Distributed Practice Learning Model Using Audiovisual Media for Teaching Basic Skills of Badminton

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Abstract. This study investigated the effectiveness of the distributed practice learning model implemented with audiovisual media to improve the learning results of badminton basic techniques materials. This research was an experimental method with one group Pretest-posttest design. The objects were 40 4th semester students selected through the purposive sampling technique. Samples were treated for 8 times (8 meetings), three times in a week Aspects related to badminton skills tested in the study included Wall Volley test, short service, long service, and clear test. Data were analyzed using a T-test with SPSS 16 software. The results of this study showed that there was a significant effect of the implementation of the distributed practice learning model using audiovisual media on the improvement of students' basic badminton skills. The use of audio-visual media in distributed practice learning models very effectively improves the learning outcomes of badminton basic techniques. Besides facilitating students in understanding the movements learned, it also facilitates teachers in delivering learning materials because students can evaluate the movement by observing the video.

Keyword: Distributed Practice, Audio Visual, badminton

INTRODUCTION

A learning process mostly orients or focuses on materials rather than the target achievement that is students' competence improvement. Those competencies include students' learning results and activeness in following the lesson. Many methods applied by teachers/lecturers tend to be more theoretical and seldom concern about students' abilities (Tamren, 2017). The subject of sport involves physical movements like games or sports to achieve learning goals (Rosdiani, 2014).

To achieve the learning targets is the main goal of education both at school and at universities. Essentially, learning results are influenced by the interaction between factors affecting the whole learning process. It can be an improvement of skills, knowledge, and attitude after following the learning process (Kumpas-Lenk et al., 2018). Various improvisations are made by teachers or lecturers to achieve those targets including modifying teaching, implementing various teaching methods and strategies, and developing teaching methods. Besides that, the use of teaching media is one of the factors leading to the success of the learning process.

Badminton is a compulsory subject that must be passed by each student of Physical

Education, Health, and Recreation of Sports Education Faculty, Makassar State University. The success of this learning cannot be separated from the role of lecturers in managing the learning activities. To play badminton well, students must frequently perform practices of the basic skills and tactics of badminton and many physical elements related to the game. Basic skills of badminton include how to hold a racket, to stand, to move legs, and to hit a shuttlecock (Subarjah, 2010; Djide, 2000; Davis, 2000; Pole, 2011). To play badminton, somebody must understand some basic skills in hitting shuttlecock including driving lob, serving (Tzetzis & Votsis, 2006), smashing, dropping shots, and netting (Jian, 2000; Kamaruddin, 2019; Pole, 2011; Usman, 2010; Wattanasin, 2000). Hitting shuttlecock can be done with a forehand or backhand technique.

The problem generally faced in teaching badminton is the low enthusiasm of students in following the lesson. It is majorly because of the teaching methods applied by lecturer which are still conventional that is by directly teaching them to do practice in the field. This conventional method makes students bored, tired, and monotonous so that their enthusiasm to follow the class reduces (Randy & Darmawan, 2017). The lack of students' attention during the lecture causes the acquisition of knowledge and the mastery of materials not as expected (Hadi & Habibi, 2018). Besides that, the lectures seldom use teaching media that can stimulate students' interest in the subject. It affects students learning results that are lower than targets. Therefore, it is important to find out a better way to improve students' learning results in badminton.

To assist students to understand the learning materials better, it is important to apply audiovisual media in teaching (Falahudin, 2014). The use of media in teaching can improve the effectiveness of learning activities (Hadi & Habibi, 2018) because the interaction patterns can be directly observed. The use of media can also help students easier in understanding materials delivered by teachers/lecturers. Media are tools bridging the message exchanged in the classroom to achieve the learning goals (Mustaqim, 2016). Therefore, the use of teaching media needs strategies to ensure the effectiveness and efficiency of the learning process. The teaching media used in this study was audiovisual media.

A study conducted by (Prayogo & Prihanto, 2013) found that there was an improvement in learning volleyball using audiovisual media. Another study also found that the use of audiovisual media can facilitate students to develop their mental imagination about a movement of skill (Eka P & Sudarso, 2015). The use of audiovisual media assists somebody to understand knowledge easily because the learning process is conducted through audio and visual at the same time. It is in line with the study by Hanief & Zawawi, (2016) discovering that there was an increase in the result of learning passing in volleyball using audiovisual media and learning to dribble on football (Kusuma, 2018). Besides that, the implementation of audiovisual media in other subjects can improve students' learning results (Prasetia, 2016; Rosyida et al., 2017). The media can stimulate the student to respond to the materials presented during the learning process (Santoso & Mudjihartono, 2016). A study by Cendra, (2016) also confirmed that there is a positive impact on children's habit to watch football matches on TV on their ability to play football. Children usually apply some movements in playing football according to what they usually watch. Using audiovisual media as tools to deliver learning materials leads the learning activities more fun for students to understand the materials (Febryanto, 2015).

Some earlier studies found that audiovisual media bring a positive impact on learning as it can improve the learning results. However, there have not been any studies that combine the use of audiovisual media and practical learning models in teaching badminton. Besides that, among many learning models, there have not been any of them effective to be applied in the whole learning process. Various learning models are usually used to meet learning targets. Learning badminton involves many movements. Distributed practice is a practical learning model that is usually applied to teaching movements (Kamaruddin et al., 2019). This method emphasizes the repletion of movements with breaks or intervals (Ahmadvand et al., 2016). Breaks between movements aimed to evaluate to achieve perfection on the following movement (Panchuk et al., 2013). This learning model provides many breaks in each session (Rohrer & Taylor, 2006). The practical learning model is relevant to be applied to movement learning. Therefore, in this study, the practical learning model was

combined with audiovisual media to improve the results of learning the basic skills of badminton.

Based on the problems presented above, we would implement audiovisual media. It was expected to support students achieving their learning targets which in this case, students have the knowledge and skills to practice the basic skills of badminton. This audiovisual media combines some components like pictures, sound, and videos. The utilization of this audiovisual media is expected to improve the effectiveness of learning badminton to achieve the best result.

The purpose of this study was to measure the effectiveness of the distributed practice learning model using audiovisual media on the basic skills of badminton of students at the Physical, Health, and Recreation Education Program of Sports Education Faculty, Makassar State University.

METHOD

This is an experimental study with *one group pretest-posttest design* (not involving a control group) (Sugiyono, 2015). Each student was given a pretest before being treated, and in the end, a post-test was distributed. The study was carried out at Sports Education Faculty, Makassar State University, from February to March 2020. The research objects were the fourth-semester students of Physical, Health, and Recreation Education Program batch year 2018 with a total number of 40, selected through the purposive sampling technique. The experimental group was treated during 8 meetings, 3 meetings a week. Each meeting, students were taught with the basic skills of badminton including short-serve, long-serve, lob, and smash. The duration of each meeting was 100 minutes. The break section was as much as the training section. The break section was also allocated to correct mistakes made during the training, to do discussion with the lecturer, to assess the performance of peers, and to analyze the following movements to practice. The data were collected using a test of students' mastery of badminton skills (Nurhasan, 2008) including Wall Volley, short serve, long service, and clear test. The data were then analyzed using a t-test aided by SPSS 16 software.

RESULTS AND DISCUSSION

Results

After conducting the treatment for 8 meetings, we measured the learning results and gathered the following data.

Table 1. Distribution of Pretest and Posttest Data of Students' Badminton Basic Skills

Statistical Values	Pre-Test	Post-Test
N	40	40
Mean	177.37	188.50
Standard Deviation	7.49	7.83
Range	33	35
Minimum	164	178
Maximum	197	213

Based on the descriptive analyses performed on pretest data, the mean score was 177.37, the standard deviation was 7.49, the maximum value was 197, and the minimum value was 164. While, the results of the posttest on students' badminton basic skills showed an average score of 188.5, a standard deviation of 7.83, the maximum value of 213, and the minimum value of 197.

Table 2. Distribution of Frequency of Students' Badminton Basic Skills

No	Interval	Categories	Frequencies	Percentages
1	$200 < X$	Very Good	3	7.5 %
2	$192 < X \leq 200$	Good	7	17.5 %
3	$184 < X \leq 192$	Average	18	45 %
4	$176 < X \leq 184$	Low	12	30 %
5	$X \leq 176$	Very Low	0	0 %
	Total		40	100%

Based on table 2 above, the distribution of frequency of students' mastery in badminton basic skills showed that 7.5% of students in the very good category, 45% in the average category, and 30% in the very low category.

Figure1. Graph of Frequency Distribution of Basic Skills of Badminton
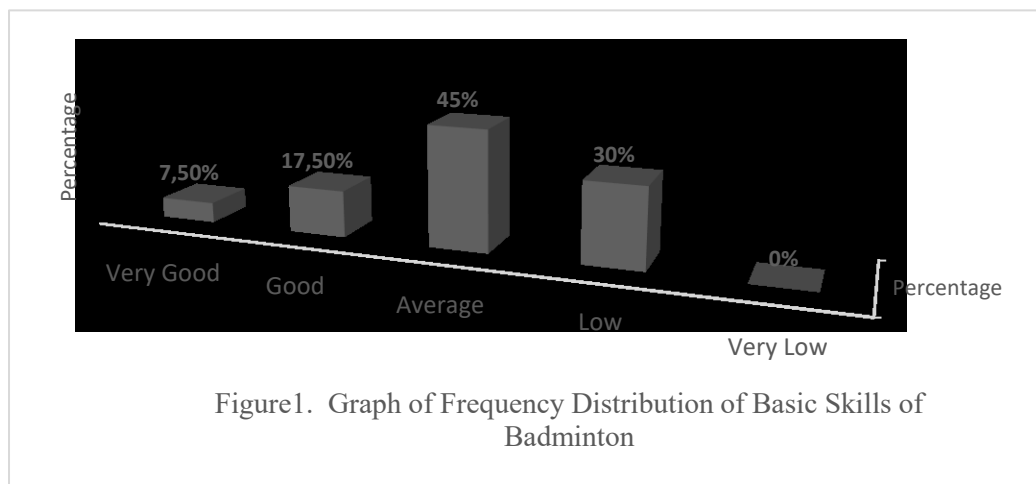
Before performing the t-test, we did a requirement analysis including the normality test using the Shapiro Wilk test and Homogeneity test using the Levene test. The results of the requirement analysis can be seen in the table 3.

Table 3. Summary of Results of Normality Test

Data	N	Statistical Values	Sig. (*p*)	Information
Pre Test	40	0,972	0.404	Normal
Post Test	40	0,892	0.101	Normal

Based on the normality test, all data had a significance value of $p > 0.05$ so that it can be concluded that all data from groups have a normal distribution. After that, the homogeneity of data was tested. The summary of the homogeneity test can be seen in the following table 4.

Table 4. Summary of Homogeneity Test

Sources of Data	N	Levene Statistic	Sig. (p)	category
Pre Test	40	1.131	0,391	Homogenous
Post Test				

Based on the Levene statistic test, the value was 1,131 with the average probability of 0,391 which was bigger than the value of α (0.05). Thus, data about students' basic skills in badminton were homogeny or had similar variance. After fulfilling the requirement analysis, data were processed using a t-test. Below is the summary of the t-test results performed on the data.

Table 5. Results of Analysis of Data about Students' Basic Skills in Badminton before and after Studying with Audiovisual Media

Sources of Data	Mean	SD	Mean Difference	t-count	Sig. (p)
Pre Test	177.37	7.49	11.12	6.48	0.000
Post Test	188.50	7.83			

Based on the variance test using t-test, after being taught with audiovisual media, students' score on badminton basic skills was 188.50 that was higher than the pretest (177.37). The result of the t-test with the significance level of α = 0.05 indicates that there was a significant difference in students' badminton basic skills before and after they study with audiovisual learning. In this case, the t-count was 6.48, and the significance (probability) value was 0.000 which was smaller than the value of α (0.05) with the mean difference of 11.12. Therefore, it can be agreed that there was a significant difference in students' badminton basic skills before and after the implementation of a distributed practice learning model using audiovisual media at the Physical, Health, and Recreation Education Program of Sports Education Faculty, Makassar State University.

Discussion

The findings of this study indicated that the implementation of a distributed practice model using audiovisual media significantly influences the improvement of the badminton basic skills of students at the Physical, Health, and Recreation Education Program of Sports Education Faculty, Makassar State University. The average increase was at 11.12 points. The distributed practice learning model is very useful to achieve the learning target. The repetition of movements will ease students to understand and analyze their performance by themselves so that it can become more perfect. Breaks provided between training sessions allow the lecturer and students to directly evaluate the movements students have just performed. Moreover, audiovisual media show students the real basic movement skills in badminton. Therefore, students can easily understand the types of movements they learn. Besides that, the media assist the lecturer/teacher in delivering the material during the learning session because students can directly evaluate their performance by watching the video.

This finding is in line with some earlier studies which found that the distributed practice learning model is suitable to be implemented in teaching complex movement (Nazari & Ebersbach, 2019), (Dail & Christina, 2004). The distributed practice provides more breaks to students (Studer et al., 2010), and students and the lecturer can allocate it for discussing and evaluating students' performances and

compared them with the perfect model in the video. Such interaction between students and the lecturer can motivate students to complete the next task (Bird, 2010), (Borhanuddin & Kok, 2014). Another finding also explains that distributed practice learning is very effective to teach a skill with complex movements (Ahmadvand et al., 2016). Breaks provided by this learning model can be utilized by students to recharge energy they have spent during the movements so that they are not tired and bored to perform the next movements (Bird, 2010).

Besides that, audiovisual media is very helpful in teaching movement like basic badminton skills. According to the current study, audiovisual media is effective to improve the students' learning results in badminton basic skills. It is in line with an earlier study that the use of audiovisual media eases students to understand the basic serve techniques of badminton (Ardiyanto, 2018), basic skills of badminton (Cendra et al., 2019), gymnastics forward roll (Arifin & Febriyanti, 2013), and table tennis (Anggraini et al., 2018). Another study also finds that the results of learning about short serve can improve as much as 41.75% through the implementation of audiovisual media (Setiawan & Darmawan, 2014). Besides that, it was also found that the use of the media can improve the results of learning short serve in badminton (25%) (Randy & Darmawan, 2017).

Based on the current findings, the distributed learning model using audiovisual media was effective to improve students' basic skills in badminton. In this learning activity, students were easier to understand various movements because they could evaluate their own performances using audiovisual media which in this case was the video. It also eased lecturers in teaching because they did not need to frequently show an example or demonstrate each movement students learn (Ardiyanto, 2018). As the *distributed practice* learning model gives sufficient breaks in each learning section, students can recover the lost energy so that they do not quickly get exhausted and bored to perform the movements. It can boost students' motivation and interest to join each learning section actively, especially because the learning was supported by audiovisual media.

Audiovisual media is very helpful to assist students in learning basic skills.

CONCLUSIONS AND SUGGESTIONS

Based on the findings, it can be concluded that learning activities need strategies to achieve their goals. The utilization of audiovisual media is a good strategy to improve learning results. The selection of an effective model also assists teachers in achieving the learning target. The distributed practice learning model can be applied in the learning activities especially materials about movements like the basic techniques in badminton to maximize the learning output. The use of audiovisual media to distribute practice learning is very effective to improve the output of learning about basic badminton skills. Besides it can help students to understand various movements, it also assists lecturers to deliver the learning material because students can evaluate the movements they perform by observing a video. In selecting a learning model, teachers or lecturers should consider the students' activeness and the learning targets. Students' involvement is the main factor influencing the success of learning. The findings of this study can be taken as references for educators to choose and implement a learning model to achieve the learning goals. Besides that, further studies should involve different samples and learning models to maximize the learning results of badminton.

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