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The effect of an educational curriculum based on the Wheatley model to positive thinking and learning the overhand server skill of volleyball for students

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Abstract

Using the Wheatley model curriculum makes research evident since researchers feel it is more thorough and successful in teaching pupil's volleyball's overhand server ability and enhancing their positive attitude. The purpose of this study is to determine how a Wheatley model-based educational program affects students' ability to think positively and how they learn to serve overhand in volleyball. It also aims to ascertain the significance of the variations in post-test scores between the experimental and control groups. The research population consisted of the 96 students who were enrolled in the second stage of the University of Kerbala's College of Physical Education and Sports Sciences in the academic year 2022–2023. These students were divided into two divisions, A–B–C–D. Two divisions of thirty pupils each were randomly selected using lots, with fifteen individuals in each division. One of the study's most significant findings is that both the experimental and control groups' instructional methodologies improved the students' ability to think positively and acquire the volleyball overhand server talent. Post-test results also showed that the experimental group performed better than the control group in these domains. Activating and implementing a Wheatley-model-based educational program to educate the other sports was the most crucial piece of advice.

Keywords:

Educational curriculum, Wheatley model, positive thinking, overhand server.

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1. Introducing the research:

1.1. Introduction:

Teaching and developing the skills and exercises outlined in the curriculum is one of the main objectives of a physical education class. The greatest tools, techniques, and models must be applied in conjunction with a thorough analysis of the traits, requirements, and preferences of the students in order to do this and produce the best outcomes.

Since the Wheatley educational model is an integrated, multi-method teaching model based on the principles of cognitive theory—it takes its cues from Ausbel's theory of meaningful learning and constructivist theory—those in charge of the educational process within sports educational institutions have therefore tended to find various methods, methods, and models aimed at developing the educational process. Piaget's committees placed the learner at the center of the educational process, allowing them to invest in prior knowledge, activate it, and pick up new information all within a synthetic, integrative framework of the cognitive structure that is tailored to meet the needs of the classroom.

Many educators have pointed out in recent years the fluctuation in the level of thinking among students. The reason may be due to the student not being involved in the educational process, not listening to his opinion, not activating his thinking, and listening to his information and thinking, whether positive or negative, and in light of the development taking place in the educational process and the use of the latest models. Educational methods that deal with the student's thinking and work to activate his mental abilities. Researchers had to address this type of thinking, which is positive thinking for students.

Among the team sports that has become increasingly popular across the world, volleyball stands out in terms of practice. Several fundamental offensive and defensive abilities are included in the game, which sets it apart and provides one of the solid foundations around which the game is practiced. It is a talent, and the learner's path to success is dependent on how well he performs the skill. One of the most crucial offensive abilities in volleyball is serving from above as, if perfected, it will be the team's means of scoring points.

As can be seen from the above, experts feel that the Wheatley model is more developed and influential when it comes to helping students master volleyball's overhand server talent and cultivate a positive mindset. This highlights the significance of exploring educational curricula based on the model.

1.2.Research Problem:

Through monitoring the students' performance, particularly in the practical area, and observing a few practical lessons, the researchers discovered that second-stage students at the University of Kerbala's College of Physical Education and Sports Sciences have varying levels of proficiency in learning certain fundamental volleyball skills, and that

some of the challenges that students encounter when learning the overhand server skill despite the subject teacher's best efforts to guide them toward better learning, suggest that the transmission skill under study calls for the teaching staff to concentrate on developing an interactive educational model that will enable students to be productive contributors to resolving the issues facing.

1.3.Research objective:

1. Determining how a program built around the Wheatley model affects students' ability to think positively and acquire the volleyball overhand server talent.
2. Determine the significance of the variations in the post-test findings between the two study groups (control and experimental)..

1.4.Research hypotheses:

1. In positive thinking and acquiring the overhand server ability of volleyball for students, there are statistically significant variations between the pre- and post-tests for the control and experimental groups, favoring the post-test.
2. The findings of the post-test for the control and experimental groups show statistically significant changes in the students' positive thinking and their acquisition of the volleyball overhand server skill, favoring the experimental group.

1-5 Research feilds:

1-5-1 Human field: For the academic year 2022–2023, second-stage students at the University of Kerbala's College of Physical Education and Sports Sciences.

1-5-2 Time field: - From 16/10/2022 to 5/2/2023.

1-5-3 Spatial field: The fenced sports arena and classrooms at the College of Physical Education and Sports Sciences - University of Kerbala.

1-6 Definition of terms:

Wheatley Model: It is one of the constructivist theory models that depends on collaborative efforts. It enables the student to connect prior information and incorporate it with newly acquired material to form a meaningful understanding. This strategy starts by giving the students an actual problem to solve. We then assess the problem and use the information and skills we've learned to discover viable answers. This paradigm has three fundamental components: (tasks, cooperative groups, participation). (Fouad, Muhammad Mahmoud, 2008, p. 6)

2- Research methodology and field procedures:

2-1 Research methodology:

The researchers used the experimental approach to create two equal groups, the control and the experimental, with pre- and post-tests in order to achieve the aims and nature of this study.

2-2 The research community and its sample:

The research community consisted of the 96 students who were enrolled in the second stage of the University of Kerbala's College of Physical Education and Sports Sciences

for the academic year 2022–2023. These students were split into two divisions, A–B–C–D. To select the division, a random drawing process was used (D). The field experiment had thirty students in total; section (B) was the experimental group and fifteen students from each section served as the control group. The experiment sample consisted of ten students, and 31.25% of the original population sample was represented by these pupils.

2-3 The sample's homogeneity and the two study groups' equality;

2-3-1 Sample homogeneity

To conduct homogeneity, the researchers used the coefficient of variation law for the variables (height and weight), as shown in Table (1).

Table (1) shows the arithmetic mean, standard deviation, and coefficient of variation of the study variables:

Variables	Measruing unit	Mean	Std. Deviation	Difference Coefficient
Length	Cm	157.11	2.94	2.73
Weight	Kg	47.14	3.21	12.54

The coefficient of Difference was less than 30%, which indicated that the sample was homogeneous

2-3-2 Equivalence of the two research groups

To find parity between the two groups and establish the starting point, the researchers employed the t-test for independent samples in the study variables, as Table (2) illustrates.

Table (2) shows the equality of the two research groups in the research variables:

Tests	Pre-test		Post-test		t Calculated	t Tabular	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Positive thinking	14.43	2.30	14.25	1.91	0.250	2.02	Non sig
Overhand server	4.81	0.51	4.75	0.44	0.36		Non sig

At the degree of freedom (28) and the significance level (0.05), the tabular t value is (2.02).

We discover that the two groups are equal by looking at the computed (t) values.

2-4 Auxiliary means and tools

2-4-1 Auxiliary means

Arab and international sources - observation, evaluation, and quantification.

2-4-2 Auxiliary tools

Measuring tape - medical scale - whistle - bork - stopwatch - legal volleyball court, legal volleyballs (9).

2-5 Determine the research variables under study

2-5-1 Determine the measure of positive thinking: (Naji, Ali Saleh, 2021, p. 60)

The researchers used the positive thinking scale by the researcher (Ali Saleh Naji) because it is a modern scale and is applied to a sample similar to the main sample. The scale consists of (26) items and consists of two alternatives. Thus, the highest score for the scale is (26) degrees and the lowest score is (0). Shows the paragraphs of the scale.

2-5-2 Determine the technical performance test for the overhead serve skill (tennis): (Al-Dulaimi, Nahida Abdel Zaid and others, 2015, p. 85)

-The purpose of the test: to evaluate the technical performance (technique) of the serving talent by looking at its three components and apparent form (preparatory, main, final).

-Tools used: nine legal volleyballs, a performance assessment form, and a court for volleyball.

- Performance specifications: The student being tested executes the skill of serving tennis from the assigned serving location, which is nine meters away, to the opposing court, attempting to drop the ball in the opposing half of the court..

- Registration: Three assessments from three distinct assessors are given to each lab student. The ultimate evaluation mark for each attempt is (10) marks, split between the three skill components (three points for the preliminary segment and six marks for the main section). Each evaluator earns three marks for their contributions. (1) A final section grade; after that, each assessor's best grade is chosen; each laboratory student's final grade is then calculated by taking the arithmetic mean of their three highest grades.

2-6 The exploratory experience:-

On Monday, October 31, 2022, the researchers ran an exploratory experiment on ten pupils who were not part of the research sample and came from the community of origin. The researchers wanted to discover what challenges researchers had while taking the tests, when to take them, how to teach the support staff, and if the tests' scientific basis are upheld.

2-7 Field research procedures

2-7-1 Pretests

For the variables under investigation, the pre-tests were held on Tuesday, August 11, 2022, in the University of Kerbala's College of Physical Education and Sports Sciences' walled sports arena and classrooms.

2-7-2 Preparing and implementing educational units according to the Wheatley model

The Wheatley model was used by the researchers to create instructional modules that would help them accomplish their goals. The following procedures were used by the researchers while applying the instructional units:

- After reviewing the language from the volleyball curriculum designed for second-year students at the University of Kerbala's College of Physical Education and Sports

Sciences, the instructional modules were developed. This made it possible for the experimental and control groups to begin the experiment on Monday, November 14, 2022, in the College's gated outside courtyard. Physical Education and Sports Sciences at the University of Karbala. There were a total of eight instructional units for each of the two study groups, which were finished in ninety minutes at a rate of two units each week. The modules were active until June 12, 2022, Tuesday.

The two groups were taught as follows:

- The control group: was taught according to the established method, which was prepared in advance by the subject teacher.
- The experimental group: It was taught according to the educational units prepared using the Wheatley model.

The stages of work according to the parts of the main section were as follows:

- The educational part - the stage of educational tasks: The skill is explained by the teacher and then a live model is presented for performing this skill, with a focus on giving corrective and reinforcement feedback according to the model's performance in order to get a general idea of the skill to be learned before starting to apply the exercises in the applied part.
- The applied part - the (cooperative groups) stage: Students are divided into groups of (4-5) students each, and each group applies the three exercises alternately, so that each group performs all of the exercises.
- The (participation) stage: where the exercises prepared by the subject teacher are applied, with a focus on correct performance.

2-7-3 Post-tests:

The post-tests were conducted on Monday, 12/12/2022, under the same conditions in which the pre-tests were conducted.

2-8 Statistical methods: The researchers used the bag(SPSS)

3- Presentation, analysis and discussion of the results

3-1 Presenting and analyzing the results of the pre- and post-tests of the control group on positive thinking and learning the overhand server skill of volleyball

Table (3) shows the significance of the differences between the pre- and post-tests for the control group in positive thinking and learning the overhand server skill of volleyball.

Tests	Pre-test		Post-test		t Calculated	t Tabular	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Positive thinking	14.43	2.30	18.06	1.84	6.21	2.14	Sig
Overhand server	4.81	0.51	6.56	0.33	10.77		Sig

The tabular t value at the significance level (0.05) and the degree of freedom (14) is (2.14)

3-2 Presentation and analysis of the experimental group's pre- and post-test findings on adopting a positive outlook and mastering the volleyball overhand serving skill.

Table (4) shows the significance of the differences between the pre- and post-tests for the experimental group in positive thinking and learning the overhand server skill of volleyball.

Tests	Pre-test		Post-test		t Calculated	t Tabular	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Positive thinking	14.25	1.91	22.25	1.06	18.27	2.14	Sig
Overhand server	4.75	0.44	8.06	0.45	21.15		Sig

The tabular t value at the significance level (0.05) and the degree of freedom (14) is (2.14)

3-3 Discussing the results of the pre- and post-tests for the control and experimental groups regarding the research variables

According to the data in Tables (3 and 4), there has been a noticeable and discernible improvement in both groups' post-test scores, which is in line with the study's initial premise. The teacher's strategy, which involved repeating the performance, is attributed by the researchers as the cause behind the development of the control group. Ability, with the teacher's function playing a major part in the approach he takes while guiding the class throughout the learning phase, "since the guidance factor is one of the most important factors in the student's acquisition of movement", (Al-Rubaie, Mahmoud Daoud & others,2000, p.83) . The amount of instructional units created in the curriculum that the subject teacher employed, as well as the instructor's field expertise in imparting that ability, are also cited by the researchers as contributing to the development in the control group.

The researchers also attribute that the reason for the superiority of the experimental group in the post-test is the use of educational units according to the Wheatley educational model, which had a role in the development of the variables (positive thinking, transmission facing from above), as the educational units according to the Wheatley educational model had a positive role according to its steps. It helped a lot in demonstrating some of the students' educational abilities in raising their self-confidence through actual participation in the educational unit and discussion without shame or hesitation, which increased their superiority.

The Wheatley model, when applied, creates environments and atmospheres suitable for learning, and this is what Qatami and others see (in the model): It is a plan that can be

used in organizing the teacher's work and tasks, including educational and teaching materials and experiences, and it is a picture of creating and providing conditions and environments that determine the specifications that can be described and achieved learning environments. (Qatami & others, 2008, p. 155)

The researchers also believe that discussion and dialogue between the student and the teacher helped in learning to perform the skills well, and this is confirmed by (Salama Adel Abu Al-Ezz): "The model excels in achieving continuous interaction between the teacher and the student during the learning process, so that the learner is the focus of the educational process through discussion and investigation." And application. (Abu Al-Ezz, Salama Adel & others ,2009, p. 33)

3-4 Presentation and analysis of the results of the post-post tests for the control and experimental groups on positive thinking and learning the overhand server skill of volleyball.

Table (5) shows the significance of the differences between the post-tests of the control and experimental groups in positive thinking and learning the overhand server skill of volleyball.

Tests	Control		Experimental		t Calculated	t Tabular	Sig type
	Mean	Std. Deviation	Mean	Std. Deviation			
Positive thinking	18.06	1.84	22.25	1.06	7.87	2.04	Sig
Overhand server	6.56	0.33	8.06	0.45	10.52		Sig

The tabular t value at the significance level (0.05) and the degree of freedom (28) is (2.04)

4. Discussing the results of the post-post tests for the control and experimental groups:

The data shown in Table (5) demonstrate that the value of (t) computed for each test under investigation is higher than its tabulated value, indicating the importance of the disparities between the two groups' post-test results and their favoritism. The researchers believe that the experimental group's advantage can be attributed to its usage of the Wheatley model, which provides students with more flexibility. Complete performance of the motor assignment and an opportunity to try many motor solutions through discussion and dialogue with group members to reach the best solution by focusing their thoughts on digesting and assimilating the skill, which leads to an increase in the learner's actual performance. The teacher is provided with many ways to evaluate the students. Instead of focusing on facts, problem-centered learning

(Wheatley's model) encourages active learning, and facilitates cooperative learning on research, communication skills, and transfer of knowledge to new situations.(Saleh Muhammad & Muhammad Bakr, 2007, p. 303)

Also, the effectiveness of the Wheatley model was in the principle of organizing the model over time and applying it within educational units, as the model can be organized in a way that is consistent with the desired goal, as "when the model is implemented effectively, the student's overall performance improves greatly, and then students can gain an additional benefit, which is develop new learning about how to learn skills" (Al-Haila, Muhammad Mahmoud,1999, p. 64).

In addition to organized work through the use of cooperative groups, meaning that the work takes place in small cooperative groups to develop cooperation and communication skills among learners, given that building learning requires communication and exchanging opinions with others, and this is only possible through cooperative groups whose members are active and cooperative in discovering the problem. Its elements and knowledge of its solutions. (Attiya, Mohsen Ali, 2015, p. 322)

The progress of the experimental group with relation to the positive thinking variable is also attributed by the researchers to their usage of the Wheatley educational model, which places an emphasis on group and cooperative work and provides students with a sense of responsibility, suspense, and excitement throughout the session. As a result, students' learning experiences are enhanced on all fronts, including social interaction and responsibility. Joy, difficulties, and other elements. "The model's steps are in line with contemporary teaching trends; they are presented in a sequential, integrated, and interconnected manner, with each step serving a specific function in setting up the subsequent step". (Dabour, Muhammad Yasser,1997, p. 22)

Conclusions:

1- The teaching method used for the control group and the model used for the experimental group had a positive impact on positive thinking and learning the overhand server skill of volleyball for students.
2- The findings of the post-tests showed that the experimental group did better than the control group in terms of positive thinking and teaching students how to serve volleyball overhand.

Recommendations:

1- The necessity of using modern models, including the Wheatley model, to teach other games.
2- The need to hold training courses to train physical education teachers on how to use modern teaching models, in cooperation between the faculties of physical education and sports sciences and the directorates of education.
3- The necessity of using the Wheatley model on other age stages and on individual variables and games.

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