

## The impact of error analysis and knowledge on students' ability to perform the left straight punch (head-torso) technique in boxing

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Received: 17/04/2025

Accepted: 27/06/2025

### Abstract

The present study aims to ascertain the efficacy of the error method. In addition to his expertise in teaching students the technique of the left straight punch (head-torso) in boxing, he possesses a wealth of knowledge in this field. Regarding the research issue, the learning method employed at Babylon University's Faculty of Physical Education and Sports Sciences for second-stage students (the traditional method) does not align with the needs of students in the learning process. It is imperative that an educational method be employed in individual games, most notably boxing, to address the errors made by learners during the learning process. Following a rigorous examination of the available evidence, the researcher concluded that the most effective approach to resolving the issue under discussion is to employ a method of error analysis and knowledge. The efficacy of this method is predicated on the fact that it provides students with sufficient space to observe the models presented to them. Furthermore, the process can be repeated at the user's discretion, allowing for the identification and correction of errors. In the present study, the researcher employed the experimental method, designated as one-group, due to its alignment with the research issue. Moreover, in addition to the sample selected by the researcher, the current research community consisted of students from the Babylon University, Faculty of Physical Education and Sport Sciences, second stage. The total number of students was 123, divided into three divisions (B, C, and D). Following the lottery, Division C was represented by the experimental research sample, comprising 20 students, which constituted 16.26% of the total. The exploratory sample included five students from Division D. The educational units were administered through the utilization of error analysis and knowledge, with one unit implemented per week on Monday for a duration of eight weeks.

**Keywords:** Error analysis and knowledge method, straight punch.

## **1-Introduction**

Boxing, an individual sport, plays a significant role in the education of its participants and learners. Participation in such sports enables individuals to engage in high-level competition, thereby offering tangible benefits to their physical and mental well-being. In essence, it is a sport that demands meticulous preparation and unceasing training, characteristics that indicate its classification as a high-calibre individual athletic pursuit. It is imperative to acknowledge the paramount necessity of maintaining optimal health in addition to the aforementioned considerations.

It has been demonstrated that boxing is an optimal sport for energy expenditure. A substantial body of research has been conducted on the subject, and the findings have consistently shown that individuals who engage in boxing activities experience a notable decrease in energy levels, which in turn leads to a marked improvement in their mood and social skills.

A salient skill in her repertoire is the ability to execute a direct blow with the fist and arm, extending in a linear trajectory. The arm is considered to extend along its entire length, from the initiation of the fist to the shoulder joint. From a mechanical standpoint, it can be characterized as a motor system integrated into a unified structure. Of these combinations, the progression of the fist with the straightening of the arm is of utmost importance. The straight punch is one of the most frequently employed punches in combat, owing to its proximity to the opponent, its simplicity in execution, and its capacity to halt an opponent's offensive maneuver. Its effectiveness in throwing punches from extended distances is contingent upon the arm's length and linearity.

Boxing is a sport that provides an environment for students to exercise autonomy in their thinking, actions, and creativity. This pedagogical approach prioritizes the student or learner as the focal point of the instructional activity, whereby a model is observed and the error therein is analyzed. In addition to the instructor's expertise, the student's application of this knowledge during the learning process of the straight punch to the head and torso is noteworthy.

Therefore, the significance of the research is evident, as the methodology employed for error analysis is designed to enhance the learners' skill performance. This objective is achieved by introducing elements of excitement and innovation to the learning environment. This phenomenon has been demonstrated to accelerate the learner's desire to learn and achieve the desired goals.

### **1-1Research Problem**

The researcher, who serves as a specialist teacher of boxing at this college, has observed that the method used is deficient. The method does not reach the requisite level of quality in the educational process, particularly in the context of boxing, which is an individual sport that demands a high level of dexterity. This deficiency leads to numerous errors being made by students during the learning process. Consequently, the researcher identified a need to develop a method that addresses these errors and enhances the learning process. Through extensive research and a review of numerous strategies and methods, the researcher determined that error analysis and knowledge-based methods can effectively address these issues.

### **1-2 Research Objective**

1- To identify the effectiveness of using the error method and its knowledge in learning the performance of the left punch (head-trunk) in boxing for students.

### **1-3 Research Hypothesis**

1- The researcher hypothesized that there are significant positive differences in the research tests in favor of the post-test.

### 1-4 Research Domains

1- Human Domain: (University of Babylon) College of Physical Education and Sports Sciences / Second Stage 2023-2024.

2- Temporal Domain: From 22/10/2023 to 25/12/2023.

3- Spatial Domain: The special boxing hall.

### 2- Research Methodology and Field Procedures

#### 2-1 Methodology

The most suitable method for the research sample and the nature of the problem is the experimental method.

Table (1): The steps of the research

The Collection	First step	Second Step	Third Step	Fourth Step
Experimental Group	Pre-test	Apply the method of error analysis and knowledge	Post-test	The difference between the pre- and post-tests of the group

#### 2-2 Population and Sample:

The participants in the research population were second-year students from the College of Physical Education and Sports Sciences at the University of Babylon, totaling (123) students distributed across three sections (B-C-D). A random selection (lottery) was conducted to choose section (C), which consisted of (20) students representing the experimental group, accounting for (16.26%) of the total. The exploratory sample included (5) students from section (D), selected in the same manner, as shown in Table (2).

Table (2): The exploratory sample.

No.	Population/Sample	Total Number	Ratio
1	Research Community	123	%100
2	Experimental sample	20	%16,26
3	Exploratory Sample	5	4.06%

#### 2-3 Devices and Information Collection Used in the Research

##### 2-3-1 Devices

- Boxing hall
- Computer (Dell)
- Camera (Fujifilm)
- Boxing gloves (40 pairs)
- Boxing ring
- Data show device (1)

##### 2-3-2 Means of Information Collection

- Arabic and foreign sources and references
- Personal interviews
- Supporting the work team
- Testing and measurement
- Observation

#### 2-4 The Test Used in the Research

##### 2-4-1 Skill Performance Test (Straight Punches)

- Boxing Test with a Partner:

Purpose of the Test: To measure the performance level of straight punches.

Materials Used: Stopwatch, 4 pairs of boxing gloves, legal boxing ring, scoring sheet, whistle to signal the start and end of the round, colored tape (red and blue).

### **Performance Description**

Two boxers stand in their respective corners. The match begins at the referee's signal, and the competition takes place between the two, performing only straight punches for a duration of 1 minute and 30 seconds.

Scoring: 1 point is awarded for each correct punch.

### **2-5 The Exploratory Experiment**

The exploratory experiment was conducted on five students from the second stage of the research community outside the sample on Sunday, October 22, 2023. The objective of the experiment was to ascertain the teacher's ability to apply the method used and whether it suits the research sample, as well as their ability to apply the research vocabulary. The experiment also sought to check the devices and tools used and to avoid errors and obstacles that the researcher may face.

### **2-6 Pre-Test**

After conducting the exploratory experiment and ensuring the safety of the devices and tools, as well as the readiness of the research sample, the researcher delivered an introductory lecture on the skill and error analysis technique. On Monday, October 23, 2023, the pre-test was conducted on the research sample in the boxing hall at the College of Physical Education and Sports Sciences, University of Babylon. The researcher and the assisting team worked to establish all conditions to create a similar environment for the post-test.

To evaluate the performance level, two experts with relevant qualifications and refereeing certifications were consulted. They assessed the skill performance level of the left straight punch for each student in the sample.

### **2-7 The Main Experiment**

The initiation of the primary experiment occurred on Monday, October 30, 2023, and was scheduled to conclude on December 18, 2023. The experiment was designed to be conducted on a weekly basis, with a total of eight weeks allocated for its completion. The experimental unit was structured to have a duration of ninety minutes, which was divided into three segments: a preparatory phase of twenty minutes, a main phase of sixty minutes, and a concluding phase of ten minutes.

The researcher prepared video clips and pictures that included the parts of the skill, with accompanying explanations. The researcher began the experiment by explaining the lecture and demonstrating the skill in front of the students.

The researcher showed video clips to the experimental group, with assistance from the assistant team. This was achieved by displaying the videos on the wall of the designated room, thereby ensuring that the members of the research sample could view them. Performance was then observed to determine the effectiveness of this method. The efficacy of the straight punch technique was ascertained through meticulous observation, wherein the performance and learning of the aforementioned technique were methodically identified.

The instructor elucidated and demonstrated the punch technique in front of the experimental group, thereby facilitating continuous observation. This observation process was instrumental in identifying the optimal learning method for the subject technique under investigation. The instructor's guidance encompassed both the explanation and the execution of the technique, thus ensuring a comprehensive and effective learning experience. Additionally, a model of one of the heroes of Iraq was showcased, further reinforcing the subject matter and augmenting the learning environment. The students observe the performance of the player through the projector (dacho).

In this case, the performance is displayed in various speeds and from different vantage points, highlighting common errors in the execution of the skill. Subsequently, the students apply the

skill and receive feedback from the assistant staff to correct their errors and optimize their learning.

### The Post-Test 2-8

After completing the procedures for implementing the main experiment, the post-test was conducted on Sunday, December 25, 2023, in the boxing hall at the College of Physical Education and Sports Sciences / University of Babylon, on the research sample by the assisting team, creating the same conditions that were present in the pre-test .

### 2-9 Statistical Methods

The statistical program (SPSS) was used .

### 3-1 Presentation of Results and Discussion:

Table (3): The results of the experimental group.

No .	Skills	Sample Number	Pre-test		Post-test	
			Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation
1	Straight punch left	20	2.778	0.286	6.513	0.539

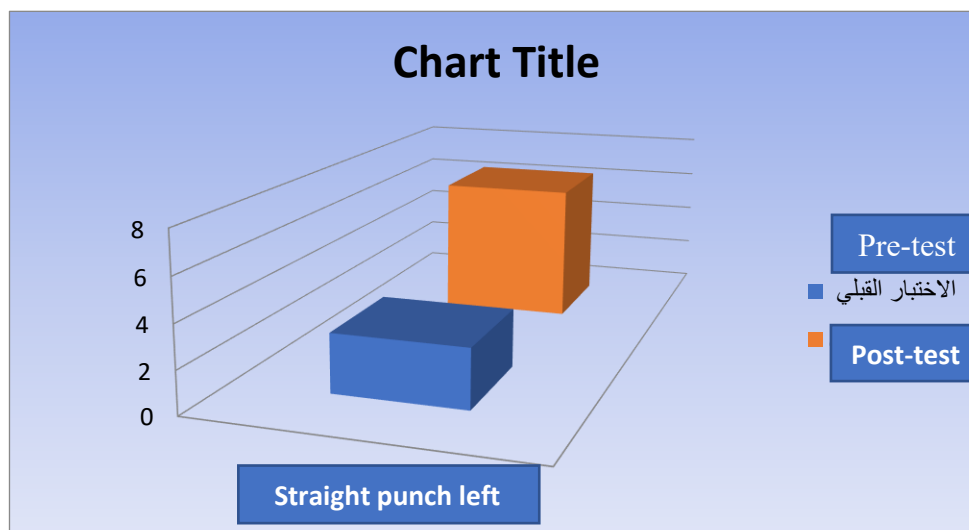


Figure (1): The differences between the pre-test and post-test.

Table 4. The results of the post-tests (control-experimental).

No.	Variables	N	S F	A f	H	Deg. freedom	Calculated T value	Significance level	Indication Type
1	Straight punch left	20	3.735	0.442	0.127	19	29.253	0.000	Moral in favor of the dimension

### 3-2 Discussion of results

As illustrated in Table 3, a statistically significant discrepancy emerges between the pre-tests and post-tests in the defence skill test, with the post-tests demonstrating superior performance. This indicates an enhancement in the level of the sample members according to the educational units. The researcher hypothesizes that this phenomenon can be attributed to the novice status of the subjects in the study, who are recent initiates in the domain of boxing. This suggests that

any novel learning or training experienced by these individuals serves to augment their performance, thereby contributing to the observed outcomes.

This is evidenced by the score of each individual, as it shows the development in the performance of the skill to be learned in the first post-test. This assertion has been reiterated by numerous experts and specialists in the domain of sports.

As Talha et al. (2006) emphasize, when a group of novices is initiated into the study of a novel mathematical skill, the learners will exhibit disparate levels of proficiency during the initial stages. This disparity can be categorized into three distinct groups: those who require a protracted period to mastery, those who demonstrate rapid progress, and those whose proficiency fluctuates between the two aforementioned categories.

The presentation of the results indicated the presence of statistically significant differences between the pre- and post-tests in the research variables, with the post-tests demonstrating superior performance. This indicates an enhancement in the level of the sample members.

The researcher ascribes this outcome to the efficacy of the error analysis method that was meticulously designed according to self-learning principles. This method effectively simulates the proficiency levels of students in acquiring the learning processes associated with the left straight punch skill, exhibiting variations in the proportion of students demonstrating each level of proficiency.

The participants' boxing skill performance was categorized into three levels: proficient, average, and substandard. This categorization was determined by an evaluation of the participants' performance, which revealed distinct levels of proficiency in boxing.

The researcher ascribes this outcome to the efficacy of the error analysis and recognition method and the interaction of the research sample with the presentation of the model and the correction of errors by the learner.

The development of these models according to scientific principles, followed by their presentation to the research sample, resulted in significant advancements in the research sample and the integration of technology within educational units.

The pedagogical approach is characterized by the reiteration of video clips, the modulation of the presentation speed, and the provision of adequate explanations by the instructor.

As Khayoun (2010) posits, "The presence of numerous repetitions in response to a specific stimulus has been shown to expedite the decision-making process, consequently reducing response time and enhancing response speed" (69).

#### **4.1 Conclusions**

1- The utilization of error analysis and knowledge has been demonstrated to be a highly effective strategy for enhancing the performance of the straight punch (head-to-torso) in the second stage of students.

2- The instructional method employed, which incorporated multimedia elements such as videos, images, and detailed explanations of the targeted skill, effectively motivated and engaged the learners during the instructional sessions. This motivation and engagement contributed to the observed positive outcomes.

#### **4-2 Recommendations**

1-The researcher posits that the educational methods employed for second-stage students should be diversified, and that the efficacy of these methods should be capitalized upon.

2-The researcher posits that conducting analogous research and studies for different samples and other skills would be a worthwhile endeavor.

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**Appendix (1)**  
Shows the performance appraisal form

No.	Straight punch			Grade	Grade from	Notes
1	Left punches of the head and torso	Straight left	Punch Out	2		
			Continuation	4		
			Accuracy of Hit	4		
<b>Observations</b>						