



Available online at:

<https://ejournal.upi.edu/index.php/penjas/article/view/33692>

DOI: <https://doi.org/10.17509/jpjo.v6i2.33692>

## **Improving Basic Dribbling Techniques through Video Feedback (VFB) in Futsal**

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### **Article Info**

*Article History :*

*Received January 2021*

*Revised March 2021*

*Accepted June 2021*

*Available online September 2021*

*Keywords :*

*Dribbling, Futsal, Video Feedback*

### **Abstract**

This study aimed to help improve the basic futsal techniques through video feedback (VFB) in futsal learning. The research method used was the pre-experimental method with a one-group pretest-posttest design. The research was conducted in a university, specifically in the Physical Education Health and Recreation Study Program, involving 34 students as the samples. The samples were then received feedback via VFB. The instrument to measure the basic technique was the Dribbling test. The results showed a significant improvement in the basic dribbling technique after using VFB in futsal learning. Futsal learning activity using VFB is one of the strategies in Physical Education learning to optimize the classroom environment, improve basic techniques, increase competence, improve playing skills, and explore physical motor activities. It concludes that Video Feedback significantly improves student skills. The use of audiovisual media (video) also has high effectiveness in the training or learning process. It is crucial for students learning to carry out the exercise material effectively in the learning process. Future research is expected to use VFB to determine the student's cognitive ability and futsal playing skills.

## INTRODUCTION

Learning developments in sports and other physical activities can be analyzed through smartphones, tablets, applications, video feedback (VFB), and Youtube, contributing significantly to Physical Education development (Nowels & Hewit, 2018). The development of science and technology is increasing for the advancement of human civilization. Today's digital environment allows teachers and trainers at all levels to utilize technology through video recordings to analyze movements to improve skills and immediately show the feedback, also provides additional points in learning and can improve performance (Nowels & Hewit, 2018).

Observing learning development in recent years, there is a growing interest among Physical Education teachers to include digital technology in the learning process (Juniu, 2013). In addition, the use of feedback is a promising scientific development to improve the implementation of complex skills. Therefore, feedback is an integral part of the teaching and learning process for Physical Education (Mahoney, Macfarlane, Ajjawi, Mahoney, & Macfarlane, 2018). Furthermore, feedback is a critical feature that can support an effective student learning process in developing their relationships with their tutors (Palao, Hastie, Guerrero, & Ortega, 2013).

Feedback also generally plays a vital role in teaching skills and is used in various professional Education and higher training courses to improve skills (Fukkink, Trienekens, & Kramer, 2011). Many learning processes are now growing in a study program and tend to use a learning process with a practical approach. One of the lessons that were used as the object in this research was futsal learning. Futsal is a team game where the players must adapt to a dynamic changing environment. A player has limited time and space to make decisions and provide solutions for their team (Jose VL, 2017). The basic technique is an important skill and absolutely must be mastered by every futsal player. An athlete needs good sports skills to reach the intended achievement (Lhaksana, 2012),

Technology can support teaching, learning, and assessment in Physical Education. This research aimed to test student skills through digital video. It is considered an effective means to learn and improve movement skills. So that the current and future pedagogies require a way to test students, it can be administered by using one of the technologies named video feedback (VFB)

for better self-regulation along with the potential to provide appropriate movement feedback based on different experience levels of students (Potdevin et al., 2018). Through video feedback, students' movements can be recorded and evaluated from several points of view. The video feedback in Physical Education classes encourages peer-to-peer dialogue in evaluating a movement. Technological advances have caused sport pedagogists and Physical Education teachers to review strategies for providing feedback related to student motor learning using video feedback (VFB) (Hadiana, Wahidi, & Agustan, 2020)

There is an approach to Physical Education in the digital era which does not necessarily break away from technological developments as a part of the teaching and learning process, especially in futsal. For example, giving feedback through VFB is conducted by producing video recordings of students' futsal learning activities in audio-visual information (Nurchaya, Yudi. Dendy, 2020), meaning that the application of a technology named video feedback (VFB) in futsal learning can make it easier to provide feedback on futsal basic technical skills. This is supported by previous studies that have confirmed the positive impact of using VFB on motivation during Physical Education learning (Weir, Connor, Weir, & Connor, 2009).

Previous research reported that using live video feedback applied in the educational environment provided promising results in increasing the student motivation, knowledge, and interest in carrying out other instructions (Loughlin, Ni, & Grady, 2013). Innovative digital technology-based video learning resources can be implemented in the Physical Education process. This can be applied as a game approach in the learning process. The research observed the potential linkages of using VFB to improve motor learning, motivation, and self-assessment during Physical Education learning (Potdevin et al., 2018). Several previous studies that have been carried out include increasing students' learning motivation and observing student behaviors (Banville & Polifko, 2009). In this study, we wanted to specify and test video feedback (VFB) in futsal learning, especially to improve basic futsal techniques. Thus, the researchers tried to test whether the use of VFB would improve the basic futsal technique ability. This study aimed to find out how the application of video feedback (VFB) could enhance the ability of basic futsal techniques in futsal learning.

## METHODS

This study is a quantitative descriptive study using the pre-experimental method. In this study, the researcher only examined the treatment effect obtained more accurately by comparing the pre-test and post-test results. Hence, the design employed was a one-group pretest-posttest design (Fraenkel, J. R., Wallen, N. E., & Hyun, 2011).

### Participants

The research was conducted on even semester students of the Physical Education Health and Recreation study program. The research samples were 34 students. The samples were given treatment in the form of video feedback (VFB). The research referred to a one-group pre-test - post-test design. The sampling technique of this study used purposive sampling, which was intended only for the sample group that received Futsal courses in the even semester by a direct appointment to the class based on the competence of the complex sample to be studied. In addition, the average age of the sample was 20 years and had diversity in height. To compare the number of men and women in this sample group, men were more dominant. In addition, the sample in this group had excellent physical health to carry out activities. Anthropometric profiles of the participants are presented in Table 1.

**Table 1.** Anthropometric profiles

Variable	Experiment (N=34)		
	Mean	Min	Max
Age (Year)	20.6 ± 1.71	19	23
Weight (Kg)	63.8 ± 5.43	58	72
Height (Cm)	167.9 ± 5.12	165	175

### Instrument and Procedure

The instrument in this study was adopted from the research of Mackenzie (2005), namely the Dribbling test, with a validity level of 0.8883 and a reliability level of 0.7333. This research was conducted in 8 meetings. At the first meeting, a pre-test was carried out, then the 2nd to the 6th meeting as the main treatment before the post-test at the 8th meeting. The determination of the eight-session was adjusted from the Lesson Plan for futsal learning, wherein the Lesson Plan, meetings 1 to 8, was conducted to provide basic futsal techniques. Every session in the experimental class was provided with VFB in futsal learning. Students carried

out learning that had been designed starting from the warm-up, core learning, and closing. VFB was given after students practiced basic futsal techniques, such as dribbling technique training consisting of several training sessions, namely dribbling by turning the cone, dribbling with boomerang direction, dribbling by crossing the fence and dribbling with simulation in the game. The videos of the students performing basic futsal technique movements were shown using a projector to gain feedback on whether the dribbling movements should be improved or maintained. With the track record of the VFB, participants had the results of the evaluation of each meeting from the VFB recordings that could be used to improve movements in the next meeting. Once the feedback session finished, participants carried out the exercise as before. A digital camera was used to record futsal learning videos connected to a laptop using a USB cable to send images directly to the projector.

### Data Analysis

The prerequisite analysis technique to assess the distribution of data in a group of data or research variables used the normality test (Kolmogorov Smirnov). In contrast, the homogeneity test was conducted to determine whether variables X and Y data were homogeneous (Levene's test).

The data analysis technique used to test the experimental group data was the Paired Samples Test. Details of the digital camera utilized in the study to record the futsal learning process was Sony W-800 brand equipped with a 20.1 megapixel CCD sensor with ISO 100-3200 sensitivity and 720p video recording quality. This digital camera was used to record the futsal learning process, complete with a USB cable to connect to a laptop. The video recording results were displayed through a projector as feedback on futsal playing skills during learning.

## RESULT

Based on the data processing results, it was found that, for the Pre Test, the mean was 50.59 with a standard deviation of 7.727. Thus, the data were a description of the normality test results as the basis for determining the data distribution. Therefore, since the pre-test dribbling data had an absolute 0.203, smaller than the table value, it indicated that the data were normally

distributed. Likewise, the absolute value data for the post-test was 0.216, smaller than the table value, meaning the data were normally distributed.

The homogeneity test results for Dribbling data based on the statistical Lavene test, the statistical value was 0.305, and the probability value (Sig.) was 0.582. The test was based on a comparison between the probability value (Sig.) 0.05. If the probability value (Sig.) is greater than 0.05, the research data is homogeneous. In contrast, if the probability value (Sig.) is less than 0.05, it means the research data is not homogeneous. Based on the probability value (Sig.)  $0.509 > 0.05$ , the result indicated that the dribbling data came from a population having the same variance. This means that the research data were homogeneous.

**Table 2. Paired Samples Test**

	Mean	Sd	t	df	Sig.(2-tailed)
Pretets_Dribbling	-.433	.506	-4.915	32	.000
Posttest_Dribbling					

After the prerequisite tests for normality and homogeneity were met, an analysis was carried out to determine the use of VFB to improve dribbling techniques in futsal learning. The analysis used the Paired Sample Test (Table 2). The analysis results showed a significant mean increase of futsal learning receiving VFB treatment to improve the dribbling technique. It was apparent in the pre-test and post-test scores. It was proven by the Paired sample test, namely the value of Sig. (2-tailed)  $0.000 < 0.05$ . Since the value of Sig. (2-tailed) is smaller than 0.05, it can be interpreted that futsal learning using VFB significantly impacts dribbling techniques.

## DISCUSSION

Several innovations and learning approaches need to be developed to achieve a better quality of Education. However, it is not certain what learning innovations are best suited to the characteristics of a field of science, especially for Physical Education. Furthermore, physical Education has a learning area that the curriculum recommends, namely cognitive, affective, and psychomotor, that must be improved. Therefore, it is necessary to conduct a study to determine whether an

innovative learning method is suitable to be applied and effective to improve psychomotor skills, in this case, namely futsal basic technical skills.

In this study, application of VFB learning was applied to improve basic futsal technical skills. The analysis results showed a significant increase in the mean of futsal learning receiving VFB treatment, especially in increasing dribbling technique seen from the pre-test and post-test scores. It was proven by the Paired sample test, namely the value of Sig. (2-tailed)  $0.000 < 0.05$ . Since the value of Sig. (2-tailed) smaller than 0.05, indicating that futsal learning using VFB has a significant impact on improving dribbling techniques.

The aspects of video feedback or digital video were utilized to determine the increase in students' interest in learning Physical Education. In this case, researchers were interested in using video feedback to improve basic techniques. So, this is a breakthrough in physical learning to enhance students' technical skills in learning at school (Schwartz and Hartmann, 2007). The findings show that learning futsal using VFB could help students improve the basic futsal technique, namely dribbling. The technical elements cover the entire technical structure and the carefully combined and efficient student movements to perform sports tasks (Juliantine, 2007). This is supported by the provision of the drill, which is a treatment that can significantly increase the ability (Beato, Coratella, Schena, & Hulton, 2017). Giving drill or a repetition treatment by giving VFB as a form of direct feedback allows students to see their own and other people's game performances on video feedback. Giving Video Feedback provides a fairly broad skill improvement for students with specific skills (Fukkink et al., 2011). The use of audio-visual media (video) has a high level of effectiveness, whereas the use of media in training or learning is important as a tool to stimulate student learning so that students can carry out the exercise material well in the learning process because students get support for training or teaching materials both through hearing and visualization with the help of audio-visual media (Nurcahya & Dendy, 2020). Providing visual feedback greatly affects the development of techniques in performing basic futsal technique exercises and affects ball mastery skills in the passing-stopping technique (Caglayan, 2017). By providing opportunities for students to spend more time to learn a sports activity, they are expected to be more

independent with the potential of technology, such as Video Feedback for supporting the development of student futsal playing skills. At the same time, exploration and experimentation are needed in a research study (Koekoek et al., 2018).

## CONCLUSION

This study found that there was significant increasing the ability of basic futsal dribbling techniques through video feedback (VFB). The use of audio-visual media (video) also has high effectiveness in the training or learning process. It is crucial for students learning to carry out the exercise material effectively in the learning process. Future research is expected to use VFB to determine the student's cognitive ability and futsal playing skills.

## ACKNOWLEDGEMENT

We would like to thank the Ministry of Education and Culture for obtaining the 2020 Beginner Lecturer Research grant. We would like to thank LP-RISTEK STKIP Muhammadiyah Kuningan for helping and guiding us to complete this research. Thank you to the VI semester PJKR students for the 2019-2020 academic year who collaborated and were willing to be the research subjects.

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