, teachers who are having problems producing assessments might learn by reading assessment books. What the teacher should do is always study and continue to learn, also known as lifelong learning, so that the teacher is always up to date on the newest information or theory, particularly in the field of education. A teacher must continue to study until he is an expert in his profession, adept at managing learning, and objective in assessing student learning results. Furthermore, by researching, the instructor will get insight into his own ideas and feelings (Musfah, 2020).

The difficulties encountered by the instructor in preparing various types of assessment do not appear to be substantial, hence no effort has been made by the teacher. Teachers nearly seldom create multiple choice evaluation questions because they dislike the format of multiple-choice questions. It's only that the instructor recognized that assessment questions should be carefully constructed. As a result, the instructor must think on whether the assessment performed is in accordance with the protocol or not; the teacher, of course, should not rush to criticize his students if they fail to learn.

The teacher's efforts to overcome the problem of inadequate learning media and supporting facilities are restricted to the use of improvised learning media. Due to restricted teacher capacities, instructors have been unable to create teaching materials; nevertheless, teachers can utilize current learning media. Because storage capacity for instructional media is limited, teachers must recognize the need of classroom management. In this regard, the instructor should endeavor to give a location to store learning materials or media so that they may be better preserved and used often.

Efforts are made to acquire extra information or expertise from the internet, in addition to solving instructor challenges in the development of learning tools. Progress, of course, has an influence on the area of education; thus, instructors must use technological advancements to widen their perspectives and expertise. This is reinforced by (Wiyani, 2013), who believes that instructors may use the sophistication of Information and Communication Technology (ICT) equipment as a way of learning.

The implementation of strengthening teachers' abilities to carry out new ICT-based paradigm learning at SMA Negeri 2 Kayuagung has gone well and has been operating smoothly. The principal's active engagement in motivating teachers benefits school growth. Teachers' confidence in carrying out the learning process is growing.

The Principal of SMA Negeri 2 Kayuagung is credited with improving teachers' teaching abilities; he is able to sustain communication so that it is properly accepted. The principal also respects the work of the teachers and avoids causing conflict at school so that the climate at school may be kept in a favorable condition at all times. Furthermore, the principal of SMA Negeri 2 Kayuagung consistently encourages teachers to continually develop their competence via numerous events done both inside and outside the school. According to the competency model in the development of the teaching profession as stated in Directorate General of GTK No. 6565 of 2020, 1) references from teacher competencies and educational leadership competencies become integrated competencies; 2) teacher competency development activities must be carried out in stages and continuously; and 3) the principal's competency is an integrated educational leadership competency.

As a result, their efforts to enhance their abilities and expertise in the field of learning management are conducted with utmost professionalism. If the principal wishes to communicate with the instructor, he phones the teacher and coordinates directly. The communication went quite nicely. The premise is that the principal is attempting to find a solution by listening to teacher feedback in order to turn it into research to discover solutions to the challenges that instructors confront.

All of the actions outlined in the teacher coaching program have been successful. Regular supervision by the principal is also provided. Other activities are also doing well. The principal constantly encourages us not to be pleased with our accomplishments. However, in order to accomplish higher goals, you must continue to improve. The program adopted by the Principal of SMA Negeri 2 Kayuagung is carried out in a respectful manner so that the teacher feels at ease carrying out his duties and is not under pressure. It is the school principal's attitude that inspires awe and respect in the instructor, rather than fear.

Based on the data collected, it is possible to infer that the implementation of the new ICT-based learning paradigm at SMA Negeri 2 Kayuagung has been proceeding as intended. In terms of implementation time, the instruments and techniques utilized have shown to be capable of making instructors feel at ease in carrying out their tasks, inspiring teachers to reach their best performance, and having responsibility with awareness rather than dread in their brains. Increased school quality in both academic

and non-academic sectors arises from instructors' great attention to their particular tasks.

At SMA Negeri 2 Kayuagung, coaching is carried out in the form of workshop activities, assisting in the production of teaching modules and other learning aids, as well as activating KKG activities, equipping class facilities with LCD projectors, and equipping teachers with learning training. The implementation of developing teacher competency at SMA Negeri 2 Kayuagung was carried out in line with the findings of a needs assessment conducted by the principal and the designated team of SMA Negeri 2 Kayuagung teachers. The coaching tool includes the whole program design. Coaching activities are also carried out in line with the instructors' agreement. This is done to avoid interfering with instructors' work at school.

The school administrator uses Fridays to organize routine activities and assessments to improve the teaching ability of instructors at SMA Negeri 2 Kayuagung on a regular basis, according to a predefined timetable. Among other things, the emphasis in these everyday activities is on the necessity of recognizing insights or educational foundations, understanding students in learning, and growing students to realize their varied potentials. Personal coaching is also provided since a teacher must be able to create a syllabus, learning implementation plans, yearly programs, and semester programs with the internalization of Islamic principles, all of which are carried out at the start of each school year.

Effective learning activities will be generated if each instructor is able to appropriately arrange the learning resources. In addition, a session on developing an autonomous curriculum was given. The coaching is meant to help instructors build an individual curriculum each academic year by providing educational insight. This workshop took place during the class increase holiday and was then refined during the Subject Teacher Consultation events. As a learning tool, LCD projectors have been installed in several classes at SMA Negeri 2 Kayuagung. Instructors are supplied with IT-based learning training during class holidays as part of the framework for using this learning technology, so that all teachers are encouraged to be familiar with technology-based learning activities. SMA Negeri 2 Kayuagung hosted a grades processing application to make it easier for teachers to process grades. Then, in order to standardize the evaluation system, a workshop was convened, followed by the deployment of the assessment guide.

Teachers who are not yet certified are sent to Teacher Professional Education and Training to strengthen their teaching skills at SMA Negeri 2 Kayuagung. Meanwhile, present instructors do not satisfy the qualifications to engage in Subject Teacher Consultation activities. Here, teachers will give and receive information about broad and in-depth subject mastery in accordance with the standard content of subjects taught by each teacher. A teacher will receive coaching, training, and exchange of ideas, share experiences, and information in a subject in accordance with the demands of scientific and technological developments. This activity occurs once a month on the odd week.

The Principal of SMA Negeri 2 Kayuagung enabled the implementation of teacher training on IT-based learning during class holidays in order to improve teachers' competence in the use of information technology. With this exercise, it is believed that learning strategies would be diverse, more exciting, and less dull, resulting in increased pupil absorption. The principal of SMA Negeri 2 Kayuagung also reviewed the program's execution to strengthen the teaching abilities of SMA Negeri 2 Kayuagung teachers in supervisory activities, including overseeing both the learning process and other activities. Monitoring, monitoring, assessment, reporting, and follow-up are carried out in order to plan contact between instructors and school principals and to oversee all teachers. Regular weekly and monthly meetings are also used to examine problems that develop during the week and month, so that problems may be remedied quickly rather than stacking up and prolonging.

Aside from that, the school administration always oversees through the authorized activity coordinator at SMA Negeri 2 Kayuagung. The school conducts a School Self-Assessment at the end of each year, as well as an annual work meeting attended by all teachers and education personnel, to perform an evaluation and establish an annual work program.

D. Conclusion

Based on the preceding description, it is possible to infer that 1) the capacity of SMA Negeri 2 Kayuagung teachers to implement new ICT-based paradigm learning at SMA Negeri 2 Kayuagung has been successful; 2) The following elements contribute to instructors' difficulties in developing learning tools: (1) time limits, teacher busyness; (2) the diverse conditions of pupils; and (3) aspects of teaching experience and years of service. (4) Teachers struggle to use learning media; (5) the learning environment and media accessible in schools are restricted; (7) Space or laboratory limitations; 3) The teacher's attempts to solve obstacles in the production of learning tools include the following: (1) collecting information from the internet; (2) having talks with colleagues; and (3) studying independently; (4) Create teaching modules for several meetings at the same time; and (5) Employ basic learning material such as media pictures or tangible things found in the surrounding environment and currently available at school.

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