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Oarignial Article

"The Effect of an Educational Program using Video on Shooting Skill Performance in Basketball for Secondary Stage Students (16-17 Years)"

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ABSTRACT

This study aims to determine the effect of using videos in educational sessions to improve the shooting skill performance level for secondary stage students (16-17) years in Mesteghanem – Algeria. Thus, the researcher adopted the empirical method using pre- and post-measurements on a sample of 24 students divided into two groups: an empirical group (12 students) and a control group (12 students) during the study year 2014/2015. As for the tests used, they are skill tests that measure performance in shooting skill in basketball (shooting from stationary, shooting while jumping and peaceful shooting). After statistical treatment of initial findings, the researcher found that the educational program using video contributed to enhance shooting skill in basketball for secondary stage students. The empirical sample depending on the educational program using video excelled over the controlling one depending on traditional method in results of performing the skill of shooting in basketball.

Keywords: Educational program, video, shooting skill, basketball

INTRODUCTION

Educational aids play an effective role in learning in general and in motor learning in particular as their use helps master motor skills. In addition, they work on acquiring accurate movement perception and advance with the motor skill as they help teachers use variety of teaching methods and provide the element of suspense that helps raise the performance level of students and reach them to the best possible level.

In some team sport activities listed or programmed in the session of physical and sport education such as basketball, whose most basic skills including shooting skill depend on quick performance, accuracy, timeliness and good positioning by students. Learning and developing this skill becomes difficult to be achieved by the teacher, especially using traditional method represented in oral explanation and presenting model of correct skill performance. Therefore, it moves to tackle errors of students through visual observation by teachers, which makes students inefficient in learning process and unaware of all of his/her mistakes unlike using audio and video means such as the video to record all stages of performing the move or skill.

Foreign studies, including: William Bertel (1970), John David (1977) and Mary (1988) referred that there is a clear and significant correlation between education aids and various psychological aspects. In addition, the study by Soliman (1984) showed that audio – video educational aids have a positive effect on motor performance level, whether in training or the latest technical exercises.

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Ibrahim Salama, 1999, Gardner & David, 2003 refer that the best methods used in learning motor skills is various drawings, video devices and other means that show the correct performance (Salama, 1999: p. 98 and Gardner & David, 2003).

Basketball is one of the competitive sport activities that are characterized with changing motor performance that requires the ability of quick response with match conditions. In addition, it is characterized by direct struggle between both teams, which affects skill and planning performance of players and, in turn, on match result. We should not underestimate or ignore giving full concern to its performance, especially in secondary education stage as the stage of maturity that needs development in all mental, psychological, skill and motor aspects. This is specifically provided by the game according to its nature in terms of intelligence concentration, suspense, speed and accuracy in movement. Therefore, the student becomes prepared in this stage to learn basketball skills, especially in presence of audio-video aids (video) that help present the optimal model and mental perception of movement for students. Although some teachers focus on practical side, the time spent by the student in practicing the skill is limited.

In addition, Siedentop (1991) noticed results of some results that tackled time spent by students in traditional physical education lessons and found that students spend time as follows: 27% in waiting, 20% in management, 15% in receiving orders from teachers and 50% in engagement in practicing the skill. Li and Duhem (1993) assert that this period of time does not give the student sufficient opportunity to own the new learned skill (Khalil, 2008, p. 116).

Within such problems facing the subject of physical education due to teaching reasons, the idea of this study emerges in an attempt to cope with the latest trends concerning teaching methods of physical education and providing a bit of basic information for those interested in using audiovisual (video) aids in teaching some of the skills of sport activities practiced in physical education.

Through modest experience of the researcher in the field of education, as well as some meetings that were held with professors of physical and sports education and some field visits, the researcher found that physical and sports education lesson lacks the use of certain audio-visual aids such as video, especially in learning and improving some basic skills in basketball like shooting that requires a lot of repetitions, focus and accurate review of performance and vision carefully by the student leading to consolidation of skill and awareness of errors to be avoided as this skill is output and result of all other skills and the specific outcome of the game and its impact on the psyche of the students. Thus, problem of study emerges over the impact of using video on performance of the shooting skill in basketball for secondary stage students.

Objectives of the Study

- Designing an educational program using video to improve the shooting skill in basketball for secondary stage students.
- Understanding the impact of using video on the performance of shooting skill in basketball among students.
- Determining the differences between the empirical sample that depends on an educational program using video and control sample that depends on the traditional method.

Field Procedures of the Study

Research methodology

The researcher used the experimental method due to its appropriateness of the nature of the problem.

Population and Sample of the Study

This sample has been chosen depending on quality of available equipment and tools in the educational institution, type of tests and nature of the program to be applied. Population of the study represents the second year students at Ben Qallah Touati Secondary School in Mestaghanem (Algeria) for the academic year 2014/2015. The estimated 220 students from whom a sample was chosen as by 24 students representing 10.90% divided into two groups:

The empirical group

Consists of 12 students who are taught the target skill using the video.

The control group

Consists of 12 students who are taught the target skill using the traditional method.

Skill Tests Used

- Shooting from stationary in basketball.
- Shooting while jumping in basketball.
- Peaceful shooting in basketball.

Main Trial

After designing the educational program using video to teach and improve performance of the shooting skill in basketball activity, and in order to ensure credibility of the study, the researcher followed a simplified method using modern scientific method to learn the steps, giving 08 educational sessions. First, pre-tests were applied on the empirical group and the control sample was studying using traditional method. After completing application of the programmed educational lessons related to study, post-tests were conducted for each of the two samples to determine collection rate and find out how effective the proposed tutorial is. In addition, program's objectives were represented in improving the level of the shooting skill performance from stationary, skill of shooting while jumping and peaceful shooting skill in basketball activity for secondary stage students.

RESULTS

1. Comparing results of pre-tests between empirical and control samples:
   Through statistical treatment of results in Table 1 using the T-Student test for significance, it is noticed that all calculated "T" values ranged between 0.34 and 1.62, which are all smaller than tabulated "T" estimated of 1.71 at freedom degree 22 and significance level 0.05. This shows that there are insignificant differences among such means and thus inequality between both samples of the study.
2. Results of Pre- and Post Tests
   2.1. Presenting and analyzing results of shooting from stationary test:
   Through Table 2, it is found that the empirical group in shooting from stationary test came with calculated "T" value of 5.001, which is bigger than tabulated one of 1.796 at significance level 0.05 and freedom degree 11, which shows that there are statistically significant differences between pre- and post-tests in favor of post-test. As for the control group, the calculated "T" value was 3.447, which is bigger than tabulated one of 1.796 at significance level 0.05 and freedom degree 11, which shows that there are statistically significant differences between pre- and post-tests in favor of post-test.
   2.2. Presenting and analyzing results of shooting while jumping test:
   Table 3 shows results of pre- and post-test in shooting while jumping test. In the empirical group, the calculated "T" value of 4.71, which is bigger than tabulated one of 1.796 at significance level 0.05 and freedom degree 11, which shows that there are statistically significant differences between pre- and post-tests in favor of post-test. As for the control group, the calculated "T" value was 4.94, which is bigger than tabulated one of 1.796 at significance level 0.05 and freedom degree 11, which shows that there are statistically significant differences between pre- and post-tests in favor of post-test.
   2.3. Presenting and analyzing results of peaceful shooting test:
   Table 4 shows results of pre- and post-test in peaceful shooting test. In the empirical group, the calculated "T" value of 4.05, which is bigger than tabulated one of 1.796 at significance level 0.05 and freedom degree 11, which shows that there are statistically significant differences between pre- and post-tests in favor of post-test. As for the control group, the calculated "T" value was 2.278, which is bigger than tabulated one of 1.796 at significance level 0.05 and freedom degree 11, which shows that there

Table 1: Equality between empirical and control samples in results of pre-tests using the T-test for significance

Variables	Empirical sample		Control sample		Calculated "T"	Tabulated "T"	Significance
	Mean	S.D	Mean	S.D			
Age (year)	16,41	1,16	16,38	1,31	0,34		Insignificant
Length (cm)	165,83	5,25	172,33	4,49	1,41		Insignificant
Weight (kg)	62,58	5,56	67,91	9,94	1,62	1.71	Insignificant
Shooting from stationary (degree)	3.41	1.5	3.16	1.75	0.43		Insignificant
Shooting while jumping (degree)	11,66	1,89	10,33	1,49	1,239		Insignificant
Peaceful shooting (degree)	1.41	0.99	1.08	0.79	1.07		Insignificant

Significance Level: 0.05, freedom degree (N2 – 2)= 22

Table 2: Results of pre- and post-tests

Statistical means	Pre-test		Post-test		Calculated "T"	Tabulated "T"	Significance
Samples	Mean	S.D	Mean	S.D			
Empirical sample	3.14	1.5	5.25	1.28	5.001	1.79	Significant
Control sample	3.16	1.74	4.66	1.43	3.447	1.79	Significant

Significance Level: 0.05, freedom degree (N – 1) = 11

Table 3: Results of pre- and post-tests

Statistical means	Pre-test		Post-test		Calculated "T"	Tabulated "T"	Significance
Samples	Mean	S.D	Mean	S.D			
Empirical sample	11.66	1.89	14.33	2.6	4.71	1.796	Significant
Control sample	10.33	1.49	12.5	1.56	4.91	1.796	Significant

Significance Level: 0.05, freedom degree (N – 1) = 11

Table 4: Results of pre- and post-tests of the sample in peaceful shooting test

Statistical means	Pre-test		Post-test		Calculated "T"	Tabulated "T"	Significance
Samples	Mean	S.D	Mean	S.D			
Empirical sample	1.41	0.99	2.83	1.26	4.051	1.796	Significant
Control sample	1.08	0.79	1.83	0.71	2.278	1.796	Significant

Significance Level: 0.05, freedom degree (N – 1) = 11

are statistically significant differences between pre- and post-tests in favor of post-test.

3. Presenting results of post-tests between both groups in shooting skill:
   From statistical treatment results of post-tests for both samples, the calculated "T" value between peaceful shooting and side shooting ranged between 2.2 as minimum and 2.34 as maximum, which is bigger than tabulated one of 1.717 at significance level 0.05 and freedom degree 22 and this shows that there are statistically significant differences except in shooting from stationary as the calculated "T" value was 1.34, which is smaller than tabulated one which shows that there are no statistically significant differences.

DISCUSSING RESULTS

Through the results obtained in the practical side where, it was noted that there are statistically significant differences between the two pre and post measurements in shooting skill of the empirical and control groups in favor of pro-measurement. Results of Tables 2-4 also showed statistically significant differences in variables of the study in favor of pro-measurement as ratios of improvement for both empirical groups ranged between (7.92 and 33.55%), while the improvement ratios ranged between (5.24 and 12.5%) for control groups and this shows the effectiveness of conventional and certified tutorial program depending on video device and this confirms that the use of audio-visual aids such as video contributed significantly to the improvement in the skill of shooting under discussion with members of the experimental group when compared to the control group, where the rates of improvement were better for the empirical group. The researcher attributes that progress in the improvement to the effectiveness of the proposed educational program that used the new method as well as the commitment of the study sample to perform what is required, through the use of interactive video that greatly helped in good employment of student efforts, helped to exert more effort and gave them the freedom to control track, relay and time is appropriate to their ability to learn. This was confirmed by Mohamed Zaghloul & Mohammad Yousuf (1995), Gardaner - Daved (2003), Jean (2010) and the study of Hassan Yahya Ismail (2013) on the importance and effectiveness of the use of audio-visual aids in improving basic skills in basketball, including the correction of various types, the role they play educational in its various aspects in multiple sports activities and the ability to improve the skills of all variables.

Concerning the significant differences between the average grades of the experimental group students and average grades of the control group students in

Table 5: Results of pre- and post-tests

Statistical means	Empirical group		Control group		Calculated "T"	Tabulated "T"	Significance
Samples	Mean	S.D	Mean	S.D			
Shooting from stationary	2.25	1.28	4.66	1.43	1.343	1.717	Insignificant
Shooting while jumping	14.33	2.6	12.5	1.56	2.2	1.717	Significant
Peaceful shooting	2.83	1.26	1.83	0.71	2.345	1.717	Significant

Significance Level: 0.05, freedom degree (2N – 2) = 22

favor of post-test, the Table 5 shows differences and improvement in the skill of shooting under study for the empirical group, which as the average rate of overall improvement all variables of the study is (13.54%). The researcher attributes the level of improvement in the empirical group to the use of the program based on video, which took into account levels, abilities and tendencies of students by segmenting the skill into small parts consecutively to facilitate the process of recognizing movement, skill and speed up their understanding and mastery. In addition, the video program contains diversity in sources of learning from diverse videos, sequential images, forms and illustrations, as well as audio commentary and explanation of audio. All these sources led to the involvement of more than one sense of the students, which increases their ability to absorb and understand the skill and speed up the learning process.

Therefore we can say that the new methods used in learning through the use of multi-aids to be more positive and effective than using traditional methods, where video gives the opportunity for students through interaction, suspense, enjoyable interest, attraction and positive engagement with the displaying mechanism for the students to become the best and this is what is interactionalism. Moreover, the study of (2003) Gardaner – Daved, Bursteni, D (2011), Gazelle Mahgoub (2011) and the study of Hassan Yahya Ismail (2013) also emphasize the advantages of using audio-video aids in education as they take into account individual differences among students in learning skills associated with sports activities.

CONCLUSIONS

- The proposed educational program using video contributed to improving the skill of shooting in basketball among students at the secondary stage.
- The use of video in the educational process leads to improvement in the skill of shooting in the activity of basketball.
- The rate of improvement is better in the control group than in empirical group in results of the skill of shooting in basketball.
- The use of video in educational programs increases the ability to understand and learn simple and complex (difficult) motor skills for students.

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