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Munadhil Adil Kasim Directorate of Misan Education, Ministry of Education of Iraq, Iraq The effect of using the V-shape map strategy on the level of skill performance volleyball skills among students of the faculty of physical education and sports sciences, Misan University

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Abstract

The objective of this study was to assess the efficacy of employing the V-shape strategy in enhancing cognitive achievement and skill performance in specific volleyball skills among students enrolled in the Faculty of Physical Education and Sports Sciences at Misan University. The study utilized experimental methodology. The present study aimed to assess the volleyball skills of a sample of 24 second-stage students at the Faculty of Physical Education and Sports Sciences, Misan University. The skills test focused on the transmission skill, which involves passing the ball to the opponent's area, as well as the receiving skill, which involves receiving the ball from the transmitter. The sample was divided into two groups: an experimental group of 12 students who were taught using the V-shape strategy, and a control group of 12 students who were taught using the conventional method. The results of the study revealed statistically significant differences, at a significant level of 0.05, between the average scores of the students in the two study groups on the achievement scale. The experimental group stands to gain advantages in terms of cognitive abilities and volleyball skills. The study suggests the use of the V-shape method for the instruction of handball, emphasizing the importance of training educators in its implementation. Furthermore, it proposes the integration of this strategy into curriculum creation. Additionally, the study recommends further research to assess the efficacy of this technique in teaching scientific concepts and variables that were not specifically addressed within the scope of this study.

Keywords: Effect, V-Shape map, strategy, skill performance, volleyball skills

Introduction

Physical education, being a significant domain of knowledge, necessitates educators to possess a diverse repertoire of teaching methodologies. This enables them to consistently introduce novel approaches and possess comprehensive knowledge regarding the intricacies of each method (Dobson, 2023) [^{10]}. Such proficiency fosters a positive learning environment, facilitating active engagement from learners and nurturing the development of a creative mindset. In addition to the mere acquisition and recall of knowledge, it is imperative for contemporary educational programs to provide students with the ability to effectively navigate and respond to the challenges of both the present and future (Wilson & Convers, 2020)^[22]. This can only be achieved via the cultivation of a mindset that prioritizes critical thinking and adaptability. Engaged in the cultivation of dialogue, discourse, and instruction pertaining to the development of rigorous scientific reasoning (Culver, Braxton & Pascarella, $(2019)^{[8]}$. According to Chiva-Bartoll *et al.* $(2019)^{[7]}$, a competent teacher is characterized by their ability to consistently introduce novel concepts and possess a wide range of direct and indirect teaching approaches and methods. Additionally, they are skilled in fostering a learner's inclination towards research and discovery by actively engaging them in the teaching process. According to Gopinathan (2022)^[12], curriculum integration is a valuable tool for effectively planning and organizing educational curricula. It establishes a cohesive and interconnected system where each element influences and integrates with others. The development of one element necessitates the development of the entire curriculum system.

Corresponding Author: Hussein Farhan Sheikh Ali Directorate of Misan Education, Ministry of Education of Iraq, Iraq This tool is crucial for educators and institutions as it assists in identifying the desired outcomes to be achieved within a specific timeframe (Kryshtanovych et al., 2020)^[16]. These outcomes are attained through the comprehensive implementation of the school curriculum, encompassing various components such as subject objectives, content, activities, classroom teaching methods, dynamics. extracurricular engagements, and evaluation (Bertills, Granlund & Augustine, 2019)^[5]. According to Dettbarn, Kilian, and Hallsteinsdóttir (2023)^[9], the utilization of maps as a learning tool is considered an effective method for organizing and categorizing facts and ideas. These maps employ colors and drawings and are structured around a central concept, from which various sub-concepts branch out. These sub-concepts are represented through words, symbols, or images, mirroring the cognitive processes of the human brain. Furthermore, utilizing such maps not only facilitates the memorization and recall of information but also enhances memory, concentration, and creativity by stimulating imagination. Consequently, students are provided with innovative and enjoyable approaches to optimize their cognitive abilities (Papanastasiou et al., 2020) ^[19]. The V-shaped map serves as a representation of constructivist theory, depicting the organized components involved in the process of knowledge building. It aids students in comprehending the constructivist nature of knowledge and the significance of concepts in the observation and interpretation of events and objects (Fontaine et al., 2022)^[11]. According to Moustakas and Robrade (2022)^[18], the teaching and learning processes in physical education hold significant importance within the broader educational framework. These processes necessitate the continual pursuit of rational solutions to overcome obstacles and challenges. It is crucial to recognize that the overall success of the educational process relies heavily on the effective utilization of diverse methods and approaches by those responsible for facilitating learning. The study revealed that conventional instructional approaches prove to be inadequate in facilitating the acquisition and mastery of fundamental volleyball abilities (Pratama & Roesdiyanto, 2022) ^[20]. Consequently, it is imperative for teaching methods to align with advancements in the broader realm of education, particularly within the domain of physical education. In the realm of education and training, it is crucial to align with scientific advancements. This necessity has prompted researchers to employ various teaching methods, one of which is represented by the V-shaped diagram. This method focuses on comprehending the fundamental elements of the skills to be acquired, thereby facilitating the process of acquiring, retaining, and sustaining learned experiences. Ultimately, this approach aims to enable meaningful transfer of knowledge. The individual possesses knowledge regarding the fundamental principles of education, encompassing sensation, perception,

attention, memory, association, judgment, reasoning, and other related factors. This understanding aligns with the prevailing contemporary approach to education, which emphasizes the comprehensive consideration of all elements that facilitate effective information acquisition, comprehension, retention, and subsequent retrieval by the learner. The researcher was motivated to explore the application of the Maps Figure (V) teaching technique in addressing deficiencies in fundamental volleyball abilities among players from the Faculty of Physical Education.

Research Objective

This research aims to identify the impact of using V-shaped maps on: Transmission skill - the skill of serve, passing, and receive skills in volleyball among students of the Faculty of Physical Education and Sports.

Research hypotheses

- 1. "There are statistically significant differences between the pre- and post-measurements of the control group in the level of academic achievement and learning the skills of (serve, passing, and receive skills) valid postmeasurement".
- 2. "There are statistically significant differences between the pre- and post-measurements of the experimental group in learning the skills of (serve, passing, and receive skills) in favor of post-measurement".
- 3. "There are statistically significant differences in the dimensional measurement between the control and experimental groups in learning the skills of (serve, passing, and receive skills)".

Methodology

Search Procedures

Research Methodology

"The researchers used the experimental method, following the experimental design with pre- and post-testing, one experimental and the other controlling for its suitability to the nature of this research".

Research population and sample

The research participants were chosen from the secondstage students of the Faculty of Physical Education and Sports Sciences at Misan University. The research sample consisted of twelve students, selected by a purposeful sampling method. The initial sample size of 56 students was reduced to 50 for the purpose of conducting an exploratory study. The students were divided into two groups: the experimental group, which received instruction using Vshape maps, and the control group. Prior to the study, the researcher ensured homogeneity among the participants by considering variables such as age, height, weight, as well as skill tests. Table 1 presents the details of this homogeneity assessment.

Table 1: Shows homogeneity of sample members and torsion coefficient of the experimental and control group.

Variables		Unit of Moscuramont	Control		Experimental		т
		Unit of Measurement	Μ	SD	Μ	SD	1
Variables Growth	Age	Year	20.03	0.56	19.88	0.73	0.15
	Height	Cm	171.33	5.76	170.59	4.56	0.74
	Weight	Kg	70.74	5.87	70.61	4.66	0.14
Basic Skills Volleyball	Serve	Degree	16.59	2.42	17	2.14	0.41
	Passing	Degree	12.88	2.98	13.03	3.06	0.15
	Receive	Degree	25.71	4.47	25.16	4.22	0.55

The data shown in Table 1 demonstrates that the torsion coefficients consistently approached (0.14 to 0.74), indicating a moderate dispersion of the sample across the growth variables (age, height, weight) and the skill assessments being examined. The researcher has assessed the equivalency of the research sample in the tests being investigated. The analysis of Table (1) reveals that there are no statistically significant disparities seen between the experimental and control groups in the initial assessment of physical tests across all measures. This finding suggests that the two groups can be considered equivalent in terms of their performance in these tests.

Means of data collection

Skill tests

In order to ascertain the skill assessments, the researchers consulted the curriculum for the second stage to identify the skills mandated for second stage students. This facilitated the process of test selection. The tests used to measure it have been determined by consultation with professionals, resulting in the identification of the following tests:

- 1. Test Serve.
- 2. Test Passing.
- 3. Test Receive.

Figure V map

The researcher to build a map of figure V took several steps as follows:

Access to scientific books, studies and research related to V-shape maps and the theoretical foundations of its design.

Selection of course units Volleyball skills to be taught to students of the second stage.

After reviewing the references, studies and the content of the curriculum, the researcher did the following:

- 1. Build shape maps (V).
- 2. Preparation of the teacher's manual.
- 3. Preparation of achievement tests.

Teacher's Manual Preparation

The teacher's guide to teaching volleyball skills to young players was prepared using V-shaped maps and went through the following steps:

- 1. Determine the content of the course.
- 2. Determine behavioral goals for each unit of study.
- 3. Identify tools, means and activities.
- 4. Define strategies for teaching in each unit: By formulating a proposed pedagogical approach for instructing the study unit, taking into consideration the utilization of the figure (V) map and its construction, as well as outlining the initial discussion questions to be addressed at the commencement of each instructional session, in order to facilitate the acquisition of knowledge and delineate the respective roles of the teacher and students within this educational context.

Exploratory studies

The first exploratory study: The exploratory study was conducted from 6/2/2022 until, 8/2/2022 on a randomly selected sample from the research community and outside the basic research sample of 10 students, where the researcher conducted an exploratory study to identify:

- 1. Choose the right places to conduct tests.
- 2. Ensure that the tests are easy.

- 3. Determine the number of educational steps that can be applied during the time allotted for the educational part of the educational unit.
- 4. Ensure the scientific transactions (consistency and honesty) of the physical and skill tests used.
- 5. Training assistants on how to measure.

Second Exploratory Study: The researcher conducted the second exploratory study on Sunday 22/2/2022 for an experiment and two events of the program to ensure the validity of the proposed program using Figure V maps.

Tutorial using V-figure maps Objective of the tutorial

Identify the impact of using V-shape maps on learning some basic skills in volleyball for second-stage students. Basics of the tutorial mode

- 1. Consider the objective of the program.
- 2. Adaptation of the program content to the level and capabilities of the research sample
- 3. Provide the capabilities and tools used in the program.
- 4. Program flexibility and acceptance of practical application.
- 5. The educational steps are graded from easy to hard and simple to complex.
- 6. Consider appropriate repetitions to learn the skill.
- 7. Considering providing instructions and instructions that clarify the correct technical aspects of each step for three errors and correcting them.
- 8. Consider presenting a sample of each educational step and providing feedback to the learner.
- 9. The learner should understand the nature of the performance of the skills under research, as there is a link between learning the skill and knowing multiple and differentiated information about performance, after the learner reaches the stage of understanding and comprehension of the sequence of skill performance for each stage of performance.
- 10. The learner acquires a set of knowledge and information about each of the skills under research.
- 11. The content of the program should be characterized by diversity, ease and simplicity.
- 12. The content of the program should be commensurate with the place, tools and capabilities necessary to implement the program.
- 13. Considering individual differences and gradation in education from easy to difficult.
- 14. Considering the achievement of the principle of suspense and excitement.
- 15. Provide the opportunity for participation and practice for all members of the experimental research sample.
- 16. Determine the basic aspects of the program depending on the scientific references, studies and research associated with knowledge of the opinions of experts in this field and the researcher has reached these aspects as follows:
- a. Tutorial weeks (12) weeks.
- b. The number of educational units is two units per week, with a total of (24) educational units.
- c. The time of the educational units is (90) minutes (10) minutes for the introductory part, (40) minutes for the main part, (15) minutes for physical preparation, (20) minutes for the educational part (5) minutes for the closing part.

Pre-test

The main experiment was carried out according to the time plan for the educational units of volleyball skills, by (12) weeks, two educational events during the week, and the unit time is 90 minutes, and the researchers have determined the date of the start of the educational program from two days.

Search Experience App

The main experiment was carried out according to the time plan for the educational units in the manner of Figure V maps, by (12) weeks, from 12/2/2023 until Thursday 7/5/2023.

Post-tests

Following the implementation of the educational program utilizing Figure V maps, the researcher proceeded to

conduct post-measurements on the research sample on the dates of Saturday and Sunday, 9-10-5 2023. The same tests that were administered during the pre-measurement phase were applied under identical conditions and circumstances. The resulting data was then organized into tables specifically prepared for statistical analysis.

Statistical Means

The researchers utilized the SPSS-24 software, a statistical package, to analyze and manipulate the research data employing various statistical treatments.

Results

Presentation and discussion of results First: Presentation of results

Table 2: "Shows the arithmetic mean, standard deviation, and value of (T) between the pre- and post-tests of the control group" in the skill tests under study.

Variables		Unit of Magguromont	Pre-to	Pre-test		Post-test		т
		Unit of Weasurement	Μ	SD	Μ	SD	1	
Basic Skills Volleyball	Serve	Degree	16.59	2.42	21.77	3.62	4.74	
	Passing	Degree	12.88	2.98	18.80	2.57	3.63	
	Receive	Degree	25.71	4.47	32.66	4.50	4.12	

Table 2 demonstrates that there exist statistically significant disparities between the pre- and post-tests of the control

group across all skill assessments, with the postmeasurement yielding more favorable outcomes.

 Table 3: Shows the arithmetic mean, standard deviation, and value of (T) between the pre- and post-tests of the experimental group" in the skill tests under study.

Variables		Unit of Maggungment	Pre-te	est	Post-test		т
		Unit of Weasurement	Μ	SD	Μ	SD	1
Basic Skills Volleyball	Serve	Degree	17	2.14	25.95	2.76	4.93
	Passing	Degree	13.03	3.06	23.36	3.74	3.29
	Receive	Degree	25.16	4.22	49.16	4.08	4.87

Table (3) demonstrates that there are statistically significant differences between the pre- and post-tests of the

experimental group in all skill tests and the level, with the post-test demonstrating a significant advantage.

 Table 4: Shows the significance of the differences between the averages of the post-tests of the experimental and control groups" under study.

Variables		II	Control		Experimental		т
		Unit of Weasurement	Μ	SD	Μ	SD	1
Basic Skills Volleyball	Serve	Degree	21.77	3.62	25.95	2.76	4.93
	Passing	Degree	18.80	2.57	23.36	3.74	3.29
	Receive	Degree	32.66	4.50	49.16	4.08	4.87

Table 4 presents the rates of progress in post-test for the pretest of both the experimental and control groups across various skill tests, as well as their level of academic achievement. The data from this table indicates that the experimental group exhibits a higher level of progress in these tests compared to the control group.

Second: Discussion of the results

The analysis of Table (2) reveals the presence of statistically significant disparities between the pre- and post-measurements of the control group across all skill tests and academic attainment," with the post-measurement exhibiting superior outcomes. The observed phenomenon can be attributed to the impact of the conventional program implemented on the control group. This group underwent a regular period of physical education lessons focusing on volleyball skills, as part of the research study. Consequently,

certain variations were observed in their performance during the post-test, which supports the validity of the initial hypothesis. The analysis of Table (2) reveals statistically significant disparities between the pre- and post-test of the experimental group across all skill assessments. These differences consistently favored the post-test and the experimental group. The positive impact of the educational program and teaching method, specifically Shape maps (V), is attributed by the researchers to the development of selfdirected learning skills. This development occurs at the learner's own pace and is based on their critical thinking abilities. The utilization of Figure (V) maps further enhances this process by fostering scientific thinking, ultimately facilitating the acquisition of fundamental skills. This finding aligns with the research conducted by Montuori et al. (2019) ^[17], wherein one of the significant outcomes was the efficacy of conflict maps in enhancing students'

performance on the conceptual change test. Additionally, the study demonstrated a favorable impact on altering alternative perceptions of the subject of chemical energy among participants in the experimental sample. Based on the observations, it can be concluded that the second hypothesis, which posits that there are statistically significant disparities between the pre- and post-tests of the experimental group in terms of learning skills (serve, passing, and receive skills), is supported by the data, favoring the post-test. The analysis of Table 4 indicates that there are statistically significant differences between the experimental and control groups in terms of dimensional measurement in skill tests and academic achievement. These differences are consistently in favor of the experimental group. The researchers posit that the experimental group, which utilized the teaching method involving V-shaped maps for dimensional measurement in learning, has statistically surpassed the results of the pre-measurement. This outcome can be attributed to factors such as motivation, self-realization, and the educational program's ability to enhance learners' motivation and effectiveness. By creating an enjoyable, suspenseful, and engaging learning environment for acquiring fundamental volleyball skills, the program has fostered high motivation among learners. This heightened motivation has facilitated their integration into the learning process, enjoyment of learning, perseverance, and increased effort. Additionally, learners' confidence in their performance has contributed to improved performance and reduced anxiety in educational situations, ultimately elevating their overall performance level. Consequently, these factors, among others, have established the V-shaped maps method as an effective approach for acquiring prescribed volleyball skills. The utilization of shape maps (V) has contributed to the enhancement of skill performance by promoting scientific thinking and stimulating learners' cognitive abilities during the acquisition of motor skills. This positive outcome can be attributed to the utilization of shape maps (V) as a teaching method, which encourages learners to explore and discover relationships through their own efforts and personal experiences. These findings align with a previous study conducted by Bond et al. (2020)^[6], which emphasized the importance of designing a comprehensive fitness curriculum map that encompasses various components such as basic learning levels, knowledge acquisition, skill development, learning activities, appropriateness/adaptation, and instructional materials. The fitness curriculum's content has been determined and outlined in the curriculum map, encompassing its fundamental components (inclusive of comprehensive essential inquiries and comprehensive enduring concepts). Each of these components comprises multiple questions that will serve as guidance for learners in acquiring knowledge and understanding of the fitness curriculum. According to the research conducted by Berntsen and Kristiansen (2019)^[4], statistically significant differences were observed in the average scores of the second group (Figure V) compared to the average scores of the first group (proposed strategy) and the third group (control) in the achievement test. These differences favored the second group. The utilization of the (V) shape resulted in a higher percentage of increase in course comprehension compared to the conventional way. The utilization of the (V) framework facilitated the cultivation of scientific research skills, hence equipping individuals with the ability to

effectively address a diverse range of challenges. Regarding the aforementioned proposition the aforementioned analysis confirms the soundness of the third hypothesis, which posits that there exist statistically significant disparities in the dimensional assessment between the control and experimental groups in the domains of serve, passing, and receive skills. The rates of progress for the dimensional measurement from the pre-test of the experimental and control groups in the skill tests and the level of academic achievement can be observed in Table (4). The table provides evidence that there are rates of progress for the distance measurement from the pre-test of the experimental and control groups in all skill tests and the level of academic achievement. The experimental group had a higher level of performance compared to the control group in terms of the rates of improvement observed in these tests. This study highlights the significance of employing the Mapping Figure (V) learning approach, which resulted in substantial enhancements and statistically significant disparities between the experimental and control groups.

Conclusions

- 1. Teaching using the V-map is better than teaching in the traditional way, as the average score of the experimental group that learned with the V-maps was greater than the average score of the control group that used the traditional method.
- 2. This study demonstrated the efficacy of the V-shape technique in enhancing cognitive achievement and skill performance in certain volleyball skills. These findings align with earlier research that has also indicated the benefit of this instructional approach in broader educational contexts.

Recommendations

Based on the findings of the present study, the researcher proposes the following recommendations

- 1. Using V-shape maps in the academic achievement of volleyball skills prescribed for second-stage students at the Faculty of Physical Education and Sports Sciences at Misan University.
- 2. Conducting more studies on the reality of using the Vmap in teaching sports in the faculties of physical education and sports sciences.
- 3. Conduct training courses and programs that will increase the efficacy of instructors and mentors specializing in the use of modern teaching methods, including the method of map figure (V).
- 4. This is achieved by employing strategies that facilitate the practical implementation of acquired knowledge by learners. The significance of integrating theoretical knowledge with practical skills in various games, events, or sports activities lies in its ability to establish a connection between theoretical concepts and their practical application.

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