

## The effect of active learning according to Thelin model supported by hypermedia in learning some soccer skills

Monther Malik Hatroosh At-Tamimi <sup>1,\*</sup>, Prof. Dr. Moraad Bahlool <sup>2</sup>, and Prof. Dr. Ismail Abid Zaid Ashoor <sup>3</sup>

<sup>1</sup> Higher Institute of Sports and Education, University of Sfax, Tunisia.

<sup>2</sup> Higher Institute of Sports and Education, University of Sfax, Tunisia

<sup>3</sup> College of Basic Education, Al-Mustansiriya University, Iraq

\* Corresponding author, Email: [Muntherhatroosh900@gmail.com](mailto:Muntherhatroosh900@gmail.com)

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### Abstract

The aim of the study was to prepare and apply the construction of educational units according to the active learning strategy according to Thelin's model, and to identify the impact of the active learning strategy according to Thelin's model supported by hypermedia in learning some soccer skills. The researcher used the experimental approach to suit it with the nature of the problem and the objectives of the research, as the experimental approach is considered one of the best scientific research approaches to solve 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 a variable (factor) or more diverse, while the variables are fixed other (factors). Where the researcher intentionally identified the research community from the students of Ash- Shaheed Talib Al-Suhail Preparatory School for the Distinguished in the Third Directorate of Education of Baghdad Al-Karkh for the academic year 2022-2023, whose number is 106 students. As for the research sample, it was chosen by the systematic random method (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) 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 exploratory experiment was applied by selecting (15) students from (C and B) to represent the sample of the exploratory experiment for testing and skill, and (10) students from Division B for the exploratory experiment from Division B. 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.

**Keywords:** Active learning, Thelin model, hypermedia, soccer skills.

## 1. Introduction

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 own 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. <sup>(1)</sup>

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 capable of understanding, interpretation, and coming up with new insights and conclusions. In addition to 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 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 model supported by hypermedia, lies in learning some football skills for students in Janbines, as this study contributes to the great and effective auxiliary role in acquiring effective and constructive knowledge that includes interaction of the cognitive, motivational and emotional resources of the individual. The second aspect is teaching students the skills of soccer for students with an educational strategy and a model that uses education technology to learn motor paths appropriately 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 and the Iraqi Ministry of Education. Through the researcher's specialization in physical

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

education and access to many previous research and studies within the competence of methods of teaching football, it was found For the researcher, the football lesson is taught according to teaching methods used for a long time that do not take into account the development taking place in the football game and its cognitive approaches as a subject approved by the Iraqi Ministry of Education. This led to learning the skills efficiently less than the desired goals in the educational process in the most appropriate and optimal way, in addition to that not giving the theoretical side of the material the appropriate importance and training among students, which led to fluctuation in the process of teaching skills.

### **1-3 research objectives**

1- Preparing educational units using the active learning strategy according to Thelin model supported by Hyper Media.

2- Identifying the effect of using the active learning strategy according to Thelin model supported by Hyper Media in learning some soccer skills.

3- Identifying the preference of the experimental and control research groups in football and learning skills.

### **1-4 Research Hypotheses:**

1- There are statistically significant differences between the results of the pre and post-test of the two groups of research in teaching some skills in soccer and in favor of the post tests.

2- There are statistically significant differences between the control and experimental research groups in the post-tests in teaching some soccer skills, 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 Martyr Talib Al-Suhail Preparatory School for the Distinguished in the Directorate of Education of Baghdad / Al-Karkh, the third.

### **3- Research methodology and field procedures.**

#### **3-1 Research methodology.**

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

### 3-2 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. With four divisions, Division A 28 students, Division B 26 students, Division C 27 students, and Division D 25 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) a control group, and the lists of each research group were 16 students, thus The research sample consists 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 the skill test 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 For cognitive achievement and skill tests	%40
	b	26	4	15 Skill		
	c	27	3	10 for tests		
	d	25	4		16 control	
Total		106	13		33	

The researcher conducted homogenization of the research sample before dividing them into two groups, the experimental and the control.

The researcher adopted the experimental design of two interrelated equivalent groups, ((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, as 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))<sup>(2)</sup>

### **3-3 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:

#### **3\_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

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

The researcher used the following devices to fulfill the research requirements.

- 1- Acer Chinese-made laptop, number 1.
- 2- (1) Chinese-made Canon camera.
- 3- Plasma display screen type LG, size 55, made in China, number (1)
- 4- Using an electronic program to display skills, photos and videos.
- 5- Measuring tape.
- 6- Colored sticky tape.
- 7- A medical scale for measuring height and weight.
- 8- Fox whistle, number 2
- 9- 24 conical figures of different sizes and colors.
- 10- 1 Chinese-made diamond electronic stopwatch.
- 11- 20 official footballs.

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<sup>2</sup> Ismail Abed Zaid and Naseer Muzher Abbood: Topics in Scientific Research Methods. Dar Al-Atak for printing and publishing, Beirut, Lebanon, 2017, p. 74.

12- The outer preparatory yard.

13- (semi) legal football goals.

### **3-4 field research procedures**

#### **3-4-1 Determination of football skills (<sup>3</sup>)**

Depending on the methodological skills prepared by the Ministry of Education, Directorate of General Curricula, the physical education teacher's guide in preparatory schools for the first semester, the skills were chosen in football, which is

1- Handling football.

2- Dribbling skill in football

3- The skill of putting out football.

4- Football scoring skill.

#### **3-4-2 Determine the special tests for the nominated skills**

The researcher deliberately chose a set of skill tests related to the football game. It was agreed with the two supervisors to prepare a questionnaire consisting of three tests for the four skills under discussion, and it was presented to the experts to find out their opinions on the appropriateness of the test for each skill and what is appropriate for the age group. Each skill included three tests, and the tests that obtained the highest percentages were selected.

Skill test specifications.

Rolling ball test between (5) signs: (<sup>4</sup>)

Backhanding test on the wall for (30) seconds: (<sup>5</sup>)

Extinguishment skill test starting line at a distance of (6) yards: (<sup>6</sup>)

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<sup>3</sup> Abdul Razzaq Kazem and others. Physical Education Teacher's Guide for the Preparatory Stage, General Directorate of Curricula, Ministry of Education, Republic of Iraq, 2012, p. 112,

<sup>4</sup> Ismail Abd Zaid Ashoor. The effect of active education according to peer learning strategy and exercise scheduling on cognitive achievement and learning skillful performance in football. PhD thesis, Al-Mustansiriya University, College of Basic Education, 2013, p. 62,.

<sup>5</sup> Hossam Saeed Al-Moamen. A proposed approach to develop some physical abilities and basic skills for soccer players. Unpublished master's thesis, College of Physical Education, University of Baghdad, 2001, p. 71.

<sup>6</sup> Sadiq Jaafar Sadiq. The effect of the overlap between the two styles of random and variable exercise according to the principle of generalization of motor programs and the type of feedback in learning some basic skills in football. PhD thesis, Al-Mustansiriya University, College of Basic Education, 2013, p. 81,.

Shooting test at a target drawn on the wall: <sup>(7)</sup>

### 3-4-3 The first reconnaissance experiment (for skill tests):

The exploratory experiment is a practical training for the researcher to identify the negatives and positives that he encounters while conducting the tests in order to avoid them. In order to give a clear and accurate picture of the vocabulary of the tests used to serve the research, and after defining the research sample, an exploratory experiment was conducted on a sample of first-grade students, numbering 10 students from Group B 10/19/2022, to identify the following:

- 1- Knowing the validity of the tests.
- 2- Knowing the validity of the tools used
- 3- Knowing the extent of the efficiency of the assistant work team in understanding and implementing the various tests and the method of recording the results, in a manner that secures their training to work in order to reduce the errors that may occur in the main experiment.

- 4- Ensure the suitability and ease of the used tests.

### 3-4-4- The Scientific Basis for Skill Tests:-

The skill tests that were nominated by the specialists are standardized tests according to scientific sources in the field of football. For the purpose of ascertaining the validity and suitability of these skill tests for the research sample groups, stability, honesty and objectivity have been verified as follows:

#### **A- Stability:**

Stability means ((to lead to the same results in the case of repetition, especially if the conditions surrounding the laboratory and the test in the two tests are similar)). <sup>(8)</sup>

In order to calculate the stability coefficient, the researcher relied on the method of re-testing, as the tests were applied to the sample of the reconnaissance experiment on // 2022 and re-applied on // 2022, as the results proved, according to the law of correlation (Pearson), that the tests have high scores, as shown In Table (2).

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<sup>7</sup> Haider Majeed Shwea'. The impact of the differentiated education strategy according to the gradual and fixed activities in learning some basic skills in football. PhD thesis, Al-Mustansiriya University, College of Basic Education, 2016, p. 56,.

<sup>8</sup> Salih Mohammed Al-Assaf. Introduction to Research in Behavioral Sciences: 1st edition, Riyadh, Obeikan Library, 1995, p. 430.

**B- Honesty:**

In order to ascertain the validity of the tests, the researcher intended to use the root of stability to infer the subjective validity, ((if he measures only what he intended to measure)).<sup>(9)</sup>

Table (2) :It shows the reliability and validity coefficients for the selected skill tests

No.	Statistical parameters Skill tests	measruing unit	Stability coefficient	Self honesty
1	Handling bounces on the wall within 20 seconds	Repetition	0.89	0.94
2	Put out the ball with any part of the body except the arms	Degree	0.86	0.92
2	Scoring on the goal drawn on the wall	Repetition	0.90	0.94
4	Rolling the ball between the bars	time / sec	0.90	0.94

**C-Objectivity:**

The approved tests were characterized by clarity and were understandable to the testers, as well as far from the self-evaluation of the orthodontist. As the registration was done by adopting units of time and repetition, as well as the instructions for each test were clearly defined and the conditions required during the application were written. In addition to the fact that the auxiliary work team is experienced and specialized in football. All these things contributed to making the approved tests highly objective.

**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, the equivalence process was conducted on // 2022 between the two research groups to adjust the variables, as shown in Table (3).

<sup>9</sup> Mohammed Sobhi Hassanein. Measurement and evaluation in physical education and sports. 3rd Edition, Part 1, Dar Al-Fikr Al-Arabi, 1995, 89.



Table (3) :The results of the mean scores of the equivalence test for the control and experimental groups in learning soccer skills.

dependent variables	measuring unit	control group		experimental group		calculated t value	significance level
		H	N	H	N		
Football dribbling	Time	21.75	2.82	21.62	3.38	0.113	not significant
Put out Football	Degree	3	1.46	3.06	1.34	0.126	not significant
football handling	Repetition	3.94	0.92	3.62	0.89	0.97	not significant
Football scoring	Degree	9.38	2.06	9.44	1.90	0.90	not significant

\* The tabular t value was (2.04) under the level of significance (0.05) and a degree of freedom of 30. Table (3) shows that the calculated (t) values for the tests (represented by the skills in question) are smaller than their tabular value of (1.697) at the level of significance (0.05). and below the degree of freedom (30). Which indicates the achievement of the principle of equivalence between the two research groups in the above variables under study. As well as adopting these results for the cardiac test of the two research groups.

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

When the researcher completed the three 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 takes the lesson at 8:30 am and the control group takes 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 time plan for the proposed educational program:

The experimental group for active learning according to Thelin's model strategy supported by hypermedia. If the stages of the model are carried out in six stages, Appendix (2), namely:

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. 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 the students in the class, for the purpose of benefit among them. ((Each group carries out the exercise according to their capabilities 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.

Some scientific teaching notes for the experimental group

1- The teacher of the subject, 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 to divide the skill and present it in more than one technological form, while providing a side of theoretical information about the history of the game and some of the rules of the game.

2- In the educational unit (3), educational and developmental exercises are given, which the student discusses with his group. After that, he organizes himself in carrying out the skill exercise through the assignment sheet, and the students move from one exercise to another in a counterclockwise direction by applying the system of educational stations.

3- The researcher has prepared an electronic program to explain and display the audio and visual skill using the (autoplay) system, which works to provide the skill to the 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

4- 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.

5- The time of the educational part was reduced after the students' practice and progress in the educational units, to be added to the time of the applied part.

6- The educational units were implemented by the subject teacher and under the supervision of the researcher without his interference in the course of the lesson.

7- Skill exercises have been prepared based on scientific sources and references and in line with the technical and educational steps of the skills under discussion.

Within the Hibermedia program, the researcher used the educational units in accordance with the self-regulated learning strategy 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.

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

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

### 3-4-13 Post-test:

The post-test was conducted on 11/6/2012 for the achievement side // 2022 and on // 2022 for the skill side on the two research groups 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 Package for Social Sciences, version 21, of SPSS

## Chapter Four

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 of the students of the control and experimental research groups in football skills under study and in favor of the post measurement.

Table (4): The results of the average scores of the pre and post measurements of the students of the control group in soccer skills

Variables	H Pre	H Post	H for the differences	N for the differences	No. calculated
(roll (in time	21.75	16.75	5	2.44	8.17
put out (in degree)	3	6.13	3.13	1.93	6.48
Handling (by repetition)	3.94	6.06	2.13	1.36	6.25
Scoring (degree)	9.38	13.94	4.56	2.53	7.22

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

It is clear from Table (4) that the value of (t) for the skills under study (ball control 6.51, dribbling 8.71, suppression 6.48, handling 6.25, and scoring 7.22) 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 (5)**

4-1-2 The results of the average scores of the pre and post measurements of the students of the experimental group in cognitive achievement and skill performance in soccer skills

Variables	H Pre	H Post	H for the differences	N for the differences	No. calculated
rolling (in time)	21.63	12.56	9.06	5.17	7.01
put out (degree)	3	7.38	4.31	1.78	9.70
Handling (by repetition)	3.62	8.38	4.75	1.44	13.22
scoring (degree)	9.44	17.63	8.19	3.04	10.78

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

It is clear from Table (5) that the value of (t) calculated for the skills under study (ball control 10.44, dribbling 7.01, suppression 9.70, handling 13.22, and scoring 10.78) 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.

4-1-2 There are statistically significant differences between the results of the mean scores of the two post-measurement scores of the control and experimental groups in football skills under study, in favor of the post-measurement of the experimental group.

Table (6): The results of the mean scores of the two post-measurements of the control and experimental groups in soccer skills under study

Variables	control group		experimental group		t value calculated
	H	N	H	N	
rolling (by time)	16.75	2,27	12.56	2.68	4.77
put out (degree)	6.13	1.36	7.38	1.58	2.39
handling (by repetition)	6.06	1.06	8.38	1.70	4.60
scoring (degree)	13.94	2.26	17.63	2.60	4.27

\*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 (6) that the value of (t) calculated for the skills under study (ball control 2.02, dribbling 4.77, suppression 2.39, handling 4.60, and scoring 4.27) is greater than the tabular t value (1.697).

## 4-2 Discussing the results:

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

It is clear from Table (5) 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 football tests 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 distraction,

distraction, and boredom have no place under pairing learning as one of the active learning strategies. (10)

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 having equal opportunity to learn and respecting his being.

The researcher attributes this to the fact that active learning according to Thelin's model supported by hypermedia agrees with the researcher Najat Baqer Mashkour 2020. ((Students differ among themselves to varying degrees in their learning styles and their understanding of different educational situations. Therefore, it has become imperative for teachers to take into account such differences Accordingly, Thelin's model is considered as a group investigation model that helps learners to understand science positions and their interaction in the process of learning skills). (11)

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

As shown in Table (6), 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 skill tests and cognitive achievement 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 Hyper Media, was more effective and positive in football skills than the control group, which used the method used by the teacher.

The use of active learning in the educational process leads to students being acquainted with 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 An appropriate teaching method that may fit the mental and skill abilities and capabilities of the learners in the educational situation). (12)

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<sup>10</sup> Mohammad Sabeeh 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.

<sup>11</sup> Najat Baqer Mashkour: Thelin model according to the two fields of cognitive style (reflective and impulsive) to teach the skill of shooting in basketball and its impact on the mental variables and functional indicators of female students. Published research, Anbar University Journal of Physical Education and Sports Sciences, Volume 15, Issue 21, 2020, p. 177.

<sup>12</sup> Iyad Saleh Salman and Suzan Salim Dawood. The effect of using two active learning strategies (jigsaw) and problem solving 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.

This is what the control group students lacked. As Mustafa Al-Sayeh mentions ((that the method of explanation and performance of the model (the imperative method) does not achieve the learner's self and does not provide him with an opportunity for mutual positive participation according to what modern educational trends call for)).<sup>(13)</sup>

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. This led to the removal of the boredom factor from them and spread the spirit of active participation in them. 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. This was reflected in the development of basic skills in a positive and effective manner ((as interest in increasing repetitive attempts and providing the learner with different patterns of feedback, commitment, urging, encouragement and diversification of performance helps beginners to learn and acquire the outputs of the learning process)).<sup>(14)</sup>

## **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 and skills in football.

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

#### **5-2 Recommendations.**

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

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<sup>13</sup> Mustafa Al-Sayeh. Modern trends in teaching physical education. Al-Ishaa Technical Library and Press, Cairo, 2001, p. 49.

<sup>14</sup> Adel Kamel Shabib. The impact of teaching according to Thelin model on the achievement and scientific thinking of second year intermediate students in physics. A published master's thesis, College of Education, Ibn Al-Haytham, University of Baghdad, 2018, p. 131.



- 2- Emphasis on benefiting from the positives of Thelin's model in organizing the content of the instructional 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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