




Using Video Physical Assessment to Enhance Nursing Student's Skills

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Abstract. Physical assessment is one of the nursing competencies required of nursing students. The accuracy of physical assessments is the key to success in the implementation of nursing care. Many learning media can be used to deliver and understand physical assessment; one of them is audio-visual learning (videos). The goal of this study is to incorporate audio-visual learning (video) into cardio-vascular physical assessment teaching and learning for nursing students who were continuing their studies in Pendidikan Profesi Ners. The research design was a quasi-experiment with pre-and post-test designs. The sample included 30 respondents in the pre-test group and 30 in the post-test group. The sample was recruited by total sampling. Data were analysed using the t-dependent test. The mean score to perform a physical assessment before the respondent was given a video was 52.17, and the standard deviation was 7.154. The mean score to perform a physical assessment after the respondent was given the video was increased; that average was 73.93, with the standard deviation being 10.075. The t-dependent test results showed a p-value of 0.000 (p-value 0.05). It is concluded that there was a significant difference in the performance of the physical assessment before the respondent was given videos and after the respondent was given videos. Further research is expected to use a control group.

Keywords: Physical Assessment, Nursing, Cardio-Vascular, Video.

1 Introduction

The process of teaching and learning with the paradigm of the lecturer as a person who knows everything is now no longer valid. Students are less active in participating in the teaching and learning process if they are only centered on the lecturer (teacher-centered learning), so they do not produce their maximum output. Students who listen or read more with the teacher-centered learning method will be made to listen and get information from their teachers only; this way does not support the development of cognitive independence in students. Minimal cognitive development will have an impact on skill development. This can be minimized if the lecturer has several media used in the teaching and learning process, such as audio-visual media (video).

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Video can be used as an alternative media that can improve student skills, especially in subject matter that requires skills. Students will prefer to watch videos and not be passive because watching videos is more directed at recreation with elements of color, movement, and sound that make the characters more alive [1]. Watching the video makes students understand the teaching material more firmly because it brings more emotional elements into the flow of the video. The potential emotional impact produced by the video is very strong. The viewer can be shown and repeated, especially for subjects that require skills such as physical examination [2].

Learning media are needed to facilitate the learning process for students. Learning media can also attract students' attention, and the learning process must not be boring and meaningful [3], [4]. Learning media has a positive influence on student learning outcomes and can also increase learning activities and make them more interesting [5]–[7]. The learning media can help the teacher when they deliver lectures. Appropriate media learning can make the learning process more interesting and clear [8]–[10]. Learning media is a tool that can attract students' attention to learning. One of the online learning media that can be used is YouTube. YouTube is the most popular online video-sharing media website on the internet. YouTube is also a video library service that is provided free of charge to teachers and students to form the character of independent and creative learners [11]. YouTube is a user-friendly and convenient social media platform. YouTube creates a conducive learning situation and fosters student interest in learning. YouTube is suitable as a learning medium that is applied during dare learning because it follows the characteristics of elementary school children who still like to play, see everything that is visual, move, and still like to imitate [11], [12]. YouTube learning media can be accessed anytime and anywhere, and it is easy to use. YouTube can be accessed anytime and by anyone. The advantages of YouTube media are used by educators at various levels of education. The use of YouTube as a learning medium aims to create interesting, fun, and interactive learning conditions and environments. YouTube has presented videos that can increase students' understanding of learning. Audio-visual media or learning videos are media that display audio and visual elements or moving images so students can see and hear [13], [14], [15].

The use of learning videos can stimulate cognitive development in students to improve student learning outcomes [15], [16], [17]. Several previous studies have shown that there are several learning media used in the online learning process. The purpose of this research is to analyse the effectiveness of learning by using YouTube media.

Physical examination learning material is application material in the Bachelor of Nursing curriculum. A physical examination is part of the assessment process before doctors or nurses make medical or nursing diagnoses. Physical examination is an examination of the body to find abnormalities in a system or an organ of the body using four methods: viewing (inspection), touching (palpation), tapping (percussion), and listening (auscultation). The head-to-toe physical examination needs to be done correctly because the results of the physical examination can be used as a basis for nurses to enforce nursing diagnoses, which then form the basis of nursing care [18]. These results can be obtained during the educational process.

Nursing education in Indonesia is now at a level ranging from a diploma to a doctorate, and each level of education has different competencies. A bachelor's degree

in nursing education is a professional education. Professional education is of course demanded to be able to produce graduates who can perform skills in their competencies in a professional manner. This can be achieved if, in the learning process, there are more demonstration methods than lectures. However, the demonstration method also has weaknesses. Students may forget after the lecturer conducts the demonstration. This will be different if the learning process uses video. Learning through videos allows students to study repeatedly, and the ability to understand the material will be obtained.

Bachelor nursing students are expected to have more nursing skills if they want to continue their studies for a professional nursing degree. Efforts to improve these skills include increasing the use of practical learning methods. The teaching and learning process in the Bachelor of Nursing Program at Universitas Muhammadiyah Gombong still uses lecture and discussion methods and is limited to textbooks. There is no use of learning video media for physical assessment in audio-visual. Therefore, the researcher is interested in developing a learning video about physical assessment. The results of interviews conducted with 5 students, all (100%) stated that the skills that were most difficult to memorize and perform correctly were physical assessment skills. The results also found that when researchers asked students to carry out spontaneous physical examinations, on average only 40% of them did it correctly. They said that they forgot. This made researchers interested in conducting research using video media as a means of improving students' physical examination skills.

2 Methodology

This research used a quasi-experiment with One-group pretest-posttest design. The sample in this study was 30 students in the pre-test and post-test groups. A total sampling technique was used in this study, and 30 students in nursing professional education were recruited. The study was carried out in the nursing laboratory room of the Muhammadiyah University of Gombong for 2 weeks pre-intervention and 1-week post-intervention. The instrument used was a cardio-vascular physical examination checklist. In the initial stage, the researcher entered into a contract with the respondent and explained the aims and objectives of the research. According to the contract, researchers assisted by enumerators (three people) conducted pre-intervention on respondents for two weeks. The researcher made observations by ticking off the prepared checklist, which consisted of 11 items of steps that had to be taken by the respondents. The researcher also asked about the characteristics or demographic data of the respondents, which consisted of age, gender, and motivation to enter the Faculty of Health Sciences. The next step after the pre-intervention was completed, the researcher to provide a video of the physical examination of the heart to the respondents. To equalize the length of time the respondents studied the video, they were given 6 days to learn it. On the 7th day, the researcher conducted a post-intervention with 30 respondents. The results of the pre-test and post-test were analyzed using the dependent t-test.

3 Result and discussion

Table 1 shows the gender of respondents, with more female respondents than male respondents: there were 25 female respondents (83.3%) and 5 male respondents (16.7%). There were 24 students aged 20 years old (80.0%), 4 respondents aged 21 years old (13.3%), while most of respondents aged 24 years old (80.0%), and only 1 respondents for each age 20 and 23 respectively. Not all respondents had the self-motivation to continue their education by studying at the Pendidikan Profesi Ners. There were 18 respondents (60.0%) from themselves, and 12 respondents sourced from their parents (40.0%).

Table 1. The frequency distribution table of the respondent's ages, gender and motivation to study at Pendidikan Profesi Ners.

Variable	Frequency	Percentage
Genre		
Male	5	16.7
Female	25	83.3
Age		
20	1	3.3
21	24	80.0
22	4	13.3
23	1	3.3
Source of Motivation		
Own student	18	60.0
Parents	12	40.0

Table 2 shows that 18 respondents (60.0%) said they forgot about the procedure of the assessment steps, 5 respondents (16.7%) had difficulty understanding how to do it, and 7 respondents (23.3%) stated that they lacked practice.

Table 2. The frequency distribution of respondents' barriers to perform a physical assessment (n=30).

Respondent's Barriers	Total	Percentage
Forget	18	60.0
Hard of understanding	5	16.7
Lack of practice	7	23.3

Table 3 shows that the average (mean) physical assessment ability of the respondents before being given the video was 52.17, with a standard deviation of 7.154. The physical assessment ability improved after watching the video by an average of 73.193 and a standard deviation of 10.075.

Table 3. Distribution of mean physical examination values of respondents based on observations before and after being given the video (n=30).

Variable	Min-Max	Mean	SD	Median	N
Physical Assessment Ability					

Pre-intervention	40-75	52.17	7.154	50.00	30
Post-intervention	50-95	73.93	10.075	77.00	30

Table 4 shows that the mean of the difference in physical assessment skills before and after being given the learning video was -21.767 with a standard deviation of 6.771. The results of the dependent t-test obtained a p-value of 0.000 (<0.05), which means that there was a significant difference in physical examination skills before and after being given the learning video. The pre-intervention results showed that the average physical assessment score was still low, namely 52.17. The results of the researcher's interview with respondents showed that 18 respondents said they had forgotten (60.0%) what they should do, 5 respondents (16.7%) said the checklist was difficult to understand, and 7 respondents (23.3%) stated that they lacked practice. They said that the lecturer's teaching methods were lecture and demonstration. Even though this method has a lot of benefits, it has a weakness when applied to improving skills because it makes students passive [19]. On the other hand, after getting a lesson, the students will never study it again because they feel they are not needed if they do not practice in the hospital. This reason will make students forget. Learning with the demonstration method provides opportunities for students to develop their skills by observing all objects used during the process and drawing conclusions from what is seen [20]. So far, the demonstrations have used standard operating procedures (SOPs) or checklists, which have the potential for respondents not to understand, and no availability of interactive media (videos) could be studied at home. This made the respondent forget about the procedure for carrying out a physical examination that they had just learned. Based on the analysis above, audio-visual media (video) is effective for improving physical examination skills in 2nd semester Nurse Professional Education students because the students have learned physical examination from various patients. Students have been given an independent learning process, but based on the average pre-test result of 52.17 with a minimum score of 40 and a maximum score of 75 from a total score of 100, it can be concluded that the student's ability was still less than the expected competence.

Table 4. The results of the dependent T-test on respondents (n=30).

Variable	95% CI		Mean	SD	SE	df	P-Value
	Lower	Upper					
Pre and Post Intervention	-24.295	-19.239	-21.767	6.771	1.236	29	0.000

The respondents did not conduct some of the pre-intervention procedures, such as palpating the left and right carotid artery areas, using a stethoscope to auscultate the arteries, observing the client's precordium (the area above the heart) by observing the apical pulse at the 4th to 5th intercostal space, and performing auscultation systematically. The participants were nursing students pursuing a Nurse Professional Education degree (Pendidikan Profesional Nurse). Nurse professionals were required to have good knowledge, skills, and attitudes to give nursing interventions optimally. The results of the post-intervention after respondents watched the physical assessment video showed an increase in the respondents' skills when they carried out cardiovascular physical examinations, with a mean value of 73.93, a minimum score of 50,

and a maximum score of 95. The increase in respondents' ability to carry out physical examinations proved that audio-visual learning media were very effective for student learning processes, especially to improve nursing skills. Physical assessment is a subject that requires not only cognitive abilities but also skills. In the nursing process, physical examination is an essential part and one of the competencies in nursing education. According to Wilms, Schneiderman, and Algranati (2005) in NV Manalu (2016), physical assessment is a process carried out by clinicians and nurses through inspection, palpation, percussion, and auscultation of the patient's physique to find the signs and symptoms of the disease [21].

Accuracy in a physical examination is a determinant of success in enforcing medical and nursing diagnoses. Many studies have proven that learning through video has advantages for the teaching and learning processes. Nindya Aryanty, et al. (2014) said that the motivation and knowledge of students in an online course can be increased through videos that are designed according to the study purpose [22]. Another study conducted by Brecht (2012) at California State University found that learning videos are beneficial for students while they learn because the students as viewers can play them slowly and replay them more [23]. Another study by Kurniawati, N. (2014) found that learning videos were better than leaflets for increasing pregnant women's knowledge about how to cover complaints during pregnancy at Surakarta City Hospital [24]. Video is one of the audio-visual media that combines several senses. This is consistent with Yusnia's (2010) findings that the teaching and learning process was more interesting and the audience was more motivated by video messages when they were delivered by moving images, and video can effectively communicate messages [7]. Anshor (2015) stated that about 90% of the learning value obtained by a person through the sense of sight (visual), 5% was obtained by the sense of hearing (audio), and 5% again by other senses [25]. Research by Munawaroh et. al (2019) found that audio-visual learning gave better results than textbook learning because there were differences in the effects of health education textbooks and audio-visual media on increasing patient knowledge of tuberculosis [2].

The effectiveness of audio-visual learning (video) in this study can be seen from the results of the dependent T-test, which obtained a p-value of 0.000, which means that there was a significant difference in physical examination abilities before and after being given the video. Playing the video as many times as desired motivates students to analyse and observe each stage, resulting in more careful learning. Students said that they can play the video according to the opportunities available and the free time they have. This result is in line with a study by Wisada, Sudarma & Yuda (2019), which stated that the information conveyed through video can be understood better as a whole and will be stored in long-term memory, and these learning messages are more meaningful [26]. This study contradicts the results of Ambarwati's study (2014), which found that textbooks were more effectively used for health education in elementary school children than video, but based on the evaluation results of the media used, it was found that respondents tended to be more interested in material that was full of images, namely videos. The results of open-ended questionnaires in this study showed that 90 respondents (87.37%) said that video was more enjoyable for learning because learning was more relaxed and easy to play. On the other hand, 13 respondents (12.62%) stated that all subjects have varying degrees of difficulty depending on the level of learning and that any media should be used [1].

4 Conclusions

The results showed that there was an increase in the mean value of the respondents' ability to perform physical examinations, from 52.17 (pre-intervention) to 73.93 (post-intervention). The results of the dependent t-test showed a p-value of 0.000, which means that audio-visual learning media (video) were effective for increasing students' abilities. Referring to the results of this study, it is suggested that lecturers need to modify the learning media and its methods when they teach their students in accordance with the learning outcomes. Learning material that requires skills cannot be done using one method alone. Teaching-learning material needs additional visualization that can stimulate students to be more interested in learning it. Lecturers should have media products that students can use, where the media can be studied casually but makes it easier to understand.

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