



# The effectiveness of feedback in learning some basic volleyball skills

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## ABSTRACT

The aim of the study was to evaluate the effectiveness of two types of feedback in learning the skills of receiving and spiking (both diagonal and straight) from position 4 in volleyball, and to determine the differences in post-test scores between the two study groups. The researcher used the experimental method, and the study sample was selected through purposive sampling, consisting of 20 players out of 30 from the Al-Madina Sports Club in Basrah, aged 14 to 15 years. The sample was randomly divided into two experimental groups, each containing 10 players. Immediate feedback was provided to the first group, while delayed feedback was applied to the second group. A receiving skill test was used to measure the ability to receive, and an accuracy test for diagonal and vertical spiking was used to assess the accuracy of spiking in both directions. Both groups (immediate feedback and delayed feedback) showed statistically significant differences in all the variables studied between the pre-test and post-test, with improvements favoring the post-test results ( $p < 0.01$ ). The group receiving immediate feedback demonstrated greater improvements compared to the group that received delayed feedback ( $p < 0.01$ ). This highlights the effectiveness of real-time correction and guidance in improving skill development, suggesting that immediate feedback may have a more direct impact on performance.

## KEYWORDS

Feedback; Spiking Skill; Receiving Skill; Volleyball

## 1. INTRODUCTION

To improve physical education in general and the learner in particular, modern learning methods are one of the main pillars on which the physical education teacher relies. An important

approach is feedback, which serves as a means of correction, guidance, and immediate direction. It represents the teacher's efforts to intervene and correct responses provided by the learner, or by anyone involved in giving feedback more generally (Hadi, 2015).

Feedback can come in a variety of sources. It can be external including external (e.g., corrective action from coach, teacher, etc.) or internal (e.g., motor performance and self-awareness). Learning in team games in general, and volleyball in particular, requires feedback throughout the learning period. This is due to the many demands of the game, and the complexity of performing its basic skills, which require long learning periods so that the learner can perform them correctly and avoid making repeated mistakes.

The basic skills of volleyball require a high level of technical performance. Learning them in a non-scientific way will prevent proper development in the future and hinder the player from advancing to higher-level teams. Therefore, when learning any skill, the learner must understand and be familiar with the mechanical aspects of the skill and apply them on the court for effective performance. As a result, the teacher or coach must enhance the effectiveness of skill learning and correct errors by providing scientifically-based feedback, ensuring the learner's skills continue to develop (Ali, 2006). This approach will help the learner recognize and respond to various playing situations that may arise.

Hence, the research problem focuses on the performance of basic skills in novice volleyball players and the high number of technical errors, which stem from the lack of attention to appropriate timing in providing feedback proportional to the stages of skill learning. Furthermore, the researcher's experience in the field of volleyball indicates that the skills of receiving and spiking are overwhelmingly important for scoring points. For this reason, the researcher chose to study the effect of two types of feedback on the learning of reception and spiking skills from position 4 in volleyball among young players.

The aim of the study is to evaluate the effectiveness of two types of feedback in learning the skills of receiving and spiking (both diagonal and straight) from position 4 in volleyball and to determine the differences in post-test scores between the two research groups.

## 2. METHODS

### 2.1. Study design and participants

The researcher employed the experimental method in line with the nature of the study. The research sample was selected using purposive sampling and consisted of 20 players out of 30 from the Al-Madina Sports Club in Basrah, with ages ranging from 14 to 15 years. The sample was randomly divided into two experimental groups, each containing 10 players, representing 66.6% of the original population. Immediate feedback was provided to the first group, while delayed feedback was applied to the second experimental group.

To ensure homogeneity, the researcher assessed variables such as height, weight, and age within the research sample, as shown in Table 1, where all variables were statistically insignificant. Additionally, the researcher conducted a homogeneity check for performance level between the two experimental groups. The calculated t-values for the reception skill (0.346), diagonal spike from position 4 (0.534), and vertical spike from position 4 (0.876) were all lower than the critical t-value of 1.833 (with 1 degree of freedom and a 0.05 probability of error), indicating no significant differences between the performance levels of the two groups. This confirms the equivalence of the groups, as shown in Tables 1 and 2.

**Table 1.** Means standard deviations and coefficient of variation of the variables of height, weight, and age in the research sample

Variables	Unit Measuring	Mean	Std. deviation	Percentage
Height	Cm	174.1	3.76	%2.15
Weight	kg	58.5	2.02	%3.45
Age	year	14.5	0.72	%4.96

**Table 2.** Means, standard deviations, coefficient of variation, and t-values for reception, diagonal spiking, and vertical spiking from position 4 in the two experimental groups

Variables	First group		Second group		t	p
	Mean	SD	Mean	SD		
Receiving	6.2	1.135	6.4	1.429	0.346	>0.05
Diagonal Spiking from position 4	11.5	1.45	10.750	1.035	0.534	>0.05
Vertical Spiking from position 4	9	2.2	8.7	1.6	0.876	>0.05

## **2.2. Tests**

### ***Receiving skill test (Hadi, 2015)***

- Test name: Receiving skill test.
- Test purpose: To measure the ability to receive.

### ***Accuracy of diagonal and vertical spiking test (modified) (Shihab, 2014)***

- Test name: Diagonal and vertical spiking accuracy from position 4.
- Test purpose: To measure the accuracy of the spiking in the directions of diagonal and vertical.

## **2.3. Exploratory Experiment**

The researcher conducted the exploratory experiment on Thursday, 01/10/2019, on a sample of the same 10 players from the Al- Madina Sports club. The aims of this experiment were: a) Assurance of the validity of the tests and their suitability for the members of the sample. b) Adaptation of the tasks of the team of assistants to the application of the educational curriculum. c) Determination of the times of the tests.

## **2.4. Field research procedures**

### **2.4.1. Pre-tests**

The researcher conducted the pre-tests for the research sample on Thursday, 10/1/2019, at 8:30 AM, at the Al-Madina Sports Club playground in Basrah.

### **2.4.2. The main experiment**

On 13/1/2019, the researcher began the main experiment with the research sample, consisting of 10 players from each group representing the Al-Madina Sports Club. The curriculum spanned eight weeks, with two sessions per week (on Sundays and Wednesdays). Each session included educational exercises for basic volleyball skills, incorporating both types of feedback: immediate feedback for the first experimental group and delayed feedback for the second group. Each educational unit lasted 70 minutes. The main experiment was completed on 13/3/2019.

### **2.4.3. Post-tests**

After applying the experimental method, the researcher conducted post-tests on the two research samples on 17/3/2019 at the Al-Madina Sports Club playground in Basrah.

## 2.5. Statistical Analyses

The researcher used the Statistical Package for Social Sciences (SPSS) version 23 to analyze the data. Means and standard deviations were calculated, and statistical comparison techniques, including t-tests, were applied. The significance level was set at  $p < 0.05$ .

## 3. RESULTS AND DISCUSSION

Table 3 presents the results of the pre- and post-tests for the receiving, diagonal spiking, and vertical spiking skills from position 4 for the first experimental group (immediate feedback). The p-values for all variables (receiving, diagonal spiking from position 4, and vertical spiking from position 4) are 0.000, which indicates that the differences between the pre-test and post-test results for each skill are statistically significant at the 0.05 level, in favor of the post-test.

**Table 3.** Differences in pre- and post-test results for receiving, diagonal spiking, and vertical spiking skills from position 4 in the first experimental group (immediate feedback)

Variables	Immediate feedback group				Calculated(t)	Sig value	Sig type
	Pre-test		Post-test				
	Mean	SD	Mean	SD			
Receiving	6.2	1.135	11.7	1.494	24.597	0.000	Sig
Diagonal Spiking from position 4	11.5	1.45	16.012	0.816	13.279	0.000	Sig
Vertical Spiking from position 4	9	2.2	13.8	1.77	10.03	0.000	Sig

Table 4 presents the results of the pre- and post-tests for the receiving, diagonal spiking, and vertical spiking skills from position 4 for the second experimental group (delayed feedback). The p-values for all variables (receiving, diagonal spiking from position 4, and vertical spiking from position 4) are 0.000, indicating that the differences between the pre-test and post-test results for each skill are statistically significant at the 0.05 level, with the post-test showing better performance.

**Table 4.** Differences in pre- and post-test results for receiving, diagonal spiking, and vertical spiking skills from position 4 in the second experimental group (delayed feedback)

Variables	Delayed feedback group				Calculated(t)	Sig value	Sig type
	Pre-test		Post-test				
	Mean	SD	Mean	SD			
Receiving	6.4	1.429	8.7	1.337	3.632	0.000	Sig
Diagonal Spiking from position 4	10.750	1.035	13.250	1.281	4.677	0.000	Sig
Vertical Spiking from position 4	8.7	1.6	10.99	0.981	7.554	0.000	Sig

Table 5 presents the results of the post-tests for the variables of reception, diagonal spiking, and vertical spiking skills from Position 4 for both the first and second experimental groups. The results of the post-test indicate that there are statistically significant differences between the first and second experimental groups for all variables ( $p < 0.05$ ), with the first experimental group (immediate feedback) showing superior performance.

**Table 5.** Differences between the two groups in the post-test of study variables

Variables	First group		Second group		Calculated(t)	Sig value	Sig type
	Mean	Std. deviation	Mean	Std. deviation			
Receiving	11.7	1.494	8.7	1.337	4.73	0.000	Sig
Diagonal Spiking from position 4	16.012	0.816	13.250	1.281	4.453	0.001	Sig
Vertical Spiking from position 4	13.8	1.77	10.99	0.981	3.989	0.001	Sig

The researcher links these differences to the effectiveness of real-time feedback, which helps consolidate information in the learner's mind and allows for correction of mistakes during performance. This includes detailed explanations and the practical application of skills until mastery is achieved. This aligns with the study by Taha (2004) which showed that instant feedback is crucial in the learning process as it is necessary and significant in the control process. The role of control and modification in learning processes is vital for improving behavior, as well as for motivating the learner by guiding them to recognize correct responses and eliminate incorrect ones, as highlighted by Abdel Meguid (2006).

#### 4. CONCLUSIONS

In conclusion, the use of both immediate and delayed feedback plays a crucial role in improving the performance of junior volleyball players in basic skills. The group receiving immediate feedback demonstrated greater improvements compared to the group that received delayed feedback. This highlights the effectiveness of real-time correction and guidance in enhancing skill development, suggesting that immediate feedback may have a more immediate impact on performance.

#### 5. RECOMMENDATIONS

Based on the results of our study, it is recommended to incorporate both immediate and delayed feedback when teaching basic volleyball skills, as both types play significant roles in enhancing learning and skill development. Coaches and trainers responsible for the training of junior

players should prioritize the use of real-time feedback to ensure that the learning process is progressing correctly and to help correct skill execution during practice.

Further research should be conducted on the application of feedback for other skills and patterns within the game of volleyball to expand the understanding of its impact across different aspects of the sport. In addition to immediate feedback, it is also important for trainers to use delayed feedback to allow players to reflect on their performance, understand the outcomes, and avoid repeating the same mistakes.

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## AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

## CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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