Journal of Education and Teaching (JET)
Vol. 5 No. 3 2024

The Effect of Audiovisual and Demonstration Towards Students Swimming Ability of Navy's Cadets

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Draft article history
Submitted: 02-10-2024;
Revised: 07-10-2024;
Accepted: 08-10-2024;

ABSTRACT: This study aims to investigate the learning outcomes of Navy Cadets students at the Puslatdiksarmil, especially in basic swimming subjects. This research is a quantitative-research with an experimental study design. A total of 100 students were involved in this study, where they were divided into two groups, experimental group and control group. Each group was given different treatment where in experimental group, they had audio visual and demostration (AV-D), while control group only demonstration (D) in swimming subject, especially breaststroke style. Performance test (before and after treatment) was employed in obtaining the students' final score. The performance was 50 meters of breaststroke smimming. No duration was required since the test only measure the style and the correctness of how hands and legs moving, and also how cadets inhale and exhale the air they need during the test. In addition, the questionnaire of motivation was also used to see whether higher or lower motivation contribute to students swimming ability. It was essential since motivation plays significant role in achieving learning outcomes. After the data were obtained, a descriptive statistic was used to compare the learnin gains. The results indicated that students in experimental class had better average score (73.16) compared to control class while learning (66.39). This shows that the use AV-D have proven effective in improving student learning outcomes especially in swimming. Therefore, the use of AV-D should be considered as an alternative way to enhance cadets' swimming ability in Puslatdiksarmil.

Keywords: Audiovisual, Breaststroke, Practice, Cadets, Swimming.

ABSTRAK: *Penelitian ini bertujuan untuk menyelidiki hasil belajar siswa Kadet Angkatan Laut di Puslatdiksarmil, khususnya dalam mata pelajaran renang dasar. Penelitian ini merupakan penelitian kuantitatif dengan desain studi eksperimen. Sebanyak 100 siswa terlibat dalam penelitian ini, di mana mereka dibagi menjadi dua kelompok, kelompok eksperimen dan kelompok kontrol. Setiap kelompok diberi perlakuan yang berbeda, di mana kelompok eksperimen menggunakan audiovisual dan demonstrasi (AV-D), sementara kelompok kontrol hanya menggunakan demonstrasi (D) dalam pelajaran renang, khususnya gaya dada. Tes kinerja (sebelum dan sesudah perlakuan) digunakan untuk memperoleh nilai akhir siswa. Tes kinerja adalah renang gaya dada sejauh 50 meter. Durasi tidak diukur karena tes ini hanya menilai gaya dan kebenaran gerakan tangan dan kaki, serta bagaimana kadet menghirup dan menghembuskan udara selama tes. Selain itu, kuesioner motivasi juga digunakan untuk melihat apakah motivasi yang lebih tinggi atau lebih rendah berkontribusi terhadap kemampuan renang siswa. Hal ini penting karena motivasi berperan signifikan dalam mencapai hasil belajar. Setelah data diperoleh, statistik deskriptif digunakan untuk membandingkan peningkatan hasil belajar. Hasil penelitian menunjukkan bahwa siswa di kelas eksperimen memiliki skor rata-rata yang lebih baik (73,16) dibandingkan dengan kelas kontrol saat belajar (66,39). Ini menunjukkan bahwa penggunaan AV-D terbukti efektif dalam meningkatkan hasil belajar*

siswa khususnya dalam renang. Oleh karena itu, penggunaan AV-D harus dipertimbangkan sebagai alternatif untuk meningkatkan kemampuan renang kadet di Puslatdiksarmil.

Kata kunci: *Audiovisual, Gaya Dada, Kadet, Praktik, Renang.*

INTRODUCTION

The Naval Academy (AAL) as a place for basic soldiering education which is the embryo of the Indonesian Navy officers must improve to develop the quality of education through the development of methods and learning media that are in line with educational goals. This is in line with what was stated by Destiawan et al. (2021), so that the quality of the results of the students produced is increasingly weighted to become soldiers who are responsive and having the agility in doing assignments.

The first education at the Naval Academy is one of the educational programs organized by the TNI Academy for 4 (four) years (Putra, 2013). During this time, all cadets are required to be able to complete all subject matter according to the curriculum and be declared passed. The implementation of educational programs at the Naval Academy is carried out based on the educational curriculum issued by the TNI Academy. Where in the curriculum listed the field of military physical studies. In the field of military physical studies there are several subjects on physical development/sports, one of which is basic swimming subjects. Based on the results of teaching experience and observations in the field as well as interviews with several cadets and teachers/trainers, the authors obtained information that most cadets considered swimming a difficult and boring subject. This assumption causes the low motivation of cadets to learn or practice, so that the results of learning to swim are low.

This phenomenon in the field is caused by the learning method used by the teacher/trainer still using the old method, namely the direct demonstration/practice method in the swimming pool (Saputro et al., 2023) where the teacher or trainer gives an example while cadets are expected to immitate. It is no different in Puslatdiksarmil for academic year of 2023. Based on early study conducted by the researcher, cadets did not have enough sample since it was difficult to imitate the style as exemplified by the teacher/trainer. Furthermore, some cadets expected a more visible display, thus they can see how the arms and legs move as well as taking and exhaling breath while swimming. In addition, the number of time allocated in basic swimming subject was often limited. It was only two credit hours while all of them were required to be able to swim in the correct style and be able to cover the distance according to the provisions.

To anticipate these issues getting bigger, swimming instructors need to be familiar with student learning outcomes that have been obtained previously (Mabruria, 2021; Yandika, 2019). For example from the early test before they enter the current academy. This is important for the teacher so that he can help diagnose learning difficulties (Mabruria, 2021) that possessed by cadets so that they can estimate the results and progress of further learning. In addition, the previous study also indicate that cadets early performance need to be addressed.

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As Saputro et al. (2023) have reported that there were only 6 of 10 cadets were able to finish the breastroke swim in the correct style.

Based on the data above, the role of the teacher/trainer must be as a good facilitator to improve the quality of learning. A facilitative teacher is a teacher who is more able to listen to students, especially their feelings, tends to pay great attention to the relationship between students and teachers as well as to the subject matter/content, provides motivation to help students develop curiosity and directs students to useful resources (Abdurakhman & Rusli, 2013; Zakirurahman and Musyarapah, 2022; Annas Nur Arifin & Dwi Khory, 2024). Thus the teacher/trainer is required to be able to present a good learning process for the cadets. One of them is by using appropriate and relevant learning where effective medias and methods are used so that the learning process becomes interesting and can run effectively ands efficiently (Emda, 2017). From a learning process that attracts cadets' interest, it is hoped that it can increase cadets' learning motivation and make it easier to receive lessons, so that it will improve cadets' learning outcomes (Destiawan et al., 2021; Invernizzi et al., 2014; Fritzdorf et al., 2009; Wolfrum et al., 2014).

There are many methods or ways to make physical education, especially swimming, more interesting, one of which is using media that is contextual and easy to understand (Reis et al., 2010; Dinata et al., 2021). One of them is audiovisual media (Yandika, 2019). This learning media has never been used by instructors/teachers in swimming lessons at the Naval Academy. Furthermore, this media can make it easier for cadets to understand learning material, especially on hands and legs movement techniques and breathing techniques when swimming (Nughroho & Khory, 2020). The use of this media alone is not sufficient, since swimming is practical activity. Therefore there should addition to this media such as demontsration method. By combining visualization and practical thing through demonstration, the learning process is expected to be interesting. In addition, the cadets motivation will also increase to achieve better learning outcomes.

In general, the purpose of this research is to investigate the use of instructional media and also a method of learning. Meanwhile, specifically, this study is aimed to see whether the use of audiovisual and demonstration can enhance students swimming ability in 2023 Fiscal Year at the Naval Academy, Indonesia.

RESEARCH METHOD

The research method used in this study was a quantitative approach with an experimental study design (Sugiono, 2018). The participants of this study were cadets at the Naval Academy of Year 2023 (n-100) who divided into two groups, experiment and control. The inclusion of participants were based on the availability of the cadets during 2023 academic year. Since it was all included, it was better for the researcher to divide them into the same number of the students in each group, to get more balance data (Invernizzi et al. 2014).. In experimental group (n-50) the students were given the treatment where they study with the help of audivisual (during the learning) and also demonstration. Meanwhile in

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control group (n-50), the students only received conventional method (demonstration). For data collection techniques, the current study employed several techniques including test and likert scale questionnaire (20 items) . The performance test was conducted before and after treatment. It covered four aspects namely hand movement, foot movement, breathing technique and swimming ability for 50 meter). In addition, the questionnaire was distributed to the students to see their motivation level. It was worth identifying since motivation was also important in enhancing students' learning outcome, in this term is swimming ability. The aspect of motivation that measured were persistent, attention, satisfaction, and confidence as they were adopted from Invernizzi et al. (2014). This instrument had a reliability and validity in 0.00 Sig. Value that was lower than confidence level of 0.05. Therfore the instrument can be used to measure the students' motivation. The inclusion of motivational questionnaire is important since it palys significant role in achieving proposed learning goals (Nughroho & Khory, 2020). In analyzing the data, the current study used descriptive statistic where normality test of data, homogenity of participants and independent sample t-test were conducted to see the effect of the treatment given (combination of audio visual and demonstration). When Sig. Value is lower that confidence level at 0.05, it can be said that the use of AV-D has significant effect of students swimming. In addition to assess the intersection between the use of media and motivation, the author employed two ways Anova (Effendi, 2013; Sugiono, 2018) by the help of SPSS. The overall design of the current study can be seen in Table 1.

Table 1. Research Design (Sugiono, 2018)

Free Variable X1 / *Moderator variable X2*	*Audiovisual and demonstration (AV-D) X1.1*	*Demonstration (D) X1.2*
Higher motivation X2.1	Swimming ability Y1.1	Swimming ability Y1.2
Lower Motivation X2.2	Swimming ability Y2.1	Swimming ability Y2.2

RESULT AND DISCUSSION

The puspose of the current study is to identify whether the use of audiovisual and demostration (AV-D) is effective in enhancing students' swimming ability. The following table is displaying the result of the study.

Table 2. Result of the study

Treatment	Range	Mean	Modes
Learning Media			
1. AV-D (N = 50)	55 - 90	73,16	70
2. D (N = 50)	48 - 88	66,39	50

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Learning Motivation			
1. High Motivation (N = 50)	49 - 90	73,24	70
2. Low Motivation (N = 50)	48 - 87	66,30	60
Based on groups			
1. AV-D-HM (N = 25)	57 - 90	74,56	70
2. AV-D- LM (N = 25)	55 - 87	71,76	59
3. D – HM(N = 25)	49 - 88	71,79	65
4. D – LM (N = 25)	48 - 81	60,84	60

Notes:
AV-D : audiovisual and demonstartion
D : demostration
AV-D-HM : audiovisual – demonstration – high motivation
AV-D-LM : audiovisual – demonstration – low motivation
D-HM : demonstration – high motivation
D-LM : demonstration – low motivation

Based on the table above, it is obtained an overview of the average results of breaststroke swimming ability between groups of students who use a combination of audio-visual and demonstration and groups of students who only use direct demonstrations. For students who used AV-D, the average score that obtained was 73.16. Meanwhile, those who used demonstration only was 66.38. The score obtained shows the difference between two groups. However to assure whether the use of AV-D has significant influence or not, the further test should be conducted. In this term, the author conducted t-test as can be seen in the following table.

Table 3. Hypothesis test (media)

tcount	t_{table}	df	Sig.
3,277	1,66	98	0,583

Based on Table 3 above, it was obtained that the t-count value is 3.277 where at the 0.05 level (df = 98). Meanwhile the t-table value is 1.66. By comparing the t-values, we can see that t-count = 3.277 is greater than t-table = 1.66 at the level of α = 5%, so this shows that there is a significant difference in the learning outcomes (swimming ability) of students who use audiovisual and demonstration to those who used demonstration only. In other words, the learning outcomes of breaststroke swimming of students who used AV-D was higher compared to students who only used D (demonstration).

In terms of motivation (see table 2) it can be seen that the average of students motivation was different. The students with higher motivation was averaging 73.24 to 66.30 where the students have lower motivation. This also should tested further to see the influence of students with higher or lower motivation toward their swimming ability. The test result can be seen in the following table.

Table 4. Hypothesis test (motivation)

tcount	ttable	df	Sig.

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3,363	1,66	98	0,555

Based on table 4 above, it is obtained that the t-count value is 3.363 where at the 0.05 level (df = 98). Meanwhile the t-table is 1.66. By comparing the t values, we can see that t-count = 3.363 is greater than t-table = 1.66 at the α = 5% level, so this indicated that there is a significant difference between students with higher motivation and students with lower motivation. In other words, the motivation that possesed by the students contributed significantly to their ability in swimming.

To see whether the learning media and motivation contribute to students swimming ability, a two-way Anava test was conducted. The result of two way Anava can be seen in the following table.

Table 5. Two ways Anova test

Data	JK	F_{count}	Ftable(0.05)	Sig.
Media and motivation	428,490	6,646	3,09	0,666

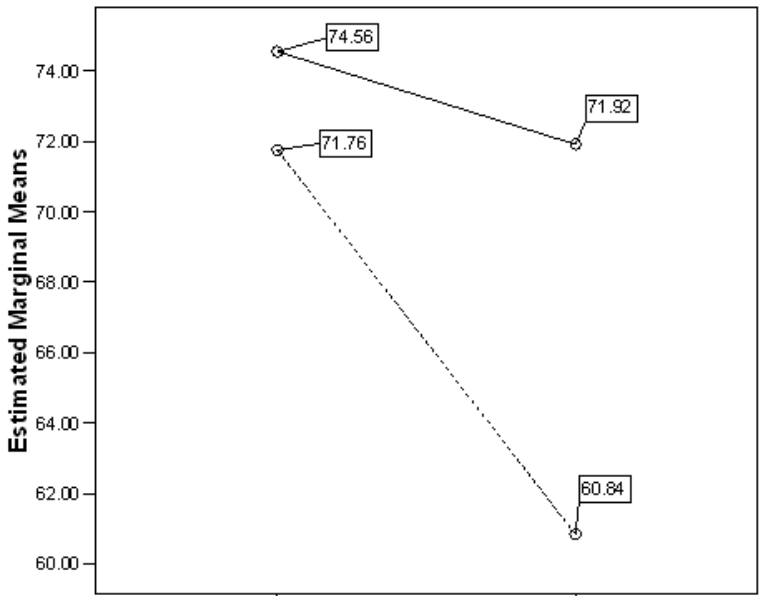

Figure 1. Estimated marginal mean

Based on table 5 above, the F-count was 4.646 for the source of variance between groups, while the F-table value = 3.09. By comparing the F value, it can be seen that F-count = 4.646 is greater than F-table = 3.09 at a significant level of α = 5%. It indicated that there is an interaction between learning media and motivation on students swimming ability.

Since there is an interaction between learning media and motivation on the learning outcome (swimming ability), further testing should be carried out to determine which learning media and motivation levels are superior. The test was carried out using the Tukey test for the four research groups. To get an overview

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of the learning outcomes of the four research groups, it can be seen in the following table.

Table 6. Tuckey Test

Groups				Score
AV-D– HM(Q_1)	**AV-D–LM (Q_2)**	**D– HM (Q_3)**	**D-LM (Q_4)**	**t - tabel**
$Q_{1.2}$ = ***2,80***	$Q_{2.1}$ = - *2,80*	$Q_{3.1}$ = *-2,64*	$Q_{4.1}$ = - *13,72*	1,66
$Q_{1.3}$ = ***2,64***	$Q_{2.3}$ = - *0,16*	$Q_{3.2}$ = *0,16*	$Q_{4.2}$ = - *10,92*	
$Q_{1.4}$= **13,72**	$Q_{2.4}$= **10,92**	$Q_{3.4}$ = **11,08**	$Q_{4.3}$ = - *11,08*	

The table above can be interpreted as follow:

a) AV-D-HM (Q1) has all t-value (2.80; 2.64; 13.72) which are greater than the t-table for all groups. That is, the use of AV-D-HM is better than the other groups.
b) AV-D-LM (Q2) has only one t value (10.92) which is greater than the t table (D-LM). That is, the use of AV-D-LM is better than D-LM.
c) D-HM (Q3) has one t-value (11.08) which is greater than the t table (see D-LM). That is, the use D-HM is better than D-LM.
d) D-LM has all t-values (to all groups) which are smaller than t table (-13.72; -10.92; -11.08). That is, the use of D-LM is the lowest group compared to other groups
e) AV-D-LM (Q2) is not better than D-HM (Q3).

Based on the interpretation above, it can be concluded that the use AV-D-HM is the most ideal group in influencing the learning outcomes of cadet breaststroke swimming. They have outperform of other groups.

Effectiveness of Audiovisual and Demonstration Techniques in Teaching Breaststroke Swimming: A Focus on Student Motivation

Based on the results displyed earlier, it can be said that the use of audiovisual and demonstration (AV-D) is able to help the teacher/trainer's efforts to improve learning outcomes. It can be seen from the t-count obtained is higher that t-table (3.277 to 1.66). This result is inline with Danang Prama Dhani et al. (2022) and also Nughroho et al. (2020) who have reported that audiovisual is beneficial for the students, especially for those who are in sport education. In addition, it also show that when instructor or teacher use visualization, she or he have created the opportunities for students to interact directly with a learning resource, which will also directly add insight for students to understand more of the material (Destiawan et al., 2021).

Utilization of audiovisual media and also demonstration have shown that it is easier for students to get variations when receiving subject matter so students don't feel bored (Yandika, 2019). After the students watch the audiovisual display in the video on how to do the breaststroke swimming technique, the teacher can repeat or slow down, then continue with direct explanations and demonstrations. This condition will also lead to a pleasant and conducive atmosphere so that students feel ready and comfortable to receive the subject matter. Indeed, this

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will have an impact on students' understanding of the subject matter being taught, and ultimately affect their learning achievement (Saputro et al., 2023).

Regarding student motivation, based on the data and results of the analysis that has been carried out, it shows that there are differences in the learning outcomes of cadet breaststroke swimming between groups of students who have high motivation and those who have low motivation. Learning motivation is one of the factors needed by students to improve their learning outcomes because motivation can play a role in strengthening one's learning (Herdianto et al., 2020; Imansyah, 2018). Students who have high motivation means they have a strong will to learn and achieve (Dinata et al., 2021). This condition will have an impact on their readiness to accept each subject matter. The student will try optimally to understand each material provided. With this effort, it is very possible that the student will eventually get optimal learning outcomes. Students with high motivation will always improve their abilities and try to find answers to the problems they face (Emda, 2017). In addition, it was also found that students who have high motivation based on the comment the researcher obtain that the cadets tend to focus on watching the visual and try harder during the practice. These two factors are contributing to the learning outcomes they achieve.

Conversely, students with low motivation, based on the data display in table 2 struglled to get into the learning. Therefore, the score they obtained was lower than the students with high motivation. This finding is in line with several previous studies that reported that students with lower motivation, they tended not to try to develop the subject matter provided (Setaya et al., 2013; Dinata et al., 2021) and it impacted learning achievement. Since motivation is the driving force for the student to do maximum, to attract their interest in learning should the priority. When motivation is developed properly, one can achieve good results (Imansyah, 2018).

All in all, the use of audiovisual combined with demonstration in the current study have proved that the learning is more effective than using demonstration only. In addition, students' motivation is also a factor should be considered by the teacher, thus the outcome will be maximum. Therefore, these two components - using appropriate media or method and having high motivation- are essential.

CONCLUSION

The current study aims at investigating the use of audiovisual and demonstration (AV-D) in enhancing students learning outcome (swimming ability). The research result shows that the students who were given AV-D in the experimental class outperformed the students in control class with only demonstration used. It can be seen from the average score where experimental class have 73.16 compared to 66.39 in control class. In addition, the research result also indicate that the use of AV-D is more effective that using D (demonstration) alone, since the t-test resulted 3.363 in t-count which is greater than t-table 1.66. In terms of motivation, students with higher motivation level obtained the better score than those who does not (73.24 to 66.30). Not only motivation have affected the learning outcomes, it also effected the learning context that those with higher

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motivation are willing to try and work hard during the learning that those who does not have. Therefore, using appropriate media or method while students have high motivation should be taking into account by the teacher, especially in teaching basic swimming for breststroke style.

ACKNOWLEDGEMENT

The author would like to thank to the reviewers of the articles for valuable insights and also suggestions.

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