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The Effectiveness of the Blended Learning Strategy in Learning the Skills of Combined Attack with the Fencing Weapon for Students

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ABSTRACT

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Keywords:
Blended Education, Compound Attack Skills, Fencing Fencing Fencing.

This research aims to investigate the effectiveness of the blended learning strategy in developing the learning of composite attack skills with the shin weapon in the sport of fencing among the students of the third stage at the Faculty of Physical Education and Sport Sciences. The educational program was built based on the Biggs model with its three modes (superficial, deep, and achievementary) due to its role in organizing the learning process and motivating the student.

The researcher adopted the experimental method, and pre and post tests were conducted for the control and experimental groups. The results showed that there were statistically significant differences in favor of the experimental group, which indicates the effectiveness of the blended learning strategy in improving the performance of complex attack skills.

The research concluded that this strategy supports gradual understanding and practical application, and contributes to enhancing student motivation and developing their performance. The researcher recommended the adoption of blended learning in teaching complex skills, and training teaching staff to apply blended learning in practical courses

يهدف هذا البحث إلى تقصي فاعلية استراتيجية التعلم المتمازج في تطوير تعلم مهارات الهجوم المركب بسلاح الشيش في رياضة المبارزة لدى طلاب المرحلة الثالثة في كلية التربية البدنية وعلوم الرياضة. وقد تم بناء البرنامج التعليمي بالاعتماد على أنموذج بيجز بأنماطه الثلاثة (السطحي، العميق، التحصيلي) لما له من دور في تنظيم عملية التعلم وتحفيز الطالب.

اعتمد الباحث المنهج التجريبي، وتم إجراء اختبارات قبلية وبعدية للمجموعتين الضابطة والتجريبية. أظهرت النتائج وجود فروق ذات دلالة إحصائية لصالح المجموعة التجريبية، مما يشير إلى فاعلية استراتيجية التعلم المتمازج في تحسين الأداء مهارات الهجوم المركب.

خلص البحث إلى أن هذه الاستراتيجية تدعم الفهم التدريجي والتطبيق العملي، وتسهم في تعزيز دافعية الطالب وتطوير أدائه. وأوصى الباحث باعتماد التعلم المتمازج في تعليم المهارات المعقدة، وتدريب الكوادر التدريسية على تطبيق التعليم المتمازج في المقررات العملية

1- Definition of the research:

1-1 Introduction and Importance of the Research:

Education is one of the main pillars of the progress of societies and the building of their civilization, as it represents the most important means in the development of various sectors when it has the appropriate environment that ensures the integration of the role of the teacher and the learner. Among the fields of education, physical education occupies a prominent position due to its contribution to the development of students' motor and skill performance, especially in games that require high accuracy such as individual sports (Razzouki et al., 2005)..

Fencing is one of the games that requires mastery of complex attack skills that depends on the speed of response, high concentration, and accuracy in execution. Due to the difficulty of these skills, traditional methods in education may not be sufficient to achieve the required level of performance. This is where the importance of choosing an educational strategy that is able to combine theory and practice, and enhance the student's motivation towards learning (Al-Najjar, 2019).

Recent educational research has shown that blended learning, which integrates face-to-face and e-learning, is one of the most effective strategies in enhancing students' understanding and interaction within the educational environment. It allows students to receive theoretical content electronically and apply it in the field within an interactive practical environment, which contributes to the development of cognitive and motor skills simultaneously (Abdel Hamid, 2023; Abu Zeid, 2020).

Since the nature of composite attack skills in fencing requires intensive training and structured iteration that takes into account individual differences, the blended learning strategy offers effective solutions through supportive digital content, immediate feedback, and flexibility to scale according to each student's ability (Mutair, 2015). Previous experiences have shown that this strategy has a positive impact on physical and technical achievement in sports skill activities, providing an opportunity to try it out and evaluate its effectiveness in fencing.

Based on this, this research aims to study the effect of using the blended learning strategy in teaching the skills of compound attack with the shin weapon in the sport of fencing among students, through the application of a training program that combines e-learning and face-to-face, and measuring its impact on their skill performance.

1-2 Research Problem:

The basic skills of compound attack in fencing are complex skills that require high concentration, speed of response, and precise coordination between movements. Although educational institutions rely on traditional approaches to teach these skills, the results of students' field performance are still substandard, indicating a flaw in the teaching methods and methods used.

Through the researcher's observation and field experience in teaching fencing, it was found that the majority of students face difficulty in mastering complex attack skills, and that the traditional method does not achieve the required interaction or sufficient motivation. Hence, the need arose to employ modern educational methods that combine the theoretical and practical aspects, such as **the blended learning strategy** that integrates e-learning with direct education, and is considered one of the effective methods in developing complex motor skills and enhancing interaction and motivation among students.

1-2 Research Objective:

1. Uncovering **the Effectiveness of Blended Learning Strategy** in Learning Combined Attack Skills with Shotgun in Fencing among Undergraduate Students.
2. Detecting the differences between the results **of the pre- and post-tests** of the control and experimental groups in learning these skills.
3. Detect the differences between the two groups in **post-tests** and find out how the blended learning strategy is effective compared to the traditional method of improving the performance of complex attack skills.

1-3 Research Hypotheses:

1. The results of the tests showed that there were significant statistical differences between the results of pre-measurement and telemetry in the level of learning the skills of compound attack with the shish weapon, and these differences came in favor of the telemetry in both the control group and the experimental group.
2. The results of the telemetry also showed that there were statistically significant differences between the two groups, with the experimental group that underwent training based on blended learning strategy outperforming.

1-4 Research Areas:

- Human Field: Students of the third stage at the Faculty of Physical Education and Sport Sciences, University of Basra.

- Spatial Field: Fencing Hall at the Faculty of Physical Education and Sport Sciences, University of Basra

- Temporal Domain : Period from 30/01/2025 to 30/03/2025

2. Research methodology and field procedures:

2-1 Research Methodology:

In his study, the researcher relied on the experimental method using the design of two equal groups (one control and the other experimental), due to its suitability to the nature of the research problem and the achievement of its objectives. This method is one of the most accurate approaches in detecting the relationship between variables, through which the researcher makes an intentional change in the independent variable – which is the use of the blended learning strategy – in order to measure its impact on the dependent variable, which is to learn the skills of compound attack with the shallow weapon in the sport of fencing.

This approach requires careful control of the circumstances and factors influencing the two groups, and ensuring parity between the two groups before implementing the experiment.

2-2 Research Population and Sample:

The study population was determined from the students of the third stage at the College of Physical Education and Sport Sciences - University of Basra, which numbered (190) students. The sample was selected in a deliberate way, where the number of students reached (20) students from the (A and B) divisions, representing (10.52%) of the total original population.

The researcher was keen to achieve homogeneity and parity between the two groups in the variables of height and weight, in addition to the basic skills targeted in the research (numerical attack (1-2), numerical attack (1-2-3) and the drone attack). To verify this, the statistical "T" test was used, as the results showed that there were no statistically significant differences between the two groups in these variables.

The data in Table (1) show the results of the homogeneity and equivalence test, which confirmed that all the differences were insignificant at the significance level (0.05), indicating the convergence of the two groups prior to the implementation of the pilot program.

Table (1)
Demonstrates the homogeneity and equivalence of the control and experimental groups

Significance Level	Calculated T value	Experimental Group			Control Group			Measurement and Evaluation
		Divergence coefficient	on	Going to	Divergence coefficient	on	Going to	
Moral insignificance	0.61	0.897	1.532	170.75	0.981	1.680	171.20	Length/cm
Insignificant	0.34	1.795	1.320	73.560	1.698	1.254	73.845	Weight/kg
Insignificant	0.29	15.021	0.648	4.311	14.217	0.602	4.230	Numerical Attack (1-2)/Degree
Insignificant	0.37	18.186	0.812	4.465	17.738	0.772	4.354	Numerical Attack (1-2-3)/Degree
Moral insignificance	0.28	16.484	0.742	4.501	15.714	0.694	4.417	Circular Attack/Degree

The tabular value of the (T) test at the significance level of (0.05) and the degree of freedom (18) was 1.724

2.3 Means of Information Collection:
2.3.1 Means of data collection:
- Arab and foreign sources.
- Scientific observation.

2.3.2 Devices and Instruments Used:
- **Manual stopwatch** to measure time spent executing skills.
- **A dedicated fencing** arena that complies with academically approved specifications.
- **(9) Cheshire Weapons**, to ensure the continuity of training for all members of the sample without delay.
- **A tape measure** to be used to determine precise distances during exercises.
- **A medical scale** to measure the weight of students, within the data of the initial homogeneity of the sample.

2.4 Field research procedures
2.4.1 Identifying Research Variables:

In preparing the content of the educational program, the researcher based on the vocabulary of the fencing curriculum to be taught in the faculties of physical education and sports sciences at

the University of Basra, with a focus on the basic skills **of compound attack** with a shish weapon, which was chosen to be the focus of the application of the blended learning strategy.

The targeted composite skills have been identified as follows:

1. **Numerical Attack (1-2)**
2. **Numerical Attack (1-2-3**.)
3. **Circular Attack**

2.4.2 Technical Performance Evaluation:

In evaluating the offensive skill performance of students, the researcher relied on evaluating the performance of each skill individually, based on precise technical criteria, using an evaluation form designed for this purpose.

The videotaped performances were presented to **three referees who specialize** in fencing, who have academic and field experience. Evaluation forms were distributed to the referees, and the students watched the performance using a digital disc containing performance recordings.

Performance Specifications:
Each student is required to perform complex attack skills correctly and clearly from a motor and technical point of view.

Evaluation Mechanism:
Each skill is awarded **a score of (10)** distributed according to the following criteria:

- Fluid performance and movement consistency
- Performance timing and accuracy
- Skill Preparatory Section
- Main Skill Section
- Concluding section of the movement

2.4.3 Exploratory Experiment:

The researcher conducted a survey experiment on **30/01/2025** on a limited sample of the same research population. The experiment aimed to codify the training program used within the blended learning strategy, find out the appropriateness of the selected exercises for the students' level, determine the appropriate number of repetitions, as well as estimate the time required to implement each educational unit.
The experience also helped to adjust the timing of the electronic presentation of the content, and to follow up on the students' ability to interact with educational videos and practical application in the hall.

2.5 Field Experience:
2-5-1 Prerequisites: The researcher started implementing the pre-tests on **2/02/2025.**

2.5.2 Educational model used:

The researcher prepared an educational program using the blended learning strategy, which included a combination of electronic content (through recorded lectures, action videos, and interactive tasks via digital media) and practical application within the fencing hall. The exercises were organized into educational modules dedicated to teaching the skills of compound attack in the weapon, namely: numerical attack (1-2), numerical attack (1-2-3), and circular attack.

This strategy is considered one of the most effective methods in enhancing motivation and skill mastery, as it allows students to review the content theoretically and then apply it in the field, which enhances the consolidation of motor understanding (Abu Zeid, 2020; Abdel Hamid, 2023).

The implementation of the program extended from **3/02/2024** to **29/03/2025**, with **one session per week**, distributed in three sections: preliminary, major, and final. The program was planned to be compatible with the principles of interactive learning mentioned by Mohsen (2016) in his talk about modern learning styles based on motivation and diversity.

2.5.3 Post-tests: Post-tests were conducted on 30/03/2025

2.6 Statistical Methods

SPSS **software was used** to perform the statistical treatments necessary to analyze the research data. These treatments included calculation: (**arithmetic mean**. **Standard deviation**. **Coefficient of difference**. (v) test was used for associated and non-correlated samples)

3- Presenting, analyzing and discussing the results:

Table (2)
Shows the pre- and post-(v) values of the control group in the evaluation used

Significance Level	Calculated T value	Standard Error	Arithmetic mean		Evaluation Used
			Dimensional	Tribal	
Moral	3.735	0.543	6.080	4.050	Numerical Attack (1-2)/Degree
Moral	3.092	0.662	6.250	4.200	Numerical Attack (1-2-3)/Degree
Moral	2.892	0.702	6.130	4.100	Circular Attack/Degree

The tabular value of the test (T) at the significance level of (0.05) and the degree of freedom (9) was 1.833.

Table (3)
Shows the pre- and post-group and experimental values (v) in the evaluation used

Significance Level	Calculated T value	Standard Error	Arithmetic mean		Evaluation Used
			Dimensional	Tribal	
Moral	4.001	1.025	8.210	4.121	Numerical Attack (1-2)/Degree

Moral	4.976	0.812	8.360	4.312	Numerical Attack (1-2-3)/Degree
Moral	4.557	0.950	8.545	4.224	Circular Attack/Degree

The tabular value of the (T) test was at the significance level of (0.05) and the degree of freedom (9) was equal to 1.833.

Table (4)
Shows the dimensional values of (v) between the control and experimental groups in the evaluation used

Significance Level	Calculated T value	Experimental Group		Control Group		Evaluation Used
		on	Going to	on	Going to	
Moral	5.572	0.739	8.147	0.745	6.080	Numerical Attack (1-2)/Degree
Moral	5.013	0.918	8.067	0.745	6.250	Numerical Attack (1-2-3)/Degree
Moral	5.704	0.831	8.356	0.774	6.130	Circular Attack/Degree

The tabular value of the test (T) at the significance level of (0.05) and the degree of freedom (18) was 1.724.

By analyzing the results **of Table (2)** and **Table (3), it** is clear that there are significant differences between the pre- and post-measurements of both the control and experimental groups in learning the skills of compound attack with the shish weapon. This means that both educational methods—whether traditional or blended learning—contributed to improving the level of students in terms of skills. Qasim Lazam (2005) believes that the scientific organization of the educational curriculum leads to tangible progress in the cognitive and skill aspects of the student, if applied in a manner Objective and methodological (Qasem, 2005, p. 56).

According to the results **of Table (4),** statistically significant differences appeared in favor **of the experimental group** in all skills, which confirms the superiority of the blended **learning strategy** over the traditional method. This superiority is attributed to the way in which the educational program was implemented, in terms of integrating digital theoretical content with practical application, which provided students with an interactive learning environment based on scientific foundations that take into account individual differences and different educational styles, which was confirmed by Saad Mohsen (1996) in his emphasis on the importance of Gradual and organized scientific teaching planning under the supervision of specialists (Saad, 1996, p. 98).

This approach has helped to enhance the learner's motivation and deep understanding of complex skills, which is supported by the Biggs model, which Zaytoun (2004) described as an effective learning tool that helps to **build concepts** and correct misconceptions in the student (Zaytoun, 2004, p. 225).

On the other hand, the first stage of learning motor skills requires a teaching style based on **immediate feedback and meaningful repetition**, which is provided by the strategy of blended learning in practice, as Afaf Abdel Karim (1990) believes that the learner at the beginning of learning needs feedback after each attempt to correct his artistic performance (Afaf, 1990, p. 79).

Zahir Hashem Ismail (2002) emphasizes that performance consistency and evolution occur when careful gradual steps are followed based on the repetition of the correct performance and a focus on attempts (Zaher, 2002, p. 102), elements that were clearly present in the implementation of the current program.

Organizing the educational situation and breaking it down into interrelated stages, as the Biggs model does, gives the student greater opportunities to succeed and avoid wrong responses, and contributes to enhancing self-confidence and motivation (Mohamed Saad & Hanan Mohammed, 2003, p. 59), which is translated by the actual results of the experimental group in this research.

5. Conclusions and Recommendations:

5.1 Conclusions:

1. The results of the study showed that **the blended learning strategy** had a clear and positive effect on **raising the level of learning the skills of compound attack** with the shish weapon among students, compared to the traditional method, which confirms the effectiveness of this strategy in teaching complex skills that require sequential and gradual stages.
2. The blended learning strategy through its three modes (superficial, deep, and achievement) contributed to **enhancing students' motivation** towards learning, and providing a logical and integrated sequence for the acquisition of complex skills.
3. **5.2 Recommendations:**

1. The necessity **of adopting blended learning strategies** in teaching the skills of compound attack with the shish weapon, as it has an effective effect on improving motor and technical performance.

2. Emphasizing the emphasis on employing **learning styles in blended learning strategies** within students' educational programs, as they play a role **in raising the level of interaction and self-motivation towards learning.**

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Attachment (1)
Sample (from Educational Modules)
Week : First
Objectives of the Educational Unit: Learning Combined Attack Skills with a Shot Weapon Using a Blended Learning Strategy According to the Biggs Model
Credit: 1

Notes	Duplicates	Details & Exercises	Time	Unit Departments
Adopting the digital stimulus method at the beginning.		- Attendance Registration – General warm-up using a short on-screen training video (interactive media warm-up.)	15 min	Introductory Section
	2×10 per skill		85 minutes	Main Section
Focus on linking theoretical concepts with practice.		1. Interactive video presentation to explain the skills of compound attack (numerical attack (1-2), numerical attack (1-2-3), circular attack)	35 mins	1- Educational
Employing collaborative learning, and stimulating individual differences.		3- Executing skills in front of a mirror (skill + self-correction using personal video) 4- Performing skills on a fixed target, then on a moving colleague) Two stages 5- Group interactive exercises using role cards (trained student - executing student)	50 minutes	2- Applied

Linking learning to the home and promoting self-continuity.		Physical Cooling + Quick Self-Assessment (Digital Form) + Homework via E-Learning Platform	10 minutes	Concluding Section