PHENOMENOLOGICAL STUDY: THE INTEGRATION OF TECHNOLOGY AS MEDIA IN TEACHING AND LEARNING PROCESS BASED ON STUDENTS' PERCEPTION

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Abstract - This research is a phenomenological study that identifying based on students' perception and experiences about technology integration as media in the teaching-learning process. This research used descriptive qualitative, by conducting open interviews for students in teaching expertise at STBA Pontianak. Based on the results of the interview, students argued that by using learning media, learning activities become more effective and efficient and also can increase student involvement and motivation in learning. Learning media also can stimulate students' attention and thinking ability, thus helping students understand the material delivered by the teacher. There are several types of technology-based learning media that can be used in learning, including computer equipment, internet, YouTube, website, email, etc. With the use of technology as a learning media, the learning process becomes more effective and efficient and can improve the quality of learning. The utilization of technology as learning media makes it easy for teachers and students to explore learning material according to what they need. Therefore, the application should be supported with adequate facilities and tailored to the needs of students. In the selection of technology as media must be adjusted to the material to be delivered. Then choosing technology from the media needed an educator must study the theory and information that have been developed. By using technology-integrated media, it is hoped that in the class situations are not boring so learning can achieve goals and students easily understand learning material.

Keywords: integration of technology, media, teaching-learning process

I. INTRODUCTION

In the digital era of literacy 4.0, the application of technology is always involved and influences in all fields, including in the education. Digital technology is the most influential in the current education system (Hoyles & Lagrange, 2010). Therefore, technology needs to be involved in the learning process. Many research results that showed about the integration of technology in the learning process, the use of technology as a learning aid or better known as learning media. As an example of using *YouTube* as a learning media, the results of research conducted by Anggraini (2018) shows that by utilizing *YouTube* as a learning media can stimulate the

creativity, interests, and motivation of teachers in the search for ideas and learning materials. The use of *YouTube* as a media can also assist students in analyzing the structure of reading texts (Aprianty, Effendi, & Hernawan, 2019). Based on these results it can be concluded that the integration of technology in learning, especially as a learning media can have a positive impact both for teachers and students.

The integration of technology in the implementation of education and its use as a learning media can also be seen in distance learning systems. Distance learning involves technology in delivering educational material or messages. One form of distance learning system by involving e-learning. The involvement of e-learning as a medium makes the learning process effective and efficient. Learning can happen anywhere and anytime without having to face-to-face in class. The used of e-learning as a learning medium has an impact on the learning process that is timely without the limitations of space and time, so that competence can be increased and become a place of learning activities (Harahap, 2015). Based on the above review, the researcher wants to see the students' perceptions about technology integration as a media in the learning process.

The utilization of information and communication technology for education can be carried out in various forms in accordance with its function in education. Information and communication technology has functions in education, namely: (1) as a storehouse of knowledge, (2) as a learning aid, (3) as an educational facility, (4) as a competency standard, (5) as an administrative support, (6) as a tool for school management, and (7) as an educational infrastructure (Indrajit, 2004). Based on this explanation, technological developments can support learning activities that are more interesting and interactive, which are expected to improve the quality of the learning process. Another definition of information and communication technology is a tool used to process data, including processing, obtaining, compiling, storing, manipulating data in various ways to produce quality information, namely information that is relevant, accurate and timely (Wardiana, 2002). So it can be concluded that the use of technology can support educational process, it is used as a media or tool in compiling, developing and delivering information in learning activities.

A variety of interactive learning media that provide an attractive appearance, help the delivery of material clearly; thus, the improvement of students' understanding and the learning objectives can be achieved. This was similarly with Instructional media as a tool that can help the teaching and learning process and the usefulness to clarify the meaning of the message conveyed so that it can achieve learning goals better (Kustandi & Sutjipto, 2011, p.9). The media becomes a means of creating communication between the sender and receiver of the message. The purpose of the media is to facilitate communication and learning (Smaldino, Russel, Heinich, & Molenda, 2006, p. 9); so that, two-way communication between teachers and students in the learning process that can increase student involvement and activity will be emerged.

In the developing era, the use of media and technology makes a significant contribution to the learning process. The use of instructional media and technology can help and provide a learning atmosphere where students can actively participate in teaching learning process. From the purpose of its use, the media provides several benefits that can create an effective and efficient learning process. Some of the benefits of learning media, namely the learning process becomes more interesting, clear, interactive, and flexible; efficient and effective in time and energy; have a positive impact on teachers and students; the delivery of material can be uniformed (Depdiknas, 2003). Furthermore, as stated by Muhson (2010); one of the benefits of the media is to present learning information consistently and can be repeated or stored as needed. For example in the form of recordings, films, slides, pictures, photos, modules, and so on. Based on the explanation above, practically the media has the benefit of giving a similar perception to students in understanding an object; increasing interaction between students, teachers, and the environment related to the material presented.

Technology developments, especially computer-based, have an impact on the development of multimedia. Multimedia is a learning media by using a set of computers. Computers have flexible properties that can provide advantages and convenience to activities related to audiovisual. As stated by Lee & Owens (2004), the benefits provided by computers can include video, audio, graphic elements, forms, processes, roles, and other responsibilities. Combining computer-based media

in learning provides benefits, which makes learning more flexible. It also can provide reinforcement, motivation to learn, and learning enhancement. That is why the teacher's role is very important in this matter. The teacher must be able to use technology as a tool in learning. Because it is part of integration literacy, "which is the ability to use computers, digital media, and other technologies combined with various learning and teaching strategies to enhance student learning" (Shelly, Gunter, & Gunter, 2010, p.4). Therefore, teachers must understand and be able to match technology with learning materials so that the learning objectives can be achieved.

There are several multimedia meanings put forward by experts, including as described by Constantinescu (2007), stating multimedia refers to computer-based systems that use several types of content, such as text, audio, video, graphics, animation, and interactivity. Then explained also by Keller & Meyer (1996) multimedia is more focused on interactivity between media and media users. Based on this explanation, it can be said that multimedia is a computer-based system that can store, present and access data that focused on interactivity. Based on the literature review above, it can be concluded that instructional media is a tool used to create a more interesting and interactive learning atmosphere, as well as having an influence on increasing student activity and teacher creativity in presenting learning. Then multimedia is a computer-based media and interactive technology in the delivery of integration. The intended integration that computer-based multimedia and technology can store and present audio-visual data.

II. METHODS
Approaches

This study used a qualitative descriptive approach to find and describe precisely an object, which focuses on student experience and understanding. Then, the researcher gives a complex picture, analyzes the findings, and reports in detail as obtained from the data source. The emphasis in this research is how students describe their opinions based on the knowledge and experience they have.

Research design

This study used a phenomenological study that focuses on students' perceptions of an event based on experience. The study collects data that leads to identifying

common themes in people's perceptions of their experiences (Williams C, 2007, p.69).

Research site and participants

In this study, the respondents were STBA Pontianak students, 6th semester, teaching class. Selecting students as a respondent because the students already have experience in applying technology as a learning media. These students have been doing teaching practice in class, conducting street vendors teaching in non-formal education places, and also doing teaching practice in formal education.

Data collection and analysis

Data collection techniques carried out by conducting open interviews with all respondents, to identify students' perceptions about learning media and technology integration as learning media. From the results of the data collected, the authors draw conclusions.

III. RESULT AND DISCUSSION
Student Perceptions Regarding Learning Media

Learning activities need to combine appropriate learning methods and media so that the message can be conveyed and well received by the recipient. The following are the results of interviews conducted with respondents, which describe students' perceptions of learning media based on their knowledge and experience, both theoretically and practically.

1) In my opinion, learning media is a tool used by teachers in delivering material so that students easily understand. By using learning media, learning becomes more interesting because it displays interesting visuals, so students become more interested in learning (Respondent 1).

2) The media itself is anything that can be used to stimulate thoughts, feelings, concerns and abilities or skills of students, so as to encourage the process of learning. By using media in the learning process can facilitate interactions

between teachers and students so that learning will be more effective and efficient (Respondent 2).

3) In my opinion, learning media is a tool to convey messages from the sender of the message to the recipient of the message, in the learning activities the sender of the message is the teacher, while the recipient of the message is a student. The media makes students easier to understand the material delivered by the teacher (Respondent 3).

4) Media is a tool used by teachers to teach so that students are more focused on learning, and students come to understand what is conveyed by the teacher. By using media, learning becomes more interesting and not boring (Respondent 4).

5) Learning media such as supporting components that help teachers explain about learning materials so that students become more understanding with what is conveyed by the teacher, where the use of media adapted to the methods and materials delivered (Respondent 5).

6) Learning media is a kind of aids that really needs to be used in the learning process. By using media, making it easier for students to understand the material, students also become more focused on the material delivered by the teacher. Media also makes learning more fun thereby increasing student motivation (Respondent 6).

7) Learning media is a tool to deliver material so that students understand and focus on learning (Respondent 7).

8) In my opinion, instructional media is a set of tools that can be used in delivering material, with the intention of making it easier for students to understand the explanation delivered by the teacher. Because sometimes there is material that is not only sufficiently explained verbally (Respondent 8).

9) In my opinion, the media is a tool to build students 'attention in receiving messages conveyed by the teacher, thus encouraging students' willingness to put their attention to the learning process. Media can also increase interactions between teachers and students, learning is not only centered on the teacher (Respondent 9).

10) Learning media is a tool used in the learning process, which serves to channel messages or information from the sender of the message to the recipient of the

message. In this case, the teacher and students. Learning media can support learning activities both inside and outside the classroom (Respondent 10).

11) In my opinion, learning media is a tool that can stimulate students' attention and thoughts in the implementation of learning. By using learning media can help students understand the material delivered by the teacher. Learning becomes more effective and efficient because it is not only centered on the teacher. Using learning media can also help teachers provide understanding, especially to students who have weak abilities. Therefore, the teacher needs to choose the right media, which is not only adapted to the method and material but also the characteristics and abilities of students (Respondent 11).

Looking at the students' explanation above, it can be concluded that their perceptions about the learning media. Learning media is a communication tool used by the sender of the message to the recipient of the message, they are the teacher and students, which can stimulate students' attention and thinking ability, thus helping students understand the material delivered by the teacher. Learning media are all things that are used to convey teaching materials from sources to students that can stimulate the thoughts, feelings, concerns, and interests of learners so that the learning process (inside / outside the classroom) becomes more effective (Jalinus & Ambiyar, 2016).

By using learning media, learning activities become more effective and efficient and also can increase student involvement and motivation in learning, so learning is not only centered on the teacher. It can be concluded also, the learning media has a flexible nature because it can be used inside and outside the classroom, where the use of the media is adapted to the methods and learning materials, as well as the abilities and characteristics of students. Therefore, appropriate consideration is needed in selecting and using a learning media, and there must be a match between the two (methods and media) to realize learning objectives (Jalinus & Ambiyar, 2016, p.4), and the creativity of teachers in selecting and using media is needed as support in learning.

Student Perceptions Regarding Technology Integration as Learning Media

The era of highly influenced by the development of technology has an impact on the implementation of education. Many technology-based media can be used to support learning to improve the quality of learning. Following is the presentation of students' perceptions of technology integration as a learning media.

1) In my opinion, in this era, it is very necessary to apply technology in the learning process. There have been many media that use technology to support learning, such as the use of computers, e-learning, YouTube, audiovisual media, Web sites, e-mail, etc. By using technology as a medium, the learning process becomes more effective and efficient. It's just that in its application it needs to be supported with adequate facilities and infrastructure. In addition, the use of technology can create independent learners, students can learn anywhere without having to face-to-face, and the teacher acts only as a facilitator. In addition, this system can motivate the improvement of the quality of learning (Respondent 1).

2) In this era, the application of technology as a media is very important, considering that everything is more accessible with the help of technology. With technology, learning becomes more effective and efficient. The teacher no longer needs to explain the material for too long, but with the help of technology can shorten the explanation verbally, without ignoring the achievement of learning objectives. In addition, teachers can easily search for the learning material. We know that many types of technology can be used as learning media, such as the internet, multimedia, YouTube, and even email. With the help of technology, it can show a clear visual appearance which is not enough to just be explained verbally. Then with technology can make students become independent learners, students can also access learning materials as requested by the teacher. Therefore, teachers must be able to choose the right technology for their learning. In my experience, using technology also makes learning not bored, it becomes more interesting so that students are enthusiastic about participating in learning (Respondent 2).

3) The role of technology is to serve as a medium or tool that is not just to communicate a relationship between teacher and student but has interrelationships between one component to another, interacting and influencing each other. The benefits of using technology in the teaching and learning process are that it can trigger teacher

creativity, create interesting learning activities, students easily find learning resources Information technology, especially the internet, provides a variety of learning resources that can be accessed by students anytime and anywhere. The material they learn is also more varied, not only in word form but can be richer with a variety of text, visual, audio, film and animation. Referring to some of the benefits obtained, the use of technology is believed to increase student learning outcomes and motivation. Because increasing student learning outcomes and motivation directly is an indicator of the effectiveness and efficiency of learning implementation (Respondent 3).

4) In my opinion, the application of technology as a media increases the effectiveness of students in teaching and learning activities and the teacher can create an active classroom. Media with technology in a learning process, it makes the teachers easier to find teaching material that will be delivered in class. With media technology, teachers will get more resources as teaching material. In addition, with media that involves technology in it, students will more quickly accept learning well, and the teacher can convey it clearly and precisely. Then, the learning process will be more interactive, and efficient in time and energy. Students and teachers will find it easier to conduct learning anywhere and anytime. I personally approve of such systems. Especially for children who are very difficult to capture or understand the material well. I think that with this system of using media with this technology, it will be well controlled, and will improve the quality of learning (Respondent 4).

5) Technology in education has helped a lot such as the presentation of presentations with animation and sound effects. This technology is also supported by the internet that can be accessed by teachers quickly, accurately, and broadly. To run a technology needed the ability to operate it properly. With the existence of technology-based media, teachers can create a more effective and efficient learning atmosphere. Students are expected to achieve the learning objectives in a limited time and place. The teacher's limitation when in class is making sure all students understand the illustrations provided. Therefore technology can help teachers without bothering to show these illustrations, for example with animation even with sound though. The ease of disseminating material with limited time, teachers can use the WhatsApp application, email, or google classroom that is sent in seconds. Unlike the teacher who writes all the material in front of the class that can spend time to the end. To implement

technology-based learning requires no small cost to buy supporting devices such as computers and internet installation. However, the implementation of this technology media can help teachers, especially students in facing increasingly fierce competition in the present and future (Respondent 5).

6) Perception of the integration of technology-based learning media in learning, in my opinion, is using technology it has been very user-friendly in its integration, but again in each use of gadgets, is it appropriate to the environment to be reached? And software, is it user-friendly? as well as supporting media, do they require additional equipment? all of which aim at realizing efficient use so that they can be well integrated. The last thing is regarding inexperienced media users, a tutorial must be given in order to make good use of the media which will involve its integration as well (Respondent 6).

7) Integration technology as a medium of learning, in my opinion, is indeed important. With technology can display a very attractive visual display, such as audiovisual media and multimedia. Learning can occur wherever and whenever, such as the use of e-learning. Teachers and students can search for teaching materials or materials on Google and YouTube. With the help of technology, learning becomes more flexible. Learning, discussion, and communication between teachers and students can occur without having to face-to-face in class. It's just that, in its use, both teachers and students must be able to use the technology. Therefore, when the teacher chooses to use a technology-based media, the teacher must master how to use the media, so that the delivery of material is easier, and what is conveyed is well absorbed by students (Respondent 7).

8) Educator and learners need technology for support the teaching and learning process. Learning media also using technology to raise the goals of the teaching and learning process. The technology of teaching media develops in visual, audiolingual, and audiovisual based on the learners' creativity. All the types of technology can support learner's creativity to understand all of the lessons. Learning media can facilitate teaching and learning activities both in formal or informal education. In its role technology and education are very influential to each other for sharing information. The technology of learning media is very influential to improve the quality of students. With technology, learners can easily understand what is delivered by an

educator. Technology in learning media can be in the form of teaching aids or other equipment such as (audio, projectors, videos). Using media is expected that the situation in the room is not boring so learning can achieve goals and students easily understand the material of learning. Then choosing technology from the media needed an educator must study the theory and information that have been developed (Respondent 8).

9) In the field of education, the use of technology-based learning media has also developed rapidly. If in the past teachers had to re-copy learning material using chalk on the blackboard so that it took a long time, in this era teachers could use projectors and power points in the teaching and learning process so as not to spend too long. The use of technology-based learning media helps the learning process become faster and more efficient. The positive impact of the use of technology-based learning media that is the process of teaching and learning can be faster and more efficient; The introduction of technology to students from an early age so that in the future students have become accustomed to and are not technologically illiterate; The teaching and learning process can take place anywhere and anytime; Teachers can upload material on the site and students can download. Then in the use of technology-based media it should be implemented with the support of adequate facilities and the school as the provider must pay attention to all needs so that in the future technical issues do not interfere with the teaching and learning process; Teachers have a basic knowledge of the media that will be used so that there is no doubt when used; The use of media adapts to the needs of students (Respondent 9).

10) Educational technology for today has experienced very rapid development. These developments can be seen since the introduction of the term media such as visual aids or visuals. With technology, the world of education is advancing so rapidly. In its role between learning and technology is very influential. In learning, we need technology to look for sources of teaching materials, as well as media for teaching aids. Technology-based media can motivate and stimulate a student's desire to learn in the learning process. But it must also be selectively selected in order to convey quality things that must be selected in advance so that what is obtained by students is quality so that technology can provide the right information. To be able to select this, it is

necessary to study in advance what material we will use to deliver, what appropriate technology will be used as props (Respondent 10).

11) Education and technology are two things that cannot be separated anymore. Along with the development, technology has an extraordinary impact. Integrating technology in learning is to make technology as a medium of learning. But in its implementation, teachers must be selective in using appropriate technology. Technology-based media make learning effective and efficient. Students' interest and motivation to learn increase, because, with the help of technology, it presents interactive and innovative learning. The teacher must align between the material, student characteristics, and the media used. Both teachers and students must be able to use technology-based media so that the material can be delivered properly so that the goal of learning can be achieved (Respondent 11).

Based on the explanation of the respondents above, based on their teaching experience, there are several points concluded on the integration of technology as a learning media, namely:

First, integrating technology as a learning media can improve the quality of learning. Teachers and students must be prepared to face the rapid development of technology and make technology as part of the implementation of education. This is similarly stated by Fitriyadi (2013) that Information and Communication Technology-based systems can improve the quality of student learning in motivation, facilitate the acquisition of basic skills, offer analysis and exploration, and prepare individuals for the encouragement of the technological world. With the integration of technology in learning, making students as independent learners. The utilization of technology as a means of learning media makes it easy for teachers and students to explore learning material according to what they need. So students can understand deeper learning. Khoe Yao Tung (2000) explains that with the use of technology such as the internet, it becomes a supplement and complement that represents an important learning resource (Yazdi, 2012, p.146). Assisted by information technology as a learning media can support students with various learning abilities, provide more educational opportunities (Molnar, 2014; Lehtola et al., 2014; Kingry et al., 2015; Russell, 2016).

Second, as is well known, that many types of communication information technology devices can be used as learning media. Like the previous presentation, the use of computer equipment, *YouTube* and e-Learning. According to students' perceptions that the types of technology-based media that can be used are the internet, audiovisual media, websites, email, etc. As explained by Rehmat & Bailey (2014) that "the technology employed varied and included activities such as the use of the computer to gather data and other information, exploring websites, watching videos, playing educational games, and using iPad applications and simulations". Many studies have shown that the use of these media is very helpful in the implementation of learning, especially in optimizing the delivery of material that has an impact on increasing student ease of learning and student knowledge.

Third, the role of the teacher in integrating technology. In integrating technology, the role of the teacher is as a facilitator for students who direct and assist students in finding material to develop abilities and knowledge. It can be said that the role of the teacher does not have a complete role, by becoming a facilitator in learning making students as independent learners, although it can be said that any sophisticated technology cannot replace the role of the teacher in the implementation of learning. The theory that supports this statement as explained by Fitriyadi (2013) the use of information technology has changed the role of teachers. The teacher's role as the primary source of information shifts to being a facilitator, collaborator, navigator, and student-partner. It also builds active and interactive communication between teachers and students. He also stated that there was a shift in the role of the teacher who was previously the controller in all aspects of learning, then switched teachers to provide many opportunities and responsibilities for students to become independent learners.

Fourth, the nature of learning and communication between teachers and students becomes more flexible. Learning can be done anywhere and anytime, not only expecting face-to-face meetings in class. This is as expressed by Yaumi (2011) that the use of communication media has built a model of interaction, interactions conducted by teachers and students not only through face-to-face relationships but also can use these media. With this model of interaction and learning, students

become more active in exploring knowledge according to what they need and remain in the teacher's observation.

Fifth, the teacher must have the ability to choose the right media in accordance with the material and methods used, because all three aspects are related to creating effectiveness in the learning process. Then, both teachers and students can use the media that will be used. Therefore, teachers should determine the learning media that will be used, it is necessary to study the types of technology-based media that will be used to support learning activities so that learning runs optimally and the material is well delivered. There are several things in determining learning media, namely identifying the ability of teachers and students must be able to use media in a familiar manner; the media can facilitate evaluation and assessment; the creation of good interactions between teachers and students; facilitate learning strategies that have been prepared; and the media can help deliver content optimally (Tafqihan, 2011).

It is expected that in the digital era now, both teachers and students should be prepared to deal with changes and developments in technology. Because it cannot be denied that, with the integration of technology in learning, especially as a media of learning has a positive impact on the implementation of the education system. Teacher creativity is required to keep updating their knowledge and skills. Although it is realized that there are several obstacles in the application of technology, judging from adequate facilities and infrastructure. For the optimal integration of technology, it must also be supported by other elements.

IV. CONCLUSION

Based on the results of a study of students 'perceptions of learning media that is learning media is a supporting tool used in learning activities, where its use can increase students' attention and thinking ability, thus helping students understand the material delivered by the teacher. With the use of instructional media can make learning effective because it helps in the interaction between teacher and student, and can the realization of student-centered learning. Five points regarding technology integration as a learning medium, namely (1) can improve the quality of learning; (2) there are several types of technology-based learning media that can be used in learning, including computer equipment, internet, YouTube, website, email, etc; (3)

the teacher's role as a facilitator and provide opportunities for students to learn independently; (4) flexible learning and interaction between teachers and students that can occur anywhere without having to face to face; and (5) in integrating technology as a learning medium, teachers must be able to align between the material, methods, and media used. And both teachers and students must be able to use these media so that the learning process can occur optimally. Besides that, integrating technology as a media can create an atmosphere that is not boring and learning objectives can be achieved, making it easier for students to understand the material so that it improves student learning outcomes.

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