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THE EFFECT OF ACTIVE LEARNING ACCORDING TO THELIN'S MODEL SUPPORTED BY HABER MEDIA IN IMPROVING THE COGNITIVE ACHIEVEMENT OF FOOTBALL FOR PREPARATORY SCHOOL STUDENTS

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Abstract

The thesis aimed to prepare and apply educational units according to the strategy of active learning, according to Thelin model supported by hypermedia. The researcher used the experimental approach to suit the nature of the problem and the objectives of the research. The experimental approach is considered one of the best scientific research methods for solving problems in a practical way, which is defined as the objective observation of a specific phenomenon that occurs in a situation characterized by the exact accuracy of one or more variables. While the other variables (factors) are fixed. Where the researcher intentionally identified the research community from the students of the middle school of Ash-Shaheed Talib Al-Suhail for the distinguished students in the Directorate of Education of Baghdad Al-Karkh, the third for the academic year 2022-2023, whose number is 106 students. As for the research sample, it was chosen randomly and systematically (lottery), as it consisted of fifth grade preparatory students, with four divisions, Division A 35 students, Division B 35 students, Division C 34 students, and Division D 38 students. The systematic random method was used to determine the two research groups, as Division (A) was chosen to be an experimental group and Division (D) was a control group, and the lists of each group for research consisted of 16 students, and thus the research sample consisted of (32) students who constitute 40% of the research community. As this percentage is representative and real for the research community. The researcher conducted a pre-test for the skills under study, and educational units were implemented, at the rate of two units per week, the time of the unit was 45 minutes. After that, the post-test was conducted under the same conditions as the pre-test. The researcher used the spss statistical bag to obtain the results, which led the researcher to the conclusions that active learning according to Thelin's model supported by hypermedia is considered as a

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collective investigation model that helps learners understand science positions and their interaction in the process of learning knowledge. Active learning according to Thelin's model has a proportional and consistent effect and is based on a scientific and effective method, which led to the student gaining experience as a result of the model's sequential and interrelated steps, increasing this experience and mastering knowledge. The recommendations are the most important interest in the strategy of active learning as an educational strategy in the lessons of physical education. Emphasis on benefiting from the positives of Thelin's model in organizing the content of the instructional unit as a new output for the physical education lesson.

Keywords : active learning, Thelin model, hypermedia , cognitive achievement.

Chapter One

1- Introducing the research

1-1 Introduction and the importance of research:

One of the important elements of modern education is the existence of a development in teaching methods through dealing with the material in an educational manner and presenting it in a scientific manner that enables students to understand, express and acquire the required skills by forming an appropriate learning environment that makes the student able to learn positively and self-creatively contributing to the educational process. As the acquisition of some skills requires the adoption of special strategies, mechanisms, methods and methods that give the learner an opportunity to be independent in his thinking and to make his decisions regarding the time and duration of learning and what he can benefit from for the purpose of learning the skill, which makes him an active and positive element in the lesson. Therefore, educators have called for the need for teachers to use models, methods and teaching strategies that allow the student to play an active role in the teaching and learning process so that he is not only a recipient, but also develops his thinking skills as a result of the cumulative experiences that the learner has and thus enables him to build a base of information that helps the learner understand the relationships between New and previous concepts and ideas. ([1])

[1] Ismail Abd Zaid and Imad Toa'ma: Fundamentals of Teaching Physical Education. Dar Dijla for Printing and Publishing, Amman, Jordan, 2016, p. 34.

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As a result, "many modern teaching models have emerged that emphasize the active role of the student in education, who performs many activities and practical experiences within the knowledge classroom. So that meaningful learning based on understanding takes place. Students' learning is a continuous creativity process in which they play the role of inventors and discoverers. It is also It emphasizes that the learner makes a mental effort to discover knowledge by himself. ([2])

Thelin model is one of these models in which the learner is active and effective, practicing investigation, discovery and searching for information through active participation individually or collectively within his small group to benefit from it in finding solutions to the research problem.

. "Instead of giving the learner the information as a ready-made grab-and-go piece, we prepare for him the appropriate and comfortable environment to discover and investigate the facts in order to reach new relationships and methods of solution that were not known to him before. This increases his tendency to learn the material and his desire to continue it, which develops in him different ways of thinking and gains him learning." Transferable to take advantage of in new situations. ([3])

There is no doubt that the tremendous progress in the concept of educational technology, especially hypermedia, has had an impact on progress in the education process. As well as the use of methods and methods that depend on direct indoctrination. There is an interaction between the student and the educational material in raising the student's self-confidence through practical application. Which creates a clear mental image that can be understood, interpreted, and new insights and conclusions come out. As well as the essential role of cognitive achievement, which works to employ information in the student's mentality. Which helps to understand the information and the technical and educational steps of the skills, which in turn works to understand the process of learning skills in football. The importance of the research using the active learning strategy according to Thelin's model, supported by hypermedia, lies in the improvement of cognitive achievement. As this study contributes to the great

[2] Afrah Yassin Mohammad and Suzan Dhahir. The effectiveness of the multimedia program in the achievement and development of computer skills among tenth grade students in computer subject. Al-Fath Journal, University of Diyala, 2017, Volume 13, Issue 72, p. 34.

[3] Wafaa Sweidan Ali: The effectiveness of the group investigation model in the achievement of the second intermediate grade students in biology and their skills in scientific thinking. A published master's thesis, College of Education / Ibn Al-Haytham, University of Baghdad, 2018, p. 57.

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and effective auxiliary role in acquiring effective and constructive knowledge that includes interaction of the individual's cognitive, motivational and emotional resources. And the second aspect is teaching football vocabulary with an educational strategy and a model that uses educational technology to improve cognitive achievement in an appropriate manner for the research sample.

1-2 Research problem

Football is one of the team games that are taught within the cognitive curriculum of the subject of physical education within the physical education teacher's guide prepared by the Directorate General of Curricula of the Iraqi Ministry of Education. Through the specialization of the researcher in physical education and access to many previous researches and studies within the field of methods of teaching football, it became clear to the researcher that the subject of football is taught according to teaching methods used for a long time that do not take into account the development in the game of football and its cognitive curricula as a subject approved by Iraqi Ministry of Education. This led to the failure to give the theoretical aspect of the subject the appropriate importance and the formation of an achievement aspect among the students, which led to the fluctuation of their understanding of the theoretical aspects of the subject. In addition, some secondary schools lack modern electronic programs such as employing educational technology (hypermedia) and its advantages in an optimal way, with learning strategies that intend to rebuild knowledge and organize it in a manner commensurate with its cognitive and mental structure. In addition, the output of the educational unit for the current physical education lesson does not take into account the process of organizing the stages of presenting and explaining the material, and this also affects the learning of skills in a better way.

1-3 research objectives

1- Constructing a measure of cognitive achievement in soccer.

2- Preparing educational units using the active learning strategy according to Thelin model supported by hypermedia.

3- To identify the effect of using the active learning strategy according to Thelin's model supported by hypermedia in improving cognitive achievement.

4- Identifying the preference of the experimental and control research groups in cognitive achievement.

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1-4 Research Hypotheses:

1- There are statistically significant differences between the results of the pre and posttest of the two research groups in the improvement of cognitive achievement and in favor of the post tests.

2- There are statistically significant differences between the control and experimental research groups in post-tests in improving cognitive achievement in favor of the experimental group.

1-5 areas of research.

1-5-1 The human field: a sample of fifth grade literary students in Talib Al-Suhail preparatory school for the distinguished students in the Directorate of Education of Baghdad Al-Karkh / the third for the cognitive year 2022-2023 AD.

1-5-2 The temporal field: from 10/2/2022 until

// 2023.

1-5-3 The spatial field: The knowledge hall (computer lab) and the sports arena of the Ash-Shaheed Talib Al-Suhail Preparatory School for the Distinguished in the Directorate of Education of Baghdad / Al-Karkh, the third.

2- Research methodology and field procedures.

2-1 Research methodology.

The researcher used the experimental approach to suit the nature of the problem and the objectives of the research.

2-2 The research community and its sample.

The researcher intentionally selected the research community as it enjoys all the requirements of the study from the middle school of the martyr Talib Al-Suhail for the distinguished students in the Directorate of Education of Baghdad Al-Karkh, the third for the academic year 2022-2023, whose number is 106 students. As for the research sample, it was chosen by the regular random method (lottery). It consisted of students in the fifth literary grade, with four divisions, Division A of 28 students, Division B of 26 students, Division C of 27 students and Division D of 25 students. The systematic random method was used to select the two research groups. As Division (A) was chosen to be an experimental group and Division (D) a control group, and the lists of each group for research consisted of 16 students, and thus the research sample consisted of (36) students, who constitute 40% of the research community. As this percentage is representative

and real for the research community. The exploratory experiment was applied by selecting (15) students from (B) to represent the sample of the exploratory experiment for achievement tests and (15) students from Division C for the exploratory experiment from Division B for Huber Media.

They were excluded from the research sample, and 13 students who practiced football in clubs from the academic divisions were excluded, as shown in Table (1).

Table (1) It shows the classification of the sample and the numbers of the control and experimental groups

stage	number of classes	number of students in each class	number of excluded students		research sample	percentage of research sample
			practitioners	Exploratory experience		
Fifth Preparatory	A	28	2	———	16 Experimental	%40
	B	26	4	15 Cognitive achievement		
	C	27	3			
	D	25	4		16 controller	
total		106	13	15	32	

The researcher adopted the experimental design of two interrelated equivalent groups, ((as this design is based on the basis of random testing for the experimental group, taking into account following the same procedures when selecting the control group. The experimental group is measured before applying the research (program) and then the dimensional measurements are taken and the procedures are followed same with the control group without exposure to the independent experimental variable)) ([4])

2-3 The means, devices and tools used in the research

It means the means and method by which the researcher can solve his problem, whatever those tools are like data, samples, devices, and it included the following:

[4] Ismail Abed Zaid and Naseer Mozher Abbood: Topics in Scientific Research Methods. Dar Al-Atak for printing and publishing, Beirut, Lebanon, 2017, p. 74.

2_3_1 The means used in the research

1_ Arabic and foreign references and sources
2_ Use the (Autoplay) program to view videos and photos
3_ Examination nomination questionnaire as shown in Appendix (1)
4_ The Internet
5_ Test registration form (Annex 2)
6_ Personal interviews (Appendix 3)
7_ Data collection form and unloading of research information

2-3-2 The devices and tools used in the research

The researcher used the following devices to fulfill the research requirements
1- Acer laptop, factory tray number 1.
2- (1) Chinese-made Canon camera.
3- Plasma TV screen type LG, size 55, made in China, number (1)
4- Using an electronic program to display skills, photos and videos.
5- The outer preparatory yard.
6- Dry pens, 40 pens.

2-4 field research procedures

2-4-1 Cognitive achievement test:

Due to the absence of a test that measures the cognitive achievement of the variables of the current research, and for the purpose of conducting a post-test for cognitive achievement. An achievement test has been prepared that measures the desired purpose of the research. As the cognitive test was adopted by selecting from the type of multiple choice ((This type of vocabulary is the most flexible. It can be used in evaluating the achievement of educational goals from different cognitive levels)) ([5]).

2-4-2 Steps to implement the cognitive achievement test: ([6])

Determine the purpose of the test:

This test aims to measure the cognitive achievement (knowledge and information) related to the academic vocabulary according to the physical

[5] Salah El-Din Mahmood Allam: Educational Measurement and Evaluation in the Teaching Process. 2nd Edition, Dar Al Masirah for Publishing, Distribution and Printing, Amman, 2009, p. 97.
[6] Mohammed Nasr El-Din Radwan: Introduction to physical education and sports analogy. Dar Al-Kitab for Publishing and Distribution, Cairo, Egypt, 2006, pp. 277-344.

education teacher's guide for the preparatory stage. It has been taken into account that the objectives of this test are consistent with the sample level.

Determine the test subjects:

The areas related to the knowledge outcomes of the fifth grade literary students were identified within the teacher's guide for the preparatory stage in football subject through analyzing the course descriptions of football subjects. The emphasis was on three vocabulary (game history, game law, and basic skills).

Determine the relative importance of the test axes:

The researcher intended to determine the relative importance of each axis of the test, based on the book of the physical education teacher's guide for the preparatory stage. The educational units for the vocabulary of history were two educational units, for the vocabulary of law four educational units, and seven educational units for football skills. This calculation of the number of educational units depends on the distribution of the subject's vocabulary and how it is taught by the football teacher in middle schools, according to the schedule and plan set for the football subject in the approved curriculum. Therefore, the number of educational units for the curriculum is thirteen educational units, as shown in Table (2).

Table (2) The relative importance of the cognitive test axes

No.	axis	number of units	percentage
1	Football history	2	%15
2	Football law	4	%31
3	Football skills are being researched	7	%54
4	total	13	%100

After that, a questionnaire was prepared containing a set of behavioral goals formulated from the three items above. Appendix (3) was presented to the experts to indicate the suitability of formulating behavioral goals for the domains (knowledge, understanding and application). The reason for selecting only the first three levels is due to the fact that the categories of the mental field are

gradual in difficulty and that the student in the preparatory stage cannot analyze, compose and evaluate without knowledge, understanding and application. ([7])

Then the researcher prepared a specification table showing the number of educational units for vocabulary (game history, game law, and basic skills) and the percentage of content. Then the relative weight of each level of knowledge, understanding and application was determined based on the behavioral goals questionnaire that was presented to the experts. Table (3) shows the table of specifications.

Table (3) Table of specifications for the cognitive test items for football

Content			Objectives			total
Topics	number of units	content ratio	knowledge 25%	understanding 25%	app 50%	
Game history	2	%15	2	2	3	7
Law of the game	4	%31	3	3	6	12
Football skills	7	%54	5	5	11	21
Total	13	%100	10	10	20	40

Formulation of test vocabulary:

The researcher intended to formulate the test items in an initial form, and there were (40) forty items divided into the three test axes. The researcher took into account that each word has one specific meaning. And that the language of each vocabulary be correct and avoid difficult vocabulary and avoid words that carry more than one meaning.

Determine the type of questions:

After formulating the vocabulary in its required form, it was arranged. The vocabulary of each axis is put together in the test. The researcher chose one type of question, which is multiple choice (3) three possibilities. The following conditions were taken into account in the test questions (comprehensiveness, objectivity, accuracy, and suitability for the level of students).

[7] Walid Al-Rahahleh and Nart Shoka: A comparative study of the knowledge outcome in the field of physical fitness among students of the Faculty of Physical Education at the University of Jordan and Yarmouk University. Yarmouk Research Journal, Volume (23), Issue (4), Al-Yarmouk, 2007, pg. 45.

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2-4-3 Test instructions:

The instructions for the test were developed, as the students were asked to carefully read each question as well as the answers, and to choose one answer from among the answers, and not to leave any question unanswered, and that each question had one mark from among the answers.

2-4-4 Validity of the initial copy of the cognitive achievement test:

The test was presented in its initial form to the experts in the field of football, measurement and evaluation, Appendix (5), in order to ensure that the test is suitable for the level of the students. Personal interviews were also conducted with some experts (see Appendix 6) to ascertain the validity of the test items and the extent to which they measure what they were designed for. The number of test items in its initial form was (40) forty items, and after presentation to the experts, they reported that some wording had been amended, and the number of test items became (40) forty items.

2-4-5 Exploratory Experiment (Cognitive Achievement Test)

The test was applied in its initial form to a number of group B students, numbering (16) students from the first academic year in the Department of Physical Education in the College of Basic Education - Al-Mustansiriya University, on / / 2022. The purpose of this experiment was the following:

1) Ensure that the paragraphs are clear to the interrogated person.
2) Ensure the ease or difficulty of the test items in order to rephrase them.
3) Preparing the final image for the test items.

The students' answers were corrected on the basis of giving one mark for the correct answer for each item in the test, and zero for the wrong answer, noting that the total test score is (40) marks. Then, after the exploratory experiment, the test became in its final form (40) forty items, which came as follows: date (7) items, law (12) items, and skills (21) items. The specific way to answer.

- Analysis of test items: After the researcher conducted the exploratory experiment, the purpose of it was also to calculate the coefficients of ease and difficulty. The researcher used the following equation to calculate the coefficient of ease.

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$$\text{Ease factor} = \frac{\text{The correct answer to the question (p)}}{\text{Correct answer + wrong answer (y + x)}}$$

Since r = the number of correct answers, x = the number of incorrect answers
The relationship between ease and difficulty is a direct inverse relationship, i.e.:
Ease coefficient = 1 - Difficulty coefficient.
Difficulty coefficient = 1 - Ease coefficient
Based on the foregoing, the ease coefficient was calculated for the test items as a whole, and Table (4) shows the ease and difficulty coefficients for the test items so that we exclude each item that gets an ease score of less than 20% or less and a difficulty score of 80% or more.

Table (4) Coefficients of ease and difficulty of cognitive test items

No.	Difficulty coefficient	Ease factor	No.	Difficulty coefficient	Ease factor	No.	Difficulty coefficient	Ease factor
1	0.69	0.31	15	0.71	0.29		0.46	0.54
2	0.77	0.23	16	0.74	0.26	30	0.71	0.29
3	0.71	0.29	17	0.51	0.49	31	0.54	0.46
4	0.54	0.46	18	0.71	0.29	32	0.69	0.31
5	0.43	0.57	19	0.66	0.34	33	0.43	0.57
6	0.29	0.71	20	0.51	0.49	34	0.74	0.26
7	0.74	0.26	21	0.77	0.23	35	0.71	0.29
8	0.69	0.31	22	0.79	0.21	36	0.71	0.29
9	0.71	0.29	23	0.49	0.51	37	0.45	0.55
10	0.77	0.23	24	0.74	0.26	38	0.40	0.60
11	0.74	0.26	25	0.57	0.43	39	0.57	0.43
12	0.40	0.60	26	0.60	0.40	40	0.74	0.26
13	0.69	0.31	27	0.63	0.37			
14	0.69	0.31	28	0.71	0.29			

It is clear from the previous table (5) that:
The ease coefficient ranged between (0.29, 0.80), and the difficulty coefficient ranged between (0.20, 0.71). The paragraph difficulty index is evaluated according to the levels set by Abel 1979.

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Table (5) Paragraph difficulty index according to the levels set by Abel 1979.

difficulty indicator	correction
%71 to 79%	An Item can be accepted if it has an acceptable discrimination indicator
from 30% to 70%	The Item is good
from 20% to 29%	An Item can be accepted if it has an acceptable discrimination indicator

Discrimination coefficient:

The index (evidence) of discrimination is known as ((the index of the validity of the paragraph, which is one of the important measures for the analysis of the paragraph)) to calculate the discrimination coefficient for the test items, the researcher used the following equation:

Variance = ease coefficient x difficulty coefficient.

This is a statistical procedure to identify the discrepancy between good and not-so-good questions (distinguishing between hard and easy degrees).

Table (6) Coefficient of discrimination for a cognitive test

No.	coefficient of excellence	.No	coefficient of excellence	.No	coefficient of excellence
1	0.213	15	0.205	29	0.248
2	0.177	16	0.192	30	0.205
3	0.205	17	0.249	31	0.248
4	0.248	18	0.205	32	0.213
5	0.245	19	0.224	33	0.245
6	0.205	20	0.249	34	0.192
7	0.192	21	0.177	35	0.205
8	0.213	22	0.160	36	0.205
9	0.205	23	0.249	37	0.240
10	0.177	24	0.192	38	0.240
11	0.192	25	0.245	39	0.245
12	0.240	26	0.240	40	0.192
13	0.213	27	0.233		
14	0.213	28	0.205		

It is clear from the previous table (6) the following: The cognitive test items have an appropriate discrimination power, ranging between (0.160, 0.249). Accordingly, the test can be used as a tool to evaluate cognitive achievement. ((The discrimination index, if it is above 0.40, means that the paragraph has a good ability to distinguish)) (Nasr Al-Din: 329: 2006).

Determine the time required for the test:

$$\frac{\text{The time taken by the first student + the time taken by the last student}}{2}$$

Thus, it was possible to determine the test time and it was 15 minutes.

3-4-5 Scientific Transactions of the Cognitive Test:

A- Test stability:

((The term stability refers to the great confidence in the test's assessment of the students' marks, as the mark obtained by the student (X) will be the same mark or close to the mark that the student will obtain in the next time or times)). ([8])

The stability coefficient was extracted using the split half method. As the test was applied to a sample of the research community, represented by division (B), numbering (20) students, dated / / 2022, and for one time, then dividing the students' answers into two equal halves, then calculating the correlation coefficient between their answers. The stability value of the test was (0.88), which is a high stability coefficient. Since the stability coefficient in this way does not measure the overall homogeneity of the test because it is the stability of half of the test, the (Spearman) equation was used. By dividing the test into two parts only, so that the first part consists of the odd scores and the second part of the even scores of the test. The stability coefficient after correction was (0.74), which is also a high stability coefficient. (Hedges) indicates ((that the stability coefficients for non-standardized tests are considered good if they reach (0.68) or more)) . ([9])

[8] Mustafa Al-Kamasha and Al-Bawaliz Muhammad: Measurement and distribution in special education. Edition 2: Dar Al-Fikr for printing, publishing and distribution, Amman, 2017, p. 69.

[9] Ali Samoom: Principles of statistical methods in physical education. 2nd edition, Al-Mohimin Press, Baghdad, 2012, p. 88.

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b- Validity of the test:

The validity of the test is one of the important means of judging its validity. An honest test is the one that measures what it was originally set to measure, or the one that measures what it is intended to measure, and for nothing else. In order to verify the validity of the test, reliance was made on the validity of the content, which means ((the extent to which the test covers the material or the curriculum and the objective objectives, and is directly proportional to that. The more the test covers the material and the objectives, the higher the validity and it becomes called that it has a high degree of content validity. It is useful This kind of honesty in achievement tests). ([10])

The veracity of the arbitrators was extracted through the percentage of their agreement on its paragraphs. As the percentage of experts' agreement on its paragraphs is (80.28%), and (Bloom et al., 1983) indicates that ((the researcher must obtain a percentage of experts' agreement on the validity of the paragraphs and the possibility of making amendments at a rate of not less than 75%). ([11])

C-Objectivity:

Objectivity is a form, form, or form of steadfastness, and it is known as estimated steadfastness, and Objectivity is known as ((the degree of agreement between the estimators of the degree)). ([12]). True-false and multiple-choice tests are among the tests that have a high degree of objectivity. In order to calculate the objectivity of the test, two of the arbitrators intended to estimate the degree of the test (i.e. the judgment on the performance of a number of examinees, 18 students) at the same time, as each judge was far from the other so as not to be affected by his opinion. The correlation coefficient was calculated between the evaluations of the arbitrators, and the value of the objectivity of the test was (0.85).

3-4-8 Pre-test (equivalence).

In order for the division of the two groups to be unbiased to a group, and in order to preserve scientific objectivity, an equivalence process was conducted in terms of cognitive achievement on / / 2022 between the two research groups to adjust the variables. And as shown in Table (7).

[10] Saleh Mohammad: Introduction to Research in Behavioral Sciences: 1st edition, Riyadh, Obeikan Library, 1995, p. 93.

[11] Bloom, Benjamin Bloom and others (translated by Muhammad Amin Al-Mufti and others). Assessment of Student's Collective and Formative Education, Macrohill House, Cairo, Egypt, 1983, p. 126.

[12] Amin Saati: Simplifying the writing of scientific research. The Saudi Center for Strategic Studies, Riyadh, 2008, p. 168.

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Table (7) The results of the mean scores of the equivalence test for the control and experimental groups in the cognitive achievement of football.

significance level	calculated t value	experimental group		control group		measuring unit	dependent variables
		N	H	N	H		
non-significant	1.17	3.23	26.94	3.13	25.62	degree	Cognitive achievement

* The tabular t value was (2.04) under the level of significance (0.05) and a degree of freedom of 30. Table (6) shows that the calculated (t) values for cognitive achievement tests are at the level of significance (0.05) and under a degree of freedom (30). Which indicates the achievement of the principle of equivalence between the two research groups in cognitive achievement. As well as adopting these results for the pre-test of the two research groups.

3-4-9 Designing the education unit according to active learning using Thelin model supported by hypermedia:

When the researcher completed the exploratory experiments and the pre-tests, he prepared a special educational curriculum for the experimental group members. The proposed educational curriculum was presented to the experts (Appendix 7) for the purpose of reviewing the curriculum, amending it, indicating its suitability, and adding what they deem appropriate. After that, the application of the curriculum began on ..../..../ 2022 for the two groups. The experimental group took the lesson at 8:30 am, and the control group took the lesson at 10:30. The curriculum included (24) educational units, at the rate of one educational unit per week, with a time of 45 minutes for each educational unit, according to the time of the football lesson.

3-4-10 The educational unit is based on active learning according to Thelin's model supported by hypermedia:

The experimental group for active learning according to the strategy of Thelin model supported in hypermedia, if the stages of the model are carried out in six stages, Appendix (2), which are:

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1- **Survey**:
At this stage, the subject of the survey is chosen, then the students are divided into groups. Each group consists of (2-6) students. Then the sub-topics are distributed to these groups.

2- Survey planning:
In this step, students in each group formulate the topic or problem in the form of a question or several questions, and plan together how to answer the questions.

3- Executing the survey:
Some duties are performed. Through each student within his group collecting the necessary information from its various sources, to benefit from it in developing solutions to the problem at hand.

4- Writing the final report:
It includes presenting the final results reached by the groups, which are in the form of a practical presentation performance or in the form of a report.

5- Submission of the final report:
After completing the preparation of the final report by the groups, each group presents it to all students in the class, for the purpose of interest among them. ((Each group carries out the exercise according to their abilities and capabilities))

6- Calendar: and it is through
* Evaluation of the performance of each student within his group by the teacher.
* Each group presents two or three questions, then evaluates the answers provided by the students of the other groups to the questions it formulated.. such as:
- What are the technical steps to perform the suppression skill?
How do we distinguish between the position of the player's foot and the supporting foot in the dribbling skill?
- How can the degree and handling skills be performed with one educational exercise?
Assign students to do other educational exercises by adopting Thelin's problem-solving model.
As for the control group: the traditional method was taken to teach this group.

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Some scientific teaching notes for the experimental group

1- The subject teacher, with the educational activity, uses educational technology to explain and display the skill given to the students through the application of the hypermedia program prepared by the researcher, who works on dividing the educational material and presenting it in more than one technological format, while providing an aspect of theoretical information about the history of the game and some of the rules of the game.

2- The researcher prepared an electronic program to explain and display the audio and visual skill using the Autoplay system, which works to provide the skill to students through:

A- Showing educational films for the skill in full motion and slow motion

b- Provide static and moving pictures of the skill implementation mechanism

C - Providing students, through the program, with common mistakes when implementing the skill

D - Providing the learners with the audio and visual pattern while performing the skill

3- The exercise time and the rest time were calculated according to the defining units applied by the researcher at the beginning of the educational program.

Within the Hibermedia program, the researcher used the educational units in accordance with the strategy of active learning in explaining and presenting the educational units for the skills under study.

It is worth noting that such applications and programs have been used in many studies and research that used computers in learning methods.

Where the (AutoPlay) program consists of the main interface, which is represented by a picture of a soccer ball on the field. The interface is preceded by the title (Learning the principles of some soccer skills), and in the middle of the interface is the name of the supervising professor, followed by the name of the researcher.

And when you press the button to enter the program, another interface will appear to us that contains a video of an enthusiastic sports anthem. After the end of the anthem, you will move to the interface of the educational units. As this interface consists of three pictures of famous players, each of them performs one of the football skills under discussion, and these pictures represent the keys to

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entering the skill that we need. When clicking on any of the four images, the interface for the skill to be explained and learned will appear.

3-4-12 Implementation of the main research experiment:

After conducting exploratory experiments on part of the research sample students and avoiding the obstacles and difficulties that faced the researcher. The main experiment was conducted for the research, which extended.../.../2022 to..../.../2032 for the two research groups.

3-4-13 Post-test:

The post-test was conducted on 11/6/2012 for the achievement side, at ten o'clock in the morning. The researcher took into account, as much as possible, the provision of the same atmosphere that was applied to the pre-test, and from all spatial aspects, devices, tools, and the work team.

3-5 Statistical methods: The researcher used the Statistical Bag for Social Sciences, version 21 of SPSS

Fourth Chapter

Presentation, discussion and interpretation of the results:

4-1 View Results:

4-1-1 There are statistically significant differences between the results of the mean scores of the pre and post measurements for the students of the control and experimental research groups in cognitive achievement and skill performance in the football skills under study and in favor of the post measurement.

Table (8) The results of the average scores of the pre and post measurements of the students of the control group in cognitive achievement in football

Variables	H Pre	H Post	H for differences	N for differences	No. calculated
Cognitive achievement (degree)	25.63	33.18	7.56	6.56	4.61

*At a significance level (0.05), a degree of freedom of 15, and a tabular degree (2.13).

It is evident from Table (8) that the calculated (t) value for cognitive achievement is 4.61, which is greater than the tabular (t) value (1.753). Which indicates that there are statistically significant differences between the results of the pre and posttest and in favor of the post test of the control group.

Table (9) 4-1-2 The results of the average scores of the pre and post measurements for the students of the experimental group in cognitive achievement in football

Variables	H Pre	H Post	H for differences	N for differences	No. calculated
Cognitive achievement (degree)	26.94	39.56	13.62	4.53	12.03

*At a significance level (0.05), a degree of freedom of 15, and a tabular degree (2.13).

It is clear from Table (9) that the calculated (t) value for cognitive achievement 12.03 is greater than the tabular (t) value (1.753). This indicates that there are significant differences between the results of the pre and posttest and in favor of the post test for the experimental group.

4-1-3 There are statistically significant differences between the results of the mean scores of the two measurements

The two dimensions of the control and experimental groups of cognitive achievement and skill performance in football skills under study, in favor of the dimension measurement of the experimental group.

Table (10) The results of the average scores of the two post-measurements of the control and experimental groups of cognitive achievement in football

Variables	control group		experimental group		t value calculated
	H	N	H	N	
Cognitive achievement (degree)	33.18	4.52	39.56	2.25	5,84

*At a significance level of (0.05), a degree of freedom of 30, and a tabular degree of (2.04).

It is clear from Table (10) that the calculated (t) value for cognitive achievement is 5.84. For the skills under study (ball control 2.02, dribbling 4.77, suppression 2.39, handling 4.60, and scoring 4.27), it is greater than the tabular value of (t) (1.697).

Discuss the results:

4-2-1 Discussing the results of the pre and posttest for the experimental group

It is clear from Table (9) that there are statistically significant differences at the level (0.05) between the means of the pre and post measurements of the experimental group in cognitive achievement in football and in favor of the post measurement. This indicates the progress of the experimental group as a result of using active learning according to Thelin's model supported by hypermedia. The researcher attributes that the active learning strategy used in teaching has contributed significantly to raising their motivation for achievement and study. As most of them began to learn through collaborative groups in which a clear role appeared for each member of the group. There is no longer a student who feels indifferent to what is happening in the classroom; Because absent-mindedness, distraction and boredom have no place in light of pairing learning as one of the active learning strategies. ([13]) The researcher also confirms that the active learning strategy has contributed to raising the level of self-confidence among the experimental group members. And that is through the sense of each one of them equal opportunity to learn and respect for his being.

4-2-2 Discussing the results of the post-test between the control and experimental groups.

As shown in Table (10), there are statistically significant differences at the level of (0.05) between the two post-measurements of the control and experimental groups in favor of the experimental group in the results of the cognitive achievement test in football under study. This indicates that the independent variable of the experimental group represented by active learning according to Thelin's model supported by hypermedia was more effective and positive in cognitive achievement. The use of active learning in the educational process leads

[13]Mohammad Sabih Hassan: The effect of educational methods according to the active learning strategy in learning some basic skills in football. Published research, Maysan Journal of Physical Education Sciences, Maysan University, Issue 15, Volume 15, 2017 101.

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to students being aware of the learning process and having the opportunity to personalize educational experiences to increase understanding, recall and application. ((Active learning emphasizes the development of students' skills and abilities, and the students' investigation of their trends and abilities, in exchange for less emphasis on the transfer of information that prevails in the imperative style of teaching. The learners' previous knowledge is formed. One of the most important features of active learning is also the use of flexibility in teaching strategies. The existence of a strategy Appropriate teaching is what may be appropriate to the abilities and capabilities of the learners, mental and skill in the educational situation). ([14])

Also among the positive results of active learning is the positive impact on students in increasing knowledge achievement in several aspects, including increasing their motivation and attention, developing positive attitudes towards the educational material, and increasing their interaction within the lesson. The nature of active learning depends on the activity of the learner and the building of knowledge by himself, where the learner searches and investigates, until he reaches the concepts himself by working within groups that contribute to the spirit of cooperation among the members of the group. ([15])

And that the progress made to the effect of active learning according to Thelin's model was proportional and consistent and built in a scientific and effective manner. This led to the student gaining experience as a result of the model's sequential and interrelated steps. As a result, this experience increased and mastery of the knowledge associated with skill learning. As the student has a good mental and cognitive perception as possible to understand and remember the correct performance sequence. As well as the continuation of the feedback provided by the members of the same group. As a result, the practice of work is repeated several times, which helps to gain experiences from each other and establish the correct performance and try to reach it. This led to increased cooperation and interaction between students to help each other, which helped to take into account individual differences and progress and improvement for the members of this group.

[14] Iyad Salih Salman and Suzan Salim Daoud: The effect of using two active learning strategies, jigsaw. Solving problems in learning some balance beam skills in artistic gymnastics. Published research, Al-Qadisiyah Journal of Physical Education and Sports Sciences, Volume 18, Issue 1, 2018, p. 23.

[15] Fatima bint Khalaf Allah Omair: The effect of active learning on the development of innovative thinking and academic achievement in science among third-grade female students in government schools in Makkah Al-Mukarramah. Published PhD thesis, Department of Curricula and Teaching Methods, College of Education, Umm Al-Qura University, Saudi Arabia, 2010, pg. 67.

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The use of the commanding method in teaching did not help the student to improve the educational level. Therefore, various ways and means have emerged to increase the effectiveness of education and take into account the individual differences between the different levels. Where the question is no longer from the minority of learners who can succeed, but how to make large proportions of learners reach the level of upgrading. ((Modern education replaced traditional education, which was based on an equation whose side consists of one teacher in front of a large group of learners, as this equation was reflected in modern education to a student who listens, watches, and participates in the educational process)) ([16])

The researcher also confirms that the steps of Thelin's model, which begin with defining the subject of the survey, dividing the students into groups of 2-6, planning the survey among them according to their capabilities within the group, implementing it, preparing reports, presenting them, and then evaluating them, were new to the students, which led to removing the boredom factor from them and instilling in them the spirit of active participation. . Also, the success of the performance in the first attempts of the skills and the students' knowledge of the result of their performance, whether through the feedback they got from the teacher or the internal (self) feedback, increased their enthusiasm and motivation to continue performing. Which reflected on the development of basic skills positively and effectively. ((Because the interest in increasing the repetitive attempts and providing the learner with different patterns of feedback, commitment, urging, encouragement and diversification in performance helps beginners to learn and acquire the outputs of the learning process)) ([17])

The researcher also confirms that the active learning strategy according to Thelin's model, supported by hypermedia, worked on learning the skills under study in a positive way. As the Hyper Media program provides the student with feedback that helps him diagnose and identify errors. As well as facilitating the retention of information from the details of the technical performance of skills for the largest possible period in memory. ((The use of hypermedia leads to an

[16] Najah Mahdi Shalash: Learning and motor development of mathematical skills. Al-Aik Design and Printing, Baghdad, 2011, pg. 25.
[17] Adil Kamel Shabib: The effect of teaching according to Thelin model on the achievement and scientific thinking of second-grade intermediate students in Physics. A published master's thesis, College of Education, Ibn Al-Haytham, University of Baghdad, 2018, p. 131.

increase in the persistence of the effect of the information that students learn and its consolidation in their minds, which is reflected in the learning process)) ([18]).

Thus, the researcher confirms that the positives of the active learning strategy according to the self-supported Thelin model with hypermedia made the differences a significant sign in favor of the experimental group because of the interesting content of the program and what it contained (sound effects, music, written texts, still and moving images, clips from educational films, audio recordings, etc.), which contributed In participating in learning the skills in question ((the super-interactive multimedia contributes to better understanding and comprehending the shape of the skill, the path of movement, the different stages of performance, and the technical points, whatever the impact on learning the skill)). ([19]).

Thus, the researcher attributes that the educational units prepared according to the strategy of active learning according to Thelin's model, supported by hypermedia, helped students to link information and gave them more room to understand and remember that information. As memory related to information can link several functions of human memory, it is an appropriate tool for presenting skills that make them capable of meaningful associations between the ideas that are going on in their mind. ((To provide a good educational environment through the availability of hypermedia that works on using all the senses of the students and stimulates their motivation towards the education process. Thus, the students appear to have a positive role in obtaining information about the motor performance of football skills and the ability to retrieve that information in any At any time, as well as presenting information about skillful performance in an attractive and interesting way to students, and dealing with details of all technical and educational aspects of performance, as well as clarifying deficiencies and mistakes during the performance of football skills). ([20])

[18] Mohammed Saad Zaghloul (and others): Design and production of a computer program prepared with hypermedia technology and its impact on learning aspects of the skills of hitting the ball with the head for students of the Faculty of Physical Education for Boys in Tanta. Published research, theories and applications volume, No. 48, Faculty of Physical Education for Boys, Abu Qir, Alexandria, 2003, p. 121.

[19] Hassan Ibrahim Ali: The effectiveness of using some educational technology methods on learning football skills for students of the Faculty of Physical Education in Zagazig. PhD thesis, Department of Theories and Applications of Team Sports, Faculty of Physical Education, Zagazig University, Egypt, 2007, p. 79.

[20] Mustafa Abdel Qader Al-Jilani: The design of the multimedia system and its impact on learning some soccer skills for beginners. Unpublished PhD thesis, Faculty of Physical Education, Menoufia University, 2000, p. 178.

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Chapter Five

5- Conclusions and recommendations

5-1 Conclusions.

1- Active learning according to Thelin's model, supported by hypermedia, is considered as a group investigation model that helps learners understand science positions and their interaction in the process of learning knowledge.

2- Active learning according to Thelin's model, which has a proportional and consistent effect, and is built in a scientific and effective manner. Which led to the student gaining experience as a result of the model's sequential and interrelated steps, and increasing this experience and mastering the knowledge associated with learning the skill, as the student has a good cognitive perception.

3-5-2 Recommendations.

1- Paying attention to the active learning strategy as an educational strategy in physical education lessons.

2- Emphasis on benefiting from the positives of Thelin's model in organizing the content of the teaching unit as a new output for the lesson of physical education.

3- Paying attention to educational technology and hypermedia programs in facilitating the process of learning motor skills, especially in the early stages of learning, to reduce errors.

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