



## The effect of hypermedia program in generalization of motor program of shooting skill in basketball for students

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ISSN (Printed): 2314-7350

ISSN (Online): 2231-8852

**Abstract** One of the reasons that led the researchers to do this research is that there is weakness in students performance of shooting skill in different types according to playing requirements, because of the learning process that is used only to teach students in one case and in constant conditions and this indicates a case of weakness in learning in general and in generalization of motor program of shooting in particular, so, to treat this weakness, the researchers suggested the use good learning means to overcome those problems, the one of important means is the hypermedia. The first aim was the preparation of hypermedia programs for shooting skill of basketball, while the second aim is to know the effect of hypermedia program in generalization of motor program of shooting skill. The hypotheses of the research was that there is a significant effect of hypermedia on generalization of motor program for shooting skill. The research popular has been identified by the students of the second stage in the College of Physical Education and Sport Sciences / Wasit University for the academic year (2014 - 2015). The research sample was selected by a simple randomly method which consisted of (30) students divided into two groups (experimental group and control group by 15 students per group). The researchers have used many standardized tests for shooting skill of basketball and they did the pre-tests and after that applied the learning curriculum, which followed by a post-tests to get on the research data that has been analyzed statistically using statistical program (spss). It reached a set of conclusions. The most important was the use of hypermedia program helped in develop and generalize the motor program for shooting skill of basketball.

### 1. Introduction:

The motor learning is one of Physical Education Sciences, which helps in learning the skills of various kinds, and this is done through the use of modern methods and means of learning in general and the side of knowledge in particular and one of means is (Hypermedia) which is one of the modern and advanced technological means that build on the strong relationship between interactive learning media and learners to display the information and knowledge and provide the coach , the teacher and the learner with the necessary learning information in various sports skills.

The basketball game is considered as collective games, which consist of several skills which characterized by high accuracy and speed in performance as well as that most of the basketball skills is open skills, which are motor programs multiple responses. The importance of research is using modern means to generalize the motor program of shooting types, through the use of modern

scientific methods of technology, which is a super media overlap (Hypermedia).

The problem of research is weakness in students performance of shooting skill in different types according to the play requirements, because of the learning process that is used only teach students in one case and in constant conditions and this indicates a case of weakness in learning in general and in generalization of motor program of shooting in particular, even if the performance Shooting good individually, it is weak through the performance of the skill during the competition, so, to treat this weakness, and to overcome this problem the researchers suggested the use good learning means, including the ultra-media overlap, one of the sophisticated means to explain the skill in a modern, scientific and working to provide the learner with necessary information about the skills required for taking advantage of them in the development shooting in basketball and generalization of its motor program in addition to the diversity of practice during exercise.

The study aimed to preparation hypermedia program for shooting skill, while the second aim is to know the effect of hypermedia in generalization of motor program of shooting skill in basketball, as well as knowledge the effect of hypermedia in learning shooting skill in basketball. The hypotheses was that is a significant effect of hypermedia on generalization of motor program for shooting skill in basketball , as well as, there is a positive effect for the use of hypermedia program in learn the shooting skill in basketball.

**2-Methodology:**

2.1 Research Method: The researchers used the experimental method by design (Magill) for the transfer of learning as result the suitability of the problem. The Table (1) has shown that.

Group	equality test	Experimental treatment	Posttest
Experimental	Passing shooting	Shooting	Passing shooting
control	Passing shooting	Rest	Passing

Table (1) shows the design of the experiment

**2.2 Research sample:**

The researchers identified the research population from the students the second stage in college of Physical Education / Wasit University for the academic year (2014-2015). The total number 111 students and the sample that selected randomly was 30 students divided into two groups experimental and control (15) students per group. For the sake of homogeneity and equality for the research groups, the researchers used the dependent variables (stability shooting, jump shoot, Lay Up shooting) and the skill (chest passing, return passing), through the analysis of results for the two groups of pretests results by using Leven test to find the homogeneity and (t) test for independent samples to create the equality between the two groups as shown in the tables (2) and (3).

Table (2) shows the homogeneity of groups using the Leven test (F)

Used tests	Leven test (F)	(sig.)	Type of (sig.)
stability	0.02	0.96	insignificant

shooting			
jump shoot	1.15	0.29	insignificant
Lay Up shooting	1.37	0.25	insignificant
chest passing	1.19	0.28	insignificant
return passing	1.01	0.21	insignificant

Table (3) shows the equality of groups using (t) test for independent samples

Used tests	Experimental		control		(t) value	Sig. value	Sig. type
	mean	Std.deviation	Mean	Std.deviation			
stability shooting	14.4	3.76	12.8	3.81	1.108	0.27	insignificant
jump shoot	15.8	4.68	14.5	3.48	0.84	0.408	insignificant
Layup shooting	10.04	2.42	7.88	3.42	1.98	0.057	insignificant
chest passing	7.06	1.07	6.28	1.14	1.91	0.06	insignificant
Return passing	80.17	1.17	6.66	3.03	1.80	0.08	insignificant

### 2.3 programs used:

- Adobe audition
- Sony vega
- Allok video joiner
- Adobe photo shop CS6
- Multimedia builder 4.9.8

### 2.4 Types of shooting and passing which used in research:

The researchers chose number of shooting types (stability shooting, jump shoot, lay up shooting) as dependent values as well as number of passing types (chest passing, Return passing) to calculate the transfer to measure the generalization of motor program.

#### 2-5 Evaluation of the technical performance of shooting and passing skills:

The researchers used evaluation of the technical shooting performance by recording the performance of the sample and sending it to experts for Evaluation. As well as, the researchers used evaluation of the technical passing performance to calculate the transfer from shooting to passing, so the performance was recorded and sent to experts and then the researchers got the data.

### 2.6 Generalization test:

The researchers measured the generalization of motor skill through the transfer from shooting to passing in basketball by using the transfer formula as it is shown.

$$\text{Transfer learning formula} = \frac{\text{Experimental mean} - \text{control mean}}{\text{Highest degree in test} - \text{control mean}} \times 100$$

### 2.7 Special procedures multimedia super overlap (Hypermedia): consists of a set of actions and as follow:

2.7.1 Procedures for collection of raw material: the researchers used a set of videos, images, graphics and special shapes of basketball which experts had and clips on the Web (Internet), which will be used in the preparation of learning means (Hypermedia).

2.7.2 Montage: The montage designer did the necessary designs on the images, music and videos collected previously and in line with what is required for the preparation of learning means  
□Hypermedia□.

2.7.2.1 The main facade: it shows icons by which you can enter the learning curriculum and then an introduction to basketball which appears automatically and when you're done you press to skip in order to enter the main page of the tutorial, containing the button to get:

1. History about the game of basketball.

2. About General introductory for basketball.
3. Generalization of motor programs.
4. Specifications of basketball court.
5. About the program (such as the rights of researcher possession).

When you press one of the categories, the contents appear in the form of submenus, including a detailed explanation in the form of video presentations will appear, according to the target indicated by the title, which consists of

- over view.
- Learn technical performance.
- Common mistakes.
- Generalization of motor programs.
- Legal cases.

Having considered and read by researchers on the most important details of basketball game to reach a comprehensive introduction to summarize each stage of the shooting skill, with fine detail about it, taking into account the suitable explanation for intelligence abilities of the sample.

#### **2.7.2.2 second Phase: Design:**

The design and procedures for hypermedia program took about one month. The designer used some relevant programs in the preparation of learning means, and included adjustment programs and editing videos and photos and edit sounds in addition to the transformers and videos cutting for easy handling with parts of learning material and programs. These programs are:

##### **2.7.2.2.1 super media overlap (Hypermedia):**

The super media overlap consists from the main interface design, which represents the main part of it the image of the player is trying to shoot, and the top is title which is (an learning program to develop the skill of shooting basketball and generalization its motor program) and located below the title key access to the means of learning, as in Figure (1).

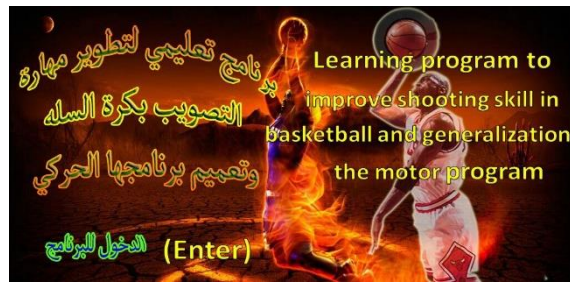


Figure (1) shows the main facade of learning means.

When you click a key to enter the program appear the introduction and will show a simplified presentation about the game, where the heroes performing basketball game, when completion of the presentation is going to be the main interface of the program by pressing the skip button, which take us to the following interface and contains the headlines of the game basketball, as shown in Figure 2, where the interface contains several major addresses a (brief overview of the basketball, and a historical overview, the concept of generalization, shooting in basketball, specifications basketball court, about the program, exit, return) and these titles represent buttons When press it which is programmer is going through what is needed to learn from the learning mean.



Figure (2) shows the headlines for the game of basketball.

## 2.8 The Exploratory experiments:

### 2.8.1 The Exploratory experiment of skill tests:

The researchers did an exploratory experiment on (5) students from research population to try skill tests shooting and passing in basketball in Wednesday (28/01/2014)

### 2.8.2 The exploratory experiment of Hypermedia:

The researchers made a exploratory experiment on Sunday (15/02/2015). The aim was knowing the possibility of running the hypermedia program by all computer operating systems and all versions of Windows, including:

(windows xp sp2- windows xp sp3 - windows 7 -windows - 8 windows).

In addition to the possibility to run the hypermedia program by members of the research population in the light of some special remarks run which the attached with program.

### **2.9 Pre-test:**

The pre-test was in (19-18 /02/2015) for experimental and control group in the dependent variables (shooting and passing in basketball)

### **2.10 main experiment:**

the researchers used the Hypermedia program with the experimental group in order to increase knowledge which relative with skills to develop the performance of shooting and generalization of motor program.

The control group did not take the hypermedia program, but they practice on different skills except shooting and passing during the experiment.

### **2.11 post-test:**

The post-test was in (16-15 /04/2015) for the two groups experimental and control in dependent variables under the same conditions of pre-test like time of tests and place to get accurate results.

### **2.12 Statistical means:**

The researchers used the spss statistical program to analyze data using the following means: mean, standard deviation, Leven test, (t) test.

## **3. Presentation and discussion of results:**

Table (4) shows the Percentage of generalization of motor programs for the shooting basketball

Percentage of generalization	Transfer direction	Group	65.37%	From shooting to passing
Experimental				

Table (4) shown the percentage of generalization of motor programs for the shooting basketball reached (65.37%), and this percentage is good in generalization of motor programs.

Group	Transfer direction	Percentage of generalization
Experimental	From shooting to passing	65.37%

The researchers attribute that percentage in generalization to use of hypermedia program in learning units and the variety of exercises practiced by this group played an active part in the development of shooting and generalization of its motor program. As the shooting skill has a wide environment in performance in aspect of display variable cases and critical situations and uses different strengths and distances and different directions, as well as the positions that it recognizes the learner in shooting is more than the positions that recognizes in another skill, and this leads to more options of the motor program of shooting and thus generalization of motor program better.

(Schmidt and Wrisberg 2000) Indicates to the variety of practice working on development the generalized motor program and improve performance in spite of the different parameters of same program, and the improve the motor program is enhanced when the learner is practiced on movements and changes of the same type of movement.( )

The idea of generalized motor program is that a motor program for a particular class of actions is stored in memory and that a unique pattern of activity will result whenever the program is executed. In order for the program to be executed, certain parameters must be supplied to the program that define how it is be executed for that particular instance. The program is considered generalized because choosing different parameters will alter the output, in terms of movement of limbs but these movements will differ in only certain ways.( )

(sig.) type	Sig.	(t) value		Post-test		Pre-test tests	
		Std.	M.	Std.	M.		
Sig.	0.00	14.63	2.91	27.73	3.76	14.41	stability shooting
Sig.	0.00	12.02	3.64	28.59	4.68	15.84	jump shoot
Sig.	0.00	8.75	2.15	16.37	2.52	9.84	Lay Up shooting



Table (5) shows significant differences between the measurement pre-test and post – test for experimental group.

tests	Pre-test		Post-test		(t) value	Sig.	(sig.) type
	M.	Std.	M.	Std.			
stability shooting	14.41	3.76	27.73	2.91	14.63	0.00	Sig.
jump shoot	15.84	4.68	28.59	3.64	12.02	0.00	Sig.
Lay Up shooting	9.84	2.52	16.37	2.15	8.75	0.00	Sig.

Through analysis table (5) we notice all differences between pre-test and post-test of experimental group for technical performance results of shooting are significant differences because the significance level less than 0.05 and in favor of the post-test.

The researchers attribute the reasons of this improvement to several factors.

- type of exercises and means assistance used during learning units and a clear improvement in the performance of shooting types was showed and this matter was certain by (Schmidt 1992) that "each skill learned there are motor program of its, it has kept in brain and when we used this skill more, the accuracy of motor program will increase."( ).
- The enough explanation and display a good model for types shooting led to draw a clear mantel pictures in mind. The hypermedia program used with experimental group to provide the student enough information for shooting types in all its details, as well as the live display for shooting skill and enough repetitions for these types in these learning units. The skill requires cognitive activity, which includes decision making, problem solving, remembering.( )
- The total number of learning units, which amount (8) units led to improve in technical performance of types of shooting.

#### 4. Conclusions:

According to the results of the study and discussion, the researchers conclude following; the use of Hypermedia program which prepared by researchers helped to improve the scientific knowledge and information in memory Faculty students and development the technical performance of shooting types. The use of hypermedia program has a significant effect on the generalization of motor program of shooting in basketball.

## References

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## Educational model for units that are apply with the experimental group

notes    Used actions and exercises    Time    Sections

30 Minutes    Preparatory section

Keep calm in the show hall and focus on what is being offered in the hypermedia Sit down the students in display hall in front of the display screen or smart blackboard.3 Minutes

Organizational aspect

Answer all questions from students regarding this type of shooting needed and provide them with information and knowledge that will help them to have the shooting    Interaction with the learning program that shows through the computer screen using the display screen or smart blackboard, and know the correct performance of this type of shooting and what are the common, which legal cases accompanied as well as the generalization.    17 Minutes    using the computer

You must be a warm-up during jogging in a gradual and must keep the students on the system, be a warm-up during a stand and focus on the special skill exercises to achieve the goal of skill

jogging and focus on the arms exercises and private recycling elbows in a circular motion-moving the wrist hands also in a circular motion moving the wrist hands forward and backward - pull wrist hands forward and backward to avoid injury occurs when you perform this skill.    10 Minutes

Warm-up

55 Minutes    main section

must take into account the position of the sun towards the wind during the explanation and that all students in the state and listen fully to the attention of the students the correct parts skill and their positions known to the performance    explain and display skill by researchers and one of the players first division sport club Kut - and application skill as well as diagnose error and correct for students and re-application skill - also explain some of the rules of the law which relative with stability shooting skill and gave some information that increase the knowledge of the students and help them in generalization of motor skill.    10 Minutes    learning aspect

students must apply what they were offered in the program (Hypermedia) and repeat the performance in each exercise 10 times and in the event of some of the mistakes should be given the diversity of knowledge to overcome those mistakes and correct performance of the students as well and help them in mainstream kinetic program the required skill Applicate all details in the program (Hypermedia) of

the true performance by students and understand the parts and the details of the skill which they are offered in this program as well as the application of some of the exercises that help the generalization of motor program.

Stability shooting exercise on the basket from a distance 2 meters of the right direction

Stability shooting exercise on the basket from a distance 2 meters from front of basket.

Stability shooting exercise on the basket from a distance 2 meters from the left

Stability shooting exercise from the free throw line 45 Minutes practical aspect

to relax the body to stress in this section and that there be cooperation among the students to return the equipment and tools Give funny game to become the learning unit interested.

Jogging slowly to relax the devices body 5 Minutes final section

22/02/2015 date 90 minutes Unit time First learning unit

15 students Students number learning shooting skill in basketball learning aim

Basketball court- legal basketballs number 15 – Basket of basketball- whistle - adhesive tape tools