

# Teacher's Interpretation of the Urgency of Learning Media Based on Information and Communication Technology in the Senior High School

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**Abstract-***Technology mastery is one of the most important competencies for teachers. In Permendiknas Number 16 of 2007 concerning Academic Qualification Standards and Teacher Competencies, there are four competencies that must be mastered by teachers, two of which are pedagogic and professional competencies. Both of these competencies are very closely related to the use of technology to optimize learning objectives. The era of education which was influenced by the industrial revolution 4.0 is called Education 4.0. Teachers who are at the forefront of the world of education must improve their competence to face the era of education 4.0. This is because teachers will be faced with millennial generation who live in the digital world. Students are familiar with industry information and technology 4.0. This shows that graduating school products must be able to answer industry challenges 4.0. This study aims to see how the teacher's interpretation of the importance of the use or utilization of ICT-based learning media in learning in secondary schools, Koto Tengah District, Padang City. The term interpretation itself can refer to the ongoing interpretation process or the results. An interpretation can be part of a presentation or description of information. The study was conducted in the form of a combination approach. This approach was chosen according to the problem under study. The combination of these two approaches will strengthen studies related to the overall phenomenon under investigation. To get quantitative data, a questionnaire was developed based on research indicators.*

*Keywords: Learning Media, Information and Communication Technology, Era of Industrial Revolution 4.0*

## I. INTRODUCTION

Learning media are tools or intermediaries that function to facilitate the learning process so that communication between teachers and students is more effective. This can make it easier for students to accept and understand the lesson. According to Kustandi and Sutjipto (2013: 23) some practical benefits from the use of learning media in the learning process are to clarify the presentation of messages and information, increase and direct the attention of children, overcome the limitations of the senses, space, and time, and provide experiences to students. Learning media according to Arsyad (2013: 10) is anything that can be used to convey messages or information in the learning process so that it can stimulate students' attention and interest in learning.

The use of instructional media in teaching and learning can also generate new desires and interests for students, generate learning motivation, and even bring psychological influence to students. The media used have a position as a tool for teachers in teaching to capture, process, and reconstruct visual and verbal information. The media are expected to provide concrete experiences, motivation to learn, increase absorption and retention of student learning. This process requires the teacher to be able to align learning media and learning methods. The current era of the industrial revolution 4.0 is very important to use ICT in learning activities to improve the quality of learning expected.

According to Sutopo (2012: 2) ICT-based education is a means of interaction that can be utilized by educators, education staff, and students in improving the effectiveness, quality, productivity, and access to education. Information technology develops in line with developments in theory, communication and technology that support the practice of learning activities. Computer-based learning (CBI), web-based learning (e-learning), computer-assisted learning (CAI) are forms of ICT use that need to be implemented in the world of education today.

Based on a study of the aims of using IT in the world of leading education in America, Alavi and Gallupe (2003: 87) found several goals for the use of IT, namely: improving competitive positioning; enhance brand

image; improve the quality of learning and improve; increase student satisfaction; increase revenue; free student base; improve service quality; reduce operating costs; and developing new products and services.

According to Rosenberg (2001), with the development of the use of ICT there are five shifts in the learning process namely:

- a. From training to appearance
- b. From classrooms to where and whenever
- c. From paper to online or channel
- d. Physical facilities to network facilities
- e. From cycle time to real time

Information and Communication Technology is a large umbrella of information technology that includes all technical equipment for processing and information. Information and Communication Technology covers two aspects, namely information technology and communication technology. Information technology includes everything related to the process, used as a tool, manipulation, and information management. While communication technology is everything related to the use of tools to process and transfer data from one device to another. Therefore, Information and Communication Technology are two concepts that cannot be separated. So Information and Communication Technology contains a broad understanding of all activities related to processing, manipulating, processing, and transferring information between media.

Broadly speaking, the 4.0 industrial revolution is the integration between the world of the internet or online with the world of business or production in an industry. The education sector will directly or indirectly play a large role in the industrial revolution 4.0. The era of the industrial revolution 4.0 also changed the way of thinking about education. Changes made are not just ways of teaching, but are far more essential, namely changes in the perspective of the concept of education itself. To be able to face all these challenges, an important requirement that must be met is how to prepare qualified teacher qualifications and competencies. Because, in the era of the industrial revolution 4.0 the teaching profession is increasingly competitive. Preparation of human resources at every level of education must be done, such as primary and secondary education teachers, even instructors or tutors in the field of education outside of school. For this reason, it is natural for teachers to be required to have competencies in the use of learning technology as stated in teacher competencies.

Danim (2010: 53) explains that professional teachers are teachers who have certain competencies according to the requirements demanded by the teaching profession. Rifa'i and Anni (2012: 7) explained that the competencies that must be possessed by a teacher are: pedagogical competencies, personal competencies, professional competencies, and social competencies. Pedagogical competence is the ability of teachers to manage learning. Pedagogic core competencies that must be mastered by teachers are utilizing ICT for learning purposes. Personality competence is an ability related to the personal appearance of the teacher. Professional competence is the ability of teachers to master broad and deep learning material. The core professional competencies that teachers must master are utilizing ICT for communication and self-improvement. Social competence is the ability of teachers to communicate with all parties that can support student success.

## II. METHOD

The research conducted is in the form of a combined approach (Mixed Method Design) that combines quantitative and qualitative methods. This approach was chosen according to the problem under study, namely regarding the Interpretation of Teachers on the Urgency of Media Based on Information and Communication Technology in the Era of the Industrial Revolution 4.0 at Koto Tengah High School, Padang City. The combination of these two approaches will strengthen studies related to the overall phenomenon under investigation. It also emphasizes that in order to produce a better understanding of research problems, a combination of quantitative and qualitative approaches is needed when compared to using only quantitative or qualitative approaches (Creswell, 2010). This type of research is a descriptive survey research, aimed at describing the state or status of the phenomenon (Arikunto, 2010: 245).

## III. RESULT

The teacher's level of interpretation of the urgency of instructional media based on information and communication technology is converted as follows:

Table 1. Percentage Range

Percentage Range	Utilization Rate
80% - 100%	Very High
60% - 79%	High
40% - 59%	Medium
20% - 39%	Low
0 – 19%	Very Low

Based on the results of the study, the results were converted as follows:

Table 2. Conversion of interpretation

Variable	Indicator	Percentage
The teacher's interpretation of the use of ICT-based learning media	1) Teacher knowledge of ICT-based learning media.	58,8 %
	2) Efforts to improve the ability to utilize ICT-based learning media.	38,7 %
	3) Making ICT-based learning media.	24,3 %
	1) Conformity with learning objectives.	40,2 %
	2) Conformity with learning material.	37,5 %
	3) Conformity with student characteristics.	38,2 %
	4) Compliance with environmental conditions, supporting facilities, and the time available.	35,4 %

IV. DISCUSSION

Variable utilization of ICT-based learning media consists of 8 indicators with 35 statement items. Based on the recapitulation results, the average score of the use of ICT-based learning media in the Koto Tengah Sub-district of Padang City was 38.9. This shows that the use of ICT-based learning media in SMA Koto Tengah is in the low category.

a. *The teacher's interpretation of the use of ICT-based learning media on indicators of teacher knowledge of ICT-based learning media.*

Based on research data it can be seen that most of the teachers in the Koto Tengah Subdistrict of Padang City are in the medium category in terms of mastering knowledge about ICT-based learning media. Some media are very supportive in implementing learning in schools such as Microsoft Word and Microsoft Powerpoint. However, based on the data obtained, some teachers have not mastered the science of Microsoft Word and Microsoft Powerpoint so they have not been able to apply it in learning. This causes the teacher's knowledge of learning media based on ICT in the medium category.

b. *The teachers' interpretation of the use of ICT-based learning media on indicators of teacher efforts to improve the ability to use ICT-based learning media.*

Based on research data it can be seen that the majority of teachers in the Koto Tengah Subdistrict of Padang City have never attended a training on ICT based learning media. This can be sought through the implementation of training by related agencies, as well as training that can be provided by several existing institutions.

c. *The teacher's interpretation of the use of ICT-based learning media on the indicators of making ICT-based learning media*

This third indicator is in the low category. This shows that most teachers have not been able to create and utilize ICT-based learning media. Even some teachers have not been able to use the internet.

d. *The teacher's interpretation of the use of ICT-based learning media on indicators of conformity with learning objectives.*

This fourth indicator is in the medium category. Most teachers rarely use ICT-based learning media in the learning process. The implication of this is the discrepancy between the learning media used and the learning objectives.

e. *The teacher's interpretation of the use of ICT-based learning media on indicators of conformity with learning material*

Based on research data it can be seen that most teachers do not utilize ICT-based learning media on all learning materials.

f. *The teacher's interpretation of the use of ICT-based learning media on indicators of conformity with student characteristics*

Based on research data it can be seen that the majority of teachers do not utilize ICT-based learning media. The teacher only applies traditional learning to the lecture method and without using instructional media. So this does not provide meaningful experience for students and is not in accordance with student learning styles.

g. *The teacher's interpretation of the use of ICT-based learning media on indicators of conformity with environmental conditions, supporting facilities, and available time.*

Some teachers do not utilize the supporting facilities that are already available, because teachers lack mastery in operating them. In addition, the teacher does not make use of the available time properly, so that it exceeds the available time limit. This has led to the relevance of ICT-based learning media with environmental conditions, supporting facilities, and the time available in the low category.

#### V. CONCLUSION

Based on the results of research on the teacher's interpretation of the urgency of instructional media based on information and communication technology the use of information and communication technology in learning by ICT teachers in Koto Tengah Subdistrict, Padang City in order to implement the 2013 curriculum, the following data are obtained:

a. The mastery of ICT-based learning media by teachers in Koto Tengah Subdistrict, Padang City is in the low category.

b. The use of ICT-based learning media by teachers in the Koto Tengah Sub-district of Padang City is in the low category

#### **References**

- Alavi, M., dan Gallupe, R. B. (2003). *Using Information Technology in Learning: Case Studies in Business and Management Education Programs*. Academy of Management Learning and Education, 2(2), 139–153.
- Arikunto, S. 2010. *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta: Rineka Cipta.
- Arsyad, Azhar. 2013. *Media Pembelajaran*. Depok: PT Rajagrafindo Persada.
- Creswell, John W. 2010. *Research Design Pendekatan Kualitatif, Kuantitatif, dan Mixed*. Pustaka Pelajar. Yogyakarta.
- Danim, Sudarwan. 2010. *Media Komunikasi Pendidikan*. Jakarta: Bumi Aksara.
- Kustandi, C. dan Bambang Sutjipto. 2013. *Media Pembelajaran Manual dan Digital*. Bogor: Ghalia Indonesia.
- Rifa'i, A. dan C. T. Anni. 2012. *Psikologi Pendidikan*. Semarang. Universitas Negeri Semarang Press.
- Rosenberg, Marc. J. (2001). *E-Learning: Strategies For Delivering Knowledge In The Digital Age*. USA: McGraw-Hill Companies.
- Sutopo, Ariesto Hadi. 2012. *Teknologi Informasi dan Komunikasi dalam Pendidikan*. Yogyakarta: Graha Ilmu.