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Elementary School Physical Education Teachers' Understanding of Technology-Based Physical Education Learning Media

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Abstract

This study aims to determine the level of knowledge of PE teachers regarding IT-based learning media, which includes (1) knowledge of visual media, (2) knowledge of audio-visuals, (3) knowledge of computer usage, and (4) knowledge of internet usage. This type of research is descriptive with a quantitative approach. The population in this study were 40 elementary school PE teachers in East Aceh Regency. The instrument used in this study was a knowledge test instrument containing multiple-choice test questions. Based on the results of data analysis, it can be concluded that; (1) 92% of teachers have high knowledge, 7.5% have moderate knowledge, and no teachers have low knowledge about visual media, (2) 80% of teachers have high knowledge, 20% have moderate knowledge, and no teachers have low knowledge about audio visuals, (3) 35% of teachers have high knowledge, 65% have moderate knowledge, and no teachers have low knowledge for computer usage skills, (4) 40% of teachers have high knowledge, 52.5% have moderate knowledge, and 7.5% of teachers have low knowledge for internet usage skills. These results it can be concluded that the category of knowledge of Physical Education teachers against the media IT- based learning in Elementary Schools Throughout East Aceh Regency, it is high.

How to Cite

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INTRODUCTION

A good learning process will shape intellectual abilities, critical thinking, and the emergence of creativity, and changes in a person's behavior or personality based on specific practice or experiences. (Makrakis, 2024). This follows the Republic of Indonesia Law No. 20 of 2003, concerning the National Education System Article 40 paragraph 2A: " Education and education personnel are obliged to create a meaningful, enjoyable, creative, dynamic and dialogical educational atmosphere". The interactions that occur during the learning process are influenced by the environment, including students, teachers, librarians, principals, materials (books, modules, magazines, video or audio recordings, and the like), and various learning resources and facilities (Sutama et al., 2022).

Physical education is one of the essential lessons included in the curriculum in Elementary School. Physical Education Teachers are more focused on field practice involving students' physical activity rather than in the classroom. The professionalism of teachers as educators must still be equipped with Information and Communication Technology (IT) skills, especially knowledge of Information and Communication-based learning media (Apriani et al., 2022). IT because technology can make it easier for physical education teachers to convey messages and learning materials.

IT covers two aspects, namely information technology and communication technology. Information technology is the use of tools to manipulate and manage information. Communication technology uses tools to process and transfer data from one device to another (Isnaeni et al., 2021).

The development of Information and Communication Technology in the last few decades has been very rapid, with the development of telecommunications technology, making it easier for everyone to access information from all over the world to improve education (Budiarto et al., 2025). Various support technologies and applications have also been developed to support and facilitate human life activities, including teaching and learning activities in education.

Progress IT also utilizes various types/ media simultaneously, in multimedia learning that contains audio-visual components to deliver material that interests students. Based on (Hasudunganlubis, Idrus and Sarji, 2018) IT based learning media is a tool that used for conveying information or message Which containing knowledge, skills and attitudes, to stimulate the mind, feelings and attention of students, by utilizing information and communication technology in the use of learning media with the aim that learning can be achieved optimally. Using IT-based learning media in the teaching and learning process can arouse motivation, stimulate learning activities, and psychologically influence students (Rizal Ahmad Fauzi et al., 2024).

With this multimedia computer facility, it is expected that students can be motivated and not bored when following the learning process. IT is expected to be a catalyst to boost the quality of education, especially in terms of life skills, so every child must have fundamental skills for provisions in their lives and for work. IT is considered one of the provisions for students, because IT is something that is very much needed in society, whether as an operator, technician, system analyst, or programmer (Sumaimi and Susilawati, 2021)

Referring to the theory above, using IT-based learning media at the learning orientation stage will significantly assist the effectiveness of the learning process, and students will more easily accept the delivery of messages and lesson content. It will be easier for teachers to convey. Learning materials using technology

The results of the observations conducted by researchers on July 22 to August 22, 2023 with Elementary School Physical Education Teachers in East Aceh Regency obtained fact about background behind Physical Education teachers are graduates of a Bachelor of Physical Education, in terms of the availability of aids, almost all schools have IT -based learning tools or media, however, these are IT- based learning tools or media have not yet been utilized optimally. Optimally. Physical Education teachers' knowledge of IT -based learning media can be said to be uneven, because each Physical Education Teacher's knowledge of IT -based learning media is different, so in delivering the material it is different, and it is necessary to know the level of knowledge of physical education teachers of IT -based learning media (Miraj et al., 2018).

Machmud, Widiyan and Ramadhani, (2021) states that " knowledge is the abilities to reveal or recall facts that simple, both concepts, terms without having to be understood, or students only required to be able to re-state or memorize " Teachers today are required to be more critical and more creative in delivering material in a learning. Therefore, good knowledge is needed for Physical Education teachers regarding IT-based learning media.

As a teacher, you should know what should

be done to create a learning atmosphere that can lead students to their goals. The Teacher's task here is to create an Exciting and enjoyable learning atmosphere for all students. Usually, the atmosphere in a Study that is neither exciting nor pleasant will have many teaching and learning activities that are less harmonious (Aryanto et al., 2021).

To create a pleasant learning atmosphere, foster enthusiasm for learning, and improve student learning achievement, a teacher must be able to organize a good learning process, one of which is by using IT learning media (Perbowo, Maarif and Pratiwi, 2019).

This study aims to determine the level of teacher knowledge of Physical Education on IT-based learning media.

METHODS

This study uses a quantitative approach with a descriptive type. Research with a quantitative approach is usually carried out with several samples determined based on the existing population.

The population in this study was 73 elementary school Physical Education teachers in Pidie Jaya Regency. Because the population was less than 100 people, the physical education teacher population in Pidie Jaya was used as a research sample.

The outline of the knowledge test for elementary school Physical Education teachers regarding IT-based learning media is as follows:

Instrument grid test Elementary School Physical Education teacher's knowledge about media-based learning.

Variables	Indicator
Physical Education teachers' knowledge of IT-based learning media in Elementary Schools	Designing learning media in the form of images
	Creating learning media in audio form
	Create learning media in audio-visual form.
	Projecting learning media in visual form
	Exploring internet-based learning media

Before this test instrument was used, a trial was conducted through two stages: validity test and reliability test. Researchers have carried out the two stages using a trial sample of 17 people who were not included in the research sample. The knowledge test instrument used during the trial consisted of 50 questions. From the trial results, 40 questions were declared valid, and 10 were declared invalid.

The data analysis technique in this study uses the following steps:

Calculate the level of mastery of questions using the formula:

Mastery Level = (∑correct Answer)/(∑Questiom)x 100%

Confirming with the norms of the level of mastery of the questions

Mastery Level	Predicate Success
90 - 100 %	Very well
80 - 89%	Good
70 - 79 %	Enough
< 70 %	Not enough

Using percentages, with the following formula, Anas Sudijono (2006: 43 in (Hasana et al., 2021: 64) as follows:

$$P=\frac{F}{N} \times 100\%$$

Information :
P = percentage sought (Relative Frequency)
F = Frequency
N = number of Respondents.

RESULTS AND DISCUSSION

Results of research on physical education teachers' knowledge of IT-based learning media in elementary schools. The entire East Aceh Regency in this study was measured using a questionnaire consisting of 26 questions. After collecting the data, the research results were obtained: minimum score = 14; maximum score = 24; average = 19.45; median = 20; mode = 18; and standard deviation = 2.39. The ideal mean price was first calculated to determine the tendency of PHYSICAL EDUCATION teachers' knowledge towards media learning based on IT in Elementary school. The ideal mean is = 13 for East Aceh Regency, and the ideal Standard Deviation (SDI) = 4.33. Then categorized based on provisions as follows:

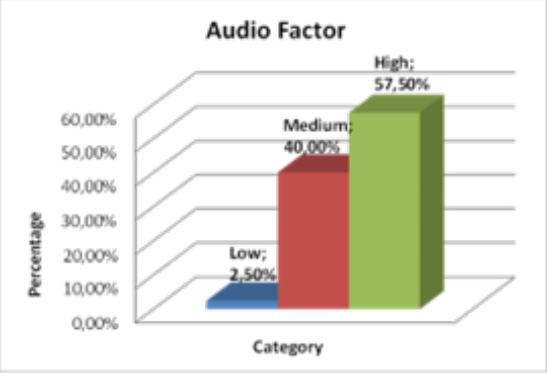
a. Tall = > Mi + 1 SDi = > 13 + 4.33 = > 17.33
b. Currently= Mi – 1 SDi to Mi + 1 SDi = 8.67 to 17.33
c. Low = < Mi – 1 SDi = < 67.5 – 13.5 = < 8.67

Table 1. Trend Knowledge category: Teacher Physical Education To IT-Based Learning Media

Category	Interval	Frequency	%
Tall	> 17.33	32	80
Currently	8.67 to 17.33	8	20
Low	< 8.67	0	0
Amount		40	100

Results of the study, if displayed in the form of a diagram, can be seen in the **Diagram 1.**

Diagram 1. Research Results Diagram of Physical Education Teachers' Knowledge of IT-Based Learning Media.



Based on the **Table 1** above, we can see the tendency of the Physical Education Teacher Knowledge category towards IT-based learning media in Elementary Schools. Throughout East Aceh Regency, there are none in the low category (2,50%), the category currently as many as 8 people (40 %), category tall as many as 32 people (57,50%), so that can concluded category Knowledge Teacher Physical Education to IT- based learning media in Elementary Schools Throughout East Aceh Regency, it is high.

Factors of Physical Education Teachers' Knowledge of IT-Based Learning Media in Elementary Schools Throughout East Aceh Regency. This study can be described as follows.

Knowledge media Visual

Knowledge media Visual in study is measured with a questionnaire consisting of 5 questions. Knowledge media Visual formerly count Ideal Mean Price (Mi) = 2.5 and Ideal Standard Deviation (Sdi) = 0.83 to find out the tendency. Then categorized based on provisions, the US follows:

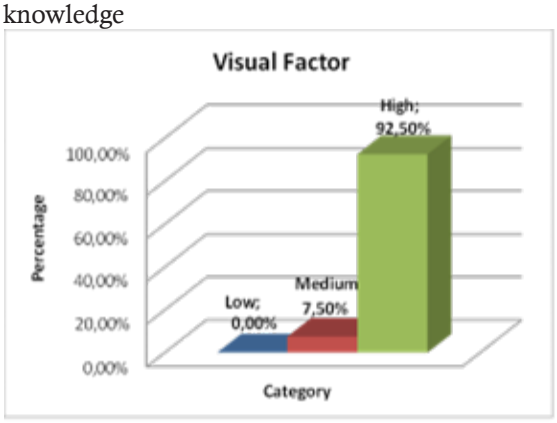
a. Tall= > Mi + 1 SDi = > 2.5 + 0.83= > 1.67
b. Currently= Mi – 1 SDi to Mi + 1 SDi = 1.67 to 3.33
c. Low= < Mi – 1 SDi = < 2.5 – 0.83 = < 3.33

Table 2. Trend Knowledge category: Visual media

Category	Interval	Frequency	%
High	> 3.33	37	92.5
Currently	1.67 to 3.33	3	7.5
Low	< 1.67	0	0
Amount		40	100

The results of this research, if displayed in diagram form, can be seen in the **Diagram 2**.

Diagram 2. Results Research Visual media knowledge



Based on the **Table 2** above, it can be seen that the tendency of Visual Media Knowledge is in the low category of 0 people. (0%), medium category, as many as 3 people (7.5%), high category, and 37 students (92.5%).

Knowledge media Audio Visual

Audio-visual media knowledge in this study was measured using a questionnaire consisting of 5 statements. Knowledge media Visual formerly count Ideal Mean Price (Mi) = 2.5 and Ideal Standard Deviation (Sdi) = 0.83 to determine the tendency. Then categorized based on provisions, the US follows:

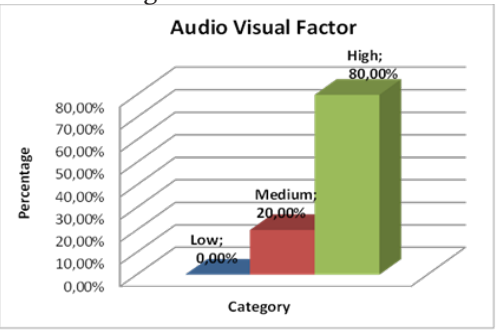
a. Tall= > Mi + 1 SDi = > 2.5 + 0.83= > 1.67
b. Currently= Mi – 1 SDi to Mi + 1 SDi = 1.67 to 3.33
c. Low= < Mi – 1 SDi = < 2.5 – 0.83 = < 3.33

Table 3. Trend Knowledge category media Audio Visual

Category	Interval	Frequency	%
High	> 3.33	32	80
Currently	1.67 to 3.33	8	20
Low	< 1.67	0	0
Amount		40	100

The results of the study, if displayed in the form of a diagram, can be seen in the **Diagram 3**.

Diagram 3. Results Research Audio Visual Media Knowledge



Based on the **Table 3** above, it can be seen that the tendency of Audio Visual Media Knowledge is in the low category of 0 people (0%), the medium category with as many as 8 students (20%), and the high category with as many as 32 students (80%).

Knowledge Computer Media

Computer media knowledge in this study was measured by a questionnaire consisting of 6 statements. To determine the tendency, knowledge media Visual, formerly Ideal Mean Price (Mi) = 3 and Ideal Standard Deviation (Sdi) = 1. The categories are based on provisions of the US:

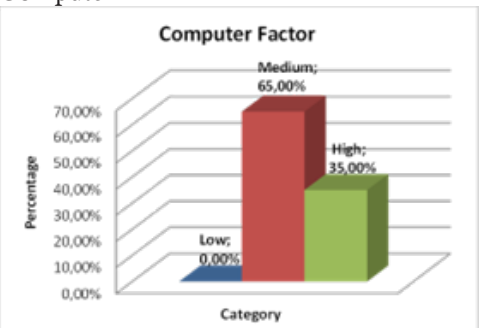
a. Tall= > Mi + 1 SDi = > 3 + 1= > 4
b. Currently= Mi – 1 SDi to Mi + 1 SDi = 2 to 4
c. Low= < Mi – 1 SDi = < 67.5 – 13.5 = < 2

Table 4. Trend Knowledge category Computer media

Category	Interval	Frequency	%
High	> 4	14	35
Currently	2 to 4	26	65
Low	< 2	0	0
Amount		40	100

The results of this research, if displayed in the form of a diagram, can be seen in the **Diagram 4.**

Diagram 4. Results Research Knowledge media Computer



Based on the **Table 4** above, it can be seen that there is a tendency for Computer Media Knowledge in the low category of 0 people (0%), the medium category of 26 students (65%), and the high category of 14 students (35%).

Knowledge media Internet

Knowledge of internet media in this study was measured using a questionnaire. Consists of a 5-grain statement.

Computer media knowledge in this study was measured by a questionnaire consisting of 6 statements. To determine the tendency, Knowledge media Visual formerly, count Ideal Mean Price (Mi) = 25 and Ideal Standard Deviation (Sdi) = 0.83. Then categorized based on provisions, the US follows:

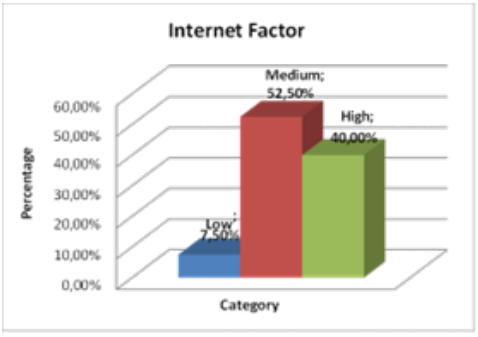
a. Tall= > Mi + 1 SDi = > 2.5 + 0.83= > 1.67
b. Currently= Mi – 1 SDi to Mi + 1 SDi = 1.67 to 3.33
c. Low= < Mi – 1 SDi = < 2.5 – 0.83 = < 3.33

Table 5. Trend Knowledge category internet media

Category	Interval	Frequency	%
High	> 3.33	16	40
Currently	1.67 to 3.33	21	52.5
Low	< 1.67	3	7.5
Amount		40	100

The results of the study, if displayed in the form of a diagram, can be seen in the **Diagram 5.**

Diagram 5. Results Research Knowledge media Internet



Based on the **Table 5** above, it can be seen that the tendency of the category of low internet media knowledge is 3 people (7.5%), the medium category is 21 people (52.5%), and the high category is 16 people (40%).

Physical Education Teachers are professional staff who handle the learning process, teaching between students and their environment, which is arranged systematically to form physically and spiritually healthy people (Wibowo, 2024). In its implementation, the subject

of Physical Education usually has more practice than theory. However, teachers must have good knowledge of learning, especially in using media in learning. Knowledge is the ability to reveal or recall simple facts, concepts, and terms without being understood, or students are only required to mention or memorize them, one of which is IT media. With IT Teacher, the media can help manage the process of learning. Therefore, teachers must have good knowledge of IT learning media (Mahdum, Hadriana and Safriyanti, 2019).

Based on the research results, there was a tendency in the Physical Education Teachers' Knowledge category regarding IT-based learning media in Elementary Schools. Throughout East Aceh Regency, there are none in the low category (0%), the category currently as many as 8 people (20 %), category tall as many as 32 people (80 %), so it can be interpreted that Physical Education Teachers' Knowledge of IT -based learning media in Elementary Schools Throughout East Aceh Regency, it is high.

These results can be interpreted as meaning that most teachers can remember and memorize IT media well. These results show that teachers can understand, remember, analyze, synthesize, and apply learning media. Remembering is the ability to remember material that has been studied previously, to recall something specific from all the burdens studied, or stimuli that have been received. Learning media can be media consisting of audio media, visual media, audio-visual media, computer media, and internet media.

Based on the study results, the tendency of knowledge of audio media is mainly in the high category, with as many as 23 people (57.5%). These results indicate that teacher knowledge of audio media is excellent, audio is a medium related to sound, meaning that so far, media audio is often used by teachers, like radio tape for gymnastics learning, sound systems, and the command method.

The tendency towards visual media knowledge is mainly in the high category of 37 students (92.5%). The results also indicate that teachers' knowledge of visual media is excellent, meaning that so far, teachers have also utilized and understood several visual media, such as teaching aids and some media images in the book.

The tendency towards knowledge media, the audio-visual part, is significant in the high category, with as many as 32 students (80%). The results mean that teachers also have high knowledge of audio-visual media, a combination of media related to sight and sound. In this case, it is a learning video. So far, the Teacher has utilized audio-visual media and understands the media.

The tendency of computer media knowledge is mainly in the moderate category, with as many as 26 students (65%). Based on these results, it can be interpreted that most teachers have moderate knowledge of computer media. These moderate results are because not all teachers command computer media well. Some elderly teachers rarely use computers, so they prefer to use teaching aids and practice directly in the field.

The tendency of the internet media knowledge category is mainly in the moderate category, with 21 people (52.5%); these results also indicate knowledge. Teachers on the Internet media are currently showing that although the Internet is still rarely used by teachers for learning media, events are now easily accessible, but some teachers still do not have good knowledge to use it as a learning medium.on the articles written from research, then in the early part of the results and a discussion on research be preceded by description of the implementation, namely (1) a description of the time of the research, (2) the duration of the implementation of the research, (3) the informant or res-respondent obtained, and (4) concludes with a description of the things that will be described in the be-how a paragraph afterwards.

CONCLUSION

Based on the research results, there was a tendency in the category of Physical Education Teachers' Knowledge regarding IT- based learning media in Elementary school Throughout East Aceh Regency low category none (0%), medium category 8 people (20%), high category 32 people (80%), so based on these results it can be concluded that the category of knowledge of Physical Education teachers against the media IT- based learning in Elementary Schools Throughout East Aceh Regency, it is high.

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