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An educational approach using visual aids and its effect on learning some basic skills and movements in foil for beginners aged (13-15) years.

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Abstract

The research study comprised four chapters. The first chapter provided an introduction to the study, highlighting its significance and the role of educational technology, particularly in modern teaching methods and strategies. This chapter emphasized the importance of utilizing these methods to enhance learners' cognitive, motor, and physical abilities. Visual aids were discussed as critical tools for skill acquisition, along with the role of visual perception and the significance of the sense of sight in the educational process. The necessity of focusing on visual aids during teaching and training was underscored, especially through the use of images and other visual tools to improve learning outcomes. Additionally, the chapter explored the foil fencing game and its relevance to skill development, addressing the research problem, which identified weaknesses among the study sample and a lack of effective teaching methods for basic skills in fencing for beginners.

To address this gap, the researchers designed an educational curriculum incorporating visual tools and high-resolution images to teach fundamental fencing skills and movements with the foil weapon. The study also aimed to benefit beginners in specialized gifted centers. The researchers used the experimental method with two equal groups to achieve the research objectives. The study population consisted of 51 students from gifted schools in Al-Qadisiyah Governorate during 2022. The sample was selected from this population, ensuring homogeneity and equivalence between the two groups.

The third chapter detailed the research procedures, including identifying study variables, tests, and their scientific foundations. It also covered the exploratory experiment, preliminary tests, main experiment, and post-tests. The fourth chapter presented, analyzed, and discussed the findings of the study. Finally, the fifth chapter offered conclusions and recommendations based on the results obtained.

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1 - Definition of the research:

1-1 Introduction and importance of the research:

Recently, interest has increased in using technology in education based on the principle of equal opportunities in providing educational and educational services in a manner that keeps pace with the requirements of the era to bring out the best in them from mental, motor and physical abilities in learners, all of which led to the need to build and prepare educational methods that contribute to developing the capabilities of individuals to improve their skill level and advance them in society in general and the sports aspect in particular.

It is known that visual means are important methods in the learning process, as they are the main outlet for the information learned, so visual perception is an important aspect in the educational process, and since all athletes perceive their motor information through the sense of sight in addition to the other senses, it is necessary to focus on this sense during the education and training process by using various visual or pictorial means more effectively during education to exploit the greatest amount of vision effectively to convey the information that is intended to be conveyed in order to achieve the desired goals of the skill learning process in particular.

Therefore, the importance of the current research lies in using visual means in the field of motor learning, which can create a significant development, especially with regard to preparing educational situations in a way that stimulates the learner's motivations and leads him to the goal of the educational process, as the learning process is based on an important means of transferring knowledge and information from the teacher to the learner, and this means is the learning method that the more appropriate it is, the better and faster the learning process is done and with less effort.

Thus, the researchers find that diversifying education through the use of visual tools and means to teach basic skills in the fencing game is more effective in the skill learning process for the research sample members.

1-2-Research problem:

After the researchers reviewed the field in the gifted centers in Al-Qadisiyah Governorate, they found that there is a weakness in the performance of basic skills among the research sample members, which appeared clearly through the tests that were conducted before starting the research, which showed that there is a weakness in the skill performance in the fencing game. All of this prompted the researchers to delve into this experiment by preparing an educational curriculum using visual means to teach some basic fencing skills and movements using foil

fencing tools and visual aids (assistance) in which clear explanation and high-resolution images will be used. Thus, the research problem is summarized in the following question: Do educational visual tools and aids have an effective role in the process of teaching some basic fencing skills (foil fencing) to beginners at the Qadisiyah Center for the Gifted at the ages of (13-15) years.

1-3- Research objectives:

1- Preparing an educational curriculum using visual tools and means for beginners to teach some fencing skills in gifted centers.

1-4- Research hypotheses

1- There are statistically significant differences between the pre- and post-test of the experimental group (first) that learns with visual tools and media, in favor of the post-test.

2- There are statistically significant differences between the pre- and post-test of the group (second) that learns in the usual way, in favor of the post-test.

3- There are statistically significant differences between the post-tests of the first experimental group that learns (with visual tools and media) and the second experimental group that learns in the usual way in skill tests, in favor of the first experimental group test.

1-5- Research areas

1- Spatial area: The yard and playground of the Gifted Center, Qadisiyah Governorate Center.

2- Time frame: The period from 2/1/2022 to 4/1/2022

3- Human field: Beginner players in gifted centers aged (13-15) years for the year 2022.

1-6- Defining terms:

1- Educational visual tools and means:

They are those educational means that rely on observation and viewing, and they are abstract means as long as a person uses some of his senses in them and resorts to them when he wants to convey information or an idea in an educational situation without relying on direct experience such as practice, but rather relies on observation, and these means are cinematic films, models and illustrative images, all of these means bring us closer to reality to varying degrees.

Chapter Three:

3- Research Methodology and Field Procedures:

3-1 Research Methodology:

The researchers used the experimental method using the method of two equivalent experimental groups due to their suitability and the nature of the researcher's problem. Choosing the appropriate method for the nature of the research problem and its objectives is one of the necessary requirements, as it is "a method of thinking and working that the research relies on to organize, analyze, and present its ideas with the aim of reaching reasonable results and facts about the phenomenon that is the subject of the study."

3-2 Research community and sample:

The researchers defined their research community as gifted school students in the center of Al-Qadisiyah Governorate for the year 2022, numbering (51) students representing different age groups, while the researchers chose the research sample intentionally, which are beginner players aged 13-15 years, numbering (20) players from the research community, and the researchers divided the research sample into two groups, with (10) players for the first experimental group and (10) players for the second experimental group, after which homogeneity and equivalence were conducted for the two groups as shown in Table (1) and (2)

Table No. (1)

shows the homogeneity of the research sample individuals

No	Variables	Unit of measurement	Mean	Median	Standard Deviation	Skew	Coefficient of Variation
1	Age	Months	173.23	173	3.653	-0.458	2.1
2	Height	Cm	6. 251	6.51	4.553	-0.193-	2.9
3	Weight	Kg	52.324	52	6.722	-0.836	12.8
4	Visually minded	Degree	22.2	22.5	4.801	-0.499	21.6
5	Fencing grip	Degree	3.25	3	0.883	-0.452-	27.2
6	Advancement/regression	Degree	5	5	0.531	0.535	10.6
7	Movement (stabbing)	Degree	4	4	0.753	0.053	18.8

Table No. (2)

Shows the equivalence of the two research samples

NO	Variables	The first experimental group		The second experimental group		Calculated T value(*)	Significance
		middle	deviation	middle			
1	Age	173.4	1.320	172.5	Not Significant	0.653	Not Significant
2	Height	154.9	1.254	159.2	Not Significant	0.251	Not Significant
3	Weight	51.4	3.343	53.1	Not Significant	1.292	Not Significant
4	Visually minded	20.2	4.412	21.7	Not Significant	0.574	Not Significant
5	Fencing grip	3.04	1.521	4	Not Significant	0.216	Not Significant
6	Advanced and regressed movements	4.6	2.756	6.9	Not Significant	1.213	Not Significant
7	(stabbing) movement	3.7	2.532	4.3	Significance	0.314	Not Significant

(*)Compared with the tabular value of (2.10) at a significance level = 0.05 and a degree of freedom (1

3-3 Methods, tools and devices used in the research:

The step of preparing the methods and tools is one of the important steps in field procedures because it is "the means or method by which the researcher can solve his problem, whatever the tools, data, samples, devices ... etc." In order to reach scientific results with accurate credibility, researchers need tools, means and devices that help complete their research

The following is a presentation of the methods, tools and devices used by the researcher to complete his research:

3-3-1-Means:

Includes:

1- References and Arab and foreign scientific sources.

2- A form to determine the basic skills that enter into the main experiment

3-3-2- Tools:

Includes:

1. Legal foil, number 10
2. Measuring tape, length 10 m
3. Indicators, number 10
4 Tools Office

3-3-3-Devices:

Includes the following:

-1 Laptop, number 3.
2- Data show.
2- Electronic weight measuring device.
3- Length measuring tape.
4- Electronic personal calculator for statistical processing.
5- Wristwatch ((stopwatch.

3-4- Field research procedures:

3-4-1- Determining the basic skills in fencing (foil) used in the main experiment: The researchers identified the selected basic skills by preparing a form containing the basic skills in fencing and presenting it to a group of experts and specialists in the field of teaching and training fencing to determine the skills that will be studied in a manner that suits the nature of the research sample individuals, where the basic skills and movements and their type were placed in the questionnaire form, which was presented to the experts to express their opinion on the extent of their importance and suitability for the research sample. After collecting and emptying the forms, the researchers obtained a 100% acceptance rate for the skills (holding the foil, advance and retreat movements, and (stabbing) movement) that suit the age level of the research sample individuals.

3-4-2- Determining the performance evaluation method:

After identifying the basic skills, the researchers found that the process of evaluating skill performance is the most appropriate method for testing the skills under study. From this, the researchers resorted to choosing the video recording method for each skill and then The video was shown to a group of experts and specialists* in the sport of fencing by placing a set of movement details in a special form through which a score is set for the level of skill performance, if the scores are limited to (1 and 10).

3-5 - The exploratory experiment:

To avoid errors that may occur during the main experiment and after determining the basic tests for the research, the researchers conducted the exploratory experiment, which is "practical training for the researcher to stand on the negatives and positives that he encounters during the experiment to avoid them

in the future." It was conducted on a sample outside the main research sample, which numbered 5 beginner players from the Gifted School in Al-Qadisiyah on 2/1/2022 AD at (9 am) on (Tuesday), where the researchers, with the help of the assistant staff, conducted the application of the tests under study. The purpose of the exploratory experiment was to know the following:

1. Practical practice of planning and designing tests in the field.
2. Practical practice of how to record scores
3. Knowing the role of the assistant staff and their number.
4. Knowing the difficulties that the researcher may face during the main experiment.

3-6- Preparing the curriculum and visual aids:

The researchers resorted to preparing visual tools and aids, as the means and tools used during the educational process are not something additional that helps in explanation and clarification, but rather they are an integral part of the modern educational process in which the hands and senses must participate in order to be successful and appropriate to achieve the educational goal.

Visual aids are tools that facilitate the process of transferring educational material to the learner, and provide him with the information he needs to help him develop his athletic skills. They may generate in the learner a strong inclination and desire to learn, thus accelerating the learning process. They also play a role in extending the learner's memory to perform motor skills better. Thus, the researchers resorted to several steps to achieve this goal, including:

3-6-1-Preparing the educational curriculum

The researchers prepared an educational curriculum for the skills (under study) with all its details based on scientific foundations. Then, these educational programs were presented to a group of specialists in the field of fencing and motor learning to express their opinion on the validity of these educational programs, and to modify what they see as appropriate in terms of the time period for the programs and educational units in the field of teaching the game of foil.

The skill-based educational units were implemented on the two research groups, with (8) educational units for each experimental group, in (4) weeks, with two educational units per week for each group, and with a time of (45) minutes for each educational unit, divided into (10) minutes representing the preparatory section, which includes (general and special warm-up), (35) minutes for the main section, which includes (educational and applied parts), and (5) minutes for the final section, while the final section included (general calming exercises or small games, and dismissal). 3-7-Pre-tests:

Pre-tests are one of the procedures followed to obtain sound results from the research sample and are a means of evaluation in the various curricula and plans for all levels and age groups, as they play the role of a positive indicator that contributes to achieving the set goals and objectives ( ). In light of this concept, the researchers gave a quick idea of how to perform the tests before starting to perform them through explanation, presentation, and clarification, to increase the enthusiasm of the test takers and their excitement to participate with motivation to achieve the best results. After that, the skills (under study) were performed by the individuals of the research sample and photographed, as the tests were conducted over two days in the private yard of the Sports Talent Center in Al-Qadisiyah and at exactly (9 am) on (Sunday and Monday) corresponding to 6-7/2/2022, with one day for each of the two experimental groups.

3-8-Main experiment:

After completing the implementation of the pre-tests for the two groups and obtaining their results, the researchers, after providing all the requirements for starting to apply the educational curriculum to the two research samples, on Wednesday 2/9/2022 at the Gifted Center in Qadisiyah, with 8 educational units distributed over 4 weeks, with two educational units per week, ending on 3/20/2022.

3-8-Post-tests:

After completing the implementation of the educational curriculum according to the established timetables for conducting the post-tests, the researchers conducted the post-tests for both experimental groups, taking into account the circumstances related to video recording of the players' performance, represented by the place, time, tools used, and method of implementing the tests. With the aim of creating the same conditions as possible as in the pre-tests, over two days, one day for each group, as the first experimental group was on (Wednesday) corresponding to 3/23/2022, and the second experimental group was on (Thursday) corresponding to 3/24/2022.

Chapter Four

4- Presentation, analysis and discussion of the results:

This chapter deals with presenting, analyzing and discussing the results according to the data reached through the tests that were conducted, as shown below:

4-1- Presenting the results of the first hypothesis, which states: There are statistically significant differences between the pre-test and post-test of the experimental group that learns with visual tools and means, in favor of the post-

test. Table (3) shows the results of the pre- and post-tests of the skill tests in fencing (foil) for the first experimental group.

Table (3)

shows the arithmetic mean, standard deviation and the calculated (t) value for the skill tests (pre-, post-) for the first experimental group

Skills	Pre-test		Post-test		Calculated t value(*)	Significance of differences
	s-	±a	s-	±a		
Fencing grip	**3.04**	**1.521**	7.1	Moral	7.575	Moral
Advance and retreat movements	**4.6**	**2.756**	6.3	Moral	4.324	Moral
(stabbing) movement	**3.7**	**2.532**	6.4	Moral	5.571	Moral

(*) The tabular degree (2.26) at the degree of freedom (9) and below the

significance level (0.05) From Table (3) above, the results of the foil holding skill test showed that the calculated (T) value reached (7.575), which is greater than the tabular (T) value of (2.26) under the significance level (0.05) and degree of freedom (9). As for the advance and retreat skill test, the calculated (T) value appeared to be (4.324), which is greater than the tabular (T) value of (2.26) under the significance level (0.05) and degree of freedom (9). This indicates the presence of a significant difference in favor of the post-test. As for the results of the stabbing movement skill test, the calculated (T) value appeared to be (5.571), which is greater than the tabular (T) value of (2.26) under the significance level (0.05) and degree of freedom (9). This indicates the presence of a significant difference in favor of the post-test.

To know the percentage of development that will enhance the validity of the results reached by the researchers, the law of the percentage of development was used, as its percentage for the skill test of holding the foil weapon reached (57%), while the percentage of development of the movements of progress and retreat reached (27%), while the percentage of development for the stabbing movement test was (42%). Thus, all tests achieved a high percentage of development. As shown in Table (4).

Table (4)
shows the percentage of development for the first experimental group in the skill tests in the foil game

Skill tests	Pre-test	Post-test	**Difference between the two tests**	**Percentage of improvement %**
Fencing	**3.04**	7.1	4.06	%.57
Advance and retreat movements	**4.6**	6.3	1.7	%27
(stabbing) movement	**3.7**	6.4	2.7	%42

4-2- Presenting the results of the second hypothesis, which states: There are statistically significant differences between the pre-test and post-test for the group (the second experimental group) that learns in the usual way, in favor of the post-test. Table (5) and Figure (5) show the results of the pre-test and post-test for the skill tests in fencing (foil) for the second experimental group. Table (5) shows the arithmetic mean, standard deviation, and calculated (t) value for the skill tests (pre-, post-) for the second experimental group

Skills	Pre-test		Post-test		**Difference between the two tests**	Significance of differences
	s-	±a	s-	±a		
Holding the foil	**4**	**1.202**	5.3	3.439	2.921	Moral
Advance and retreat movements	**6.9**	**1.969**	7.2	4.342	0.629	Non-moral
(stabbing) movement	**4.3**	**1.443**	5.7	2.843	3.043	Moral

(*) The tabular degree (2.26) at the degree of freedom (9) and below the significance level (0.05)

Based on the data in Table (5), the results of the foil holding skill test revealed that the calculated (T) value was (2.921), exceeding the tabular (T) value of (2.26) at a significance level of (0.05) with (9) degrees of freedom. Regarding the advance and retreat skill test, the calculated (T) value was (0.629), which is lower than the tabular (T) value of (2.26) under the same significance level and degrees of freedom. This demonstrates a significant difference favoring the post-test results. Similarly, for the stabbing movement skill test, the calculated (T) value was (3.043), surpassing the tabular (T) value of (2.26) at a significance level of

(0.05) and (9) degrees of freedom, indicating a significant difference in favor of the post-test.

To know the percentage of development that will enhance the validity of the results reached by the researcher, the law of the percentage of development was used, as its percentage for the skill test of holding the foil weapon reached (25%), while the percentage of development of the movements of progress and retreat reached (04%). As for the test of the stabbing movement, the percentage of development was (25%). Thus, all tests achieved a high percentage of development. As shown in Table (6).

Table (6)

shows the percentage of development for the second experimental group in the skill tests in the game of the foil weapon

Skill tests	Pre-test	Post-test	**Difference between the two tests**	**Percentage of improvement %**
Fencing grip	4	5.3	1.3	%25
Advance and retreat movements	6.9	7.2	0.3	%.04
(stabbing) movement	4.3	5.7	1.4	%.25

4-4- Interpretation of the results:

By displaying Table (3), which shows the results of the tests in the skills under study for the first experimental group, significant differences appear between the pre- and post-tests in favor of the post-tests. The researchers attribute this to the optimal use of visual tools and means used in the study effectively by the researchers during the educational curriculum, such that they had a clear impact on the emergence of these differences between the pre- and post-tests of the skills. Therefore, we find that these tools and means helped greatly in creating learning among the sample members if "when implementing the curriculum effectively, the general performance of the student or (learned individual) improves greatly" . The researcher's keenness to distribute the educational units for the skills in terms of dividing time and the number of exercises contributed effectively to the learning of the sample members, and this was confirmed by (Al-Hila 1999), as the use of the time factor allocated to learning each of the selected skills had an effective impact on the learning process, as indicated by (Qarsham and Mustafa 2010). The nature of the educational exercises must be compatible with the time

allocated to them ( ). As for Table (5), which shows the results of the tests in the skills under study for the second experimental group, significant differences appear between the pre- and post-tests in favor of the post-tests. The researcher attributes this to the sample's ability to learn well, which appeared through the level of motor performance of the skills under study, and that the educational curriculum was formulated according to scientific methods in terms of the diversity of exercises, performance time, and appropriate repetitions that suit this category, which in turn reflects on the learning of the sample members, as (Al-Kazemi: 2002) sees that one of the natural phenomena of the learning process is that there must be development in learning as long as the teacher follows the steps of the sound foundations of learning and teaching. (This confirms that the visual means and tools represented by explanation, video presentation, and pictures create an atmosphere of enjoyment and excitement that contributed to increasing focus and positive interaction, as presenting the movements and exercises or what is related to them theoretically achieves the power of observation and attention to the sensory systems, facilitating learning the movements faster and permanently. If this diversity and excitement creates motivation in the learner, it contributes to making a great effort to perform The required skill or task and to be more interactive during learning or training for a long period. This is confirmed by the difference in the rates of development of basic skills between the two groups as shown in Table (4 and 6) if the rates of development appeared in favor of the first experimental group. From here we find that preparing educational situations in a way that stimulates the player's motivations leads to reaching the basic goal of the educational process. The more effective the exercises are in terms of the way they are presented and applied, the more they create a purposeful environment that facilitates the learners' ability to comprehend and perform the selected skills.

Chapter Five

Conclusions and Recommendations

5-1 Conclusions:

Through the results obtained by the researchers, they reached the following:

1. The educational curriculum with the prepared visual tools and means had a positive impact on learning and mastering skills.
2. The educational curriculum used with visual tools had a positive impact on learning and mastering skills and their development rates.
3. There was a clear superiority of the post-tests for the two groups in the selected skills except for the skill of progress and regression for the second experimental group.

4. The educational curriculum prepared by the researchers using visual tools and means recorded a development rate in teaching the selected skills ranging between (27% - 57%)
5. The educational curriculum in the traditional way prepared by the researcher using a sign language interpreter recorded a development rate in teaching the selected skills ranging between (04% - 25%)

5-2- Recommendations:

In light of the conclusions, the researchers recommend the following:
1. The necessity of using visual tools and means in teaching the basic movements and skills of fencing in schools for the gifted due to their role in raising the level of skill performance of learners.
2. The necessity of using new methods such as (self-education, e-learning,) to know their effect on learning some skills in other individual games.
3. Conduct similar studies for other weapons (the Arab sword and the fencing sword) other than those used in the current study.
4. Conducting similar studies on a sample of females in order to reach gender differences in the results and their practices of fencing (foil).

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Appendices

Foil Performance Evaluation Form
Name:
Date:
Signature:
Name of Evaluator:
Academic Degree:
Place of Work:

no	Variables	**Preparatory Section (3)**	**Main Section (4)**	**Final Section (3)**	**Total**
1	Weapon holding				
2	Advance and retreat movements				
3	Stab movement				