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THE EFFECT OF BEHAVIORAL MODELING IN TEACHING SOME TABLE TENNIS SKILLS TO STUDENTS OF AL-AMAL INSTITUTE FOR THE HEARING IMPAIRED

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ABSTRACT

Preparing an educational curriculum using the behavioral modeling method in teaching some table tennis skills to students of Al-Amal Institute for the deaf and dumb, as well as identifying the impact of using the behavioral modeling method in developing the level of performance of some table tennis skills (serving and receiving). The study also showed a comparison between the use of the behavioral modeling method and traditional education in developing the level of performance of some table tennis skills (serving, receiving and serving) and retaining them, assuming that there are no statistically significant differences between the pre and posttests of the experimental group that learns using the behavioral modeling method in developing the level of the performance of some table tennis skills, as well as there were no statistically significant differences between the post-tests between the experimental group and the control group in developing the level of performance of some table tennis skills. The research sample was determined, and they are the students of Al-Amal Institute for the Deaf and Mute in the academic year 2019-2019, whose number is 16 students distributed into two groups, the experimental group, if their number reached 8, and the control group, whose number reached 8 students, after conducting equivalence between them in some of the selected variables, applying the educational curriculum and analyzing the results using statistical methods The researcher concluded that the method of behavior modeling is an effective method in developing the level of performance in table tennis. The method of behavior modeling is an effective method in developing the level of performance in table tennis. Moreover, the use of the behavior modeling method led to the development of the level of performance of my skills (serving and receiving the serve) and the scoring) in table tennis greater than the usual method.

***Keywords**: Behavior Modeling Style, Hope Institute, Table Tennis.*

INTRODUCTION

Interest in educational technology has increased in the Arab world, and the great role it plays in developing the education process and facilitating learning in the shortest possible time. Hence, this development undoubtedly included all areas of life, and the sports field as one of these important fields has also witnessed in recent years a great development and progress in the field of education and training. From this, it is necessary to develop and use modern educational means that keep pace with developments and the current era, and the educational process in its entirety

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has become the preoccupation of many researchers and those interested in the educational process. From this we see that the learner is the main axis in the educational process by trying to provide him with information, sources and modern technologies (supported by programmed educational presentation tools), and this in turn is positively reflected when learning basic skills in sports in general, and among those games is table tennis as one of the games Individuality, which consists of a number of basic skills, which in turn require a high level of mental abilities. These skills are the starting point for learning beginners in the game, which enables them to earn the largest number of points and then win the match. Hence, many workers in the field of education and training try to take advantage of modern technology in the learning process. Skills, especially with beginners, and the capabilities offered by these modern scientific techniques aimed at raising the efficiency of learning and performance. Behavioral modeling is one of the technological innovations that appeared in educational institutions that are used to develop the educational process and raise the efficiency of performance and increase its effectiveness. Absorption of the learned skill, so the researchers resorted to designing an educational curriculum with behavioral modeling and the use of computer software to learn some basic skills in table tennis (table), and the importance of research lies in laying the foundations for building a public base for learning and practicing sports skills by going towards people with special needs to create a generation or abilities Skillful, physical and dynamic that opens the horizon for a promising future.

Research Problem

The researchers summarized the research problem with the following questions:

- Does the behavioral model develop some table tennis skills?
- Which of the traditional learning methods or the behavioral modeling method is better in the education process?
- Which of the two methods of traditional learning or the method of behavioral modeling preference in retaining skills for long periods?

The research problem also lies in the fact that it is an attempt to add a new method of education for people with special needs who are deaf and dumb and may contribute to giving the teacher of physical education a practical method applied scientifically that can benefit from it in his implementation of the physical education lesson plan.

Research Objectives

1. Preparing an educational curriculum using the behavioral modeling method in teaching some table tennis skills to students of Al-Amal Institute for the Deaf and Dumb.
2. Identifying the effect of using the behavioral modeling method in developing the level of performance of some table tennis skills (serving and receiving).
3. Comparing between the use of behavioral modeling and traditional education in developing and retaining the level of performance of some table tennis skills (serving and receiving).

Research Hypotheses

1. There are no statistically significant differences between the pre and posttests of the experimental group that learns using the behavioral modeling method in developing the level of performance of some table tennis skills.
2. There are no statistically significant differences between the pre and posttests of the control group that learns in the traditional way in developing the level of performance of some table tennis skills.
3. There are no statistically significant differences between the post-tests between the experimental group and the control group in developing the level of performance of some table tennis skills.

Research Scopes

1. The human field: students from Al-Amal Institute for the Deaf and Dumb, Al-Qadisiyah Governorate Center.
2. Time frame: for the period from 5/11/2019 to 16/12/2019.
3. Spatial field: the yard and playground of the Housing Youth Center, Al-Qadisiyah Governorate Center.

DEFINING TERMS

Behavioral Modeling

It is to provide a direct behavioral model to the individual, where the goal is to communicate information about the behavioral model shown to the child with the intention of bringing about a change in his behavior or acquiring a new behavior[1] (Jordan, 2009, 350).

RESEARCH METHODOLOGY AND FIELD PROCEDURES

Research Methodology

The choice of the method is one of the priorities of the research procedures, so the researcher used the experimental method due to its suitability to the nature of the research. 217).

The Research Community and Its Sample

The research community was identified and they are students of the Al Amel Institute for the Deaf and Dumb, Al-Qadisiyah Governorate Center for the academic year 2019-2020 (Diwaniyah Center). After that, the research sample was deliberately chosen, and they are the average first-grade students, whose number is (16 students). They were distributed into two groups A and B. By lottery, group B was chosen to be the experimental, and their number reached 8 students, group A, the control, and their number reached 8 students, as shown in the table (1).

Table (1) Shows the number of members of the search groups

Section	*Research Groups*	*Total Number*	*Sample Excluded*	*The final sample number*
A	17	1	8	17
B	17	-	8	17
	17	1	16	17

Equivalence and homogeneity of the research sample

One of the conditions of experimental research is that there are equal groups and its homogeneity so that the work is on a starting line and so that the researcher can refer the differences between the results of the research to the independent factors. The researcher resorted to verifying the equivalence of the research groups. It is related to research" (Vandalen, 1977, p. 398). The sample was equalized with the variables: chronological age measured in months, height measured in centimeters, and weight measured in kilograms, as shown in Tables (2) and (3).

[1] Michael I. Jordan. Computational aspects of motor learning, Motor Skills. New York: Academic Press, 2009. P. 350-420.

Table (2) The Homogeneity of The Research Groups in The Variables of Age, Height and Weight

Statistical Parameters / ***Variables***	***No.***	***Mean***	***Std Dev.***	***Torsion Modulus***	***Sig.***
Age / Month	16	14.5	4.472	-0.565	Homogeneous
Height / Cm	16	145.8	5.236	0.578	Homogeneous
Weight / Kg	16	48.63	3.48	0.609	Homogeneous

Table (3) Equivalence of The Two Research Samples with The Chosen Variables

Statistical Parameters / ***Variables***	***Groups***	***No.***	***Mean***	***Std Dev.***	***Torsion Modulus***	***Sig.***	***Statistical Parameters***
Age / Month	***Experimental***	8	14.47	4.542	8	1.433	equivalent
	Controlled	8	13.95	5.923	8		
Weight / Kg	***Experimental***	8	141.48	5.655	8	2.121	equivalent
	Controlled	8	143.55	5.344	8		
Height / Cm	***Experimental***	8	46.86	4.732	8	1.533	equivalent
	Controlled	8	50.80	5.136	8		

DETERMINE THE APPROPRIATE TESTS

Basic skills tests with table tennis

1. Transmitter: It was measured by sending a test about 40 cm x 40 cm squares (Salam Jwaida, 2009, 28).
2. Receiving the serve: repelling balls from the level of the belt from stability (10 repetitions) (Salam Jwaida, 2009, 49).

The First Pilot Experiment

The researchers conducted a first exploratory experiment on 10/6/2021 by applying the educational program prepared in its initial form on a sample of (16) students. The aim of this experiment was to set the performance time for each exercise according to behavioral modeling methods, determining the rest time in each exercise, and the students' response to the exercises, as well as the possibility of application by the subject teacher.

Educational Curriculum

One of the elements of preparing the educational curricula is to identify the category to which the curriculum is to be applied, and they are students of 13-14 years of age, and after defining it and defining the main objective of the curriculum, which is teaching some basic skills on the table. Sports is a set of planned experiences practiced by the participants through sporting events (Saleh, 1981, 199). Through personal interview with professors specialized in the subjects of teaching methods and motor learning and table tennis coaches during lectures, educational exercises were developed for the skills in question according to the method of behavior modeling (Appendix 2) and in a manner consistent with the students' abilities and in line with their tendencies. The programs were presented to a group of specialists in the fields of teaching methods, motor learning and saliva training for the purpose of expressing their

opinions and observations about the programs and approving their suitability for application. The preparatory program includes:

- The introduction.
- General warm-up.
  And the main part which includes:
- Educational Section
- Explanation of the method of performance
- The applied section includes exercises on modeling presentation.

And the last part includes the closing activity and leaving. The researcher used the command method to implement the program for the purpose of controlling repetitions and controlling work in groups.

The Main Experiment

The researcher implemented (6) an educational unit to develop the level of performance of two table reel skills, which are (transmitting, receiving, transmitting). And by three educational units for each skill. And in the period from 5/11/2019 to 16/12/2019.

The educational units were given at the rate of an educational unit per week for each group, according to the specificity of the class schedule in the school, and on Mondays for the experimental group and Thursdays for the control group.

Post-tests

Post-tests were conducted for the research sample after completing the implementation of the educational program on 20-21/12/2019, and the researcher followed the method he used in the pre-tests under the same conditions and under almost the same spatial and temporal conditions and with the same tools.

Presentation and Discussion of Results

1. Presenting the results of the first hypothesis, which states: "There are no statistically significant differences between the pre and posttests of the experimental group that learn by behavior modeling method in developing the level of performance of some table tennis skills." After collecting the data, unpacking it and processing it statistically, the results appeared for us, as shown in Table (4).

Table (4) Comparing the level of students' performance in the skills tests of the research topic Behavior modeling method (pre and posttests)

Skills	**Measuring Unit**	**Posttests**		**Pretests**		**T-Calculated Value**
		+P	S-	+P	S-	
transmitter towards boxes (points)	Point	3.58	2.36	6.34	3.43	3.61
transmitter receiver	Frequency	5.53	4.27	8.65	5.62	5.69

The tabular value of t is (2.7) at an error rate of (0.05) and a degree of freedom (7).

The table above shows that the results of the application of the pre and post tests for the experimental group that learns according to the method of behavior modeling. The value of (T) calculated for the skill of transmitting was (3.61), while the value of (T) calculated for the skill of receiving transmission was (5.69), which is also indicative when

compared with The tabular value of (2.7) at the level of significance (0.05) and the degree of freedom (7) all show significant differences. That is, there is a significant improvement in the results of the post-tests of the experimental research sample. That is, we reject the null hypothesis and accept the alternative hypothesis, which states that there are statistically significant differences between the pre and posttests of the experimental group that learns by behavior modeling in developing the level of performance of some table tennis skills.

2. Presenting the results of the second hypothesis, which states that there are no statistically significant differences between the pre and posttests of the experimental group that learns in the traditional way in developing the level of performance of some table tennis skills.

Table (5) Comparing the level of students' performance in the skills tests of the research topic in table tennis in the traditional way (pre and posttests)

Skills	**Measuring Unit**	**Posttests**		**Pretests**		**T-Calculated Value**
		+P	S-	+P	S-	
transmitter towards boxes	Point	4.47	3.11	5.53	3.08	3.47
transmitter receiver	Frequency	3.39	4.68	4.82	2.64	2.77

The tabular value of t is (2.7) at an error rate of (0.05) and a degree of freedom (7).

The table above shows that the results of the application of the pre and posttests for the experimental group that learns according to the method of behavior modeling. The value of (T) calculated for the skill of transmitting was (3.47), while the value of (T) calculated for the skill of receiving transmission was (2.77), which is also indicative when compared with the tabular value of (2.7) at the level of significance (0.05) and the degree of freedom (7) all show significant differences, meaning that there is a significant improvement in the results of the post-tests of the control sample. That is, we reject the null hypothesis and accept the alternative hypothesis, which states that there are statistically significant differences between the pre and posttests of the control group that learns in a traditional way in developing the level of performance of some table tennis skills.

3. Presenting the results of the third hypothesis, which states that "there are no statistically significant differences between the post-tests between the experimental group and the control group in developing the level of performance of some table tennis skills".

Table (6) Comparing the level of students' performance in the post-skills tests of the research topic in table tennis, using the modeling method and the traditional method

Skills	**Measuring Unit**	**Posttests**		**Pretests**		**T-Calculated Value**
		+P	S-	+P	S-	
transmitter towards boxes	Point	6.34	3.43	5.53	3.08	2.82
transmitter receiver	Frequency	8.65	5.62	4.82	2.64	4.14

The tabular value of t is (2.6) at an error rate of (0.05) and degrees of freedom (14).

The table above shows that the results of the application of the posttests for the experimental group that learns according to the behavior modeling method and the control group that learns in the traditional way. Significant also, and when compared with the tabular value of (2.7) at the level of significance (0.05) and the degree of freedom (7), all of them show significant differences, meaning that there is a noticeable improvement in the results of the post-tests for the experimental research sample, better than the control sample with the specified tests. That is, we reject the null

hypothesis and accept the alternative hypothesis, which states that there are statistically significant differences between the post-tests between the experimental group and the control group in developing the level of performance of some table tennis skills.

Interpretation Of the Results

From the results of table (4.5.6), the researcher attributes this to the effectiveness of the behavior modeling method used in this research. Performance practices for a period of a month and a half, during which the students practiced a new method that was not familiar to them in the usual learning, which prompted the students to implement the paragraphs and parts of the educational unit and apply its skills well. The researcher also attributes this common and different development in relation to this age stage that the students go through in this class, as it is characterized by the student's desire to satisfy his group and strengthen his position.

As he mentions (Azmy, 1996): “This stage is characterized by the youth’s work to satisfy his group and strengthen his position in it by increasing his participation in the different (physical) activities (Azmy, 1996, 38).

Also, the image of behavioral modeling represented an increase in motivation to achieve responses to implement skillful performance. He states (Hill and Spencer) in the behavioral theory, "The increase in motivation causes an increase in the strength of all responses in a situation. It is also assumed that competitive situations in sports produce higher rates of motivation and special responses are stronger intensity." in competitive situations than in similar situations that do not have competitive effects” (Mutawa, 1977,104).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

1. The method of behavior modeling is an effective method in developing the level of performance in table tennis, but in proportions
4. different.
2. The use of the behavior modeling method led to the development of the level of performance of my skills (serving and receiving the serve) and scoring) with a table ball, which is greater than the usual method.
3. The use of the behavior modeling method led to the development of the performance level of the (serving reception) skill in table tennis to a better degree than the usual method.
4. The use of the traditional method led to a remarkable development of table tennis skills.

Recommendations

In light of the results of the study, the researcher recommends the following:

1. The use of competitive behavior modeling in developing the level of performance of other table tennis skills.
2. The need for teachers of physical education in institutes for people with special needs to use the method of behavior modeling in the development and retention of basic skills when teaching some games
3. Using different types of sensory, audio and visual modeling method in developing and maintaining the level of performance of basic table tennis skills.

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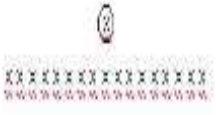
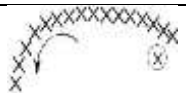
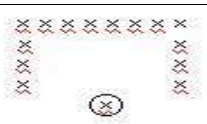
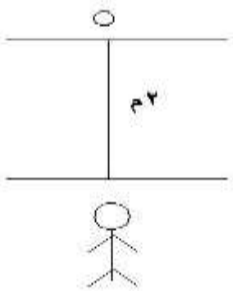
Appendix (2) A Model of a Training Unit Using the Method of Behavior Modeling
A Model for An Educational Unit for The Lesson in The Style of Modeling

Grade: middle school ***Date:***
Number of students: 8 ***Time : 45 min.***
Competition style: Developing the transmission skill.
Behavioral objectives: that the student performs the skill of serving in table tennis well

Tools: (1) Table balls, number (20), are located inside the goal.
(2) a stopwatch.
(3) Net and colored ribbons (20).

Activity	Time	Activity/ Skill	Formulations
Preparatory Part The Introduction	45 Min. 4 Min.	Students standing with notes about the teacher	

Warm-Up and Exercises The Feeling of The Ball	5 Min. 5 Min.	General warm-up for all parts of the body (walking → jogging → jogging with rotating arms → jogging with alternating feet lifting → jogging → walking) Ball sense exercises (holding the racket, tapping the ball and walking a distance of 10 m)	
The Main Part	6 Min.		
Educational Activity	5 Min.	Explanation of the method of performing the transmission skill with the presentation of a visual behavioral model for it by the teacher and one of the students, then the teacher corrects the errors.	
Activity	**Time**	**Activity/ Skill**	**Formulations**
Applied Activity			
Exercise 1 Exercise 2 Exercise 3	7 Min 7 Min. 7 Min.	The student sends a ball towards a square drawn on the table and from a distance of (60 m) from the net, trying to record the largest number of correct passes inside the square during the specified time. Upon completion, the student records the number of passes he accomplished in his registration card (5 repetitions). The student performs the same exercise, but from a distance of (80 cm) from the net, for a period of (30 seconds), taking into account the same performance conditions (5 repetitions). - Invest time between one repetition and another for the purpose of recording results and giving feedback	
Closing Activity	5 Min.	Refer to the students and explain the new exercise. The student performs the same exercise, but for a distance of (60 m), with a run in the place of the square, for a period of (25 seconds), taking into account the same performance conditions mentioned previously. (5 repetitions) Cool down exercises and then leave.	