



The Effect Of Nursing Skills Learning Media Through Video On Student Competency Achievement In Infusion Installation

Jenny Ramadona PAY^{1*}, Sri Sundari²

¹ Master of Nursing program, University of Muhammadiyah Yogyakarta

² University of Muhammadiyah Yogyakarta

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ABSTRACT

INTRODUCTION: Learning media is a learning tool used by someone to facilitate the delivery of material during teaching at school and this really helps someone who teaches in an institution and is a solution to make students feel happy while learning and not feel bored. **Methods:** The design of this study was a quasi-experimental study with a two-group pre-test and post-test design to determine the effect of infusion of video instructional media on student skills. In this study, 2 groups were used, namely the control group with learning methods without video and the treatment group with learning using video. The population in this study were 201 students of the Nursing study program. The sampling technique in this research is purposive sampling which is done by taking respondents who meet the inclusion criteria. The sample size according to experimental research, the minimum sample is 30 subjects per group (Gay and Diehl, 1992). So the researchers set a sample of 30 subjects. **Results:** There is a significant difference in the effect of the group given video learning media and without video learning media with a value of $0.000 < 0.05$, which means that there is an influence of nursing skills learning media through video on the achievement of student competence infusion. **Conclusion:** There is an effect of nursing skills learning media through video on the achievement of student competence in infusion. which means that there is an influence of nursing skills learning media through video on the achievement of student competence in infusion. **Conclusion:** There is an effect of nursing skills learning media through video on the achievement of student competence in infusion. which means that there is an influence of nursing skills learning media through video on the achievement of student competence in infusion. **Conclusion:** There is an effect of nursing skills learning media through video on the achievement of student competence in infusion.

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Kata kunci:

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**) corresponding author*

Jenny Ramadona Putri Ardi Yudha

Nursing Education, Master of Nursing,
Yogyakarta Muhammadiyah University,
Indonesia
Jalan Tanjung Barangan, Lorong Temiyang
XII, South Sumatra

ABSTRAK

Pendahuluan: Media pembelajaran adalah alat pembelajaran yang digunakan oleh seseorang untuk memfasilitasi penyampaian materi selama pengajaran di sekolah dan ini benar-benar membantu seseorang yang mengajar di sebuah institusi dan merupakan solusi untuk membuat siswa merasa senang saat belajar serta tidak merasa bosan. **Metode:** Desain penelitian ini adalah penelitian Quasy experimental dengan rancangan two group pre-test and post-test untuk mengetahui pengaruh media pembelajaran video pemasangan infus terhadap keterampilan mahasiswa. Pada penelitian ini menggunakan 2 kelompok yaitu kelompok kontrol dengan metode pembelajaran tanpa video dan kelompok perlakuan dengan pembelajaran menggunakan video. Populasi pada penelitian ini adalah mahasiswa program studi Keperawatan berjumlah 201 orang. Teknik pengambilan sampel dalam penelitian ini yaitu Purposive sampling yang

Email: jennyrpay@gmail.com

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dilakukan dengan mengambil responden yang memenuhi kriteria inklusi. Besar sampel menurut penelitian eksperimental, minimum sampel 30 subyek per group (Gay dan Diehl, 1992). Sehingga peneliti menetapkan sampel sebanyak 30 subyek. Hasil: Terdapat perbedaan pengaruh yang signifikan pada kelompok yang diberikan media pembelajaran video dan tanpa media pembelajaran video dengan nilai p value $0,000 < 0,05$ yang berarti ada pengaruh media pembelajaran skills keperawatan melalui video terhadap pencapaian kompetensi mahasiswa pada pemasangan infus. Kesimpulan: Ada pengaruh media pembelajaran skills keperawatan melalui video terhadap pencapaian kompetensi mahasiswa pada pemasangan infus

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INTRODUCTION

Learning media is a learning tool that is used by someone to facilitate the delivery of material during teaching at school and this really helps someone who teaches at an institution and is a solution to make students feel happy while learning and not feel bored. Using computer technology is a way to make learning media less boring (Dahrizal and Dewi, 2019). Sudjanadan Rivai (2018) said that the benefits of learning media in the learning process are useful for motivating so that learning becomes more fun and not boring, and also can quickly understand the meaning to be conveyed.

During the current COVID-19 pandemic, videos have very useful potential to be used as learning media for students. Some of the video content in the health sector is seen to be highly utilized by students to be used as an educational resource. Video provides several benefits including making it easier to access interactive videos that are obtained quickly, and are easy to understand. However, video selection requires strict supervision and must be selected by the nursing education provider so that the selected video is more appropriate and the images displayed are in accordance with the learning objectives. Video is incorporated into nursing education so that students can easily improve collaboration skills and integrate technology into nursing education in an easy and user-friendly manner.

The results of a survey by the Association of Indonesian Internet Service Providers (APJII) stated that in 2017, internet users in Indonesia reached 143.26 million people out of Indonesia's total population of 262 million people. The survey results also show that 74.23% of people aged 19-34 years use the Internet in Indonesia. The composition of social media use according to male gender is 51.43% while female is 48.57%. This number shows how big social media is as a medium of communication and information dissemination is no exception, the percentage of laptop/computer ownership is 25.72% and the percentage of smartphone/tablet ownership is 50.08%. Devices used to access the internet are laptops/computers 4.49% while smartphones/tablets are 44,

Based on the results of pre-research at Akper Kesdam II Sriwijaya, it was found that students studied using Standard Operating Procedures (SOP) only as many as 67 students, 45% of students' skills in installing infusions were still low, one of which was seen through the OSCA exam, therefore in this study learning media will be tested in the form of an infusion installation video according to the infusion installation procedure. The learning method uses video media as an applied learning resource. At present the impact of using video teaching technology is very positive on learning activities, especially the skills of nursing students in infusion.

Learning nursing skills is not only based on written theory but mastery of skills is also very important. This is also said by (Munawaroh et al., 2019), that the use of video is an alternative medium that can improve student skills, especially in lessons that need to use skills. The advantage of using video as a learning medium is that students can observe moving objects more closely and the image projection can be stopped so that they can be observed carefully. Video is a platform that facilitates various learning videos related to nursing science including how to properly insert an infusion, using a video the teacher can easily download and share with students.

According to Sudjana and Rivai (2015) the benefits of video media are: (1) it can foster motivation; (2) the meaning of the message will become clearer so that it can be understood by students and allows for mastery and achievement of the delivery objectives. Learning videos that are intended to make it easier for students to understand subject matter are not always in accordance with the needs and desires of students.

The use of video media in learning activities is not only as a tool, but as a carrier of information or messages to be conveyed. The use of video about infusion can clarify an abstract picture of how to install it, because in the learning process the respondent not only hears the material being delivered, but also sees directly and clearly the steps for infusion through the video (Nurul, 2018). The learning method uses video media as an applied learning resource. At present the impact of using video teaching technology is very positive on learning activities, especially the skills of nursing students in infusion.

Infusion is a method of drug administration that is carried out directly through a vein. Infusion is the best choice when the patient's condition is no longer possible to take medication orally. As we all know, infusions cannot be installed haphazardly, because they can cause several disorders in patients such as blood clots, air embolism, heart failure, damage to blood vessels, infection, edema and even sudden death can occur.

Infusion therapy is an integral part of a nurse's professional practice. There is one thing to keep in mind that infusion therapy is not a therapy without risk, so it depends on the individual professional commitment of a nurse to the skills possessed (Gabriel et al, 2005).

The infusion technique is included in learning nursing clinical skills. The need for correct infusion can reduce the occurrence of infection. Nosocomial infections or Hospital Acquired Infections (HAIs) in patients receiving infusion therapy are an indicator of an infection due to an incorrect installation or improper insertion of an infusion procedure, especially a septic-aseptic technique problem.

The results of this study were also supported by Agustin's research (2013) based on the results of analysis in group A who received phantom media with a minimum score of 58, a maximum score of 90 and an average score of 66.9 while in group B who received video media with a minimum score of 58, the maximum value is 100 and the average value is 87.4 after the t test is carried out with $\alpha = 0.05$ with a p value of 0.00 there is a significant difference between the phantom media and video media learning methods.

From the description above, it can be concluded that learning via video is more effective than reading SOPs in improving catheter insertion skills in nursing students. Learning via video stimulates sensory memory (visual and aural) simultaneously thereby increasing information retention in long-term memory.

Based on the explanation above, the researcher is interested in conducting research with the title "The Influence of Nursing Skills Learning Media Through YouTube on the Achievement of Student Competence in Infusion Installation". Because remembering that the effect of infusion on learning using videos for students is very large, especially in the current conditions where online learning is more frequent so that the use of social media including

videos is increasing. With this research, it will help direct the use of video as a learning medium better and optimally.

METHODS

The design of this study was quasy experimental research with a two-group pre-test and post-test design to determine the effect of infusion video instructional media on student skills. This study used 2 groups, namely the control group with the learning method without video and the treatment group with learning using video.

The population in this study were 201 nursing students. The sampling technique in this study was purposive sampling which was carried out by taking respondents who met the inclusion criteria. Sample size according experimental research, a minimum sample of 30 subjects per group (Gay and Diehl, 1992). So the researchers set a sample of 30 subjects.

Results

Characteristics of Respondents

Table 2 Distribution of Respondents Characteristics of Intervention Group (n=30) and Intervention Group (n=30)

| Characteristics of Respondents | Control Group (n=78) | | Intervention Group (n=78) | |
|--------------------------------|----------------------|-------|---------------------------|-------|
| | n | % | n | % |
| Gender | | | | |
| Man | 10 | 33.4% | 13 | 43.4% |
| Woman | 20 | 66.6% | 17 | 56.6% |
| Age | | | | |
| 18-21 years | 11 | 36.6% | 10 | 33.4% |
| Over 21 years | 19 | 63.4% | 20 | 66.6% |

Based on table 4.1 above, it can be seen that from each group, namely the experimental group and the control group, most of the dominant sex is female, the experimental group is female as many as 17 people (56.6%) and the control group is 20 people (66.6%) while for the male sex both the experimental group amounted to 13 people (43.4%) and men as many as 10 people (33.4%) for the control group.

1) Test the Difference between Pretest and Posttest on the Effect of Learning Media on Nursing Skills Through Video on Student Competency Achievement in Infusion Installation.

Table 4.2

The effect of learning to infuse with video learning media on the intervention group and the control group

| | | N | Std. Deviation | Mean | mean difference |
|----------------|----------|----|----------------|-------|-----------------|
| Learning media | Pretest | 30 | 13,293 | 53,17 | 9,83 |
| | Posttest | | | | |
| Without vidios | Pretest | 30 | 10,554 | 63,00 | 17,33 |
| | Posttest | | | | |

Based on table 4.2 above, the experimental group with the mean before the infusion learning media without video was 56.67 and after learning by watching videos on infusion to 74.00 from these results that there was an increase of 17.33 while the mean for the pretest control group was 53.17 and the posttest was 63.00 with an increase of 9.83, so it can be concluded that there is an influence of learning media on nursing skills without videos on the achievement of student competence in infusion.

Based on table 4.3 above, the results of the paired samples test using SPSS 16.0 showed a p value of 0.000 ($p < \alpha = 0.005$, a sig (2 tailed) value of 0.000, which means that Ha is accepted and Ho is rejected or there is an influence of learning media on nursing skills through video on competency achievement

2) Analysis of Differences in Student Knowledge of Video Learning Media before being given and after being given video media to the intervention group.

Table 4.3
 The effect of learning to infuse with video learning media on the intervention group and the control group

| | | N | Std. Deviation | Mean | mean difference |
|----------------|----------|----------|-----------------------|-------------|------------------------|
| Learning media | Pretest | 30 | 15,522 | 50,67 | 3,33 |
| | Posttest | | 14,994 | 54,00 | |
| Without vidios | Pretest | 30 | 14,794 | 54,67 | 20 |
| | Posttest | | 17,367 | 74,67 | |

Based on table 4.3 above the experimental group with the mean value before infusion learning media without video of 54.67 and after learning by watching videos on infusion to 74.67 from these results that there is an increase in value of 20, it can be concluded that there is an influence of skills learning media nursing without video on student competency achievement in infusion installation.

Discussion

Based on the table above, the results of the paired samples test using SPSS 16.0 showed a p value of 0,000 ($p < \alpha = 0.005$, a sig value (2 tailed) of 0,000 which means that H_a is accepted and H_o is rejected or there is an influence of learning media on nursing skills through video on achievement student competency in infusion installation.

Based on the above results for the experimental group with the mean value before the infusion learning media without video was 56.67 and after learning by watching videos on infusion to 74.00 from these results that there was an increase of 17.33 while for the pretest control group, the mean result was 53.17 and the posttest to 63.00 has an increase of 9.83, this is because with video learning media it is easier for students to understand a clear picture of the information conveyed and can repeat movements that students have not understood. With video learning media, students will also find it easier to get the contents of the laboratory skills material in its entirety and arranged in accordance with the competency manual. Anderson (1983; 104) states that "video is the right medium to show examples of skills involving movement". In accordance with research conducted by Ebner (1984; 29) that "video can save as much learning time as

The results of this study note that the level of student ability is at level C4 (analysis), where students have the ability to detail and describe a factor that is the cause and understand among other factors. The results of the paired t test on students' knowledge using the MCQ (Multiple Choice Question) questionnaire sheet regarding infusion found that the intervention class averaged the pre-test score of 56.67 and the post-test was 74.67 so that it experienced an increase value of 20.0. The knowledge of other students in the control group regarding infusion videos obtained an average pre-test score of 50.67 and an average post-test score of 54.00 so that the score increased by 3.33. So that the value of tcount >

Based on the results of the analysis test using the paired t-test, the results obtained were a p value of 0.000 ($p < \alpha = 0.005$ sig value (2 tailed) which means that H_a was accepted and H_o was rejected or there was an effect of nursing skills learning media via video on student competency achievement in infusion set.

According to the researcher's assumption that learning methods using videos and without videos are equally influential, but when viewed from the mean difference the most influential is using videos because the increase in the mean difference increased by 17.33.

LIMITATION OF THE STUDY

In this study, researchers faced limitations such as a small sample because of the small number of students.

CONCLUSIONS

Based on the results of the research that has been done about the influence of nursing skills learning media through videos on the achievement of student competence in infusions, the following conclusions are obtained:

- 1) The difference in the average value of the pretest and posttest results is 17.33. This means that the posttest score is much higher than the pretest, which means that there is a difference in the mean value of the intervention group before and after watching the infusion video.
- 2) There was a significant difference in student knowledge of the group that was given the intervention by watching the infusion video, namely the difference in mean results was 20.0, which meant that there was a difference in the mean value of student knowledge in the intervention group before and after watching the infusion video.
- 3) There was a significant difference in the effect on the group given video learning media and without video learning media with a p value of 0.000 < 0.05, which means there was an influence of nursing skills learning media through video on student competency achievement in infusion.

SUGGESTIONS

a. For educational institutions

The results of this study can be used as an evaluation of institutions, especially study programs to improve the skills of nursing students in conducting therapeutic communication. In addition, it can be a reference for

lecturers to choose effective learning methods in the learning process both online and offline.

b. Student of nursing

This learning video can be used by students as learning material in conducting therapeutic communication.

c. Further Researcher

The results of this study can be a reference for researchers to carry out ongoing research either by adding research variables that are measured or developing learning videos in the form of applications.

REFERENCES

- AECT, Taskforce. 1977. The definition of educational technology. Jakarta: CV. Eagle.
- Anderson, R N. 1986. Selection and development of media for learning. Jakarta: Rajawali Press.
- Anitah S. 2008. Learning Media. Surakarta: LPP UNS and UNS Press.
- Bloom, BS 1976. Human characteristics and school learning. New York: Mc. Graw Hill Book Company.
- Brown, AL 1975. Learning to learn: on training students to learn from texts educational research. February.
- Dahrizal, Dahrizal, and Gita Putri Dewi. 2019. "Learning Through Video on Social Media Can Improve Catheter Placement Skills in Nursing Students." *Journal of Telenursing (JOTING)* 1(2): 386–95.
- De Porter, B. & Hernacky, M. 2000. Quantum learning. Bandung: Mizan Media Utama.
- De Porter, B., Reardon, M.& Nourie, L. 2000. Quantum teaching. Bandung: Mizan Media Utama.
- Degeng, I NS 1989. Instructional design: theory and practice. Malang: Implementation of Postgraduate Education IKIP Malang Higher Education Improvement Project.
- Dembo, MH 1981. Teaching for learning : applying educational psychology in the classroom. California: Goodyear Publishing Company Inc. Santa Monica.
- Gagne, RM, Briggs, LJ, and Wager, WW 1988. Principles of instruction design. New York: Holt Rinehard and Winston.
- Gagne, RM 1975. Essentials of learning for instruction. New York : Holf, Rinehart and Winston.
- Halis, F. 2006. Effect of learning media and student learning styles on learning acquisition. Unpublished thesis. Poor; Malang State University Postgraduate Program.
- Heinich, R., Molenda, M., & Russel, JD 1993. Instructional media and the new tec. instructions. New York: John Wiley and Sons. <https://ejournal.almaata.ac.id/index.php/JNKI/article/view/247/239>.
- Ibrahim, Sihkabuden, Suprijanta, and Kustiawan, U. 2000. Planning for use. instructional Media. Education and Learning Development Institute (LP3) Unive Negeri Malang.
- Iswati. 2016. "OPTIMIZATION OF INFUSION INSTALLATION BEHAVIOR THROUGH INFUSION INSTALLATION TRAINING IN STUDENTS." *Adi Husada Nursing Journal* – 2(2): 35–40.
- Latuheru, JD 1988. Learning media. Jakarta: Depdikbud Dikti PPLPTK.
- Marcelina, Maria. 2019. "The Effect of Utilizing Youtube Social Media on the Learning Independence of Class IX Students of SMP Negeri 2 Pontianak." *Journal of Learning and the Equator* 8(7): 2019.
- <https://jurnal.untan.ac.id/index.php/jpdpb/article/download/33734/75676581845>.
- Meriril, MD 1983. Component display theory. an article in instructional-design theories and models: an overview of their current status. Editet by Charles M. Reigeluth. New Jersey: Lawrence Erlbaum Associates Publishers Hillsdale.
- Miarso, Y. 1984. Educational communication technology. Jakarta: CV. Eagle.
- Miftah, M. 2014. "11-19-1-Sm." *KWANGSAN Journal* Vol. 2(Number 1): 1–11. <https://jatengbelajar.com/wp-content/uploads/2020/10/Peuntungan-Media-Pembelajar.pdf>.
- Moelyadi P. 2006. Effects of essential, eductive, and redundant multimedia message design as well as visual and verbal literacy on retention and transfer abilities. Unpublished dissertation. Malang: UNM post-graduate program.
- Mujianto, Haryadi. 2019. "Using Youtube as a Teaching Media in Increasing Interest and Motivation in Learning." *Journal of Communication of Thought and Research Results* 5(1): 135–59. www.journal.uniga.ac.id.
- Munawaroh, Siti, Sujiono, and Vivi Yosafianti Pohan. 2019. "The Effectiveness of Audio Visual Media (Video) to Improve Physical Examination Skills in Undergraduate Nursing Students." *Journal of Muhammadiyah Nursing* 2(2): 171–76.
- Murti B. 2006. Design and sample size for quantitative and qualitative research in the health sector. Yogyakarta: Gadjah Mada University Press. 2008. Epidemiological research methodology. Module in Teaching in the Master of Family Medicine/ Master of Nutrition Program. Sebelas Maret University.
- Nana Sudjana and Ahmad Rivai, Learning Media, (Bandung: Sinar Baru Algesindo, 2015).
- Nasution, S. 1997. Various approaches in the process of learning and teaching. Jakarta: Earth Script.
- Potter, PA, Perry, A. 2005. Fundamentals of nursing. Jakarta: EGC.
- Purwandari, Elce. 2019. "Using Youtube as a Source for Learning Physics." *Journal of Education and Instruction (JOEAI)* 2(2): 83–90.
- Radne, Imram, and Rimba Putri. 2016. "The Influence of Long Infusion Time With Phlebitis Incidence In Inpatients In The Internal Medicine Ward And Nerve Hospital Nur Hidayah Bantul The Effect Of Infusion Duration With The Incidence Of Phlebitis In Patients." *Indonesian Journal of Nurses and Midwifery* 4(2): 90–94.
- Retno Issroviatiningrum, Suyanto Suyanto. 2018. "The Effect of the Practice Based Simulation Model on the Performance Skills of Nursing Students." *NURSCOPE Journal of Research and Scientific Thought in Nursing Influence* 5(2): 1–7.
- Sadiman, AS, Rahardjo, R., Haryono, A., and Rahardjito. 2002. Media education understanding, development and utilization. Jakarta: PT. Grafmdo King.
- Sari, Indah Permata, and Sri Sundari. 2021. "The Use of Video as a Learning Strategy in Supporting the Increasing Knowledge and Clinical Skills of Nursing Students." *Indonesian Nursing Media* 4(1): 47–55.

- Sastrawijaya, T. 1988. The process of teaching and learning in universities. Jakarta. Dekdikbud Director General of Higher Education. P2LPTK.
- Saudin, Didik, and Heri Kristanto. 2016. "Design of Learning Media." *Journal of Hesti Wira Sakti* 4: 29–35.
- Subagio A. 2006. Development of multimedia animation-based physics learning media on the subject of linear momentum and impulses for high school students.
- Add, Consumption of Tablets, Youth Posyandu, Work Area, and Lasusua Health Center. 2021. "The Effect of Audiovisual Media (Youtube) on Compliance with Added Tablet Consumption
- Blood in Preventing Anemia and Tiwu, North Kolaka Regency." *JOURNAL OF LIMITATIONS HOBSEGIN* 13(3): 50–55.
- Ulfa, Jelly &. 2014. "Nurse Compliance in Implementing Standard Operating Procedures for Infusion at PKU Muhammadiyah Gombong Hospital." *Journal of Medicine and Health* 14(1): 51–62. <http://journu.umy.ac.id>. Holy Grace. 191–202.