

**The effect of integrating the cooperative learning strategy with the multimedia on the knowledge side and some skills of the floor exercise for students of the Faculty of Physical Education**

**\*Dr/ Ola Taha Ismail**

**Research Introduction:**

The scientific development of teaching and learning methods is a goal sought by faculties of physical education to provide their knowledge and concepts in a simplified way to prepare and develop female students, as they are the teachers and coaches of tomorrow, so learning is one of the most important stages to reach a high level of owning the method of performance near the best technical performance that is the cornerstone of excellence and improved performance, as well as confidence in being teachers and trainers of tomorrow.

Given the importance of educational communication technology in upgrading the educational process, it is an imperative in university learning, both as a medium in the teaching of courses or as a curriculum in courses for

students of teacher training colleges. (28:29)

**Mohammed Saad Zaghoul et al.** (2001) explains that the multimedia method makes the learner stay influential and provides the learner with feedback that results in increased learning in quantity and quality. It also communicates more than the learner's sense and allows the learner to repeat and view the performance several times. In addition, we find that the various educational media play an important and vital role as an important teaching method in the educational process, so it must be chosen according to specific rules to achieve the purpose of Use it in the learning process. (20: 105)

**Mahmoud Abdel-Karim** (2006) points out that the tasks of the teacher of physical education are no longer limited to the traditional role, but have played an

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\* Lecturer, of the theories and applications of Gymnastic and Kinetic expression sports Department of Faculty of Physical Education, Sadat City University, Egypt.

important role in the process of innovation and creativity to encourage students in sports activity and practice on scientific grounds, ensuring continuity and continuing learning and practice. (28: 22)

**Makarem Abu Harja and others** (2007) indicate that modern learning strategies should be used to provide us with a wide range of new horizons that will help learners to develop and enrich their knowledge and mental skills and train them to be creative and able to pursue the horizons of modernity without fear or hesitation, In which the learner with the teacher to produce everything that is new and useful, and this is what prompted the researcher to do the study. (18: 7)

**Sabri Maher** (2010) points out that the educational importance of multimedia in the field of education is:

- 1- Help students to link the information in terms of presentation in a variety of forms, including text, drawings, pictures and others.
- Helps to achieve different educational goals (cognitive - emotional - the same kinetics).
- Interested in cooperative education between students.

- Helps to think beyond thinking and provide abstract concepts as factual information.

I- use it provides fun and attractive to the learner and increases the motivation of students to learn.

- Provide self-learning methods of various shapes and abilities of students. (31: 73)

The use of multimedia as an educational tool is one of the most appropriate ways to implement a cooperative education strategy. It can not be found in any other type of educational tool. This is due to the results of some studies on the importance of cooperative computer education through the achievement of students' Their interaction in fulfilling their assigned duties, and that everyone in the group is an educational resource in his group. (12: 178)

#### **Research Problem:**

The **researcher** noted that there is a paucity combination of learning strategies and modern technology in the field of gymnastics education, The traditional method is usually used with technological means or the use of a method of learning without technological

means, which led the researcher to study the effect of the integration of collaborative and multimedia learning strategies on some aspects of the skill, cognitive and emotional. Because gymnastics requires an effort to teach technical skills during field application of the education process, this requires a mechanism to invest learners and reduce effort and time as much as possible. The investment of modern technologies to communicate knowledge to students with the integration of the cooperative learning strategy may increase their motivation towards learning as a team and to discover information and reach it through interaction with these media and make it a link between teacher and learner and apply what has been learned on the ground.

The task of the teacher today is not limited to explaining and dumping and the traditional methods used in learning beginners, but it is the first responsibility is to draw a strategy for the strategy of learning skills to connect to the highest levels of sports, and rely on the use of modern

methods of learning to achieve the goals set.

(22:6)

The **researcher** sees that the integration of the cooperative education strategy and the use of multimedia technology does not mean canceling the role of the teacher. On the contrary, its role becomes more important and more difficult. It must prepare the educational medium in a well-developed and reflects his personality is in need of continuous development to know the best means of technology education to the current era.

#### **Research importance:**

The importance of the study stems from the importance of cooperative education as well as the importance of the use of educational technology in the educational process. It carries a strategy that combines two outstanding methods in the field of education, and the cooperative education strategy provides the student with social experiences and preparation for practical life. Of the recommendations that recommended the implementation of such a study for its effectiveness and ensure

its results on the collection of students, and this study is a practical application for future teachers on the use of technology education through groups Individually or individually in the teaching of students, thus effectively investing multimedia to implement modern educational strategies of collaborative education.

#### **Research objectives:**

This research aims to design an educational program using a cooperative learning strategy and multimedia to know its impact on:

1. Some of the technical variables of the movement of terrestrial students of the second division of the Faculty of Physical Education Sadat City University.

2. Level of cognitive and emotional achievement of the second year students at the Faculty of Physical Education, Sadat City University.

#### **Research Hypotheses:**

1- There are statistically significant differences between the average of the per and remote measures of the control group in the level of cognitive achievement and skill performance for the post Measurement.

2- There are statistically significant differences between the average of the tribal and post-experimental criteria for the experimental group in the level of cognitive achievement and skill performance for the post Measurement.

3- There were statistically significant differences between the mean of the two measure of the experimental and control groups in the level of cognitive achievement and skill performance for the experimental group.

4- Variance of the views and impressions of the students in the experimental group using a cooperative learning strategy and multimedia in learning some skills on the ground movements.

#### **Terms used:**

##### **Multimedia Technology-**

"It is an integrated technological information system that carries a new educational vision that extends to both the teacher and the learner, It changes the traditional models in their roles, It canceled the terms speaker and the listener and take the learner to learn complete its officials, and the expansion of the role of the teacher to the designer and supervisor and a wave of education ". (23)

### **Cooperative Learning Strategy:-**

"Is a training and teaching strategy based on dividing trainees involved into small groups of varying capacities to know and learn from each other. They have a shared responsibility for their learning, and are based on individual achievement and achievement of the group, So that the success of the trainee is successfully linked to his colleagues in the same group, which leads them to cooperative work together ". (35)

### **Research procedures:**

#### **First, the research methodology:**

The **researcher** used the experimental method due to its relevance to the nature of this study, It used one of the experimental designs for two groups, one experimental (Cooperative Learning Strategy and Multimedia) and the other a control (Traditional program) using pre and post measurement.

#### **Second, the research community:**

The research community was chosen by the second year students of the Faculty of Physical Education at Sadat

University (109) students for the academic year 2014-2015.

#### **Third, the research sample:**

The **researcher** chose the sample of the research in a deliberate manner on (40) female students and selected (90) students With 82.6% from the total research community, representing the academic year 2014/2015 were distributed to two groups, one experimental and the other control (45) female students For both of them, and the sample of the survey sample (15) students from the research community and outside the basic sample to conduct scientific transactions (Believe – Stability).

#### **The homogeneity of the sample**

The **researcher** found the homogeneity of the sample of the research as a whole (105) students to make sure that they occur under the average curve in the variables (age - height - weight), as shown in Table (1).

The **researcher** also found the homogeneity of the research sample in the IQ and cognitive test, skills and physical variables of the sample of the research sample after confirming scientific transactions of the tests used.

**Table (1)**

**Statistical characterization of the sample individuals in the variables "Age – Height - Weight" n =40**

Variables	measruing unit	mean	Median	Mode	St.d	skewness
Age	Year	18,82	19,00	19,00	0,39	-1,68
Height	C.m	162,69	163,00	165,00	4,58	0,24
weight	K.g	59,54	60,00	60,00	7,95	0,04

Table (1) shows that coefficients of torsion of research sample are between (+3, -3) in the variables of (Age - Height - Weight) which indicates the coherence of the sample.

**Table (2)**  
**Statistical characterization of individuals sample**  
**in the Tests used n = 40**

variables	Measure unit	mean	Median	Mode	St.d	skewness
IQ test	point	87,04	88,00	96,00	6,85	-0,23
knowledge test	point	19,42	20,00	20,00	2,30	1,54
Rebound run	sec	12,98	13,05	12,47	1,18	0,13
Fixed balance	sec	2,69	2,38	3,04	1,34	1,84
Moving balance	point	72,32	74,00	80,00	21,59	0,32
Reverse balance	sec	1,59	1,54	1,04	0,95	0,36
flexibility	C.m	57,00	56,00	45,00	14,60	0,48
Speed of response	sec	0,17	0,43	0,54	1,00	0,97
Shoulder speed	Rep	4,64	5,00	3,00	1,80	0,25
endurance of the arms	Rep	6,87	7,00	6,00	2,66	0,21
Stand on your hands	point	1,58	2,00	1,00	0,82	0,06
Down on the chest	point	2,11	2,00	2,00	0,64	-0,10
cartwheel tutorial	point	1,36	1,00	2,00	0,82	-0,13

Table (2) shows the homogeneity of the research sample in tests, as the skewness of research sample are between (+3, -3) in the variables.

**Sample equivalence:-**

To ensure that the levels between the two groups converge, the variables related to the two groups were adjusted, as shown in the following table:

**Table (3)**  
**The significance of differences between the averages of per**  
**measurements in Tests used of the experimental and control**  
**groups N1 = N2=10**

variables	Measure unit	experimental groups		control groups		Means difference	'T' Test
		mean	Std	mean	Std		
IQ test	point	88,64	6,89	86,71	5,79	1,93	1,51
knowledge test	point	19,71	2,73	19,27	1,89	0,44	0,83
Rebound run	sec	12,88	1,21	12,91	1,15	-0,03	0,14
Fixed balance	sec	2,55	1,11	2,81	1,47	-0,26	0,93
Moving balance	point	70,09	21,67	73,76	22,86	-3,67	0,82
Reverse balance	sec	1,68	1,01	1,64	0,95	0,04	0,18
flexibility	C.m	59,02	14,54	50,84	11,72	8,18	1,64
Speed of response	sec	0,94	0,42	0,98	0,42	-0,03	0,35
Shoulder speed	Rep	4,76	1,77	4,62	1,79	0,13	0,33
endurance of the arms	Rep	6,51	2,44	7,11	2,61	-0,60	1,17
Stand on your hands	point	1,76	0,68	1,69	0,79	0,07	0,46
Down on the chest	point	1,58	0,89	2,16	0,64	-0,58	1,53
cartwheel tutorial	point	1,67	0,91	1,40	0,81	-0,27	1,39

\* The value of the table "T" at a significant level (0.05) = 1,68

Table (3) shows that the calculated value of t in all previous variables indicates that there are no statistically significant differences, which means the equivalence between the two groups of research.

#### **Fourth: Data collection tools**

The researcher used the following tools to collect data:

Resistameter device for measuring length in centimeters.

Electronic for measuring weight.

Stopwatch - measuring tape

included in centimeters.  
Mattresses - Cones - Wall -  
Swedish Seats - Jump Ladders  
-Chalk.

9 laptops and computers - (1)  
DataShow device.  
Sample videos of selected  
skills are "in search".

## **2. Tests used: Attachment (3)**

- Rebound run To measure  
agility in seconds. (1: 174 -  
175)

- Stand on the instep to  
measure the balance in a  
second. (19: 352)

- Bass adjusted for dynamic  
balance to measure moving  
balance degree. (21: 354)

- (a Bridge) to measure the  
flexibility of the spine in  
centimeters. (27:55)

- Tensile of the highest rate for  
the measurement of arm  
strength by repetitions. (21:  
212 - 213)

- Hand-held test to measure  
response speed per second. (21:  
375-376)

- The sit-down test is used to  
measure the strength of the  
abdominal muscles by  
repetitions. (21: 221- 222)

- IQ test (Prepared by **Jaber  
Abdel Hamid Jaber,  
Mahmoud Ahmed Omar**).  
(13)

- knowledge test of the skills  
under discussion.

## **4. Forms Search:**

- Recording data on individuals  
search forms:

The researcher designed forms  
to record the measurements of  
the research so as to have the  
simplicity and ease of  
registration for the collection  
and scheduling of data in order  
to be processed statically as  
follows:

-Registration form for  
measurements of variables (age  
- height – weight).

-An individual form to record  
the tests of the skills and  
knowledge.

## **Fifth: Scientific transactions for tests and a form of evaluation of skill level: -**

### **Test the level of mental abilities (IQ):**

The **researcher** used to  
test the verbal intelligence of  
the secondary and university  
stage, prepared by **Jaber  
Abdul Hamid Jaber,  
Mahmoud Ahmed Omar**  
(1993). Attachment (4)

### **1. Believe of the tests: -**

The Believe of the tested  
test was calculated using the  
Believe of the difference by  
finding the significance of the  
differences between the two  
means (upper spring and the  
lower spring) after the  
researcher arranged the scores



of the research sample (15) student in descending order, and then found the difference

between the average of the two spring. Table (3)

**Table (3)**  
**Significance of differences between the upper spring and lower spring In the IQ test N 1 = N 2 = 10**

variables	Measurement unit	upper spring		lower spring		Means difference	'T' Test
		mean	s.d	mean	s.d		
IQ test	point	93,75	2,63	74,00	1,16	19,75	20,87

The value of "T" Driven at the level (0.05) = (2.45)

Table (3) shows that the calculated value of T is greater than the t-score at a significant level (0.05) between the mean (upper spring, the lower spring) and the upper spring average in the IQ test.

**Stability Test:**

The coefficient of test stability was calculated by applying the test and re-applying it by using the Spearman equation on the survey sample which reached (15) female students of the second group from the same

research community and outside the basic research sample. To implement this, the researcher applied the test twice sequentially, Which took place on Tuesday, 14/10/2014, which is the grades extracted when calculating the "honesty", and for the second application degrees, the researcher re-applied the test on Monday, 21/10/2014, with a difference of time (7) days between the first application and the second application. Table (4)

**Table (4)**  
**The correlation coefficients between the first and second applications in the IQ test N = 10**

variables	Measurement unit	Implementation first		Implementation second		correlation
		mean	s.d	mean	s.d	
IQ test	point	83,20	8,36	86,47	7,13	0.93

The value of "R" Driven at the level (0.05) = (0.57)

It is clear from Table (4) that the IQ test has a high degree of stability, The results revealed a correlation between

the first and second applications. **knowledge test: (Researcher preparation)**

After reviewing the many studies and researches that have been done in the field of gymnastics and learning about the steps of building the test and the scientific transactions and the method of formulating the questions used, the researcher analyzed the course of gymnastics for the second division girls, In light of this knowledge test were prepared in the initial form, where the test includes two types of questions are (right and wrong, multiple-choice) included "37" items Attachment (7), Were exposed to a group of experts in the field of arbitration and the training of gymnastics who are also faculty members exercise and gymnastics department, was also reference to the gentlemen experts in the judgment and teaching methods at the Faculty of Physical Education Department (University of Sadat City) Attachment (9), It was made necessary adjustments in the light of the opinion gentlemen experts, and based on it became included "34" items Attachment (8), where deleted 3 items were exposed again

they were identified by one degree for each question, and became so ready to conduct scientific transactions.

### **Scientific transactions for knowledge test:**

#### **Calculation of ease, difficulty and discrimination for testing:**

in order to calculate the coefficient of ease and difficulty of the test vocabulary, Attachment (10) was applied to a sample composed of (15) female students from the second division and from outside the basic study sample in order to evaluate each sentence and judge them in terms of their plainness and difficulty. 0.70) to accept the phrases as determined by most studies and practical references.

The results of the sample were arranged in descending order to determine the highest 27% and the lowest 27% to distinguish between the students in the upper group and the lowest in the lower group, According to most studies and references, the coefficient of discrimination (0.30) To accept phrases as shown in Table (5).

**Table (5)**

#### **The coefficient of ease, difficulty and discrimination of the terms of the knowledge test**

phrase	easy	Difficulty	identify	phrase	easy	Difficulty	identify
1	0.60	0.40	0.86	23	0.33	0.67	٠.٦٧
2	0.53	0.47	0.94	24	0.60	0.40	٠.٤٠
3	0.47	0.53	0.94	25	0.60	0.40	٠.٤٠
4	0.60	0.40	0.86	26	0.53	0.47	٠.٤٧
5	0.53	0.47	0.94	27	0.67	0.33	٠.٣٣
6	0.53	0.47	0.94	28	0.40	0.60	٠.٦٠
7	0.40	0.60	0.86	29	0.60	0.40	٠.٤٠
8	0.67	0.33	0.71	30	0.67	0.33	٠.٣٣
9	0.53	0.47	0.94	31	0.33	0.67	٠.٦٧
10	0.67	0.33	0.71	32	0.67	0.33	٠.٣٣
11	0.60	0.40	0.86	33	0.60	0.40	٠.٤٠
12	0.40	0.60	0.86	34	0.53	0.47	٠.٤٧
13	0.53	0.47	0.94				
14	0.47	0.53	0.94				
15	0.40	0.60	0.86				
16	0.67	0.33	0.71				
17	0.60	0.40	0.94				
18	0.53	0.47	0.94				
19	0.67	0.33	0.71				
20	0.53	0.47	0.94				
21	0.60	0.40	0.86				
22	0.47	0.53	0.94				

It is clear from Table (5) that the ease coefficients of the knowledge test in question ranged from (0.33 to 0.67) and the coefficient of difficulty ranged from (0.33 to 0.67) and the coefficient of distinction ranged from (0.71 to 0.94).

**Believe of the knowledge test of the selected skills "under discussion" Experts believe:**

The researcher relied on the opinions of experts in the field of arbitration and training

of gymnastics, as well as international players, as well as members of the faculty of the Department of Exercise and Gymnastics, as well as professors in the Department of Curriculum and Teaching Methods, Faculty of Physical Education, Sadat City University. Attachment (9)

**Internal consistency believe:**

The believe of the knowledge test was calculated using the believe of the internal

consistency between the phrase of each axis and the total score of the axis, as well as between the score of each axis and the total score of the test, on the survey sample which reached

(15) female students of the second division and the same research community and outside the same basic research.

**Table (6)**  
**The internal consistency between the degree of each phrase and the total sum is valid For the "question" axis represented by the phrase n = 15**

first question		first question		second question		second question	
The phrase number	Values "T"	The phrase number	Values "T"	The phrase number	Values "T"	The phrase number	Values "T"
1	*0.65	10	*0.74	20	*0.58	27	*0.83
2	*0.82	11	*0.65	21	*0.59	28	*0.65
3	*0.66	12	*0.50	22	*0.81	29	*0.72
4	*0.58	13	*0.74	23	*0.82	30	*0.67
5	*0.66	14	*0.85	24	*0.64	31	*0.66
6	*0.86	15	*0.81	25	*0.74	32	*0.62
7	*0.81	16	*0.58	26	*0.66	33	*0.66
8	*0.82	17	*0.63			34	*0.85
9	*0.81	18	*0.64				
		19	*0.61				

\* The value of the "T" is at the level of significance (0.05)= 0.57

It is clear from Table (6) that there is a statistical correlation between the score of each statement and the total score of the question "for the

axis", which indicates the correct representation of the expression for the axis "question".

**Table (7)**  
**Coefficient between the degree of each question and the total sum of the knowledge test n = 15**

knowledge test axes	coefficient value
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first question	*0.77
second question	*0.68

\* The value of the "T" is at the level of significance (0.05) = 0.57

There is also a statistical correlation between the score of each axis "question" and the total score of the cognitive test, which indicates the veracity of the "questions" of the test.

**C) believe knowledge test:**

The validity of the cognitive test was calculated by using the validity of the difference by finding the

significance of the differences between the intermediate (upper spring, the lower spring), After the researcher arranged the scores of the sample of the study (15) student descending order, and then find the significance of the differences between the average quadrants.

**Table (8)**

**The significance of the differences between the upper and lower spring in the knowledge test "under discussion" n = 1 n = 15**

variables	Measurement unit	upper spring		lower spring		Means difference	'T' Test
		mean	s.d	mean	s.d		
knowledge test	point	21,75	0.96	16.50	1,29	5.25	*21,00

\* The value of the table "T" at the level of significance (0.05) = 2.13

Table (8) shows that the calculated value of T in the knowledge test to the skills of the selected terrestrial movement instrument is "under discussion", indicating that the value of "T" is statistically significant, indicating that there are differences between the upper and lower spring Thus, the knowledge test of the skills of the selected terrestrial movement device is "under discussion" capable of distinguishing between

individuals, which confirms the believe of the test in measuring what was set up for it.

**• Stability coefficient of the knowledge test for the skills "under discussion ":**

The Stability of the knowledge test to the skills of the selected " under discussion " were calculated by applying the test and applying it to the survey sample, which reached (15) female students from the second group and outside the

basic research sample, The time interval between the two applications (7) was seven days and the first application on Saturday, 11/10/2014, which is the grades extracted when calculating the "honesty

coefficient", was re-applied on Saturday 18/10/2014 and the correlation coefficient between the two applications was found using Pearson equation, as shown in Table (9)

**Table (9)  
stability coefficient between the first and second application to knowledge test of the selected skills " under discussion" n = 15**

knowledge test	Measurement unit	Implementation first		Implementation second		correlation
		mean	s.d	mean	s.d	
total summation	point	19,47	2.02	21.80	2.08	0.65

\* The value of the "T" is at the level of significance (0.05) = 0.57  
Table (9) shows that the calculated "t" value in all the axes of the previous knowledge test indicates that the value of t is statistically significant, This indicates a correlation between the first and second applications and thus the stability of the tests.

calculated the experimental time, which is the time taken by the first student and the last student to answer the test in its final and then collected the time taken by the first student and the last student and divided by two to extract the arithmetic average of the test time is the right time to answer On the test.

**Determining the time required for testing:**

To calculate the test time in the final, the researcher

**Table (10)  
The mean to time of the knowledge test**

Experimental Time		Total	Appropriate time
The answer time for first student	Last Student		

20 min	30 min	50 min	25 min
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It is clear from Table (10) that the time to respond to the final knowledge test is 25 minutes.

**• Scientific transactions for selected physical tests:**

In order to ascertain the suitability of the research community, the researcher applied the selected physical tests on the sample of the exploratory study consisting of (15) students from the second group "outside the basic sample" in order to conduct the scientific tests for the physical tests (believe - stability).

**Experts believe:**

The researcher relied on the validity of physical tests on

the opinions of the experts in physical education from the departments of exercise and gymnastics and motor expression of the professors of the faculties of physical education (Al-Jazeera Girls, Sadat City University). Attachment (9)

**• believe of distinction in the comparative comparison method:**

The researcher used the believe of the distinction by means of a comparative comparison between the upper and lower springs of one group using the t-test.

**Table (11)**

**Significance of differences between the upper and lower spring in the tests used N = 1 n = 15**

variables	Measure unit	upper spring		lower spring		Means difference	'T' Test
		mean	St.d	mean	St.d		
Rebound run	sec	14,83	0,56	12,05	0,39	2,79	30,31
Fixed balance	sec	4,85	1,51	1,33	0,31	3,52	5,66
Moving balance	point	96,25	7,47	54,75	2,50	41,50	8,02
Reverse balance	sec	1,96	0,63	0,55	0,49	1,41	5,93

**Follow Table (11)**

**Significance of differences between the upper and lower spring in the tests used N = 1 n = 15**

variables	Measure	upper spring	lower spring	Means	'T'
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	unit	mean	St.d	mean	St.d	difference	Test
flexibility	C.m	86,00	7,79	53,25	3,59	32,75	11,78
Speed of response	sec	1,61	0,23	0,41	0,15	1,20	14,61
Shoulder speed	Rep	7,00	0,82	2,25	0,50	4,75	19,00
endurance of the arms	Rep	11,50	1,00	3,25	0,96	8,25	17,23

\* "T" table at a significant level (0.05) = 1.77

Table (11) shows that the calculated value of t is the statistical value of T, which indicates that the value of T is statistically significant. This indicates that there are differences between the upper and lower springs in favor of the upper spring. Thus, the intelligence test is capable of distinguishing between individuals, The test is believe in measuring what was set for it.

**Stability coefficient of selected physical tests "under discussion":**

The stability of the selected physical tests " under discussion " was calculated

according to the method of application of the test and its application to the survey sample which reached (15) female students from the second and outside the basic research sample. The interval between the applications was (7) Sunday, corresponding to 11/10/2014, which is the grades extracted at the calculation of "believe coefficient", and then re-applied on Sunday, 18/10/2014, also by the assistants, and was found correlation coefficient between the applications using the Pearson equation as shown in Table (12).

**Table (12)  
Stability correlation coefficient between the first and second application of the tests used n = 15**

variables	Measure unit	Implementation first	Implementation second	'T' Test
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		mean	St.d	mean	St.d	
Rebound run	sec	13,46	1,16	13,05	1,18	0,90
Fixed balance	sec	2,78	1,61	3,30	1,58	0,98
Moving balance	point	74,73	17,77	80,80	17,59	0,97
Reverse balance	sec	1,19	0,66	1,81	0,57	0,92
flexibility	C.m	69,40	13,69	72,87	13,63	0,98
Speed of response	sec	1,03	0,49	0,75	0,35	0,95
Shoulder speed	Rep	4,33	2,02	6,33	2,02	0,93
endurance of the arms	Rep	7,20	3,41	11,20	4,41	0,89

\* "T" of the table at a significant level (0.05) = 0.57

Table (12) shows that the calculated "t" value of t in all physical tests indicates that the value of t is a statistical function, This indicates a correlation between the first and second applications and thus the stability of the tests.

**-Scientific processes to test the skill level performance of the skills under discussion:**

In order to ascertain the suitability of the research community, the researcher applied the performance assessment form for the selected skills on the sample of the survey, consisting of (15) students from the second group "outside the basic sample" in order to conduct scientific tests to evaluate the performance

level of the chosen skills (believe - stability).

**- believe performance evaluation level test for selected skills:**

The researcher used the sincerity of differentiation to calculate the level of skill performance by applying it to two groups each with 15 students, The first group represents the students of the fourth group (the distinctive group) while the second group represents the students of the third group of the research society and outside the basic sample (the Undistinctive group) on Sunday, 11/10/2014 for the technical tests at the Faculty of Physical Education at Sadat University.

**Table (13)**  
**Significance of differences between the upper and lower spring**  
**spring In tests used n 1 = n 2 = 15**

variables	Measure unit	distinctive group		Undistinctive group		Means difference	'T' Test
		mean	St.d	mean	St.d		
Stand on your hands	point	2,25	0,50	0,50	0,58	1,75	7,00
Down on the chest	point	3,25	0,50	1,50	0,58	1,75	5,20
cartwheel tutorial	point	2,50	1,00	0,25	0,50	2,25	7,00

\* "T" table at a significant level (0.05) = 1.77

Table (13) shows statistically significant differences between the two distinct and non-distinguishing groups in the previous tests. The calculated values of T are greater than their tabular value at the level of (0.05) indicating that these tests can distinguish between students and this means sincerity These tests.

• **Stability test for performance assessment of selected skills:**

The performance evaluation form for the chosen

skills was calculated by applying the test and applying it to the survey sample which reached (15) students from the second and outside the basic sample. The first application was on Sunday, 12/10/2014, And the re-test was conducted on Sunday, 19/10/2014, and the correlation coefficient between the two applications was found using the Pearson equation as shown in Table (14).

**Table (14)**

**Stability correlation between the first application and the second application For tests used n = 15**

variables	Measure unit	Implementation first		Implementation second		'T' Test
		mean	St.d	mean	St.d	
Stand on your hands	point	1,40	0,83	2,47	0,92	0,87

Down on the chest	point	2,13	0,64	2,87	0,64	0,59
cartwheel tutorial		1,47	0,52	2,20	0,78	0,64

\* "T" of the table at a significant level  $(0.05) = 0.57$

Table (14) shows that the calculated "t" value in all previous tests indicates that the value of t is a statistical function, This indicates a correlation between the first and second applications and thus the stability of the tests.

• **Level of skill performance:**

The level of skill performance of the students in the skills in question (front roll, back wheel, handstand) was assessed by a committee of faculty members and arbitrators in the Egyptian Gymnastics Federation, which has 4 residents. On two degrees each skill was 5 degrees.

**Fifth: Time distribution of the proposed program:**

The researcher prepared the educational program using the "Multimedia Collaborative Learning Strategy", which included 9 educational units for 5 weeks, two units per week and the unit time of 90 minutes according to the study plan on Tuesday and Wednesday, (3) teaching skills to master and improve performance. Attachment (22)

**Suggested educational programs:**

The **researcher** used the multimedia collaborative learning strategy in the main part while teaching and applying the skills " under discussion ". The details of the unit are as follows:

- **The experimental group:**

**Warm up:** 10 minutes, in which the body is made up of muscles, ligaments, joints, blood circulation of work, whether in a variety of running, or a small game, or Gymnasium inhibitors, the combination of aerobics.

**General physical preparation:** 10 minutes, in which students are given training to develop the elements of general fitness, strength, speed, flexibility and agility and tolerance ..... etc.

**Physical preparation of the skill:** 10 minutes, in which exercises are given to develop the fitness elements of each skill being taught.

**The main part:** 55 minutes divided into 20 minutes to display the model and the educational progression of the selected skill using the educational media through the data show, 30 minutes for the

application and skill training. In this section, the students are divided into 9 groups and each group contains (5) Each student has a computer or laptop device loaded with the program prepared by the educational media. The roles are exchanged between them in performance. The role of the teacher is supervisory, organizational, and directing. Student inquiries (5) minutes, the teacher questions the students and discusses the common mistakes and the most important points that lead to the success of the skill and the working muscles and the technical group to which the skill and aids belong. Watching the best models and rewarding the best team as a team in terms of knowledge and skills.

**Calming:** 5 minutes, in which the students are given exercises to relax and calm the body's gradual return to normal.

**The Control group:**

**Warm up:** 10 minutes, in which the body is prepared of muscles, ligaments, joints, blood circulation of the work, whether it is a small game, or gymnastics contraindications, the combination of aerobics.

**General physical preparation:** 10 minutes, in which students are given training to develop the

elements of general fitness, strength, speed, flexibility, agility and carrying ..... etc.

**Special physical preparation:** 10 minutes, in which exercises are given to develop the fitness elements of each skill being taught.

**The main part:** 55 minutes divided into 25 minutes to display the model is often the performance of one of the students master of skill, and the educational hierarchy of the skill selected, 30 minutes of application and skill training, in which students perform the skill, and the teacher at this time to pass between students and correct errors to the extent that allows By the time of the lecture.

**Calming:** 5 minutes, in which the students are given exercises to relax and calm the body's gradual return to normal.

**Sixth: Exploratory Studies:**

•\* **Preliminary survey:**

The preliminary survey was conducted during Saturday and Sunday, 11, 12/10/2014. The objective of this study was to identify:

- Validity of tools and equipment used in tests and selection of assistants.
- The validity of the place for testing.

**The results of the survey showed:**

- Validity of instruments and equipment used in tests.
- The area of the Gymnasium is open for testing.
- The assistants were absorbed in how to conduct the tests and the conditions of their application and train them to register the data in the forms.

### **Second survey study:**

The second exploratory study was conducted on Saturday and Sunday, 18, 19/10/2014 on a sample of (15) female students of the second division of girls from the same research community and outside the same basic research to calculate the validity of physical and skill tests and cognitive achievement test. This study is:

- Calculation of scientific transactions (believe and Stability) of the tests used in the research.
- Identify potential errors during tests to avoid basic study.
- Application of some units.

### **The results of the survey showed:**

- Validate the tests used in the research.
- Availability of computers, data show and display for the application under discussion.
- The researcher noted joy and happiness during learning in a

new way on the faces of students.

### **• Seventh: Steps to apply the research: -**

#### **A) Tribal measurements:**

The **researcher** carried out tribal measurements of the experimental and control groups in the research variables (knowledge test - skills under discussion) by the arbitrators committee attached (19) during the Tuesday and Wednesday, 21, 22/10/2014.

#### **B) Implementation of the basic experience:**

The **researcher** applied the learning program using the multimedia collaborative learning strategy (the experimental group) and the traditional method of "verbal explanation and performance of the practical model" (for the control group) in the period from Tuesday 28/10/2014 to Tuesday, 25/11/2014 In accordance with the proposed educational program plan.

#### **C) post measurements:**

After the end of the period specified for the implementation of the basic experiment, the researcher carried out remote measurements of the experimental and control groups in the variables under discussion (knowledge test - the form of opinions and

emotional impressions) on Saturday, 29/11/2014, The post measurements of the experimental and control groups in the technical variables (19) on Tuesday, 2/12/2014. The researcher took into account that the post measurements are carried out under the same conditions as the per measurements.

**Eighth: Statistical Processes:**

The statistical treatment was:

- Descriptive statistics
- "measures of central tendency

standard deviation torsion coefficients"

-Coefficient of correlation to calculate the persistence of technical and knowledge test.

-T test.

- Spearman correlation coefficient.

-Percentage improvement by percentages.

**Presentation and discussion of the results: -**

**First: Presenting and discussing the results of the first hypothesis:**

**Table (16)**

**Significance of differences between the mean of two measurements (per-post) In the used tests For the control group N= 45**

variables	Measure unit	pre measurement		Post measurement		Means difference	'T' Test	Improvement ascriptions
		mean	s.d	mean	s.d			
Stand on your hands	point	2,82	1,13	3,42	0,75	0,60	2,90	%21,28
Down on the chest	point	2,51	1,14	3,31	0,76	0,80	4,41	%31,87
cartwheel tutorial	point	2,51	1,18	3,22	0,74	0,71	3,51	%28,29
knowledge test	point	19,27	1,89	30,84	1,48	11,58	48,05	%60,09

The value of "T" Driven at the level (0.05) = (1.68)

Table (7) shows that the calculated value of "T" in all the variables under discussion indicates that the value of T is a statistical function, This

indicates that there are differences between the (pre-post) measurements of the control group for the post measurement.

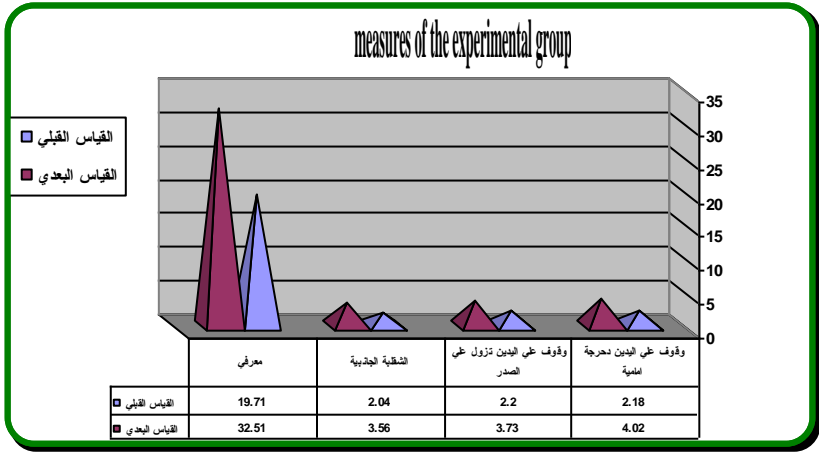


Figure (1)

**Indication of differences between the mean (pre - post) measures of the experimental group**

Table (16) and Figure (1) show statistically significant differences between the average of the tribal and the remote indices of the control group in the performance level of the selected technical variables and the level of knowledge test, Where the value of the table "T" (1.68) was at a significant level (0.05) less than the calculated value of "T" which was limited between (2.90, 3.51 and 4.41). The differences were also statistically significant in the cognitive test results, (48.05) is larger than the tabular value, This is illustrated in Figure (1) The results showed that the percentages of improvement in skills under discussion and knowledge testing were as follows descending order

(21.28%, 28.29%, 31.87%, 60.09%). For (Stand on your hands, Down on the chest, cartwheel tutorial, knowledge test) respectively.

The researcher attributes this result to the student's practical practice of the selected skills and the knowledge of the performance of each skill through the verbal explanation of the knowledge and information related to the skills and behavioral patterns that must be available to the student, as well as the model or practical presentation of the skill, with the student performing the skill and practice and accompanying This is to reinforce skill performance by parameter or correct errors, which helps to

be a clear picture of those skills.

It is clear that the traditional method (explanation and presentation) has a positive effect on the level of knowledge test and the level of performance of the selected skills " under discussion " These results are consistent with the results of many studies that indicate the impact of the traditional method on the level of knowledge test and skill in learners.

This is consistent with the results of the studies of **Rasha alHariri** (2012) (30), **Osama Abdul Aziz** (2001) (26), **Aisha Al-Fateh** (2001)

(5), **Ahmed Talha** (2006) (4), **Ashraf Fathi** (2010) (8), **Elsayd Marzouq** (2010) (10) that the traditional method that has an impact on the aspects of learning but at a lower rate.

Thus, the validity of the first hypothesis of the research hypotheses, which reads as follows: "There are statistically significant differences between the average of the (pre-post) measurements of the control group in the level of knowledge test and skill performance for the post measurement.

**Second: - Presentation and discussion of the second hypothesis: -**

**Table (17)**

**Significance of differences between the mean of two measurements (per – post ) In the used tests For the experimental group N= 10**

variables	Measure unit	pre measurement		Post measurement		Means difference	'T' Test	Improvement ascriptions
		mean	s.d	mean	s.d			
Stand on your hands	point	2,18	0,65	4,02	0,81	1,84	8,39	%84,40
Down on the chest	point	2,20	0,63	3,73	0,80	1,53	6,50	%69,55
cartwheel tutorial	point	2,04	0,60	3,56	0,62	1,51	6,33	%74,51
knowledge test	point	19,71	2,73	32,51	2,16	12,80	26,64	%64,94

The value of "T" Driven at the level (0.05) = (1.68)

Table (8) shows that the calculated value of "T" in all the variables under discussion indicates that the value of "T" is a statistical function. This

indicates that there are differences between the (pre-post) measurements of the experimental group for the post measurement.



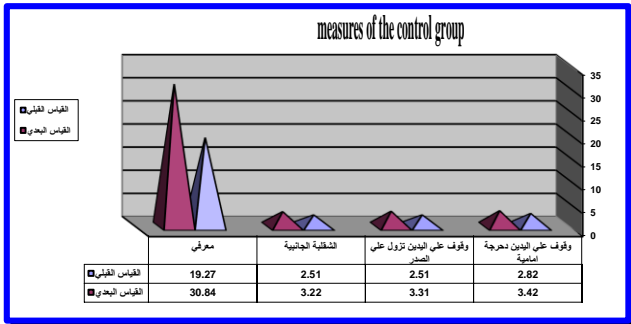


Figure (2)

**Indication of differences between the mean (pre - post) measures of the control group**

Table (17) and Figure (2) show statistically significant differences between the average of the tribal and the remote criteria of the experimental group in the level of performance level of the selected technical variables and the level of knowledge test, Where the value of the table "T" (1.68) was at a significant level (0.05), Was less than the calculated value of T. (6.33, 6.50, 8.39), The differences were statistically significant in the results of the cognitive test, and the computed value (26.64) was greater than the tabular value, This is illustrated in Figure (2) The results showed that the percentages of improvement in skills under discussion and knowledge

testing were as follows descending order (84.40%, 74.51%, 69.55%, 64.94%) (Stand on your hands, Down on the chest, cartwheel tutorial, knowledge test) respectively.

The researcher attributes these differences to the teaching method used with the students of the experimental group (cooperative learning supported by multimedia) and the advantages that contributed to the upgrading of the skill level and knowledge of the variables under discussion.

The use of multimedia contributes to the learner's access to information through the use of different senses. It makes the learning process more enjoyable and exciting

and attracts the attention of students. It also helps to provide time for individual differences and helps to evaluate his or her self-performance, With the educational objective to be achieved.

This is consistent with what **Angor wol Scott** (2005) (7), **Mohamed Zaghloul et al.** (2001) (20), **Rasha alHariri** (2012) (30), **Shaimaa Tawfiq** (2009) (32), The development of the emotional side of the individual, and the availability of self-learning and taking into account the individual differences between learners in both interests and abilities, and helps to acquire the learner some of the skills required more effectively than if relying on one medium, and enrich the interaction between learners and create more opportunities for thinking and encourage learners to focus their minds In the educational process, and make the educational unit more lively and increase the activity of learners Their affect with the teacher.

The researcher suggests that the use of multimedia-supported collaborative learning has contributed to

helping learners to understand the information and principles and the ability to apply them in practice and practice during the part of the applied activity in the lecture and transfer the impact of learning from the previous skill to subsequent skills, It provides opportunities for individual and group thinking within the group, develops creative ability and accepts the other viewpoint and contributes to the self-confidence of the learner and mutual trust among the learners as well as the positive direction of the material and also work with some team and the desire to improve the individual level to upgrade the team.

This is consistent with what was confirmed by **Abu Al-Naja Ezzeddine** (2000) (2) and **Khaled Thabet** (2009) (14) have shown that the advantages of collaborative method using multimedia contribute to the improvement and development of the educational process, These results are consistent with the results of the studies of **padifield Glenna** (2000) (29), **Noha Ahmed** (2001) (25), **Amr Al-Sayed** (2003) (6), **Osama Abdel Aziz** (2002)

(28), carr.M (2003) (9), kon koman (2003) (15), Ahmed Abdel Moneim (2005) (3), Nafin Hanafi (2005) (24), Yousef Mahmoud (2005) (34).

Thus, the second hypothesis, which states that there are statistically significant differences between the

average of the per and post measures of the experimental group, is achieved in the level of knowledge and skill performance in favor of post measurement.

**Third: Presentation and discussion of the third hypothesis:-**

**Table (18)**

**Significance of differences between the mean of the dimensional measurements in skill tests for the two groups N + 1 N 2 = 90**

variables	Measure unit	post measurements				Means difference	'T' Test
		experimental group		control group			
		mean	s.d	mean	s.d		
Stand on your hands	point	4,02	0,81	3,42	0,75	0,60	4,79
Down on the chest	point	3,73	0,80	3,31	0,76	0,42	3,87
cartwheel tutorial	point	3,56	0,62	3,22	0,74	0,34	2,10
knowledge test	point	32,51	2,16	30,84	1,48	1,67	6,77

The value of "T" Driven at the level  $(0.05) = (1.68)$

Table (18) shows that the calculated value of t is a statistically significant difference in all skill variables,

indicating differences between the two groups and for the benefit of the experimental group.

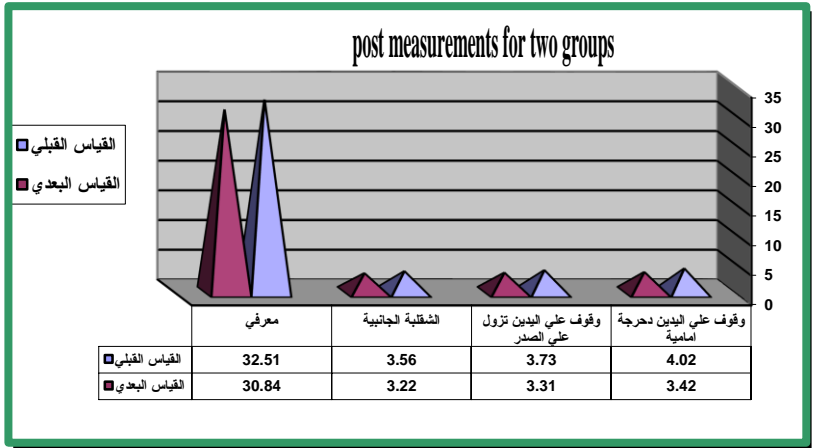


Figure (3)

**Mean the differences between the post measurements for two groups**

Table (18) and Figure (3) show statistically significant differences between the two dimensions of the experimental group and the control group and for the experimental group in the level of performance of the skills of (Stand on your hands, Down on the chest, cartwheel tutorial, knowledge test) Where the value of (t) calculated (4.79, 3.87, 2.10) respectively, which is greater than the tabular value (1.68), The differences were statistically significant in the cognitive test results and the computed values (6.77) were greater than the tabular values.

This means that the differences between the two post measurement in these variables for both control and

experimental groups for the benefit of the experimental group.

From the above, it is clear that the experimental group is superior to the control group in the skills (under discussion) and the level of knowledge test in the post measurement.

The researcher attributes these results to the use of multimedia-supported collaborative learning methods in the teaching of the experimental group and its positive impact on the variables under discussion and to a greater degree than the effect of the method of explanation and presentation used in teaching the control group.

Therefore, the **researcher** believes that the method of cooperative learning supported by multimedia contains the different knowledge and information of educational experiences and is linked to more than a sense of the senses of the learner and this is better and more effective and through which the delivery of information in the best images, and from this perspective, the use of multimedia (Picture- Text - movement - video) in the educational process makes it better, easier and faster and help to stabilize the educational experiences of the learner at the same time increase the effectiveness of the educational process.

The **researcher** attributed this progress to the fact that this method made the learner an effective role in the educational process during the planning, implementation and presentation, and left the freedom of choice for the appropriate mediator (image - text - video) and the effective impact on the formation of a good perception of the skill to be learned and As well as the ability to apply them better, in addition to self-reliance

sometimes and colleagues in the group at other times and the cooperative method of educational and educational advantages, unlike the students of the control group, which used in the teaching method of explanation and presentation, which did not have the same multimedia and adoption The teacher has to receive information and knowledge regarding educational activities.

This is in line with what **Muhammad Zaghloul et al.** (2001) (20), **Rasha alHariri** (2012) (30), noted in terms of multimedia skills in teaching the skills of educational activities such as attracting learners' attention and integrating them into the lesson, , Helps the learner to think logically and develop innovation and deepen the concept of evaluation, and gives the learner motivation and repetition of performance and view more than once and take into account individual differences, and address more than the sense of the learner and increase the degree of clarity and explanation.

The **researcher** also points out the difference in the improvement between the two

groups to the diversity of access to information and correction of errors of performance through (teacher - educational program - colleagues) for the experimental group and they work as a team and want to improve their level, unlike the control group and the only source of information and correct performance errors from During the teacher only.

These findings are consistent with the results of the studies of **Shaima Tawfiq** (2009)(32), **Badifelina Glena** (2000)(29), **Noha Ahmed** (2001) (25), **Amr El Sayed** (2003) (6), **Carr. M** (2003) (15), **Ahmed Abdel Moneim** (2005) (3), **Nafin Hanafi**

(2005) (24), **Yousef Mahmoud** (2005) (34).

Thus, the third hypothesis is achieved, which states that there are statistically significant differences between the mean of the two post measurement of the experimental and control groups in the level of knowledge test and skill performance for the experimental group.

**Fourth: Presentation and discussion of the fourth hypothesis:-**

Presentation of the questionnaire results and impressions of the experimental group towards the use of the cooperative multimedia learning strategy:

**Table (19)  
The views and emotional impressions of the female experimental group n = 45**

n	Estimated total	Relative weight	n	Estimated total	Relative weight	n	Estimated total	Relative weight	Estimated total	Relative weight
1	225	100%	11	225	100%	21	224	99.56%	—	—
2	214	95.11%	12	217	96.44%	22	225	100%	—	—
3	215	95.56%	13	225	100%	23	224	99.56%	—	—
4	51	22.67%	14	45	20%	24	222	98.67%	—	—
5	222	98.67%	15	224	99.56%	25	224	99.56%	—	—
6	222	98.67%	16	49	21.78%	26	224	99.56%	—	—
7	222	98.67%	17	224	99.56%	27	224	99.56%	—	—
8	220	97.78%	18	225	100%	28	225	100%	—	—
9	225	100%	19	25	100%	29	224	99.56%	—	—
10	218	96.89%	20	223	99.11%	30	225	100%	—	—
	2034			1882			2241		6157	91.22%

Table 19 shows that the relative weight of the responses of female students in the

experimental group reached 91.22%. This indicates a positive impact on the views

and emotional impressions of students as a result of the use of the cooperative multimedia learning strategy.

The researcher attributed the positive views of the students in the experimental group to the fact that the multimedia has increased the student's response, which led her to participate positively in the educational process and has stimulated meaningful self-activity by the students and thus enabled the students to follow the lessons actively and this is not available in traditional education.

The researcher is referring to the nature of multimedia, as it has a completely new and distinctive style that is presented to the students. This is also the testimony of the students themselves, also because they attract attention through the clear and interesting vision of the skills and concentration of the senses during the presentation, including color and colorful backgrounds, The program presented the motor performance of the skills and its vision at different speeds (fast - slow). This aroused the interest of the students and their readiness to absorb the

correct learning and focus in what is presented, and increased the passion and motivation of the students to do more to learn the skills, And this is consistent with the findings of some studies that the use of more than one sense during education has an effective impact on the learning process.

This is consistent with what **Mahmoud Anan, Mostafa Bahi** (2001) (16), suggests that internal motivation emanating from within the individual itself helps the individual to overcome the difficulties and obstacles that require more effort, courage, will or the aesthetic pleasure of agility The consistency of performance or the result of internal motivation emanating from the outside of the individual itself which raises and directs behavior towards practice or athletic performance.

These results are consistent with the results of **Osama Abdul Aziz** (2001) (26), **Ahmed Abdel Moneim** (2005) (3), **Fatma Basiouni** (2005) (11), **Marzouk** (2010) (10), **Rasha alHariri** (2012) (30), Which emphasized the

effectiveness of the use of multiple educational media in increasing the improvement of emotional views towards the use of these media in increasing the achievement of the various behavioral goals towards the activity and thus it is clear that the multimedia method was effective on the emotional side.

Thus, the fourth hypothesis of the research hypotheses, which provides for the variation of the views and impressions of the students in the experimental group using the cooperative learning strategy and multimedia in learning some skills on the ground movement device, has been validated.

#### **First - conclusions: -**

In light of the research objectives and hypotheses, the nature of the sample and the methodology used, and through the analysis of the results, it was possible to reach the following main conclusions:

1. The traditional educational program used with the control group improved the performance of the skills of (Stand on your hands, Down on the chest, cartwheel tutorial) with an improvement of (21.28%, 28.29%, 31.87%) Improved the knowledge

aspects associated with these skills with an improvement rate of 60.09%.

2- The integration strategy using multimedia collaborative learning applied to the experimental group led to improved performance of the skills of (Stand on your hands, Down on the chest, cartwheel tutorial) with improvement rates of (84.40%, 74.51%, 69.55), And improved the cognitive aspects associated with these skills with an improvement rate of 64.94% better than the traditional method used in the lecture.

3- The strategy of integration using multimedia collaborative learning has had a positive effect that the relative weight of the responses of female students in the experimental group reached 91.22%. This indicates a positive influence in the views and emotional impressions of the students.

#### **Recommendations: -**

Based on the findings of the **researcher** in her study and within the sample of the research, the **researcher** presents the following recommendations:

- Interest in the use of multimedia by using the



computer as a means to keep pace with the nature of this era.

- Pay attention to the development of educational programs using the strategy of collaborative multimedia learning to improve and develop the skills of various gymnastics so as to improve the performance of students of colleges of physical education.
- Using all that is new and innovative in the field of education technology to learn the motor performance of various sports activities.
- Training students to use different teaching methods, especially collaborative multimedia-supported learning.

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