LETTERS IN BIOMATHEMATICS
An International Journal

OPEN ACCESS

RESEARCH ARTICLE

The Effect of Exercises Using the BLAZEPOD Device on Developing Some Visual Abilities in Volleyball for Students

Aya Bader Salam[1], Suzan Salim Dawud[1], Nedaa Yaser Forhood[1]

[1]College of Physical Education and Sports Sciences, University Baghdad, Iraq

ABSTRACT

The sports field has witnessed remarkable progress in employing modern technologies to enhance the quality of education and training, particularly in developing visual abilities, which are a fundamental element of skill performance. The Blazepod device is a modern tool that utilizes interactive visual stimuli to contribute to the development of visual attention and eye-hand coordination. Visual abilities are of paramount importance due to their reliance on precise visual tracking and motor coordination. However, traditional methods often neglect this aspect, necessitating the introduction of more effective modern training methods. This research aimed to develop exercises using the Blazepod device to enhance certain visual abilities in volleyball, as well as to identify their impact on student performance. The research sample consisted of 20 students, randomly divided into experimental and control groups. The results showed the superiority of the experimental group in post-tests, indicating the effectiveness of the exercises in developing visual abilities. It is concluded that the use of interactive visual aids contributes to enhancing the learning of volleyball skills and improving student performance.

ARTICLE HISTORY

Received September 23, 2026
Accepted October 29, 2026

KEYWORDS

Blazepod
visual abilities
volleyball

Introduction:

Volleyball is a fast-paced team sport with diverse physical, technical, and tactical demands. It presents constantly evolving situations according to the rules of the game, requiring players to make precise and rapid responses controlled by the central nervous system. A successful response must not only be technically correct but also swift and efficient to gain an advantage over the opponent. Volleyball holds a prominent position among team sports in both education and training due to its requirements of high physical abilities, precise basic skills, rapid decision-making, and visual and motor responses appropriate to different game situations. With the significant development, the game has undergone in terms of physical, technical, and tactical aspects, matches have become increasingly intense and challenging. This has necessitated the search for more effective educational and training methods to keep pace with this evolution. Performance in volleyball is not solely based on physical abilities; it also requires the development of visual skills such as visual attention, speed of anticipation, and visual discrimination accuracy, as these play a fundamental role in perceiving the ball's trajectory and making appropriate motor decisions. Recent studies indicate that these abilities are among the essential determinants affecting the speed of motor learning and mastery of basic skills in various sports.

CONTACT Aya Bader Salam: Aya.Badr2304@cope.uobaghdad.edu.iq

Visual abilities are fundamental to effective athletic performance, as they are closely linked to reaction speed, movement accuracy, and anticipation in different game situations. They also enable adaptation to the movements of teammates and opponents in fast-paced, changing situations. Therefore, any deficiency in visual abilities leads to delayed response or reduced performance accuracy, negatively affecting the player and team's performance. As (Turker et al., 1998, p. 234) notes, "Visual training in sports is a relatively small but crucial area within the sports performance system, and interest in it has grown significantly and actively in recent times." The idea for this research arose with the rapid pace of technological development in the sports field, leading to the emergence of numerous modern training methods and tools aimed at enhancing the efficiency of teaching and training. Among the most prominent of these is the Blazepod device, which utilizes interactive light signals to develop visual and motor skills. This device is an innovative tool that helps improve reaction speed, enhance visual attention, and increase eye-hand coordination, as confirmed by recent studies examining the impact of technology on developing cognitive and motor skills in athletes (Johnson & Miller 2021, pp. 210-219).

Despite the significant potential, this device offers for developing visual abilities, research on its use in teaching and training volleyball skills remains limited, particularly in university settings.

Therefore, the researcher decided to develop exercises using the Blazepod device to enhance certain volleyball skills in students.

Research objective:

- Develop exercises using the Blazepod device to enhance certain visual abilities in volleyball for students.
- Identify the effect of exercises using the Blazepod device on developing certain visual abilities in volleyball among the research sample.

Research hypotheses:

- There are no statistically significant differences between the pre-test and post-test results of the experimental and control groups in developing certain volleyball abilities among second-year students at the College of Physical Education and Sports Sciences.
- There are no statistically significant differences between the experimental and control groups in the post-tests regarding the development of certain visual abilities in volleyball among the research sample.

The importance of this research also stems from the vital role of visual abilities in improving the quality of athletic performance. Visual abilities are a fundamental element in fast-paced team sports, such as volleyball, where learners rely on visual attention, speed of anticipation, and precise eye-hand coordination to master basic skills. Traditional teaching methods are often routine, which reduces student motivation and slows learning. This necessitates the search for innovative teaching methods that utilize modern technology to motivate learners and improve learning effectiveness.

Based on the above, the need arises to study the effect of exercises using the BlazePod device on developing certain visual abilities in volleyball for students. Among the most important previous studies that informed the current research on the effect of exercises using the BlazePod device on developing certain visual abilities in volleyball for students is the study conducted by (Yassin, 2025). This study involved preparing visual ability exercises using the BlazePod device for three third-grade basketball referees and identifying the effect of these exercises on developing certain sensory perceptions among the three third-grade basketball referees.

This study aimed to identify the effect of visual perception exercises using the BlazePod device on improving the performance of third-grade basketball referees. The researcher employed an experimental approach with a sample of 33 third-grade basketball referees in Baghdad Governorate. The results showed that the exercises had a positive impact on developing the sensory perceptions of the third-grade basketball referees, as well as on improving their overall performance.

The study by (Ahmed, 2025) aimed to develop psychomotor exercises to enhance visual tracking and visual interference skills, as well as improve certain volleyball technical skills, namely receiving the serve and spiking. The study also sought to identify the impact of psychomotor exercises on developing visual tracking and visual interference skills among volleyball players aged 15-17 years, and to determine the effect of these exercises on the accuracy of receiving the underhand serve and spiking skills in the same age group. The researcher employed an experimental approach with a sample of 20 volleyball players aged 15-17 years from the Al-Karkh First Education Directorate. The most significant findings demonstrated that developing visual interference and visual tracking skills is a vital element for improving volleyball technical skills, such as receiving the underhand serve and spiking.

The study by (Mahdi, 2023) aimed to develop specific exercises using the BlazePod training device for advanced basketball players and to identify the effect of these exercises on improving the reaction speed of these players. The researcher used an experimental approach with 12 advanced players representing Al-Adhamiya Sports Club. The results showed a significant positive impact of the exercises developed by the researcher using the BlazePod training device on improving the reaction speed and defensive endurance of the advanced basketball players.

The study by (Ali, 2022) aimed to design an optical device to improve visual acuity and the spiking skill in volleyball for young men (aged 17-19). It also aimed to develop specific exercises using an optical blocking device to enhance visual acuity and spiking skills in young men (aged 17-19), and to identify the impact of these exercises on visual acuity and spiking skills. The researcher used an experimental approach at the Police Club and the Industry Club. The results showed that the optical blocking device had a positive effect on improving visual acuity and spiking skills, and that the specific exercises also had a positive effect on improving visual acuity and spiking skills.

Study (Walaa, 2022) aimed to identify the effect of visual vision training on some visual abilities and the skill of the spike in volleyball. The researcher used the experimental method on a sample of young female volleyball players at Al-Ghaba Sports Club. The results showed that the proposed visual vision training had a positive effect on the visual abilities and the level of skill performance of the spike for young female volleyball players.

Method and Tools:

The researcher selected the research population purposively. The population consisted of second-year students in the College of Physical Education and Sports Sciences, after excluding students who had failed, deferred, or were not attending regularly. The research sample was selected randomly by lottery and randomly divided into two equal groups: an experimental group and a control group. Each group consisted of (10) students for the experimental group and (10) students for the control group.

Honorability and Equivalence of the Research Sample:

Honorability of the Sample: The researcher did not conduct homogeneity testing among the sample members, as the sample was raw, from the same age group and academic year, and of the same gender. Therefore, the sample is considered homogeneous.

Equivalence of the Research Groups:

The researcher conducted equivalence testing between the two groups (experimental and control) in the dependent variables (spatial perception, temporal perception, motor response speed, visual tracking, evaluation of the smash, accuracy of the smash, evaluation of court defense performance, and court defense accuracy).

Table (1) shows the equivalence between the experimental and control groups in measuring the research variables.

Variables	Unit	Experimental Group		Control group		T value calculated	Level Sig	Type Sig
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			

Spatial Perception	Meter	3.5000	0.52705	3.4000	0.51640	0.429	0.673	Non-sig
Temporal Perception	Second	4.4000	0.69921	4.1000	0.73786	0.933	0.363	Non-sig
Visual Tracking	Point	4.0000	1.63299	3.8000	1.47573	0.287	0.777	Non-sig

At 18 degrees of freedom and a significance level of 0.05, the means of data collection and the equipment and tools used are crucial for conducting and completing the experiment. Research tools are the means by which the researcher can collect data and solve their problem to achieve the research objectives, regardless of the nature of these tools, such as data, samples, equipment, etc. (Wajih, 1988, p. 133).

Methods of data collection:

- Arabic and foreign sources.
- The World Wide Web (Internet).
- Observation and experimentation.
- Personal interviews.
- Tests and measurements.

Equipment and tools used:

- One electronic stopwatch.
- Camera tripod.
- Two iPhone 15 Pro Max cameras (American made).
- A Blazepod sports device (Thai made).
- A regulation volleyball court.
- A regulation net.
- One eye patch.
- Ten Mikasa volleyballs.
- One whistle. (1) - Measuring tape (2m)
- Colored adhesive tape (2 x 5cm)
- Evaluation form (2).

BlazePod Device

This fitness device, manufactured by BlazePod, enables both body and mind to train using Flash Reflex technology. These interactive pods, containing stimulating visual cues, and their professionally designed activities provide advanced visual, cognitive, and physical training to maximize the benefits of each workout. These devices (pods), paired with the BlazePod smartphone app, create an effective and ideal training experience.

These devices include LED lighting units and facilitate the creation of activities, competitions, and tests. They also come with a charging base and an official BlazePod protective case, as shown in the image in Appendix (1).

Comprehensive Use: Flash Reflex training is excellent for training across multiple disciplines. BlazePod pods and activities are designed to challenge athletes and customers, track their results, and enhance their performance in training and competitions. Intuitive Pods: BlazePod's uniquely designed visual light pods are incredibly intuitive, with no buttons or moving parts. They connect easily to the BlazePod app on smart devices and are powered by low-energy Bluetooth technology. The Pods illuminate with powerful RGB LEDs offering eight color options, allowing you to

associate each activity with a different color. Suitable for all ages, from children to seniors, as well as professional athletes, BlazePods are a great motivator for gamers of all ages and fitness levels.

Connectivity and Durability: BlazePod's long-range automatic connection reaches up to 40 meters, ensuring connectivity for a wide range of activities, covering the entire indoor futsal field. The lights are extremely durable, absorbing hard impacts during a training session while remaining sensitive to light taps. They are also splash-resistant (IP65) and UV-protected. BlazePods can be easily used for training anywhere and in any setting, as illustrated in Appendix 1.

The BlazePod system offers several important features and organizational aspects for efficient operation and performance:

1- The device helps enhance performance:

Exceed your personal best: Push or surpass your potential with TM Flash Reflex Training, a unique training method that combines visual, cognitive, and physical challenges.

Train in an unconventional way: Continuously change your drills by selecting the best exercises from a vast library of predefined activities within the program. You can also create complex drills using multiple stations and varying color coding.

Simulate real-life on-field situations: Focus on relevant cues to make the right pass, block, shoot at the right time, or move towards the ball, translating the training into real-life on-field scenarios.

2- The device helps with focus:

Keep students prepared: Create on-field situations with unexpected drills using random cues and lights that keep students always alert and ready.

Create simplified drills: From easy setup to designing drills in a single smart application, it guides you from start to finish. Data-driven accuracy: Acquiring precise data fed directly from touch-sensitive devices to an analytics dashboard that provides real-time data, as shown in Appendix (2).

Visual Abilities Tests

First: Sensory-Kinesthetic Perception (Spatial) Test (Al-Saadi, 2002, pp. 110-116)

- Test Name: Sensory-Kinesthetic Perception Test of Ball Drop Distance for Two-Handed Smash
- Test Purpose: To measure the ability to perceive the sensory-kinesthetic distance of the ball drop during a smash.
- Equipment Used: Volleyball court with regulation net, volleyball, blindfold.
- Performance Specifications: The test subject strikes the ball from the attack line in the front row of the court, facing the opposite court, holding a volleyball in front of their body with both hands. The test subject is allowed to estimate the distance of the strike (drop) and look at the marked area. Their eyes are then blindfolded with a piece of cloth or any opaque material and they remain in this position for 10 seconds. After that, they are instructed to drop the ball over the net using both arms towards the designated area, ensuring it lands within the seventh meter of the service line in the opposite court. The ball must be dropped over the head, starting from behind the head by bending the arms holding the ball. The ball is released after passing over the head.
- Conditions: Each test subject has three attempts.
- Scoring Method:

- A score of zero is awarded to the test subject when the ball lands within the designated area within the seventh meter.
- One point is added for each meter beyond or below the designated area. That is, each meter beyond or below the designated area is worth one point, so the scores are (2, 1) after the designated area at meters (8, 9) and the scores

are given for meters before the designated area, according to their proximity to area (2, 1) at meters (6, 5), respectively.

- The final laboratory score is the sum of the scores from the three attempts.

Note: The lower the laboratory score, the better the kinesthetic perception.



Figure (1) show the test of sensory-motor perception is demonstrated by the distance of ball projection for a deceptive two-handed spike.

Secondly: Time perception test (Mohammed & Hatamleh, 1996, p. 26)

- Purpose of the test: To measure time perception.
- Equipment used: Electronic stopwatch.
- Performance specifications: The subject is asked to look at the stopwatch and start it (to test and familiarize themselves with it). They are then asked to start and stop it at 5 seconds, 7 seconds, and 15 seconds, repeating this three times at each time point.
- Second stage: The subject is asked to perform the test without looking at the stopwatch, standing with their gaze forward and their arms fully extended. They start and stop the stopwatch at 7 seconds, repeating this measurement three times consecutively.
- Recording method: The results of the last three attempts are recorded for the laboratory at a time of (7 seconds), each attempt separately, provided that the amount of error in each attempt is calculated by recording the time that is at (7 seconds) or less, and thus the arithmetic mean of the three attempts is found.

Third: Visual Tracking Test (Al-Shammari, 2019, p. 62)

- Test Name: Colored Ball Test
- Test Objective: To measure visual tracking accuracy
- Materials: A regulation volleyball court, three balls with colored stickers (strips) measuring (2 x 5) cm, in the colors (red, black, and blue), a barrier (opaque curtain) measuring (4 x 3) m, and a pre-prepared registration form.
- Procedure:
  - The student receiving the volleyball stands (4) meters behind the covered net, ready to identify the color of the ball served by the instructor.

- The instructor serves the volleyball to the opposite court, over the net and in the direction of the student, ensuring the ball passes over the net.
- The instructor serves from behind the barrier, in the direction of the student, ensuring the ball passes over the student's head. The student identifies the color of the stripe on the ball before it crosses the net.

- Test Conditions: The test is performed by changing the balls for each attempt.
- Registration Method: The student is given a form The lab (6) attempts. Two points are awarded for each correct attempt and zero points for each incorrect attempt. Thus, the total score for the test is (12) points, as shown in figure (2).



Figure (2) shows the visual tracking accuracy test

First Pilot Test:

The researcher conducted the pilot test on Wednesday, December 24, 2025, at 10:00 AM, with a sample of five students randomly selected from the second year of the College of Physical Education and Sports Sciences. These students represented the research population and were not part of the main research sample. The researcher was assisted by the research team. This pilot test provided the researcher with several observations. The objectives of this pilot were:

- To determine the suitability of the tests for the research sample.
- To accurately determine the distances and measurements for the tests.
- To determine the time required to complete the tests.
- To identify any problems or difficulties encountered by the researcher when administering the tests.

Second Exploratory Exercise:

The researcher conducted the second exploratory exercise on Thursday, December 25, 2025, at 10:00 AM, with a sample of five students from the same original population but outside the research sample. The researcher was assisted by the research team.

This experiment provided the researcher with several observations, including:

- Determining the time taken for each exercise.
- Determining the total time for performing the exercises.
- Determining the sequence of exercises.
- Assessing the suitability of the exercises for the sample.
- Assessing the difficulty level of the exercises performed by the research sample.
- Determining the total rest time.

Field Research Procedures

Pre-Tests:

The researcher conducted pre-tests on both the experimental and control groups at the College of Physical Education and Sports Sciences. The tests were administered on Sunday, February 1, 2026. The researcher ensured that the post-test conditions were as similar as possible to those of the experimental group.

The researcher also ensured that the post-test was conducted under similar conditions to the experimental group. Main Experiment:

- The exercises will be implemented from February 2, 2026 to April 20, 2026.
- Number of training units per week: (1)
- Days: (Monday)
- Total number of training units: (12)
- Duration of each training unit: (60 minutes), which pertains to the main section
- The exercises will be implemented in the main section of each training unit.
- Number of exercises prepared by the researcher: (24)
- The exercises will be implemented in the volleyball hall at the College of Physical Education and Sports Sciences, University of Baghdad.

Post-Tests:

The researcher conducted the post-tests for the research sample after the completion of the exercise program on April 21, 2026, at 8:30 AM in the volleyball hall at the College of Physical Education and Sports Sciences, University of Baghdad. The researcher ensured that the post-test conditions were similar to those of the pre-test in terms of location, time, and testing method to achieve accurate and reliable results.

Statistical Methods:

The researcher used the Statistical Package for the Social Sciences (SPSS) to analyze the research data using the following statistical methods:

- Arithmetic mean
- Standard deviation
- Matched samples t-test

- Independent samples t-test -Media
- -Skewing coefficient
- Correlation coefficient

Presentation, analysis, and discussion of results:

The researcher presented the pre- and post-test results for the research sample by displaying the means and standard deviations in explanatory tables after performing the necessary statistical operations. This facilitated easy observation of the results. Furthermore, a comparison was made between the experimental and control groups in the post-tests through the analysis and interpretation of all measurement results to determine the actual differences and their statistical significance, according to a precise scientific perspective. This was done to achieve the research objectives and hypotheses, which focused on identifying the effect of BlazePod exercises on developing certain visual abilities in volleyball among students.

Presentation, analysis, and discussion of visual ability results

Presentation of visual ability results for the experimental group

Table (2) shows the means, standard deviations, differences, and calculated t-value for the experimental group in the pre- and post-tests

Variables	Unit	Pre-test		Post-test		Arithmetic mean of difference	Standard deviation of differences	T value calculated	Level Sig	Type Sig
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation					
Spatial Perception	Meter	3.5000	0.52705	1.3000	0.48305	2.20000	0.63246	11.000	0.000	Sig
Temporal Perception	Second	4.4000	0.69921	1.7000	0.48305	2.70000	0.82327	10.371	0.000	Sig
Visual Tracking	Point	4.0000	1.63299	6.8000	1.03280	-2.80000	1.39841	-6.332	0.000	Sig

At a degree of freedom of (9) and a significance level of (0.05),

Presentation of visual ability results for the control group:

Table (3) shows the arithmetic means, standard deviations, differences, and calculated t-values for the control group in the pre- and post-tests.

Variables	Unit	Pre-test		Post-test		Arithmetic mean of difference	Standard deviation of differences	T value calculated	Level Sig	Type Sig
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation					

Spatial Perception	Meter	3.4000	0.51640	2.5000	0.52705	0.90000	0.56765	5.014	0.001	Sig
Temporal Perception	Second	4.1000	0.73786	2.9000	0.56765	1.2000	0.63246	6.000	0.000	Sig
Visual Tracking	Point	3.8000	1.4757	5.4000	0.96609	-1.6000	0.84327	-6.000	0.000	Sig

At 9 degrees of freedom and a significance level of 0.05

Results of differences in visual abilities between the experimental and control groups

Table (4) shows the results of the differences in visual abilities between the experimental and control groups

Variables	Unit	Experimental Group		Control group		T value calculated	Level Sig	Type Sig
		Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
Spatial Perception	Meter	1.3000	.483050	2.5000	.527050	-5.308	.0000	Sig
Temporal Perception	Second	1.7000	.483050	2.9000	.567650	-5.091	.0000	Sig
Visual Tracking	Point	6.8000	1.03280	5.4000	.966090	3.130	.0060	Sig

At 18 degrees of freedom and a significance level of 0.05

Discussion of the results of the differences in visual abilities between the experimental and control groups

The results in the table showed statistically significant differences between the experimental and control groups in all visual ability variables (spatial perception, temporal perception, and visual tracking), all in favor of the experimental group. The experimental group recorded better values in reducing distance in spatial perception and reducing time in temporal perception, in addition to achieving higher scores in visual tracking, with statistically significant (t) values at a significance level of 0.05. The researcher attributes this superiority to the effectiveness of using the Blazepod device exercises, which rely on interactive visual stimuli. These exercises contributed to activating the visual system and improving the speed of sensory information processing. Spatial perception developed as a result of training individuals to accurately and quickly locate visual stimuli, which enhanced their ability to estimate distances and directions better. Furthermore, changing movement directions and varying performance positions within the exercise enhanced the players' ability to move quickly and systematically with appropriate timing, helping them reach the ball at the optimal moment and execute the skill accurately. This is attributed to the fact that volleyball learners rely heavily on temporal adaptation to changing situations and selecting the appropriate motor response at the right time. (Schmidt , 2000), as quoted by Hussein Subhan, states that "the amount of training and increasing repetitions of the response to a specific stimulus accelerates decision-making" (Al-Kaabi, 2006, p. 133: Edwards, 2004). Temporal perception improved due to the use of Blazepod exercises, which focused on practicing rapid responses to time-changing stimuli, thus reducing response time and increasing the accuracy of motor timing.

Regarding the temporal anticipation variable, continued learning contributed to developing the learners' ability to anticipate the timing of motor situations by improving their ability to estimate the ball's arrival time, trajectory, and direction before it actually occurs, which positively impacted the accuracy of skill performance. Furthermore, diversifying the stimuli used in learning, whether visual or verbal, and presenting them at different times, contributed to developing motor response speed and time coordination with performance requirements. In this context, points out that the success of motor performance is linked to the learner's ability to choose the appropriate response according to the demands of the situation and to organize their movements sequentially and harmoniously, thus achieving accuracy and fluidity in performance (Al-Washahi, 1994, p. 276). Information coming from the environment and reaching the central nervous system, its correct understanding, and the improvement and development of the learner's ability to receive it, along with the accurate response to perform the skill and training learners in complex movements, all contribute to improving learners' mental processes, including motor anticipation. Regarding visual tracking, the nature of exercises that require following moving or changing light stimuli has contributed to improving the eye's ability to track and focus. Exercises that rely on following changing light stimuli have contributed to developing the efficiency of the learners' visual system by improving their ability to focus and track moving targets with greater accuracy, which is directly reflected in the quality of motor performance. Furthermore, the diversity of stimuli in terms of intensity, timing, and presentation nature enhanced coordination between the visual system and motor responses, contributing to increased speed and accuracy of performance.

Conversely, traditional teaching methods often lack diversity and direct sensory stimulation, thus limiting opportunities for effectively developing visual abilities. In contrast, the use of modern technological tools provides a stimulating learning and training environment that activates cognitive processes and improves the speed of sensory information processing. This is consistent with what Intisar indicated, that developing and mastering motor performance depends on preparing quality educational and training programs based on situations that require making correct decisions, in order to achieve the appropriate motor response and enhance the efficiency of skill execution (Owaid, 2000, p10). Based on this, it can be concluded that the main reason for the superiority of the experimental group is due to the effectiveness of exercises based on visual stimuli, which contributed to developing visual abilities in an integrated way, which is reflected positively on skill performance in sports, especially volleyball, which requires high accuracy in perception and speed in response. Therefore, the results were logical.

Conclusions and Recommendations:

Through the research procedures, the researcher arrived at the following conclusions:

- The use of BlazePod exercises effectively contributed to developing the visual abilities of students at the College of Physical Education and Sports Sciences.
- The adoption of modern training methods based on sensory-motor interaction contributed to raising the level of learning basic volleyball skills among students at the College of Physical Education and Sports Sciences.
- The use of varied exercises based on situations similar to real play led to improved speed and accuracy of skill performance among students at the College of Physical Education and Sports Sciences.
- The use of modern technological tools in training contributes to accelerating the motor learning process and improving the coordination between cognitive and motor aspects among students at the College of Physical Education and Sports Sciences.

Recommendations:

- The BlazePod device or similar interactive teaching aids should be incorporated into volleyball training modules for students in the Faculty of Physical Education and Sports Sciences.
- Modern technologies should be integrated into the sports education curricula at the Faculty of Physical Education and Sports Sciences due to their role in developing motor and cognitive abilities.
- Teachers and coaches should be encouraged to diversify teaching stimuli and update teaching methods to meet the demands of modern sports.

- Similar studies should be conducted with different age groups and other sports to confirm the broader effectiveness of these devices.
- Attention should be given to developing both visual and motor skills when teaching the fundamental skills of sports.

References

Ahmed, A. T. (2025). The effect of psychomotor exercises on developing visual tracking and visual interference abilities and the accuracy of underhand serve reception and spiking skills in volleyball for ages (15–17) (Master's thesis, University of Baghdad, College of Physical Education and Sports Sciences).

Akram, W. (2022). The effect of visual training on some visual abilities and the spiking skill in volleyball. Scientific Journal of Sports Sciences and Arts.

Ali, W. A. (2022). The effect of special exercises using an innovative light device for blocking on developing visual accuracy and spiking skill in volleyball for youth players (Master's thesis, University of Baghdad, College of Physical Education and Sports Sciences).

Al-Kaabi, H. S. (2006). A training curriculum to develop anticipation time and motor response accuracy and its effect on the accuracy of some basic volleyball skills for youth players (Doctoral dissertation, University of Baghdad, College of Physical Education).

Al-Saadi, A. J. (2002). Design and standardization of sensory-motor perception tests for volleyball players. Journal of Physical Education.

Al-Shammari, I. S. J. (2019). The effect of the (SQ3R) strategy on visual tracking and improving the accuracy of serve reception skill in volleyball for students (Master's thesis, University of Karbala, College of Physical Education and Sports Sciences).

Al-Washahi, I. (1994). Volleyball: The key to reaching a high level. Dar Al-Fikr Al-Arabi.

Edwards, W. (2004). Art of boxing and science of self-defense. Excelsior Publishing House.

Johnson, A. (2021). Visual reaction training and cognitive-motor performance in athletes. Human Kinetics.

Johnson, T., & Miller, D. (2021). Visual reaction training devices and their effect on perceptual-motor performance in athletes. International Journal of Sports Science.

Mahdi, M. D. (2023). The effect of special exercises using the Blazepod training device on developing motor response speed and defensive performance endurance in advanced basketball players (Master's thesis, University of Baghdad, College of Physical Education and Sports Sciences).

Mohammed, A. A. K., & Hatamleh, M. R. (1996). The effect of mental training accompanying skill training on developing some sensory-motor perception variables on the floor exercise mat for students of the College of Physical Education. Journal of Physical Education Studies and Research.

Owaid, I. (2000). Measurement and evaluation of anticipation time and motor response for defensive basketball skills using computer technology and match analysis (Doctoral dissertation, University of Baghdad, College of Physical Education).

Schmidt, R. A., & Lee, T. D. (2019). Motor learning and performance (6th ed.). Human Kinetics.

Turker, A., Hoscebk, Z., Basgazeo, A., Barman, O., & Ozker, Z. (1998). The effects of physical training on physical fitness tests and auditory and visual reaction time of volleyball players. Journal of Sports Medicine & Physical Fitness.

Wajih, M. (1988). Scientific research methods and methodologies. Dar Al-Hikma for Printing and Publishing.

Walaa, A. (2022). The effect of visual training on some visual abilities and the spiking skill in volleyball. Scientific Journal of Sports Sciences and Arts.

Yassin, A. K. (2025). The effect of visual ability exercises using the Blazepod device on developing some sensory perceptions and the performance of third-class basketball referees (University of Baghdad).

Appendices

Appendix (1)

BlazePod Device







Appendix (2)

Explains the BlazePod app on the iPhone



Appendix (3)

Learning Unit Model

Stage: Second

Number of Students: 10

Weeks: Fifth and Sixth

Learning Unit Time: 90 minutes

Learning Objective: Response Speed/Visual Tracking

Pedagogical Objective: Team Spirit and Cooperation

Location: Volleyball Hall, Faculty of Physical Education and Sports Sciences

Equipment: BlazePod/Volleyballs

No.	Unit Sections	Time	Details of Instructional Unit Components	Notes

1	Preparatory Section	20 min		
2	Main Section	60 min		
*	Educational Aspect	10 min	Explanation of the targeted exercises and demonstration of the drills to be applied, in addition to explaining movements.	Encourage students and motivate them to perform the exercises and listen to instructions.
*	Practical Aspect	50 min	Work Time / Repetitions / Rest Time	
	Exercise (1)		30 sec / 8 reps / 25 sec	Approach correctly – jump at the right time – hit with power and intelligence – land safely
	Exercise (2)		35 sec / 8 reps / 30 sec	
	Exercise (3)		30 sec / 8 reps / 25 sec	
	Exercise (4)		35 sec / 8 reps / 30 sec	
3	Final Section	10 min		

Note: The researcher did not interfere in the other sections of the educational unit, only the main section.