

The Impact of Collaborative E-Learning on Some Basketball Skills in Physical Education for Middle School Students

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Introduction and Research Problem

Teaching and learning methods have advanced in the current era and have become in step with modern educational trends in the field of education in general and physical education in particular. Through these methods, the requirements of the educational process can be met, and through them, the desired educational goals in the field of physical education can be achieved in light of the ongoing scientific and technological development. Therefore, the prevailing trend in educational communities has been toward the use of collaborative learning models, reflecting the interaction that occurs between the teacher, his or her students, and learning resources.

This should be done with proper preparation in advance and the use of technological communication tools, in order to achieve the desired educational and pedagogical goals in the field of sports. The collaborative e-learning environment is one of the environments that allows the use of various Internet tools and capabilities to develop problem-solving skills. E-learning is a modern educational trend that is comparable to individual learning based on teachers, educational television, or textbooks in traditional educational models.

It is also comparable to the modern learning model based on educational software and multimedia CDs, through the optimal use of Internet tools to serve the collaborative learning environment, enabling students and teachers to participate in discussions, conduct dialogues, and exchange opinions and viewpoints on targeted academic topics in a positive and organized educational environment (1:65).

Collaborative e-learning is primarily based on social participation, which manifests itself during discussions and dialogues between learners. Learning takes place through the exchange of new information and concepts, based on learners' previous experiences, through collaborative work groups that bring them together. This creates a link between previous information and new information they possess. It also provides good learning opportunities for learners and allows them to exchange experiences through group collaboration in completing various tasks. It is distinguished from other types of group learning in that it gives learners the opportunity to share the authority and responsibility for learning between the student and the teacher (8:165) (7:24).

Chuang, H & Quo-Cheng, S (2011) state that the increasing use of the Internet has changed the traditional concept of education, as students are supported to collect data through the computer, and process information on the network as a source of learning materials, in addition to the teacher supporting the research process, while Schraw, G, Kent, J, & Kendall, H (2006) state that technology plays an important role in developing self-regulated learning in many ways, as it forms mental models, supports self-regulated learning, and helps in understanding complex topics (17: 978) (19: 126).

Thus, information and communication technology has become an important role not only in facilitating the daily lives of people, but also as an effective tool in promoting development in society, in addition to its use as an effective element in the educational field in general and in physical education in particular. After the world entered the digital age, the standard of progress for any country in the world has become

governed by its ability to keep up with the information revolution and understand the reality of its inevitability (4:7).

Through the work of some researchers in the field of supervising field training for students of the Faculty of Physical Education, and the work of others in the field of teaching physical education in middle schools, the researchers noticed that teaching physical education activities in general, and basketball in particular, faces many problems, the most prominent of which is the use of traditional teaching methods that rely on indoctrination, orders, and model performance in learning, and do not give the student opportunities for serious interaction in the educational situation.

The role of the learner when using this method is passive and merely a recipient, and the physical education teacher is the one who makes all the planning, implementation, and evaluation decisions in this method, and the channels for cognitive, skill, and emotional growth are almost low.

It was also noted that the role of technology in learning basketball skills is absent. From here, the desire grew among the researchers to search for a non-traditional educational method that relies on self-learning and modern technology, especially the Internet. It also develops the student's ability to search, investigate, and obtain information on his own from various and diverse sources, and works to spread the spirit of cooperation between him and his colleagues, stimulates his motivation towards learning, and develops within him positive attitudes towards learning basketball skills. Hence, the choice of collaborative e-learning via the web was made, as it provides all of the above. The researchers reviewed previous studies and scientific research that focused on collaborative e-learning, such as the study by Khaled Abu Al-Saud and Nihad Abdel Rahim (2023) (6), the study by Heba Allah Essam El-Din and Mohamed Shahat (2023) (15), the study by Ahmed Mohamed (2022) (3), and the study by Alaa El-Saeed (2022) (9). These studies concluded that collaborative e-learning was effective in improving cognitive achievement

and skill performance in hockey, swimming, handball, and high jump. However, the researchers did not cite studies in basketball. Hence, the importance and problem of this research emerge, as it attempts to study the impact of collaborative e-learning on cognitive achievement and skill performance in some basketball skills among middle school students. Research Objective: **The research aims to identify the impact of collaborative e-learning on the performance of basketball skills (holding and receiving the ball, chest pass, rebound pass, dribbling, and free throw) in a physical education lesson for middle school students.**

Research Hypotheses:

In light of the research objective, the researchers formulate the following hypotheses:

1. There are statistically significant differences between the average scores of the pre- and post-tests of the experimental group in the performance of the basketball skills, in favor of the post-test.
2. There are statistically significant differences between the average scores of the pre- and post-tests of the control group in the performance of the basketball skills, in favor of the post-test.
3. There are statistically significant differences between the average scores of the post-tests of the experimental and control groups in the performance of the basketball skills, in favor of the experimental group.

Terms used in the research

Electronic collaborative learning:

A system of collaborative and interactive processes that take place between teachers, students, and learning resources during the learning process. This is done with prior planning, using educational technology and its tools as a means of communication and exchange of ideas and experiences. This is done to accomplish a task or achieve shared educational goals, while organizing learning activities and interactions among students (12: 197).

Procedures methodology:

The researchers used a quasi-experimental approach due to its suitability for the nature of the research. The researchers used an experimental design for two groups, one experimental and the other control, following pre- and post-test measurements for both groups.

Community and Sample:

The research community included first-year middle school students at Matai Official Language School for the second semester of the 2022/2023 academic year, totaling (56) fifty-six students. The researchers selected a random sample of (40) forty students, representing a percentage of (71.4%) of the research community.

They were divided into two equal groups, each consisting of (20) twenty students: one experimental group, which applied collaborative e-learning via the web, and the other a control group, which applied the traditional method of (explanation and model performance).

The researchers also used (12) twelve students from the same research community and from outside the original sample, similar to it, to conduct the pilot study. (4) Four students with special circumstances and illnesses were excluded.

Normality distribution of sample members:

The researchers verified the moderate distribution of the members of the experimental and control groups under study in light of the following variables: growth rates (Age, Height, Weight), IQ Test Basketball , physical abilities, and skill performance. Table (1) illustrates this.

Table (1)

Mean, median, standard deviation, and skewness coefficient for growth rates and physical abilities, and skill performance for the sample members under study as a whole

(n = 40)

| Variables under investigation | | Unit of measurement | experimental and control group (n = 40) | | | |
|-------------------------------|--|---------------------|--|--------------------|--------|-------------------------|
| | | | Arithmetic mean | Standard deviation | Median | Coefficient of skewness |
| Growth rate | Age | Year | 12,35 | 12,00 | 0,49 | 2,15 |
| | Height | Cm | 154,85 | 153,50 | 3,31 | 1,22 |
| | Weight | Kg | 51,27 | 51,85 | 3,20 | 0,54- |
| IQ Test | | Degree | 43,35 | 29,00 | 1,31 | 1,49- |
| Physical Abilities | Hand Strength (Medicine Ball Throw) | Meter | 5,64 | 5,68 | 0,38 | 0,29- |
| | Coordination (Jumping Inside Numbered Circles) | Second | 12,89 | 12,95 | 0,45 | 0,39- |
| | Legging Strength (Broad Jump) | Cm | 129,90 | 129,50 | 3,11 | 0,39 |
| | Agility (Zig Zag Running) | Second | 30,14 | 30,13 | 0,55 | 0,04 |
| | Accuracy (Aiming at Overlapping Circles) | Degree | 6,15 | 6,00 | 1,53 | 0,29 |
| Basketball Skills | Handling the Ball | Degree | 1,38 | 1,50 | 0,51 | 0,74- |
| | Receiving the Ball | Degree | 1,40 | 1,50 | 0,50 | 0,60- |
| | Chest Pass | Degree | 1,15 | 1,00 | 0,54 | 0,83 |
| | Rebound Pass | Degree | 1,03 | 1,00 | 0,47 | 0,16 |
| | Dribbling | Degree | 1,25 | 1,50 | 0,55 | 1,36- |
| | Free Throw | Degree | 1,00 | 1,00 | 0,63 | 0,00 |
| | Overall Score | Degree | 7,20 | 7,50 | 1,45 | 0,62- |

Table (1) shows the following:

- The values of the skewness coefficients for the growth rates (age, height, weight), intelligence scale, physical abilities, and skill performance assessment form for the control and experimental groups (the primary sample) ranged between (-1.49: 2.15), i.e., they were within (± 3), indicating the normal distribution of the two groups in these variables.

Equivalence of the two research groups:

The researchers established equivalence between the two research groups in light of the following variables: growth rates (age, height,

weight), intelligence test, physical abilities, and skill performance. Table (2) illustrates this.

Table (2)

Significance of the differences between the average scores of the two pre-tests for the experimental and control groups on the variables under study (n1 = n2 = 20)

| Variables under investigation | | Unit of measurement | Experimental Group | | Control Group | | T-value | Significance level |
|-----------------------------------|--|---------------------|--------------------|-------------|---------------|-------------|-------------|--------------------|
| | | | M | Stdv. | M | Stdv. | | |
| Growth rate | Age | Year | 12,35 | 0,49 | 12,30 | 0,66 | 0,27 | Not significant |
| | Height | Cm | 154,85 | 3,31 | 154,65 | 2,23 | 0,22 | |
| | Weight | Kg | 51,27 | 3,20 | 50,71 | 4,33 | 0,47 | |
| IQ test | | Degree | 43,35 | 1,31 | 28,25 | 1,12 | 0,26 | |
| Physical Abilities | Hand Strength (Medicine Ball Throw) | Meter | 5,64 | 0,38 | 5,63 | 0,51 | 0,06 | |
| | Coordination (Jumping Inside Numbered Circles) | Second | 12,89 | 0,45 | 12,90 | 0,54 | 0,06 | |
| | Legging Strength (Broad Jump) | Cm | 129,90 | 3,11 | 129,75 | 4,34 | 0,13 | |
| | Agility (Zig Zag Running) | Second | 30,14 | 0,55 | 30,18 | 1,01 | 0,17 | |
| | Accuracy (Aiming at Overlapping Circles) | Degree | 6,15 | 1,53 | 6,20 | 1,88 | 0,09 | |
| Skill Performance Evaluation Form | Handling the Ball | Degree | 1,38 | 0,51 | 1,35 | 0,54 | 0,15 | |
| | Receiving the Ball | Degree | 1,40 | 0,50 | 1,38 | 0,46 | 0,17 | |
| | Chest Pass | Degree | 1,15 | 0,54 | 1,18 | 0,59 | 0,14 | |
| | Rebound Pass | Degree | 1,03 | 0,47 | 1,08 | 0,52 | 0,32 | |
| | Dribbling | Degree | 1,25 | 0,55 | 1,28 | 0,64 | 0,13 | |
| | Free Throw | Degree | 1,00 | 0,63 | 1,03 | 0,72 | 0,12 | |
| | Overall Score | Degree | 7,20 | 1,45 | 7,28 | 1,93 | 0,14 | |

Table t-value at a significance level of (0.05) = 2.042

Table (2) shows the following:

- There are non-statistically significant differences between the average scores of the two pre-tests for the experimental and control groups in growth rates (age, height, weight), intelligence scale, physical abilities, and skill performance. The calculated t-value is less than the table t-value at a significance level of (0.05) and a degree of freedom of (38), indicating the equivalence of the two research groups in these variables.

Data Collection Methods:**First: Equipment and Tools:**

1. A restameter for measuring height.
2. A medical scale for measuring weight to the nearest kilogram.
3. Computers.
4. Cones.
5. Floor markers.
6. Basketballs.
7. A basketball court.

Second: Tests

1. Raven's Colored Progressive Matrices Intelligence Test (Appendix).
2. The researchers used the John Raven Colored Progressive Matrices Test, a non-verbal test largely free of cultural influences for the age group of 5.5-68.4 years. It relies primarily on group application and can be administered individually under certain circumstances

The test consists of 60 items divided into three sections: "A, B, C, D, E." Each section includes 12 items, each consisting of a basic shape or pattern from which a specific part has been cut, followed by six sub-sections from which the examinee chooses the part that completes the blank in the basic shape. Colors were used as a background for the problems to make the test more interesting, clear, and engaging.

The correlation coefficient ranged from 0.86, and its self-reliability was 0.9. 2- Physical Tests (Appendix 4).

The researchers used a set of physical tests to measure physical abilities specific to basketball. Their correlation coefficients ranged between 0.95 and 0.98, with a reliability of 0.97.

3. Technical Performance Evaluation Form for the Skills Under Study (Appendix : 8) .

The researchers designed a form to evaluate the technical performance of the basketball skills under study. It was designed to correct the skill performance score out of (10) points, comprising (6) skills totaling (60) points.

The score was judged by three judges (Appendix (1)), with the skill score being the average of the three judges' scores. The form's correlation coefficients ranged between 0.92 and 0.98, with a reliability of 0.96.

Third: Electronic links to the collaborative e-learning lessons on the basketball skills under study:

1. Catch and Receive the Ball: <https://sites.google.com/view/webquest-basketball1/%D8%A7%D9%84%D8%AE%D8%A7%D8%AA%D9%85%D8%A9>
2. Chest Pass: <https://sites.google.com/view/webquest-basketball4/%D8%B5%D9%81%D8%AD%D8%A9-%D8%A7%D9%84%D9%85%D8%B9%D9%84%D9%85>
3. Bounce Pass: <https://sites.google.com/view/webquest/%D8%A7%D9%84%D8%B5%D9%81%D8%AD%D8%A9-%D8%A7%D9%84%D8%B1%D8%A6%D9%8A%D8%B3%D9%8A%D8%A9> .
4. discussion: <https://sites.google.com/view/webquest-basketball5/%D8%B5%D9%81%D8%AD%D8%A9-%D8%A7%D9%84%D9%85%D8%B9%D9%84%D9%85> .
5. Free Throw: <https://sites.google.com/view/webquest-basketball2/%D8%A7%D9%84%D8%B5%D9%81%D8%AD%D8%A9-%D8%A7%D9%84%D8%B1%D8%A6%D9%8A%D8%B3%D9%8A%D8%A9>.
6. Some Legal Rules of Basketball: <https://sites.google.com/view/webquest-basketball6/%D8%B5%D9%81%D8%AD%D8%A9-%D8%A7%D9%84%D9%85%D8%B9%D9%84%D9%85>.

Procedures for Implementing the Physical Education Lesson According to Collaborative E-Learning:

The researchers adopted the teaching of one of the basketball skills to the experimental group in the physical education lesson. To achieve this, the researchers implemented a set of procedures. The objectives were as follows:

1. Define the objective:

The objective was for the student to learn the basketball skill, the subject of the instructional unit, acquire the relevant knowledge and concepts, and perform the skill correctly.

2. Identify and compile sources for obtaining the educational material (content) .

The researchers reviewed numerous websites that provide diverse resources on the skill, the subject of the instructional unit. Appropriate content was selected from these websites, ensuring credibility and diversity, such as (written text explaining the skill, still or animated images, still or animated infographics, presentations, and video clips that address the skill's performance, explaining its technical points and educational steps). All of these contents should be comprehensive, engaging, and motivate students to learn.

3. Create a website using Google services, upload content, and add students from the experimental group to it.
4. Meet with students from the experimental group and explain how to access the website. They should set a specific time to log in, in conjunction with the teacher.
5. Log in at the specified time and ensure all students from the experimental group are present.
6. Explain the subject of the instructional unit, the importance of the skill, and learning management through sequencing. Viewing uploaded content.
7. Opening a discussion group with the students and answering their questions.
8. Students, accompanied by the teacher, head to the computer lab adjacent to the playground. The class begins with taking attendance, logging onto the website, and browsing the skill requirements specified according to the collaborative e-learning method. This period of (20) minutes of viewing and interaction is counted as part of the lesson's educational activity time.
9. Students head from the computer lab to the playground for a (5)-minute warm-up, followed by (20) minutes of physical preparation, followed by a (40)-minute practical activity, and then a (5)-minute closing session, totaling (90) minutes of lesson time (Appendix (14)).
10. Members of the control group perform the same skill learned and the same content using the traditional teaching method and for the same time, according to the distribution: (5) minutes warm-up, (20) minutes of physical preparation, (20) minutes of educational activity, (40) minutes of practical activity, and (5) minutes of closing session, totaling (90) minutes (Appendix (14)).

Research Implementation Steps:**pilot Study:**

The researchers conducted a survey study on a sample of (12) students from the research community and outside the original sample, from Sunday, October 2, 2022, to Thursday, October 6, 2022. The study aimed to conduct scientific procedures for data collection methods and ensure their suitability for the research.

Pre-test:

Pre-test was conducted on the two research groups from Sunday, October 9, 2022, to Monday, December 10, 2022, on the variables (skill performance evaluation form) under study.

Main Experiment:

After completing the pretest, the researchers conducted the main experiment on the experimental and control groups. The experiment took place from Tuesday, October 11, 2022, to Thursday, December 28, 2022. The experiment consisted of one study unit per week for a period of (6) weeks, as follows:

- One of the researchers taught the basketball skills to the experimental group using the collaborative e-learning method. He also taught the control group using the established method (explanation and model performance).
- The research experiment consisted of one study unit per week, with the duration of each unit being (90) ninety minutes.

Post-test:

The researchers conducted the post-test immediately after completing the experiment for the experimental and control groups on the variables (skill performance evaluation form) under study. The post-test was conducted from Sunday, December 11, 2022, to Monday, December 12, 2022, using the same method and under the same conditions as the pre-test.

Statistical Methods Used:

The researchers used the following statistical coefficients:

- Arithmetic mean.
- Skewness coefficient.
- Median.

- Correlation coefficient.
- Standard deviation.
- T-test.
- Percentage.

The researchers settled on a significance level of 0.05. They used SPSS to conduct statistical analyses.

Presentation and Discussion of Results:

To achieve the research objective and hypotheses, the results will be presented, interpreted, and discussed as follows:

- 1. Significance of the differences between the mean scores of the pre- and post-tests of the experimental group in the performance of the basketball skills under study.**

Table (3)
Statistical Significance of the Differences between the Mean Scores of the Pre- and Post-tests of the Experimental Group in the Performance of the Basketball Skills Under Study (n = 20)

| Physical Abilities | Unit of measurement | Experimental Group | | Control Group | | Average Difference | T-value | Percentage Improvement |
|--------------------|---------------------|--------------------|-------|---------------|-------|--------------------|---------|------------------------|
| | | M | Stdv. | M | Stdv. | | | |
| Handling the Ball | Degree | 1,35 | 0,54 | 6,58 | 0,88 | 5,23 | 29,12 | 387,41% |
| Receiving the Ball | Degree | 1,38 | 0,46 | 6,90 | 1,14 | 5,52 | 24,88 | 400,00% |
| Chest Pass | Degree | 1,18 | 0,59 | 6,65 | 1,24 | 5,47 | 22,89 | 463,56% |
| Rebound Pass | Degree | 1,08 | 0,52 | 6,53 | 0,94 | 5,45 | 29,52 | 504,63% |
| Dribbling | Degree | 1,28 | 0,64 | 6,50 | 0,87 | 5,22 | 33,51 | 407,81% |
| Free Throw | Degree | 1,03 | 0,72 | 6,80 | 1,37 | 5,77 | 19,24 | 560,19% |
| Overall Score | Degree | 7,28 | 1,93 | 39,95 | 3,92 | 32,67 | 45,95 | 448,76% |

Table t-value at a significance level of (0.05) = 1.734

Table (4) shows the following:

- There are statistically significant differences between the mean scores of the pre- and post-tests of the control group in the performance of the basketball skills under study, in the direction of the post-test, as

the calculated t-value is greater than the tabular t-value at a significance level of (0.05).

- The percentage improvement rates between the pre- and post-tests of the control group in the performance of the basketball skills under study ranged between (387.41%: 560.19%), indicating the impact of the explanation method and the performance of the model in improving the skill performance in basketball for the second cycle of basic education students under study.

The researchers attribute this to the fact that, through the method of Clarification

and modeling, the teacher provides students with a set of knowledge and concepts specific to the basketball skills under study.

The teacher also explains the method of performing the skills under study, performs the model from Various angles, presents some educational tools, and mentions the cognitive aspects related to the performance. This repetition, therefore, led to progress for the members of the control group.

The researchers also attribute the improvement in the skill performance of the students in the control group in the basketball skills under study to the teacher performing a model of the skill and using some educational tools. The students see the model and develop a motor visualization of the skill performance. The students then attempt to imitate the model and perform the skill, with the teacher correcting errors and providing appropriate and timely feedback.

This leads to improved skill performance for the students. This is consistent with the results of studies by Ahmed Mohamed (2022), Khaled Abu Al-Saud (2023), and Heba Allah Essam El-Din (2023), whose most important findings indicated a significant positive impact for members of the control groups using the traditional method (explanation and model performance) on the skills under study (3:227), (6:178), (15:88). This is consistent with what Alaa El-Din Saleh (2021) states, stating that the traditional teaching method relies on explanation and lecturing on the part of the teacher, and listening and listening on the part of the learner.

This is also an educational approach in which educational tools are used (10:19). In this regard, Nawal Shaltout and Mohsen Homs (2017) and Magdy Aziz (2014) indicate that modifying learner behavior is linked to practice and drills, leading to adaptation to new situations.

This is what the method of explaining and modeling provides, as it allows the longest time of the educational unit for practical skill activity. This provides students with ample opportunity to learn the skill and emulate the model presented by the teacher, while providing guidance and direction to the students during performance, continuous correction of errors, and immediate feedback. Students perform the skill under study correctly (14:46) (11:35).

From the above, it becomes clear that the second hypothesis has been achieved, which states: "There are statistically significant differences between the mean scores of the pre- and post-tests for students in the control group in performing the basketball skills under study, in favor of the post-test".

2. Significance of the differences between the mean scores of the post-tests for the experimental and control groups in performing the basketball skills under study.

Table (5)

Statistical significance of the differences between the average scores of the two post-tests for the experimental and control groups in the performance of the basketball skills under study ($n_1 = n_2 = 20$)

| Physical Abilities | Unit of measurement | Experimental Group | | Control Group | | Average Difference | T-value | Percentage Improvement |
|--------------------|---------------------|--------------------|--------------------|-----------------|--------------------|--------------------|---------|------------------------|
| | | Arithmetic Mean | Standard Deviation | Arithmetic Mean | Standard Deviation | | | |
| Handling the Ball | Degree | 8,33 | 0,92 | 6,58 | 0,88 | 1,75 | 6,15 | %116,22 |
| Receiving the Ball | Degree | 8,65 | 1,05 | 6,90 | 1,14 | 1,75 | 5,04 | %117,86 |
| Chest Pass | Degree | 8,38 | 1,09 | 6,65 | 1,24 | 1,73 | 4,69 | %165,14 |
| Rebound Pass | Degree | 8,28 | 1,13 | 6,53 | 0,94 | 1,75 | 5,33 | %199,25 |
| Dribbling | Degree | 8,18 | 0,83 | 6,50 | 0,87 | 1,68 | 6,21 | %146,59 |
| Free Throw | Degree | 8,55 | 1,15 | 6,80 | 1,37 | 1,75 | 4,38 | %194,81 |
| Overall Score | Degree | 50,35 | 3,36 | 39,95 | 3,92 | 10,40 | 9,01 | %150,54 |

*Table t-value at a significance level of (0.05) = 1.684.

Table (5) shows the following:

- There are statistically significant differences between the mean scores of the two post-tests for the control and experimental groups in the basketball skill performance of middle school students in the direction of the post-test, indicating the impact of collaborative e-learning on the basketball skill performance of middle school students in the study group.
- The percentage differences in improvement between the two post-tests for the control and experimental groups in the variables ranged between (116.22: 199.25), indicating the impact of collaborative e-learning on the basketball skill performance of middle school students in the study group.

The teacher refines the learning process for students, as he plays the role of designer of the teaching situation and of collaborative e-learning, which provides reliable information, knowledge and content.

The teacher also plays the role of guide, mentor and organizer of the learning process during the teaching situation, as he is given the opportunity and time to observe and address weaknesses and strengths in his students. In this regard, Walid Salem (2011) states that the use of educational technology leads to an increase in the persistence of the impact of what students learn and its consolidation in their minds, which is reflected in the outcome of the learning process (16:27).

The researchers believe that the collaborative e-learning method has a greater positive impact than the explanatory method and model performance in teaching (basketball skills under investigation) to students in the second cycle of basic education (the research sample), as it meets the desires and needs of students through the many, varied and reliable sources of knowledge it provides, whether (written text - sequential still and moving images of the skill - still and moving infographics - video clips - and presentations).

It also stimulates their motivation towards learning by providing students with opportunities for self-learning and cooperative learning, performing most of the roles in the teaching situation and making most of the decisions, which increases their self-confidence and their appreciation of the importance of teamwork.

It also increases the permanence of the learning effect through the availability of knowledge sources for students, as they can refer to them and view them at any time they need them. This is consistent with the results of the study by: "Khaled Abu Al-Saud, Nihad Abdel Rahim" (2023) (6), the study by "Heba Allah Essam El-Din, Muhammad Shahat Abdel-Azim" (2023). (2023)(15), Ahmed Mohamed's study (2022)(3), and Alaa Al-Saeed's study (2022)(9), which concluded that collaborative e-learning

was effective in improving skill performance in hockey, swimming, handball, and high jump.

From the above, it becomes clear that the third hypothesis was achieved, which states, "There are statistically significant differences between the average scores of the two post-tests of the experimental and control groups in the performance of the basketball skills under study, in favor of the experimental group".

Conclusions and Recommendations

First: Conclusions

In light of the objectives and hypotheses of the research, the researchers reached the following conclusions:

1. The collaborative e-learning method had a significant positive effect on improving the performance of basketball skills among the experimental group.
2. The explanation method and model performance had a significant positive effect on improving the performance of basketball skills among the control group.
3. The collaborative e-learning method contributed to improving basketball skill performance more effectively than the explanation method and model performance.

Second: Recommendations

In light of the research results, the researchers recommend the following:

1. The necessity of using collaborative e-learning in teaching basketball skills to middle school students.
2. The necessity of incorporating the design and implementation of technological methods, including collaborative e-learning, theoretically and practically, into the curricula of colleges of education in general and colleges of physical education in particular.
3. The necessity of conducting other similar studies at different age levels and in other subjects.

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