

THE EFFECT OF THE CONCEPT MAPPING STRATEGY ON THE ACCURACY OF PERFORMANCE AND COGNITIVE ACHIEVEMENT OF SOME BADMINTON SKILLS FOR FEMALE STUDENTS

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ABSTRACT

The research aimed to identify the effect of the concept mapping strategy on the accuracy of performance and cognitive achievement of some skills in badminton for female students. The scientists postulated that there is a positive impact of using the concept mapping strategy on the cognitive achievement of badminton for third-year female students of the Department of Physical Education and Sports Sciences - University of Kufa. The researchers identified the research population as the third-year female pupils from the for the academic year, University of Kufa, College of Education for Girls, Department of Physical Education and Sports Sciences 2023-2024, who numbered (32) students. Researchers follow experimental strategies to meet research needs. The researchers used a measure of cognitive achievement and performance accuracy tests. For badminton skills, the scientific foundations of the research tests were extracted and after using the statistical package and transcribing the research results, the researchers concluded that the percentage of performance accuracy and cognitive achievement in the post-test increased for the experimental group that used the concept mapping strategy compared to the control group that used the traditional curriculum followed by the teacher. The researchers recommend the necessity of using the concept mapping strategy in developing the skills taught in racket games or other games, whether at the same stage or other educational stages.

Keywords: *Mapping, strategy, accuracy and badminton.*

INTRODUCTION

We have recently witnessed great developments in all fields, including the educational field in physical education. This shows how interested experts and researchers are in continuously improving the educational process to help students reach their goals and perform at a higher level. The sports field and badminton are one of the fields in which it is interested in using modern strategies due to their beneficial effects on learning speed and in investing the effort expended on time. Adopting these strategies as a basic focus of learning qualifies students to practice and learn basic skills. The field of teaching has become one of the sciences that researchers in the field of physical education pay special attention to because of its importance in teaching. Individuals acquire new motor skills with the least possible effort because teaching is an important part of learning and its methods have varied over the years.

Judging from the data of this era, educational institution's function has evolved, and it is now more than only delivering and retrieving instructional materials goes beyond it to acquiring access abilities. To knowledge, obtaining and employing it, and generating new knowledge, and this comes through meaningful learning, which is only achieved focus on the essentials concepts and course Ideas content rather than employing extraneous information or details that detract from the significance of the targeted concepts and given the importance in understanding and realizing the other components of knowledge from Principles, laws, rules, theories, and generalizations, and if this process is one of the responsibilities of the teacher who needs a great effort to achieve it, then the concept mapping strategy is one of the important and influential strategies in the extent to which students form concepts, so the school should determine its goals that are consistent with the characteristics of the students and their previous backgrounds, Choosing tools and means that contribute to achieving the desired goals and providing better education for concepts, and to enhance the cognitive achievement and accuracy of performance among female students with badminton and increase their awareness of its importance in practical application. Therefore, it was necessary for the instructors' thoughts resorted to research in order to employ cutting-edge and successful teaching tactics and approaches. There are several ways that a teacher may serve as a mentor, guide, and helper to their pupils in terms of knowledge and how to use it in real-world situations life. Research has tended towards investigating the methods of learning and forming concepts among students.¹ These efforts have concluded that the mental images that students form of a single concept differ depending on the experiences they go through, and the way their Considering it, or their interpretation of it, and as a consequence, the process of forming a concept stems from a personal impression or perception that varies based on the individual. Generally speaking, school curricula are packed with several abstract or tangible notions; this is particularly true in study units in the Sport and Exercise Science course are structured around specific concepts. ²The focus of these courses is to engage students in the learning process. We need teaching techniques and strategies that enable students to retain knowledge and reuse it in new situations. This is the importance of research that utilizes concept mapping strategies to gain knowledge from both theoretical and practical aspects, where this strategy has not yet been applied, so this study was limited to the effect of the strategy. Concept maps on accuracy of performance and cognitive achievement of some badminton skills for female students, to be an expressive means used by teachers to achieve the best results.

RESEARCH PROBLEM

Despite the efforts made in the educational process, education still faces a number of problems, including low accuracy of performance and level of cognitive achievement, and unlike other subjects or specialties, instruction in physical education and sports sciences places a strong emphasis on the connection between cognitive success and real-world application. In this instance, low accomplishment is seen as a failure to meet objectives since cognitive achievement on its own is deemed inadequate in the absence of practical application. After looking over earlier studies and observing as teachers, the researchers found that there was a flaw in the performance accuracy. In order to provide a fresh experience for this strategy in the practical sport aspect, the two researchers chose to apply the concept mapping strategy, which was previously only used in many theoretical scientific fields. They did this by introducing it to the sport aspect and reaping its benefits in practical application in addition to the cognitive aspect, and this is what helps in developing cognitive achievement and accuracy of performance and thus returns This development is beneficial to the students' ability in practical application.

RESEARCH OBJECTIVES

1. To determine the impact of concept mapping strategies on performance accuracy and cognitive badminton skills of selected female students.
2. Preparation of lessons based on concept mapping strategies for female students' badminton performance accuracy and cognitive acquisition of specific skills.

RESEARCH HYPOTHESES

1. There is a positive effect of using the concept mapping strategy on the cognitive achievement of badminton for third-year female students of the Department of Physical Education and Sports Sciences - University of Kufa.
2. There is a positive effect of using educational units according to the concept mapping strategy on the accuracy of performing some badminton skills for female students.

RESEARCH FIELD

- Human field: Third stage female students academic Year, Department of Physical Education and Exercise Science, Faculty of Women's Education, University of Kufa (2023-2024)
- Spatial field: The closed hall of the Department of Physical Education and Sports Sciences.
- Temporal scope: The period from (9/17/2023 to 1/1/2024).

RESEARCH METHODOLOGY

The researchers adopted the experimental research method in the form of two equal groups using a pre- and post-test, which is said to be the most honest and closest approach to solve many scientific issues both conceptually and practically, and it is compatible with the nature of the research problem.

RESEARCH GROUPS AND THEIR SAMPLES

The study population consisted of third-year female students in the Department of Physical Education and Exercise Science, Faculty of Women’s Education, University of Kufa, in the academic year 2023-2024. The study population consisted of (32) female students. Four female students were not allowed to participate in the exploratory project, and the research sample consisted of 28 female students.

Homogeneity of the study sample

The researchers found homogeneity for the sample members in the variables (age - weight - total height) and the results showed that the value of the skewness coefficient was set between (± 1). This indicates the homogeneity of the sample members in those variables, and Table (1) shows this homogeneity for the research groups in skills. Researched.

Table 1. Shows the homogeneity of the research sample members.

Variables	Units	mean	STD	Median	Skewness
Age	Year	22.16	2.91	21.50	-0.35
Weight	Kg	66.37	2.18	67.45	-0.11
Length	Cm	169.75	5.41	171.50	0.13

Methods, devices and tools used in the research.

1. Means of collecting information

- Observation.
- Questionnaire.
- Tests and measurement.
- References and sources.

2. Devices and tools used in the research.

- HP calculator (1), made in China.
- A basket for collecting flying feathers (1), Chinese-made.
- rackets (30).
- A network with columns.
- Integrated badminton court (1).
- Colored pens (10).
- Measuring tape with a length of (20) m.

- The means are (a plastic bench with (1) blades suspended on a pole and fixed to the ground (1) Chinese-made).

Field research procedures

1. Identify the basic badminton techniques used in the study: The researchers The basic skills of playing badminton (accurate ability with long hair, accurate ability with short hair, forehand hitting ability, and forehand lob ability) were determined because these skills are within the curriculum specified by the Ministry and are appropriate for the research problem to be addressed.
2. Tests used in the research:

First: Testing the short back transmission :³

- The test's objective is to determine how accurate a player is with the short serve.
- The necessary tools are an information form, an elastic rope, feathers, and a badminton racquet.
- Performance description: The following measurements are made for each area: (5 degrees with a radius of 55.8 cm), (4 degrees 67 cm), (3 degrees 96.5 cm), (2 degrees 117 cm), and (3 degrees 96.5 cm) from the center. One degree less than the remaining area). The sender attempts to drop the shuttlecock in the region with the greatest score by standing in the serving position (x) and sending off twelve shuttlecock passes between the net and the rope, which is 51 centimeters above the net. The best ten shuttlecock passes are tallied toward the sender's fifty points.
- Point calculation: The shuttlecock's landing location determines the score. The server that does not pass between the rope and the net and does not land on one of the areas receives a zero. The shuttlecock that lands on a line connecting two places receives the greatest score. The final score is the sum of the scores for all of the attempts (10), and the serve that strikes the rope is returned once again.

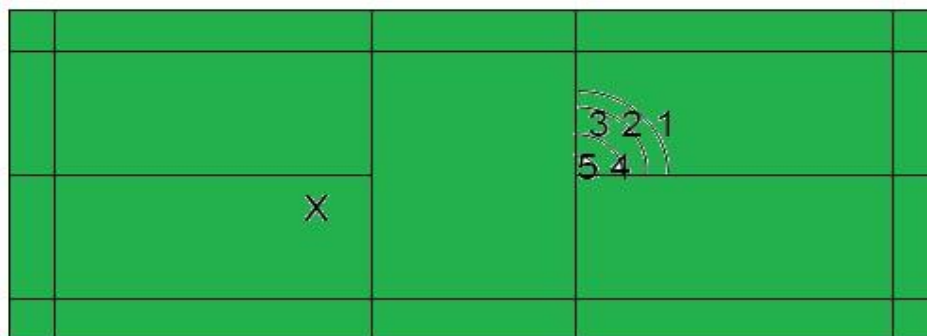


Figure 1. Shows the layout of the badminton court for the short serve test.

Secondly, the long high transmission test :⁴

- The objective of the test is to assess the long serve skill's accuracy.
- Necessary equipment: badminton rackets, feathers, measuring tape, sticky tape, information form, grade-indicating marks, rope fastened to poles, shuttlecock placement table
- Performance description: Following an explanation of the test to the testers, each tester is given five experimental efforts after having had a suitable amount of time to warm up. The location designated (X) is where the tester stands. In an attempt to drop the shuttlecock in the region indicated by the dots, the tester sends out a high-long transmission, allowing the shuttlecock to cross the net and subsequently the rope. The exam taker is given twelve tries, and only the top ten are worth fifty points.
 - The laboratory is given points (4, 3, 2) if the feather falls in the areas specified by a distance of (40 cm), respectively, after the area specified by (5) points.
 - If the shuttlecock lands in the designated area, which stretches from the end of area 2 to the imaginary line beneath the rope, the tester receives one point.
 - Each time the shuttlecock tries to cross the rope, one point is taken away.
 - When the shuttlecock lands on a line separating two regions, the area with the greater score wins.
 - A shuttlecock that goes outside the boundaries of the court (except the designated area) or gets stuck in the net is not given any point.
 - The laboratory's highest possible score in the best ten efforts is fifty points.

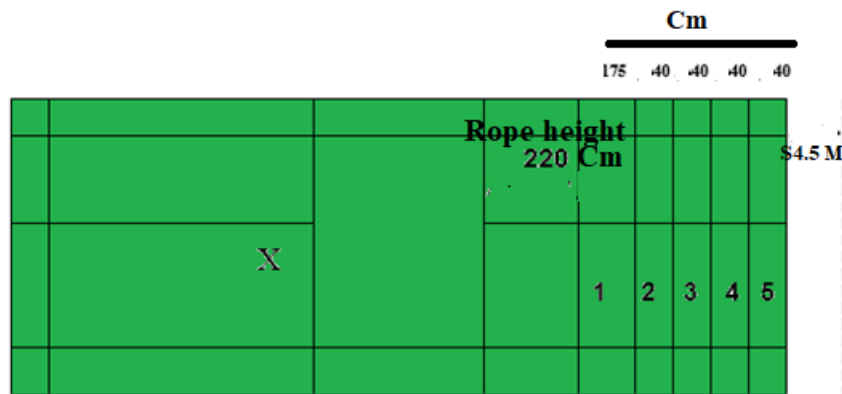


Figure2. Shows the configuration of a badminton court to measure long serves.

Third - Front clearance strike:⁵

- Front clearance stroke is the test name.
- The objective of the test is to gauge the front clearance stroke's accuracy.
- Equipment: badminton rackets, rope, extra legs (244 cm high), instruction sheet, and court set up according to test specifications.
- Description of performance:
 - Following an explanation of the test to the testers, each tester has five experimental efforts after having a suitable amount of time to warm up.
 - The location of the laboratory is indicated by (x).
 - If a move is required for the effort to succeed, he may do it as soon as the coach hands him the shuttlecock. To propel the shuttlecock over the net and then the rope toward the region marked by the steps, he must strike it with a forward kick (from above the head).
 - The tester is given (12) attempts, and only the best (10) attempts are counted.
 - If the shuttlecock lands on a line that separates two points, you get the highest score. If the shuttlecock lands outside the court's lines or becomes tangled in the net, it loses points.
 - The laboratory has ten attempts, with a maximum score of fifty (50) points.

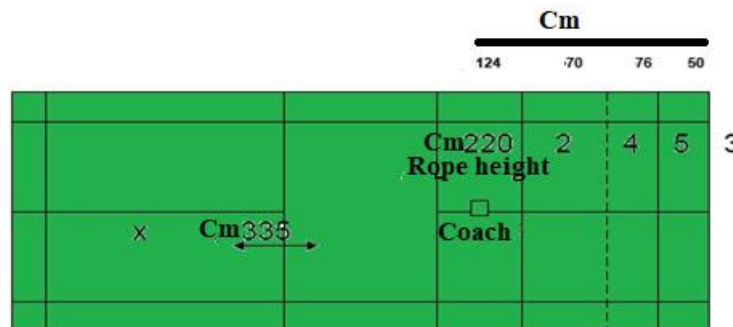


Figure 3. Shows how a badminton court is set up to evaluate a forehand clearance stroke.

Fourth: Testing the skill of the forward drop shot⁶

- Test purpose: To measure performance in the forehand drop shot skill.
- Required tools: badminton rackets, feathers, a court marked with the test layout as shown in the drawing.
- Description of the performance: After the test is explained to the testers, each tester is given (5) experimental attempts to warm up, after which the player stands in the designated place (x) and 2 meters away from the net and is in a position of readiness to receive the shuttlecock sent to him from the opposite court so that it crosses the net, trying to drop it in the area with The highest degree is listed from (1,2,3).
 - The player makes twelve tries, of which the best ten are tallied toward him.
 - The shuttlecock's landing location determines the score.
 - The shuttlecock with the greater score is the one that lies on a line connecting two regions.
 - A player may only receive a maximum of thirty points.

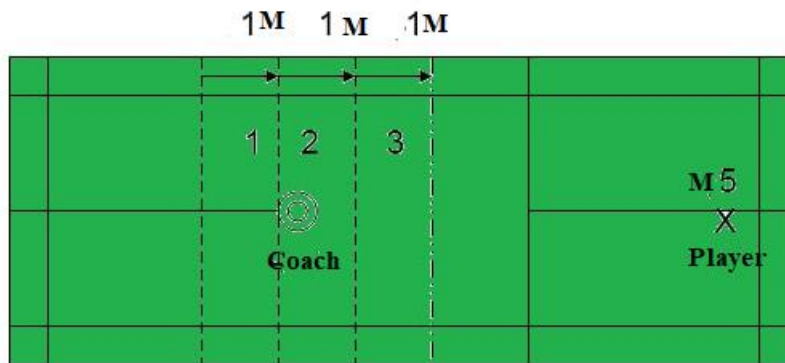


Figure 4. Shows the layout of a badminton court to test the forehand drop.

Badminton cognitive achievement test⁷

The researchers relied on the cognitive achievement test prepared by researchers Abbas Zaki and others, which was applied in the Iraqi environment and was codified and used on third-year students in the colleges of physical education and sports sciences, as the scale consists of (30) items and 3 items. Areas (game history, game law, and technical steps for skills).

Table 2. Shows the areas and items of the cognitive achievement test.

Test areas	Number of paragraphs for each level
History	7
Law	11
Skills	12

Test correction method.

For the purpose of grading the test, questions were given grades from (1.0), whereby a grade of (1) is given for the correct answer and a grade of (0) for the incorrect answer. In light of this, the correct answers obtained by the students are summed up.

Exploratory experience

The researchers conducted an exploratory experiment on a private badminton court at the Department of Physical Education and Exercise Science, Faculty of Women's Education, University of Kufa, during the academic year (2023-2024 AD), conducting skill and cognitive tests on a group of students. The main study was from within. The sample consisted of (4) female students from the original community. They were randomly selected from members of the research community on (01/10/2023) with the aim of identifying the difficulties and obstacles that researchers may face and thus validating several purposes, namely:⁸

1. Ensure the efficiency of the assistant team.
2. Identify the validity of the tests used in the research.
3. Identify the readiness of equipment and tools.
4. Identify the time it takes to test performance accuracy and test cognitive achievement.
5. Identifying the extent of female students' ability to achieve the objectives of the educational curriculum on the one hand and learn some basic skills on the other hand.

Main experiment

1. Conducting pre-tests

On Tuesday, October 3, 2023, the researchers started administering the pre-tests to the participants in the two groups (control and experimental). They collected data and documented it on certain forms in order to process it later. them statistically. They distributed the cognitive achievement test questions to members of the experimental and control groups in the classrooms of the department. Physical education and sports sciences. The researchers also conducted

performance accuracy tests on members of the experimental and control groups in the closed sports hall at the College of Education for Girls.

2. Implementing the educational program using the concept mapping strategy

The educational program implemented in experimental group the period from 10/4/2023 until 11/22/2023, and the educational units were different in the educational part (from the main section) and similar in the preparatory and final sections.

- The weekly educational unit count was one unit, in compliance with the college's authorized course requirements; the overall educational unit count was eight units.
- Developing idea maps that depict primary and secondary information on the cognitive elements of badminton from a number of fundamental areas that are crucial for students to understand on the court, such as the game's history, rules, and fundamental techniques.
- Preparing concept maps (showing the technical steps of the skill).
- Numbers of maps representing illustrations of legal cases.
- Preparing conceptual maps supported by illustrative images (identifying important dates for this game).
- Requesting that each student make unique cognitive maps based on her aptitude (taking into account the maps that each student generates as an assessment tool at the conclusion of each instructional unit)
- The method was followed (hierarchical, spider-based, and maps enhanced with pictures).
- Cartoon murals and sometimes a data shop was used to display these maps.

Equality of the two groups

For the purpose of ensuring the equality of the experimental and control groups among themselves regarding all variables, the two researchers relied on the pre-measurement data and extracted descriptive statistics indicators represented by (mean, standard deviation, skewness coefficient, and calculated and tabulated T-value). It turned out that the members of the two groups (control and experimental) were equal in all variables because the calculated value of (T) for all variables was less than its tabulated value, and this confirms the randomness of the differences between the sport settings and for all variables under study and research, as shown in Table (3).

Table 3. demonstrates the parity between the two research groups.

Variables	Units	Control group		Experimental group		(T) value	Sig. Type
		mean	STD	mean	STD		
Short back transmission test	Degree	22.28	5.52	22.14	5.58	0.068	Non-Sig.
Long high transmission test	Degree	21.92	1.94	22.07	2.84	0.155	Non-Sig.
Front clearance stroke	Degree	22.14	3.75	21.71	4.76	0.264	Non-Sig.
Testing the skill of the forward drop shot	Degree	13.78	3.06	13.71	3.62	0.056	Non-Sig.
Cognitive achievement	Degree	13.21	2.54	13.28	2.67	0.072	Non-Sig.

Posttest

Following the completion of the concept mapping strategy-based educational program, which comprised eight educational units for the experimental group members, the two researchers administered the post-test to the members of the control and experimental groups on Wednesday, November 29, 2023, in accordance with the same pre-measurement conditions and specifications. They collected the data and entered it in the forms. Especially in preparation for processing it statistically.

Results

Presentation and discussion of the results

- **Presenting the results of the pre- and post-tests of the research sample members regarding the variables investigated:** This section included a presentation, analysis, and discussion of the results, according to the data obtained, and then converting them into tables and graphical forms, as it is an illustrative tool for the study, and

since it lowers the chance of inaccuracy in the research's subsequent phases and fortifies and enhances the scientific evidence .

- For the purpose of detecting the difference between the pre- and post-tests for members of the control group, the two researchers used the (t) test for symmetrical samples and extracted the calculated (t) value as shown in the table.

Table 4. Shows the means, standard deviations, and (t) value calculated for the pre- and post-tests for members of the control group in the investigated variables.

Variables	Units	Pretest		posttest		(T) value*	Sig. Type
		mean	STD	mean	STD		
Short back transmission test	Degree	22.28	5.52	29.5	3.34	7.45	Sig.
Long high transmission test	Degree	21.92	1.94	27.42	2.17	13.22	Sig.
Front clearance stroke	Degree	22.14	3.75	27.78	3.76	13.20	Sig.
Testing the skill of the forward drop shot	Degree	13.78	3.06	18.57	2.68	13.08	Sig.
Cognitive achievement	Degree	13.21	2.54	18.92	2.67	11.51	Sig.

*Tabular t value = (2.16) at the degree of freedom (13), and at the significance level (0.05).

- Displaying pre-and post-test results of experimental group members on examined variables.

Table 5. Shows mean, standard deviation, and (t) values calculated for pre- and post-test for members of the experimental group in the variables examined.

Variables	Units	Pretest		posttest		(T) value*	Sig. Type
		mean	STD	mean	STD		
Short back transmission test	Degree	22.14	5.58	33.07	3.97	11.55	Sig.
Long high transmission test	Degree	22.07	2.84	29.87	2.51	17.14	Sig.
Front clearance stroke	Degree	21.71	4.76	31.64	3.47	18.30	Sig.
Testing the skill of the forward drop shot	Degree	13.71	3.62	22.57	2.62	13.73	Sig.
Cognitive achievement	Degree	13.28	2.67	22.28	2.36	18.30	Sig.

*Tabular t value = (2.16) at the degree of freedom (13), and at the significance level (0.05).

- Displaying Post-test results for control and experimental groups on examined variables.

Table 6. Shows means, standard deviations, and (t) values calculated between post-tests for study variables in the control and experimental groups.

Variables	Units	Control group		Experimental group		(T) value*	Sig. Type
		mean	STD	mean	STD		
Short back transmission test	Degree	29.5	3.34	33.07	3.97	2.544	Sig.
Long high transmission test	Degree	27.42	2.17	29.87	2.51	2.651	Sig.
Front clearance stroke	Degree	27.78	3.76	31.64	3.47	2.815	Sig.
Testing the skill of the forward drop shot	Degree	18.57	2.68	22.57	2.62	3.990	Sig.
Cognitive achievement	Degree	18.92	2.67	22.28	2.36	3.517	Sig.

*Tabular t value = (2.056) at significance level (0.05) and degree of freedom (26).

DISCUSSIONS

Significant changes were seen between the pre- and post-tests of the cognitive achievement exam for female students in the Department of Physical Education and Sports Sciences, as well as for both the experimental and control groups, based on the data displayed in the preceding table (6,5,4). The researchers attribute the reason for the development of the control group to continuity and commitment. The female students are in full-time and attendance, as well as the curriculum followed by the teacher. The researchers also attribute the reason for the development of the experimental group that used the concept mapping strategy to the fact that the concept mapping strategy is characterized by the fact that it makes a significant contribution to increasing the amount of information and knowledge that was acquired by the female students, as the information was organized in a logical manner. Sequentially from general to specific, which led to an increase in the students’ understanding and achievement of the part to be taught in each lecture. This result agreed with most previous studies, which indicated the effectiveness of using the concept mapping strategy in raising the level of academic achievement among the research sample in the direction of the experimental group. Among these Studies, ⁹ and the researchers believe that the student at this stage has a passion for reading and an interest in everything new in the method of presenting information, and” indicated that the student At this age stage, her ability to achieve increases, the speed in acquiring information and reading increases, and the student is able, as much as possible, to become familiar with the increasing sources of knowledge, as well as her inclination towards specialized readings. There is also a departure from the usual traditionalism in organizing the content of the game of badminton, as well as in the teaching method, where it was arranged the concepts of the subject matter were taught in an organized, gradual and interconnected manner through a model and illustrations represented by concept maps, which made it easy for the students to clarify their meaning and comprehend them. They were distinguished by their high level of achievement through their participation in building the maps that were required of them.¹⁰

A concept map is a cluster or fabric of information that helps students understand concepts and the relationships between ideas.¹¹ The researchers also believe that the reason for the superiority of the experimental group over the control group in the cognitive achievement test is due to the nature of the concept maps that It contributes to the processes of remembering and retaining learning for the long term. The researchers noted that the concept mapping strategy makes the learner retain learning for a long term, and that this strategy can be used to review the academic material, and that repetition and practice of badminton skills through the maps drawn by the student strengthened long-term memory.¹²

The nature of the concept maps strategy, as it has a completely Students are exposed to a fresh and unique style, because the concept maps and the content of each lecture were presented in the form of a map drawn in the form of (posters and posters) in different sizes (large, medium, and small), and this large size shows the content The lecture is considered an interesting method of presentation, which stimulated the students’ focus on what was being presented. Because their senses were aroused and their concentration grew as a result, all of this attracted their focus and attention and boosted their desire and motivation towards studying.¹³ The main reason is the teacher’s request to prepare a map. A conceptual

concept specific to each student according to the information she gained during the educational unit. The researchers believe that this paragraph has greatly influenced the students' enthusiasm and their longing to attend the educational unit in order to express their creativity and personal ideas by preparing a map on the subject that she prepares herself from what she learned according to this strategy. The researchers noticed that many female students presented new ideas and drawings that showed the extent to which they benefited from using this strategy. More than one sense during education has an effective impact on the learning process. According to the results shown in the previous table (4,5 and 6), significant differences appeared between the pre- and post-tests in the tests of accuracy and cognitive achievement for third-stage female students and for both groups. Researchers cite reasons for development of the control group to the continuity and regularity of the students in the lesson.¹⁴

Continuity plays an important role in students reaching a good level in terms of performance, integration, and stabilization and mechanism of high performance. The results also showed that there are significant differences and preference for the experimental group in tests of accuracy and achievement, and the reason is a result of the idea mapping strategy's unique and novel presentation of the performance to the students through posters that describe it. Due to the stimulation of their senses, which improved concentration, all of this attracted the students' focus and attention and enhanced their enthusiasm and drive for studying. During schooling, one sense has a significant influence on the learning process.¹⁵ This is also because the goal of the technique is to teach students how to take part in creating the maps that are expected of them. Their self-confidence has grown as a result, and they will perform better when creating their own maps in the future. They also showed less disdain for the academic subject while completing the practical lessons they found challenging, as evidenced by the post-application results. The internal desire emanating from within the individual himself helps the individual overcome difficulties and obstacles that require more effort, courage, and will, or because of the aesthetic pleasure resulting from the agility and consistency of performance. Or as a result of internal incentives emanating from outside the individual himself, which provoke and direct behavior towards sports practice or performance.¹⁶

This is in addition to the researcher's use of immediate positive reinforcement, as the use of this reinforcement resulted in increasing the students' enthusiasm for learning more, that immediate positive reinforcement has a greater role and impact in increasing motivation towards learning than positive reinforcement. The late one. The researcher also attributes these variations may be attributed to the fact that the students' exposure to the visual models solidified the proper performance in their thoughts. This forced the student to contrast her performance with the model's, which raised her proficiency level. Additionally, the learner may identify her flaws by comparing her current performance with the supplied model using the models—whether they are written or visual. And given that they now have a broad understanding of the appropriate answer, they must attempt to adjust their responses in order to achieve the intended outcome.¹⁷

The researchers also attribute this development to badminton skills through regularity and continuity in the educational units, in which the students practiced the concept mapping strategy that was not common in regular lessons, which increases the time invested in performance that “teaching methods and methods are of great importance in the educational process.” These methods and methods affect the speed of learning. The researchers also attribute that the students' response to all instructions during the educational units represented the most important effective means for highlighting energies, maintaining level, and achieving goals. “An athlete who trains toward a specific goal will have an incentive in his work, and that working without a goal It is futile and boring work, so the coach must help the athlete set a suitable goal for him that he can achieve so that the exercise has value and so that the athlete knows the extent of his progress” .¹⁸

The researchers believe that one of the reasons for this development is interference, that is, diversification through continuous changes in the exercises “the necessity of introducing an element of diversification into the lesson” .¹⁹ The demonstration of the skills helps the student to visualize what she is seeing and try to actually apply the movements and the student's knowledge. This practical application of formation is subject to evaluation by the teacher, and this performance will be presented in front of colleagues. It will lead the student to improve her performance and appear at a good level in front of her colleagues because everyone will see what He did it and that a good performance will avoid embarrassment in front of colleagues, and vice versa, a bad performance will bring ridicule from colleagues, and this will be an incentive to increase learning among the students. Each student will try to prove that she is the best in terms of comparing her to her friend and trying to prove her presence within the group compared to her colleagues on the one hand. Other. “The level of learning is directly proportional to the degree of motivation.”²⁰ The researchers believe that the task that asked the students to prepare conceptual maps for each educational unit contributed to increasing the thinking ability of the students and brought out the creativity and ideas within them. New evidence indicates the extent

of creativity that they possess within them, and this feature had a great advantage in highlighting these innovations that were achieved on the ground and inside the stadium, where new maps were drawn by some of the female students that added a lot to the learning process, whether from an educational or cognitive standpoint.

CONCLUSIONS

1. An increase in the percentage of accuracy of performance and cognitive achievement in the post-test for the experimental group that used the concept mapping strategy compared to the control group that used the traditional curriculum followed by the teacher.
2. The experimental group that used educational units excelled according to the concept mapping strategy.
3. This strategy helped increase the students' self-confidence by providing them with the opportunity to design conceptual maps that indicate the extent of their understanding of the academic subject.

RECOMMENDATIONS

1. The necessity of using the concept mapping strategy to develop cognitive achievement by preparing concept maps specific to each academic subject.
2. The necessity of using the concept mapping strategy in developing the skills taught in racket games or other games, whether at the same stage or other educational stages.
3. The necessity of focusing on theoretical concepts and linking them to the practical aspect during the implementation of the physical education lesson.

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