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### VIDEO-BASED LEARNING ON IMPROVING STUDENTS' LEARNING OUTPUT

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#### **ABSTRACT**

This research is about video-based learning on improving students' learning output; it is done to find out whether video learning media is effective in enhancing the students' learning output on Anatomy Practicum. The method of this research is a classroom action research using a set of test and interview sheet as the instruments. This research indicates that 80% of the students got improvement in their learning outputs. This improvement was also supported by the data taken trough interview sheet that the students find it more exciting and are more facilitated to learn using the video learning media. From the finding of this study, it is concluded that the video learning media is beneficial in improving the students' learning outcome. So it is suggested that in teaching Anatomy Practicum, the lecturers are required to use video as a media in teaching.

## INTRODUCTION

Less learning achievement or not reaching the minimum completeness criteria are very often encountered in the teaching and learning process done by the lecturer. It is, of course, happens due to several factors; it could be an internal factor or an external factor. What is meant by "internal factors is originating from within students; such as physical/spiritual state/condition of the student. In contrast, external factors are factors that come from outside students; such as the environmental conditions around students" (Ercan, 2014; Nadeak & Naibaho, 2018). In addition to the factors mentioned above, "learning approach factors (approach to learning), namely student learning efforts that include strategies and methods used by students to carry out learning activities on the subject matter also contribute to student learning outcomes" (Su & Cheng, 2015).

This process is what is called the learning process, which can realize the change in mindset in a positive direction. Facts that are often found in the field; namely, students often fail in the intended learning process so that changes in mindset for the better do not materialize as expected (Al Zoubi & Al Khamaiseh, 2019; Kirkwood & Price, 2014; Qian & Clark, 2016). Finally, student learning outcomes are not satisfactory because they cannot reach the graduation grade standards that have been set. Furthermore, Nadeak and Naibaho (2018) said that "80% of students in each class had low learning achievement". Their learning outcomes do not exceed the minimum completeness limit that has been required, which only reaches a C value with a score of 60 - 65. It is, of course, is one of the problems that must be addressed immediately, namely by seeking solutions that can be implemented to overcome these problems. In previous studies, researchers have tried to find out "the factors that cause this problem through a preliminary study by seeing whether students have an interest or not in learning Anatomy, and the results obtained was that students have a high enough interest in the course so that it can be concluded that the student learning outcomes are low not because of their low interest, but is caused by several factors outside of interest" (Nadeak & Naibaho, 2018).

For more comprehensive data, in the following table is provided learning achievement score made by the medical student in learning Anatomy courses.

**Table 1:** Evaluation of Anatomy Score of Students Batches 2014, 2015 and 2016

Batches	Theory					Practicum				
	Students' Total	Passed	%	fail	%	Students' Total	Passed	%	fail	%
2014 Block 6 Block 9	-	-	-	-	-	218	102	46,79%	116	53,21%
	-	-	-	-	-	214	165	77,10%	49	22,90%
2015 Block 2 Block 3 Block 7 Block 8 Block 9	183	126	68,85%	57	31,15%	179	75	41,90%	104	58,10%
	182	25	13,74%	157	86,26%	181	81	44,75%	100	55,25%
	-	-	-	-	-	183	69	37,70%	114	62,30%
	-	-	-	-	-	183	19	10,38%	164	89,62%
	-	-	-	-	-	184	53	28,80%	131	71,20%
2016 Block 2 Block 3	171	56	32,75%	115	67,25%	173	25	14,45%	148	85,55%
	162	83	51,23%	79	48,77%	166	46	27,71%	120	72,29%

**Source:** Nadeak and Naibaho (2018).

If it is viewed from the terms of the urgency of the course, the Anatomy course is an essential subject, because it is the foundation or foundation for other courses in the faculties of medicine and other health sciences. Supposedly, in their generation, by the expectations contained in the curriculum design after studying the course, it is hoped that it will no longer be problematic. In learning Anatomy, there are two types of learning, such as theory and practicum. Practicum is part of the learning process, which is aimed, so the students are able to practice the theory they learned. Due to that information, it means that practicum is where they could see the real Anatomy of the human body that brighten their knowledge before they are sent into real condition.

From the results of interviews conducted to 20 students from 2015, 2016 and 2017 batch whose learning results are unsatisfactory, it was found that 80% of students had a reasonably good interest in learning Anatomy courses, 87% of students lacked direct learning opportunities (practicum). Due to limited resources or learning media used, 81% of students said that the number of lecturers was not very proportional to the number of students in a class, and 86% of students said the lack of learning resources and references used by lecturers in Anatomy courses.

It encourages researchers to examine more deeply about methods or appropriate ways to be able to overcome these problems by reviewing the literature or research results that have been carried out to improve student learning outcomes. After that, researchers read research related to problems that arise and then find a way to overcome them. The way that has been implemented is to learn by using video learning media. The results of the studies that have been carried out are increasing student learning outcomes using the help of video learning media (Strkalj et al., 2018). Greenberg and Zanetis (2012) who say that the benefits of video in learning are: “a) Interactivity with content (the learner relates to visual content, whether verbally, by taking notes or thinking, or by applying concepts ); b) Engagement (the learner connects to the visual content, becomes drawn in by video, whether on-demand or real-time); c) Knowledge transfer and memory (the learner may remember and retain concepts better than with other instructional media)”.

The use of video as learning media at Medical Faculty, *Universitas Kristen Indonesia* is still new, since the teaching method used before was traditional teaching. The teaching method, which was done by whole lecturers, were centralized in the teachers. So the students become passive learning instead of being active learners.

It was the background of the researchers to conduct this research, so the researchers designed a study with the title "A Video-Based Learning on Improving Students' Learning Output". By doing this research, it can be known empirically and scientifically whether video learning media can improve student learning outcomes in Anatomy courses.

The research problems that will be answered in this study are formulated in the form of questions as follows: "Does the student learning output improved if taught using video-based learning?". With the aim of the study to find out whether student learning outcomes in Anatomy courses increase if taught using video learning media.

### **THEORETICAL REVIEW**

Speaking of media, of course, is not new to us because our daily lives are inseparable from the use of these media. It means that the media is a tool that can be used in human activities. The word media is a plural form of "medium" derived from the Latin language, namely medius, meaning; something that is used as an intermediary (Jacobi, Van der Burg, & de Groot, 2012; Matijevic, 2012; Uimonen, 2013).

While learning is a process of interaction between teacher/lecturer and students as well as learning resources that are used when the lecturer is doing the learning and teaching

process. In this process the acquisition of knowledge and knowledge occurs, besides that, the process of mastery of skills, the formation of mindset, character, attitudes and beliefs also occur (Akçayır & Akçayır, 2017; Bankole-Minaflinou, 2019; Han & Shin, 2016; Ormrod, 2011; Rogoff, Paradise, Mejía Arauz, Correa-Chávez, & Angelillo, 2003; Wilson & Peterson, 2006).

So what is meant by “learning media is the use of materials and tools in learning, or merely learning media can be understood as media used in the learning process and objectives. In this case, the media is used as a tool that can help educators and students in preparing and receiving subject matter” (Berk, 2009; Matijević, 2014). Examples of instructional media are as follows: books, pictures, LCDs, torso, undead, audio, video, slides, videos and others. In general, the media can be categorized into three types such as visual media (picture or form), audio media (radio, audio cassettes) and audiovisual media (Video, TV and Computers). However, in this study, the three types of media will not be discussed in detail, except video media, because this research is only focused on the use of video media in the study of anatomy courses at the Faculty of Medicine, Indonesian Christian University. The explanation of the selected media will be explained in detail in the following section.

Video is a recording of an image or a real object that is accompanied by sound or often referred to as audiovisual media that displays both images and sound. This media is very often used in the teaching and learning process because it can foster students' interest in learning, where students can simultaneously listen and see things even though objects that are seen and heard are not directly from the primary source, but through intermediary media such as TV, laptops, computers, or mobile phone.

From the explanation, it can be concluded that video is a type of audiovisual media that shows both objects and movements as well as the natural sound of the object. Videos usually contain information, performances of a process or event, an explanation of a concept, teaching about specific skills that can affect the nature of the audience. “There are several advantages of using video in learning such as: 1) video is a tool that can facilitate students to experience something, so students can do something by imitating what has been recorded in the video; 2) with video media, something that is impossible to show (real objects) due to some limited resources, funds, location and other factors so that it can be displayed” (Woolfitt, 2015) c) “with video can provide experiences for students to feel something” (Bishop & Verleger, 2013) and d) “with video, learning can be more productive and more interesting so that students can be motivated in learning” (Ahmad, 2019; Day, 2008; Gorissen, 2013; Schwartz, 2013). These reasons are what drives the educator to use video as media in teaching at schools and universities.

Anatomy courses are “the basis of all medical courses, and also have close links in other fields of health sciences such as; normal and pathological physiology to genomics, pharmacology, biochemical applications of laboratory medicine for the patient's therapies, the physics of gas in the lungs, cell-level transport of oxygen for the acutely ill patient, as well as the human experience of illness and average growth and development - and much more must be understood or mastered by all medical students without exception. Anatomy as basic medical science is needed in studying and developing clinical science” (Abdullahi & Gannon, 2012).

Anatomy which studies “the shape, structure and location of organs, its position side by side with other basic sciences, in this case, is Physiology (bodily functions), Biochemistry (biological processes) and Histology (micro Anatomy) which are part of Anatomy. Anatomy courses are taught in semester 1 to semester 2, where theoretical and practical laboratory subjects have been incorporated in these two semesters. Anatomy courses are subjects that should be conditional; namely, students must first pass the course before entering other medical courses” (Sturges & Mauner, 2013). Besides,

“Anatomy courses are also the basis for all health-related study programs such as nursing, radiography, physical therapy assistant, occupational therapy assistant and many others. To be successful in the health profession, a student should master functional anatomy” (Sturges & Mauner, 2013). It has been documented in several previous studies, namely “good performance in the Anatomy course has a close relationship with the success of health programs in the future. Anatomy education fosters the abilities that are essential for someone who will deal with sufferers, and many of these abilities are not obtained in the same degree in other disciplines in the medical curriculum”.

### RESEARCH METHODOLOGY

The research method used in this study is classroom action research. Where researchers in two cycles with self-reflection will conduct this research, this is done to improve the learning outcomes of anatomy courses as well as to be expected to improve the performance of teaching staff (lecturers) so that student learning outcomes and lecturer performance in Anatomy courses increase. The location of this study in the Faculty of Medicine, Indonesian Christian University, Jalan Mayjen Sutoyo No. 2 RT.5 / RW.11, Cawang, Kramat Jati, City of East Jakarta, DKI Jakarta starting from November - January 2018. The research subjects used in this study were students from 2016 and 2017 who took anatomy courses in odd semester 2018/2019 with 172 students. This class was chosen to represent medical students who have the highest number of failures. The research procedure begins with: a) planning; b) action; c) observation; and d) reflection. The instrument used in this study was a test sheet (the test consisted of 30 items of essay test) to test the level of student achievement on Anatomy courses, questionnaires, and also interview notes. The research data were analyzed using simple statistical analysis with percentage descriptive techniques, and then the questionnaire data were analyzed with scoring, to determine to score with a weight value for each answer as follows.

**Table 2:** The score of Respondents' Alternative Answers Items.

Positive		Negative	
Response	Score	Response	Score
strongly agree	4	strongly agree	1
agree	3	agree	2
Disagree	2	disagree	3
strongly disagree	1	strongly disagree	4

Then by looking at the average score of student responses with the following classification.

**Table 3:** Classification of Questionnaire Scores.

Classification	Explanation
25 – 50	Low
51 – 75	Middle
76 – 100	High

### RESULTS AND DISCUSSION

Before conducting the cycle of the study, the researcher conducted the pre-test. The pre-test given to the students consisted of 30 items (essay test). This test was conducted to know the prior knowledge of the students before treatments were given. The average score of students at the pre-test was 48.2. There were 85,5% of the students from a total of 172 were failed in the test.

After getting and analyzed the pre-test score, then it was decided to conduct the first cycle. At the first cycle, before the test was conducted, the students treated the students learning Anatomy using video. The students were grouped into eight groups, and they were sitting in front of the TV. The activity of lecturing was done in four meetings before

they were tested. After treatment was given to the students through teaching activities, they then were tested. The student activities based on observations of student activities in the first cycle can be seen in the following explanation.

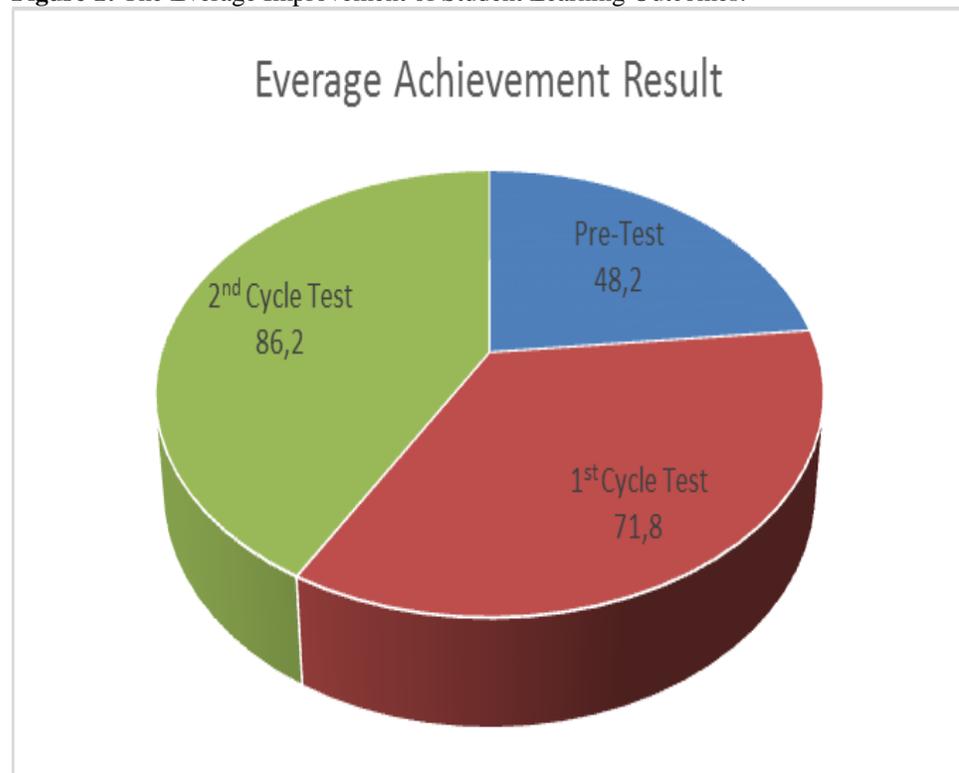
The results showed that there was an increase in student learning outcomes from the pre-test, the first cycle and the second cycle. The first cycle, the average learning outcomes are 71.8 by entering into a proper category but still not included in the category of success indicators that is 65. In the second cycle for student activities, obtain a percentage of 86.2 included in the category is perfect and has reached the indicator of success that has been set. For more details, then the following table can be seen.

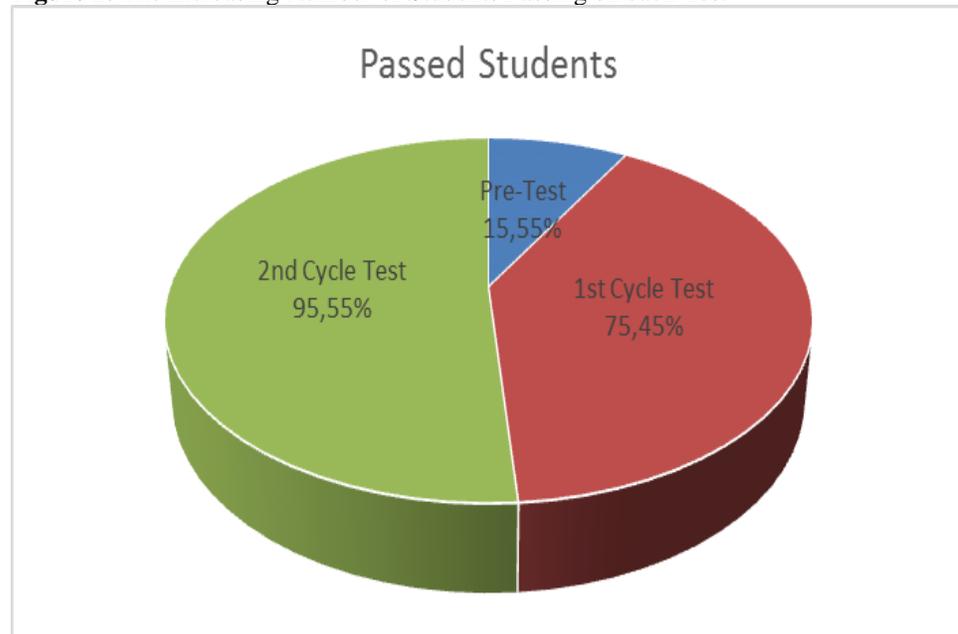
**Table 4:** Student Achievement Results in Each Test.

Test	Average Achievement Result	Passed Students	Fail Students	Total of the Students
Pre-test	48,2	15,55%	84,45%	172
First cycle test	71,8	75,45%	24,55%	172
Second cycle test	86,2	95,55%	4,45%	172

From the table above it can be seen that the improvement in student learning outcomes in each test conducted by lecturers is excellent. It can be concluded that the total average increase from pre-test to test in the second cycle is 38.1, while the percentage increase in graduation from pre-test to the second cycle test is 80%.

**Figure 1:** The Everage Improvement of Student Learning Outcomes.



**Figure 2:** The Increasing Number of Students Passing on each Test

In the teaching activities in the first cycle stage, as mentioned earlier, the achievement indicator score that has not been reached is 65. Although it has reached a proper category, there are still aspects that are still lacking and must be improved again, namely the aspect of concluding lecture material where students have not maximum in concluding lecture material after watching the video. Thus, this research continues in the second cycle by taking into account the factors that cause learning outcomes are not achieved to the maximum. Therefore, the treatment was repeated. The score on the second cycle has improved into a higher score (86.3) and even had passed the success indicator rates score (65). Some students are above the minimum success indicator score.

This improvement can be achieved by students because the lecturer tries as much as possible to do apperception - in the form of giving a question and answer to students. Students respond enthusiastically, then actively present their work by alternating, listening and listening to the material being given by the lecturer via video. Their behaviour which is sometimes crowded themselves is pleased, and some even walk now to be controlled until the end of the lesson. When the lecturer played the learning video, all students actively watched the video, were active in the discussion and were active in when the lecturer asked to present the results of the work and actively concluded the learning material.

From the results achieved in the first cycle and second cycle, it is possible to occur because of the usefulness of the video learning media used. The benefits are as follows: "a) grabbing students' attention; b) focusing students' concentration; c) generating interest in class; d) creating a sense of anticipation; e) energizing or relaxing students for learning exercise; f) drawing on students' imagination; g) improving attitudes toward content and learning; h) building a connection with other students and instructing; i) increasing memory of content; j) increasing understanding; k) fostering creativity; l) stimulating the flow of ideas; m) fostering deeper learning; n) providing an opportunity for freedom of expression; o) serving as a vehicle for collaboration; p) inspiring and motivating students; q) making learning fun; r) setting an appropriate mood or tone; s) decreasing anxiety and tension on scary topics, and t) creating memorable visual images". This opinion is also consistent with the opinion that said: "teaching material based on video clips was at least as equally effective as standard teaching lectures" (Aliyu, Korau, & Basiru, 2019;

Chiang, Yang, & Hwang, 2014; Hwang, Lai, & Wang, 2015; Hwang, Yang, & Wang, 2013).

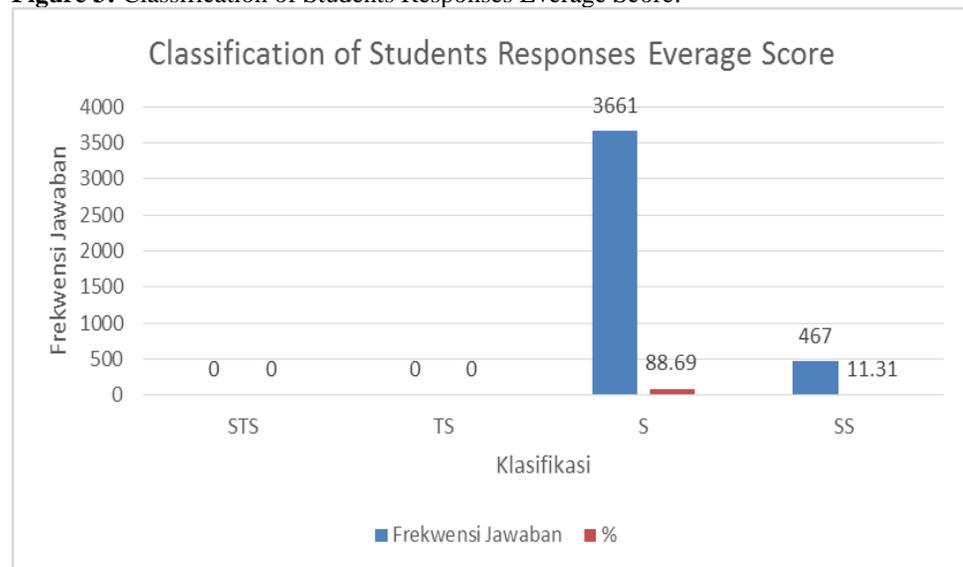
The results of observations on questionnaires that have been filled out by students in the first cycle and the second cycle can be seen in the following diagram.

**Table 5:** Classification of Average Student Answer Scores.

Classification	Responses Frequency	Number of Students
Strongly disagree	0	172
Disagree	0	
Agree	3661	
Strongly agree	467	
<b>Total</b>	<b>4128</b>	

The table above shows that out of 172 students, the frequency of answers agreed to the questionnaire content given to students appeared 3661 times and 467 times for the frequency of answers strongly agree. While for the frequency of answers that strongly disagree and disagree, none of the students chose the answer. It means, about 88.69% of the total frequency of answers that appear said agree that learning videos can improve their learning outcomes in the field of Anatomy. The rest, 11.31 per cent of the total frequency of answers that emerged said strongly agreed that learning videos can improve their learning outcomes in the field of Anatomy. For more details, then the following diagram can be seen.

**Figure 3:** Classification of Students Responses Everage Score.



Thus, it can be determined the "score calculation" for the assessment of respondents' interpretation based on a questionnaire that has been filled (with a value of  $Y = 4 \times 172 = 688$  as follows:

$$\begin{aligned} \text{Index\%} &= (\text{Total Score} / \text{Total Statement} / Y) * 100 \\ \text{Index\%} &= (12851/24/688) * 100 \\ \text{Index\%} &= (0.77) * 100 \\ \text{Index\%} &= 78.82 \end{aligned}$$

While the calculation of the percentage index that ends with the determination of the criteria for the score interpretation based on the classification that has been mentioned in the methodology section of this study, it can be concluded that the criteria for interpretation of scores from this study are at intervals of numbers 76-100. "very good". Based on the discussion above, the overall utilization of instructional video media in the Anatomy course shows an increase in learning in each cycle.

It is consistent with the opinion that "video learning media can clarify the presentation of messages and information to facilitate and improve the process and learning outcomes" (Naibaho, 2019; Rockinson-Szapkiw, Courduff, Carter, & Bennett, 2013; Uyulgan & Akkuzu, 2018). "Video learning media can increase and direct student attention, so that it can lead to motivation to learn, more direct interaction between students and their environment, and allows students to learn on their own according to their abilities and interests" (Merchant, Goetz, Cifuentes, Keeney-Kennicutt, & Davis, 2014; Naibaho, 2019). "Video learning media can overcome the limitations of the senses, space and time. Learning media can provide a familiar experience to students about events in their environment, and allows direct interaction with the lecturer, the community, and the environment" (Guthrie, Klauda, & Ho, 2013).

### CONCLUSION

Student learning activities on Anatomy courses using video learning media have a very positive impact on improving student learning outcomes. It can be seen from the increase in learning outcomes in the first cycle and second cycle. It is not only demonstrated through the learning outcomes achieved by students but also shown through questionnaires filled out by students. Thus it can be concluded that video-based learning improves students' learning output. Thus, researchers strongly recommend to lecturers to use video learning media in learning. Moreover, the courses taught are courses that are more directed at the anatomy learning system. Even lecturers are also expected to be able to make their learning videos to answer better the needs of students by the circumstances of the students being taught. Thus, students can gain knowledge from well-studied subjects.

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