

Video-assisted Cooperative Physical Learning Model to Improve Student Learning Achievement

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ABSTRAK

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This is an open access article under the <u>CC BY-SA</u> license. Copyright © 2024 by Author. Published by Universitas Pendidikan Ganesha. Metode ceramah yang terlalu berfokus pada pengetahuan teoritis gagal memberikan kesempatan kepada mahasiswa untuk mempraktikkan keterampilan hidup sehat dan menjaga keselamatan, yang seharusnya merupakan inti dari pendidikan kesehatan. Hal ini menimbulkan keberagaram prestasi belajar mahasiswa. Penelitian ini bertujuan untuk menganalisis pengaruh model pembelajaran pendidikan jasmani berbasis Collaborative Teamwork Learning berbantuan video pembelajaran terhadap prestasi belajar mahasiswa. Subjek yang terlibat dalam penelitian ini berjumlah sebanyak 40 mahasiswa. Jenis penelitian ini yaitu penelitian eksperimen dengan desain penelitian yang digunakan adalah guasieksperimen yang disebut dengan nonequivalent posttest-only control group design. Metode pengumpulan data yang digunakan meliputi observasi, angket, dan tes, sedangkan instrumen yang digunakan adalah tes prestasi belajar. Setelah data dikumpulkan kemudian dianalisis menggunakan metode analisis data yang digunakan dalam peenltiian ini meliputi analisis deskriptif dan analisis statistik inferensial. Hasil penelitian menunjukkan bahwa model pembelajaran pendidikan jasmani berbasis Collaborative Teamwork Learning dengan bantuan video pembelajaran terbukti memberikan pengaruh terhadap prestasi belajar. Oleh karena itu, dapat disimpulkan bahwa, model ini dapat menjadi salah satu solusi dalam proses pembelajaran pendidikan jasmani. Pengembangan model pembelajaran ini diharapkan dapat memberikan kontribusi positif terhadap peningkatan prestasi belaiar, pemahaman, dan keterampilan kepemimpinan mahasiswa pada mata kuliah pendidikan jasmani. Model pembelajaran pendidikan jasmani berbasis Collaborative Teamwork Learning dengan bantuan video pembelajaran merupakan salah satu alternatif yang dapat digunakan untuk meningkatkan efektivitas pembelajaran pendidikan jasmani.

ABSTRACT

The lecture method, which focuses too much on theoretical knowledge, fails to provide opportunities for students to practice healthy living and safety skills, which should be the core of health education. This leads to the diversity of student learning achievements. This study aims to analyze the effect of the Collaborative Teamwork Learning-based physical education learning model assisted by learning videos on student learning achievement. The subjects involved in this study amounted to 40 students. This type of research is experimental research, with the research design used as a quasi-experiment called nonequivalent posttest-only control group design. The data collection methods used include observation, questionnaires, and tests, while the instrument used is a learning achievement test. After the data is collected, it is analyzed using the data analysis method used in this research including descriptive analysis and inferential statistical analysis. The results showed that the physical education learning model based on Collaborative Teamwork Learning with the help of learning videos proved to influence learning achievement. Therefore, it can be concluded that this model can be one of the solutions in the physical education learning process. The development of this learning model is expected to positively contribute to improving student learning achievement, understanding, and leadership skills in physical education courses. The Collaborative Teamwork Learning-based physical education learning model with the help of learning videos is one alternative that can be used to increase the effectiveness of physical education learning.

1. INTRODUCTION

Health education is one of the physical education materials that PGSD STAHN Mpu Kuturan Singaraja students must take because they are prospective elementary school teachers who will later apply the material to their students. This is an attraction for researchers to take Physical Education courses on Health Education material as research material because health education is directed at fostering students to have attitudes and behaviors to live clean, healthy, fit and disciplined lives not only knowing the concept of health education but especially how they apply their knowledge to real life. Health education has three dimensions, namely: (a) changing negative (sick) behavior to positive (in the sense of health values), (b) developing positive behavior, and (c) maintaining positive behavior (López et al., 2020; Notoatmodjo, 2014). Health education aims to improve students' physical and spiritual health by understanding and practicing a healthy lifestyle. Therefore, children are expected to grow and develop naturally, physically, mentally, socially and emotionally. Given the objectives of health education and the realization of healthy schools, both schools and universities play an important role in implementing health education, including modeling and directing appropriate and responsive health education to their students (Pertiwi, 2012; Wong et al., 2013).

The results of observations made by researchers on fourth-semester students of the Elementary School Teacher Education (PGSD) Study Program at the State Hindu Religious College (STAHN) Mpu Kuturan Singaraja in the 2020/2021 academic year in classes A, B, and D with a total of 72 students found that students have diverse learning achievements in PE courses. It was found that 15 students were categorized as having sufficient learning achievement, 25 students were categorized as good, and 32 students were categorized as very good. The dominant thing that causes the category of moderate value is health education material, with sub-materials on healthy lifestyles, healthy food and drinks, personal hygiene, environmental hygiene, and basic safety education. Health material is important because following the objectives of the physical education, sports and health curriculum, it is expected that students not only have the skills to perform various sports but also be able to maintain physical health and the environment (Mustafa & Dwiyogo, 2021; Pertiwi, 2012).

In addition, physical education learning in the PGSD Study Program at STAHN Mpu Kuturan Singaraja also still uses the lecture teaching method and does not provide opportunities for students to practice how to live a healthy lifestyle and maintain safety and overcome simple injuries during physical activity. The lecture method only focuses on knowledge or cognitive aspects, so it lacks opportunities for students to practice their skills (Madu, 2020; Müller & Wulf, 2020). Whereas in learning physical education health education material, various learning materials require skills, for example, practicing a healthy lifestyle, such as healthy food and beverage patterns, maintaining personal and environmental hygiene, rest patterns and regular physical activity or exercise patterns, and practicing ways to maintain personal safety and overcome injuries during exercise. All of these activities must be maximized in the form of practice or psychomotor so that students can understand the theory given the can apply it in everyday life (Maryati et al., 2019; Rachman et al., 2020).

From the explanation above, it can be understood that there are three problems in implementing physical education learning in the PGSD Program of STAHN Mpu Kuturan Singaraja. First, the problem of students' understanding of health education. Second, the problems experienced by students are not only limited to cognitive problems, but also to affective and psychomotor aspects. Third, the lecture method still dominates the learning process and is teacher-centered. One of the solutions taken by researchers to solve these problems is to develop and implement learning models that provide more opportunities for students to build their knowledge, skills and attitudes regarding health education. For this reason, in this study, researchers will develop a physical education learning model based on Collaborative Teamwork Learning.

The development of this Collaborative Teamwork Learning-based physical education learning model is based on the findings of previous research, which states that its application has a positive effect on student learning outcomes (Dewi et al., 2019; Sholeha et al., 2019; Yasa & Sadra, 2013). The application of Collaborative Teamwork Learning is also proven to influence students' motivation to learn and the soft skills of learners (Daniati et al., 2022; Jiwa et al., 2014; Primadiati & Djukri, 2017). Previous study state that implementing Collaborative Teamwork Learning, students have more opportunities to be involved in the learning process and become more active in building their understanding (Daniati et al., 2022; Raihanah et al., 2018). Other research also emphasize the implementation of collaborative learning also has various advantages over conventional learning models, such as 1) higher learning achievement; 2) deeper understanding; 3) more enjoyable learning; 4) developing leadership skills; 5) increasing positive attitudes; 6) increasing self-esteem; 7) learning inclusively; 8) feeling of belonging; and 9) developing future skills (Suryani, 2011).

What distinguishes this research from previous studies is that, in this study, researchers developed a physical education learning model of health education material based on Collaborative Teamwork

Learning assisted by learning videos. The integration of learning videos in the learning model was carried out with the consideration that the students who were the subjects of the study were generation z. One of the characteristics of generation z is that they can learn better when using current information and communication technology (Boholano, 2017; Murillo-Zamorano et al., 2019). Thus, in this digital era, lecturers must be able to keep up with technological development to produce highly competitive graduates (Kanca et al., 2021; Vorona et al., 2020). The use of video has empirically been proven to have a positive influence on the learning outcomes of adult learners, namely students. Using learning media in videos can help improve students' understanding of the subject matter being studied (Expósito et al., 2020; Trabelsi et al., 2022). Using learning media in videos also increases student motivation and concentration in the learning process (Arke et al., 2021; Padilla et al., 2020; van der Meij & Dunkel, 2020). Based on this empirical evidence, video learning media is expected to help PGSD students at STAHN Mpu Kuturan Singaraja learn health education materials in physical education courses.

The development of a physical education learning model based on collaborative teamwork learning assisted by learning videos will produce products in the form of a physical education learning model book for health education materials based on collaborative teamwork learning assisted by learning videos along with learning support devices, including Learning Implementation Plans (RPP), Student Worksheets (LKM), Student Learning Achievement Tests, and Learning Videos for Health Education Materials. It is hoped that the product can later be used as a learning model to improve student's learning achievement in physical education courses. Based on the description above, the researcher is interested in developing a learning model for physical education health education material based on Collaborative Teamwork Learning assisted by learning videos to improve learning achievement. The research results have found that the physical education learning model based on Collaborative Teamwork Learning assisted by learning videos is valid and practical. Therefore, this research will focus more on analyze the impact of the Collaborative Teamwork Learning-based physical education learning model assisted by learning videos on student learning achievement. Therefore, this study aims to analyze the effect of the Collaborative Teamwork Learning-based physical education learning model assisted by learning videos on student learning achievement. The development and application of this learning model are expected to be adopted by lecturers and educational institutions to improve the quality of physical education learning. By utilizing video learning technology and a collaborative approach, students are expected to be more involved and active in the learning process and be able to apply the knowledge and skills gained in everyday life.

2. METODE

This type of research is experimental research, with the research design used as a quasiexperiment nonequivalent posttest-only control group. In the implementation of the study, the experimental group was treated with learning using a physical education learning model based on Collaborative Teamwork Learning assisted by learning videos. In contrast, the control group was treated with not a physical education learning model based on Collaborative Teamwork Learning assisted by learning videos. Both experimental and control groups were given a post-test to measure knowledge and skills. This research consists of three stages: the research preparation stage, the research implementation stage, and the final stage of experimentation or research completion. The sample of this study was 40 fourthsemester students of the PGSD Study Program of STAHN Mpu Kuturan Singaraja conducting student learning achievement tests consisting of 20 students as the experimental group and 20 students as the control group taken by Intact-Group Comparison.

The data collection methods used are observation, interviews, and tests. Observation is collecting materials or information (data) through systematic observation and notes on the observation target. Observation data collection techniques are carried out if research is related to using human behavior, work processes, and signs of nature and if the observed respondents are not too large (Anas, 2009; Rogers & Revesz, 2019). This observation was conducted on fourth-semester students in the PGSD study program at STAH Negeri Mpu Kuturan Singaraja. The interview is an oral research process, question and answer, in which two or more people meet face to face and hear direct information relevant to the research being investigated. In this study, researchers interviewed lecturers teaching physical education courses and fourth-semester students in the PGSD study program at STAHN Mpu Kuturan Singaraja regarding the obstacles in the learning process experienced. The test consists of a series of questions or exercises and other actions designed to measure individuals' or groups' attitudes, knowledge, skills, abilities or talents (Anas, 2009; Suharsimi Arikunto, 2021). This study uses a learning achievement test instrument, which is a test that is prepared in a planned manner to reveal information on lessons or material that has been taught.

The data analysis methods used in this research include descriptive analysis and inferential

statistical analysis. Descriptive analysis was conducted using SPSS 26.0 for Windows software, focusing on post-test data. Some values sought in the statistical analysis include mean (average), standard deviation, maximum value, and minimum value. Furthermore, inferential analysis was conducted through the MANOVA (Multivariate Analysis of Variance) test for post-test data. Before conducting the MANOVA test, prerequisite tests were also conducted, including the normality test using Kolmogorov-Smirnov, the homogeneity test using Levene Statistic and Box's Test of Equality of Covariance Matrices, and the multi-correlation test. MANOVA tests and prerequisite tests were conducted using SPSS 26.0 for Windows software. Testing the normality of data distribution was conducted to ensure that the sample came from a normally distributed population so that hypothesis testing could be carried out. To test the hypothesis above, the F test is used through multivariate analysis of variance (MANOVA). The significance number is smaller than 0.05, which means that H0 is rejected: Implementing the physical education learning model of health education material based on collaborative teamwork learning assisted by learning videos effectively improves student learning achievement.

3. RESULT AND DISCUSSION

Result

The physical education learning model trial based on Collaborative Teamwork Learning assisted by learning videos was conducted at the PGSD Department of STAHN Mpu Kuturan Singaraja. This trial was conducted on 40 students of PGSD STAHN Mpu Kuturan Singaraja, consisting of 20 students as an experimental group and 20 as a control group taken by Intact-Group Comparison. The trial process was carried out offline. After learning with a physical education learning model based on Collaborative Teamwork Learning assisted by learning videos conducted at the PGSD Department of STAHN Mpu Kuturan Singajara, it was found that the physical education learning model based on Collaborative Teamwork Learning assisted by learning videos conducted at the PGSD Department of STAHN Mpu Kuturan Singajara, it was found that the physical education learning model based on Collaborative Teamwork Learning assisted by learning videos conducted at the PGSD Department of STAHN Mpu Kuturan Singajara was effectively used to improve student learning achievement. This is shown from the descriptive analysis results presented in Table 1.

Treatment	Dependent Variable	Mean	Standard deviation	Minimum	Maximum
Physical education learning model based on Collaborative	Knowledge Aspect	84.80	5.521	74.00	93.00
Teamwork Learning assisted by learning videos	Skill aspect	85.70	5.95	71.00	94.00
Not a physical education learning model based on Collaborative Teamwork	Knowledge Aspect	78.40	7.42	65.00	89.00
Learning assisted by learning videos	Skill aspect	81.50	5.34	70.00	91.00

Table 1. Descriptive Analysis Results of Learning Achievement (Knowledge and Skills Aspects)

Base on Table 1 show the results of the descriptive analysis show that a physical education learning model based on Collaborative Teamwork Learning assisted by learning videos is effective because it can improve learning achievement in student knowledge and skills. This is indicated by the average experimental class and control class. Where there is a selective difference between the control class and the experimental class. In the knowledge aspect, there is a score difference of 6.40. Where the score of the knowledge aspect of students who are taught with the Collaborative Teamwork Learning-based physical education learning model assisted by learning videos is higher than students who are taught with non-Collaborative Teamwork Learning-based physical education learning model assisted by learning videos. Likewise, the learning achievement of student skill aspects shows a significant difference between students who are taught with the Collaborative Teamwork Learning-based physical education learning model assisted by learning videos. Likewise, the learning videos and students who are taught with not Collaborative Teamwork Learning-based physical education learning model assisted by learning videos and students who are taught with not Collaborative Teamwork Learning-based physical education learning model assisted by learning videos, and this is indicated by the difference of 4.20. From the results of this analysis, the aspect that is more influenced is the knowledge aspect.

After descriptive analysis, the next stage is prerequisite test analysis. The prerequisite test analysis includes the normality test of data distribution, homogeneity test of variance, multivariate homogeneity test, and linearity test of the dependent variable. The first prerequisite test conducted was the normality test with Kolmogorov-Smirnov. The analysis showed that all data came from a normally distributed group. The Sig value can show this. > 0.05, presented in Table 2.

		Kolmogorov-Smirnov			Shapiro-Wilk			
	Treatment	Statistic	df	Sig.	Statistic	df	Sig.	
Knowledge Aspect	1.00	0.169	20	0.135	0.928	20	0.143	
	2.00	0.179	20	0.095	0.941	20	0.248	
Skill aspect	1.00	0.164	20	0.168	0.938	20	0.220	
-	2.00	0.156	20	0.200	0.936	20	0.200	

Tabel 2. Normality of the Data

Base on Table 2 after the normality requirement is met, the next prerequisite test is the homogeneity test. In this study, the homogeneity test was carried out with two analyses: the variance homogeneity test with Levene's Test of Equality and the multivariate homogeneity test with Box's Test of Equality of Covariance Matrices. The results of the homogeneity analysis show the same meaning, namely that the research data comes from a homogeneous data group. This can be seen from the sig value. Each test shows a value of more than 0.05. Sig value. Levene's Test of Equality is 0. 347 for the ability of the knowledge aspect, while the Sig. value of the ability of the skill aspect is 0.408. Meanwhile, the homogeneity test with Box's Test of Equality of Covariance Matrices obtained a sig. value of 0.571 with an F value of 0.669. The next prerequisite test is the multicollinearity test. The analysis results show that the VIF and tolerance values are close to 1. Thus, the science literacy and independence variables do not correlate. The prerequisite test for MANOVA analysis has been fulfilled, where the research data obtained are normally distributed and homogeneous, and there is no linear relationship between variables, so hypothesis testing with Manova can be carried out. The results of MANOVA analysis on multivariate test are presented in Table 3.

Table 3. Multivariate Tests

	Effect	Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	0.997	6618.415	2.000	37.000	0.000
	Wilks' Lambda	0.003	6618.415	2.000	37.000	0.000
	Hotelling's Trace	357.752	6618.415	2.000	37.000	0.000
	Roy's Largest Root	357.752	6618.415	2.000	37.000	0.000
Perlakuaan	Pillai's Trace	0.265	6.687	2.000	37.000	0.003
	Wilks' Lambda	0.735	6.687	2.000	37.000	0.003
	Hotelling's Trace	0.361	6.687	2.000	37.000	0.003
	Roy's Largest Root	0.361	6.687	2.000	37.000	0.003

Based on Table 3 show results of the analysis, several findings were obtained. First, the MANOVA results show Pillae's Trace, Wilks' Lambda Hotelling's Trace, and Roy's Largest Root, which shows that the F coefficient is 6618.415b with a Sig value. 0,00. This means there is a simultaneous difference in the achievement of knowledge and skill aspects of student groups taught with the Collaborative Teamwork Learning-based physical education learning model assisted by learning videos. The tests of between-subjects effects analysis is show in Table 4.

Table 4. Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares		Mean Square	F	Sig.
Corrected	Knowledge Aspect	409.600	1	409.600	9.572	0.004
Model	Skill aspect	176.400	1	176.400	5.525	0.024
Intercept	Knowledge Aspect	266342.400	1	266342.400	6224.484	0.000
	Skill aspect	279558.400	1	279558.400	8756.363	0.000
Treatment	Knowledge Aspect	409.600	1	409.600	9.572	0.004
	Skill aspect	176.400	1	176.400	5.525	0.024
Error	Knowledge Aspect	1626.000	38	42.789		
	Skill aspect	1213.200	38	31.926		
Total	Knowledge Aspect	268378.000	40			
	Skill aspect	280948.000	40			
Corrected	Knowledge Aspect	2035.600	39			
Total	Skill aspect	1389.600	39			

Base on Table 4 show tests of Between-Subjects Effects analysis showed an F value of 9, 57 with Sig. 0.004, which is smaller than 0.05. This shows the effect of the Collaborative Teamwork Learning-based physical education learning model assisted by learning videos on the achievement of knowledge aspects. Third, the Tests of Between-Subjects Effects analysis results showed an F value of 5.525 with Sig. 0.000,

Discussion

The results showed that the physical education learning model based on Collaborative Teamwork Learning assisted by learning videos to improve learning achievement effectively. The occurrence of increased student learning achievement after applying this model is inseparable from how the learning process is carried out. In this learning model, students' development creates conditions that can affect students' lives in cooperation, helping each other so that they are motivated to learn together in achieving satisfactory learning-based physical education learning model assisted by learning videos is a teaching model where students work together in a "team" that helps each other learn where the problems given are available on the learning video. In addition, students can apply health education both healthy lifestyles, personal hygiene, environmental hygiene and safety education in the form of practical videos played in collaboration with their friends. The learning process emphasizes the importance of cooperation rather than competition or interdependence in addition to independence (Asrori & Tjalla, 2020; Ghahramani & Salimi, 2022; Le et al., 2018).

which is smaller than 0.05. This shows the effect of the Collaborative Teamwork Learning-based physical

education learning model assisted by learning videos on the achievement of skill aspects.

On the other hand, the development of cooperation and interdependence can develop the ability to face challenges, leadership, and management needed when entering the world of work (Falcione et al., 2019; Marshel & Ratnawulan, 2020). Through the teamwork learning model, lecturers can at least help students who will later become prospective elementary school teachers, learn to work successfully in collaboration in the world of education, and develop skills and improve the quality of work in the world of education needed for collaborative skills when they later enter the world of work. The strategy focuses more on maximizing participation and activeness in learning and how students can construct their knowledge to become their own. In this strategy, the role of the lecturer tends to be a facilitator, motivator, and guide to finding alternative solutions when students experience learning difficulties. In addition, collaborative learning provides opportunities for students to gain new experiences from built social interactions. These interactions teach that group differences, disagreements and problems will arise in groups. This model contains five steps that support the physical education learning model following the stages of Collaborative Teamwork Learning assisted by teaching videos, namely 1) Forming, team formation activities. 2) Stroming includes activities to disclose hypotheses from students related to the problems given with the help of learning videos. 3) Norming, determining the sources related to solving the problems discussed in the problem sheet. 4) Performing and communicating the results of their group discussions through team presentation activities. 5) Adjourning includes collaborative problem-solving activities based on the presentation that has been done (Marhadi, 2019; Wijayanti & Pratomo, 2019).

The learning process and the need for an interesting and effective model are inseparable from the need for media that supports the delivery of the teaching material presented. Media that can be utilized in assisting the learning process is a learning video. Learning models that are designed and supported by infrastructure utilizing technology, such as learning videos following the material in implementing the learning process, can help achieve the learning objectives. Learning video media can be classified into audio-visual aids (AVA) media or media that can be seen and heard. Making interesting learning videos, of course, it will make the learning process much more effective. The use of video-based physical education learning models is one of the most supportive factors in the learning process, such as the use of image media, the use of audio-visual media or learning media in the form of Compact Discs and other learning media (Aryanti et al., 2021; Bystrova, 2020). Using video in the learning model specifically impacts students' learning motivation. This makes learning achievement can be improved. Video media can be used to conduct health counseling on other topics with adolescent respondents (Aryanti et al., 2021; Okilanda et al., 2021). Apart from that, by taking advantage of technological advances, namely the use of video. Learning videos are defined as any electronic media format used to stimulate learners' thoughts, feelings and interests to learn through the presentation of ideas, messages and moving image information (Expósito et al., 2020; Simbolon et al., 2021). An effective way to promote health in children is to involve the media in delivering the material.

Several studies were similar to the research on physical education learning models based on Collaborative Teamwork Learning have been proven to improve students' learning achievement. Research shows collaborative learning contributes to higher-order thinking skills such as communication, critical thinking and cooperation and can develop students' knowledge. Research states that there is an effect of using Collaborative Teamwork Learning-based LKPD on dynamic fluid material on student learning outcomes indicated by the average value of collaboration skills and KPS for all three activities> 72. The paired sample t-test results showed a significant difference at the 95% confidence level between the average pretest and post-test results on cognitive ability learning outcomes whose learning uses collaborative teamwork learning-based LKPD. The results of the study state that through the CTL model, students can develop hard and soft skills to become graduates who are competent, creative and can work well when entering the world of work. The study results in in-state student learning achievement between the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based collaborative teamwork model and the control group using the practicum-based on the results of this study, it can be said that a physical education learning model based on Collaborative Teamwork Learning will impact student achievement.

This research can help educators better understand how students generalize in solving math problems. The implication is that teachers can develop more effective teaching strategies to help students develop mathematical generalization skills. Additionally the findings from this research can contribute to the development of better mathematics curricula that promote deeper understanding of concepts and generalization skills of mathematics. Findings from this study may only apply to certain contexts or certain student samples. The results of this study may not be generalizable to a broader population. In addition, time and resource limitations may limit the scope of the study and the size of the student sample that can be included in the study. To overcome the limitations mentioned, several solutions can be applied to increase the validity and relevance of the results of this study. First, to broaden the scope and increase the generalizability of the findings, future research can involve a more extensive and diverse sample. Thus, the research results can be more representative and relevant to a broader population. Researchers can also use more diverse sampling methods, such as stratified sampling, to ensure that various subgroups in the population are well represented. Finally, future researchers can implement longitudinal research to overcome time constraints. By conducting research over a more extended period, researchers can observe the development of students' mathematical generalization skills more comprehensively and see the longterm effects of the teaching strategies implemented.

4. CONCLUSION

The results of the descriptive analysis show that a physical education learning model based on Collaborative Teamwork Learning assisted by learning videos is effective because it can improve learning achievement in student knowledge and skills. This is indicated by the average experimental class and control class. Where there is a selective difference between the control class and the experimental class. Where the score of the knowledge aspect of students who are taught with the Collaborative Teamwork Learning-based physical education learning model assisted by learning videos is higher than students who are taught with non-Collaborative Teamwork Learning-based physical education learning achievement of student skill aspects shows a significant difference between students who are taught with the Collaborative Teamwork Learning-based physical education learning model assisted by learning wideos. Likewise, the learning achievement of student skill aspects shows a significant difference between students who are taught with the Collaborative Teamwork Learning-based physical education learning model assisted by learning wideos and students who are taught with not Collaborative Teamwork Learning-based physical education learning model assisted by learning videos. From the results of this analysis, the aspect that is more influenced is the knowledge aspect.

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