

DOI: <https://doi.org/10.54702/ms.v22i4.1166>

The Impact of a Curriculum Based on the Bybee Model on Learning Some Volleyball Skills for Female Students at the College of Physical Education and Sports Sciences

Woroud Qasim Hamad¹✉, Sahar Hurr Majeed²✉, Khitam Mousa³✉

1&2 Physical Education and Sport Sciences college for women, University of Baghdad

3 College of sport Sciences/ University of Jordan - Jordan

Received: 29/04/2023, Accepted: 21/05/2023, Published: 30/12/2023



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/)., Modern Sport

Abstract

The significance of this research lies in its development of a proposed educational curriculum that is based on the Bybee model and aimed at teaching students the skills of serving and receiving in volleyball. The importance of the Bybee model lies in its ability to facilitate the application of information in various situations. The research problem emerged after the researchers reviewed previous studies and sources. They noticed a deficiency in the performance skills of setting and receiving in volleyball among female students. Consequently, the researchers decided to investigate the impact of the educational curriculum using the Bybee model on the learning of setting and receiving skills in volleyball. The research aims to develop instructional units based on the Bybee model, consisting of one instructional unit per week, totaling 16 instructional units. The objective is to facilitate the acquisition of two essential skills: volleyball serving and receiving among female students. Additionally, the study aims to investigate how the instructional curriculum enhances skill learning. The researchers employed an educational approach based on the Bybee model for skill acquisition. The research population consisted of second-year female students, totaling 82 students. The research sample included 30 students from class sections (A) and (D). Volleyball encompasses six fundamental skills that students should learn (serving, receiving serves, setting, spiking, blocking, and defending the court). The researchers will focus on the skills of setting and receiving the serve, as they are considered the most crucial skills in this game. These skills excel due to their dual offensive and defensive nature. Therefore, it is imperative for us to explore the latest strategies, tools, and techniques in this field. The researchers concluded the existence of differences in skill acquisition between pre-test and post-test assessments in favor of the experimental group, and this achieves one of the sustainable development goals of the United Nations in Iraq which is (Quality Education). They recommended that the findings of the study be used as a foundation for initiating new research projects in the field of volleyball and other sports.

Keywords | Bybee model, setting, receiving serves.

Introduction:

As a result of the developments witnessed in the modern era across all fields, including the field of sports, there has been a significant quantitative and qualitative growth in knowledge and scientific facts" (7). So, there is a need to adopt modern strategies, methods, and educational models to enhance and improve the

level and effectiveness of learning. To achieve this, today's educators adopt a scientific plan in the teaching process to overcome the obstacles that hinder the learning process. "The teacher contributes through their personal efforts to guide students on how to overcome the challenges they encounter" (2). Some teaching

strategies, programs, and models have been designed to focus on enabling learners to confront real-life problems, encouraging them to seek solutions through research, critical thinking, and social negotiation. The researchers utilized an educational approach based on the Bybee model, with one instructional unit per week, totaling 16 instructional units, to achieve skill learning. The concept of the Bybee model originated from constructivist theory as one of the modern teaching strategies. Many researchers have highlighted the significance of this model in concept learning and its related applications. It not only amplifies the focus on educational tasks but also fosters an enthusiasm for collaborative work within the classroom setting. "This model comprises five stages: engagement, exploration, interpretation, expansion, and evaluation" (3). According to the Bybee model, the learning process begins with tasks that present an educational challenge, prompting learners to identify a problem. Subsequently, they seek solutions independently within small groups. The learning concludes with groups engaging in discussions to share their findings, followed by the instructor's assessment of the learners. Volleyball has been considered one of the most famous and recognized sports worldwide since the beginning of the current century. It has gained popularity among a large audience due to its distinctive technical skills and tactical strategies, far removed from any reasons for violence and strength. This sport has become a vital part of our educational institutions and is practiced by both male and female students. It is imperative for students to master all the basic skills uniformly, ensuring every participant can effectively execute their assigned roles on the court. Through this collaborative approach, team members can implement pre-established gameplay strategies, aiming for optimal performance. Volleyball encompasses six fundamental skills that students ought to learn: serving, receiving serves, setting, spiking,

blocking, and court defense. In this research, the researchers will focus on two of these skills: setting and receiving serves. These are pivotal to the game due to their offensive and defensive characteristics. Exploring the latest methods, tools, and techniques is imperative to effectively learn and master these skills. The research objective is to develop an educational curriculum based on the Bybee model to teach volleyball (setting and receiving serves). Additionally, the study aims to ascertain the impact of this educational curriculum on students' proficiency in setting and receiving serves. The research hypotheses posited statistically significant differences between the pre-test and post-test results of the control group in learning the skills of setting and receiving serves in volleyball, favoring the post-test. There are also statistically significant differences between the pretest and posttest results of the experimental group in learning the skills of setting and receiving serves in volleyball, favoring the posttest. Furthermore, there are statistically significant differences in the post-test measurements between the control and experimental groups in the level of learning the skills of volleyball serving and receiving for the benefit of the experimental group. The research areas focused on the second-year students of the College of Physical Education and Sports Sciences for Girls for the academic year 2022-2023. The research problem emerged after the researchers assessed the students' performance through practical lessons and their participation in college and university activities. It was observed that there was a deficiency in the skills of setting and receiving in volleyball among the students. Therefore, the researchers decided to investigate the impact of the educational curriculum using the Bybee model on learning the skills of setting and receiving in volleyball. The significance of this research lies in the use of an educational program based on the Bybee model in the learning process of the skill of setting and receiving in volleyball for female students. The objective is to achieve the

best possible skill performance by the learner. "The primary duties of learning in the College of Physical Education and Sports Sciences aim to elevate the learner to the highest possible athletic level by identifying the key physical, skill-based, and psychological requirements" (9). "The modern requirements of this sport have prompted researchers and experts to study the skill, tactical, and physical aspects based on scientific principles in order to reach the highest levels" (4). "The traditional view of science has indeed evolved from being merely a body of knowledge to the way scientists use to acquire that knowledge. This shift has redirected the educational focus away from the mere accumulation of scientific content. Instead, the emphasis has shifted towards developing higher-order thinking processes in learners and encouraging them to become researchers and innovators" (1). Dewey recommended that learners need to acquire and explore their surrounding environment and interact with it. Advocates of this theory pointed out that learners can be engaged in the learning process by providing them with opportunities to choose, practice, think, and make decisions based on their analysis.

Method and Procedures:

The researchers adopted the experimental design with two groups, the control group and the experimental group, utilizing both pre-test and post-test measures. This method is considered the most suitable for achieving the research objectives, in addition to being the most reliable for solving many problems. The research population consists of second-stage students at the College of Physical Education and Sports Science for girls for the academic year (2022-2023). who are continuously enrolled on a full-time basis, totaling (82) students from sections (A) and (D). A random sample of (30) students, representing (36.6%) of the original population, was selected for the study. The researchers' choice of the study population is due to several reasons, one of the most important being that

volleyball is a prescribed subject studied in the second stage of the College of Physical Education and Sports Sciences for Girls, in addition to the availability of tools and equipment used in the research. The exploratory experiment began on Sunday 2/10/2022, at the College of Physical Education and Sports Sciences for Girls. It included the skills of setting and receiving serves. The tools used in the experiment were an electronic timer, a court, a whistle, cones, a video camera, a net, and balls. The researchers utilized Statistical Package Software to extract the research values and variables. They conducted the main experiment, which is one of the most crucial procedures that the researchers should undertake, on Sunday 9/10/2022, at the College of Physical Education and Sports Sciences for Girls. The researchers adopted educational units following the Bybee model, with one instructional unit per week, totaling (16) instructional units, to achieve proficiency in both skills. The Bybee model consists of five stages: Engagement, Exploration, Explanation, Elaboration, and Evaluation. Learning, according to the Bybee model, begins with tasks that present an educational challenge, prompting learners to perceive a problem that requires resolution. Subsequently, they engage in the exploration of potential solutions through small groups, with each group working separately. Learning culminates in an inter-group collaboration, where they engage in discussions regarding their findings, followed by the teacher's evaluation of the learners.

The application in the educational unit included the following sections in each lesson:

- 1- Preparatory Section: It aims to prepare the body's parts and is timed for 20 minutes.
- 2- Main Section: It aims to provide exercises using the Bybee model for a duration of 60 minutes.
- 3- Concluding Section: It aims to foster relaxation and a sense of tranquility, along with a short recreational activity lasting 10 minutes.

"The researchers utilized the following skill tests:" (8)

Firstly, testing the precision of the settings on a basketball hoop.

Objective of the Test: To measure the precision of the setting from a high-level position.

Equipment: A basketball hoop tower, a Swedish bench placed in front of the basketball tower at a distance of 4 meters, and a volleyball.

Performance Specifications: The participant subject stands in front of the Swedish bench and performs thirty (30) passes through the basketball hoop, requiring the ball to pass through the hoop without touching it.

Scoring:

(4) points for each successful pass that enters the hoop without touching it.

(3) points for each pass where the ball enters the hoop after touching it.

(1) point for each successful pass that touches the backboard and enters the hoop.

The results:

Secondly, testing the reception accuracy of the transmission.

Objective: To measure the reception accuracy of the transmission.

Equipment: A regulation volleyball court and an exercise mat placed on top of a vaulting box with a height of 180 cm. They position the mat in the player's preparation area.

Performance Specifications: The mattress is placed on a box in position 3. The participation stands at position 6. Another player stands in the designated area for serving from the second half of the court in order to perform the serve so that the receiving player can receive it and deliver it to the designated position. The server makes 10 attempts from each of the three rear positions, which are positions (5, 6, and 1).

Scoring:

(4) points for each successful pass where the ball lands on the mat.

(3) points for each pass where the ball lands on the mat and touches its boundaries.

Table (1)
shows the pre-test and post-test results for the control and experimental groups

The test and the measurement unit	The group	Comparison	Arithmetic mean	Standard deviation	The mean of the difference	Deviation of differences	(t)	(sig)	The significance of the difference
The performance of serving	Experimental	Pre-test	40.5	8.9	40.4	1.2	17.6	0.000	Significant
		Post-test	80.9	0.6					
	Control	Pre-test	39.2	1.10	16.5	1.18	5.0	0.000	Significant
		Post-test	55.7	1.4					
The performance of receiving a serve	Experimental	Pre-test	820.	1.5	14.5	1.92	10.9	0.000	Significant
		Post-test	35.3	0.6					
	Control	Pre-test	5.02	1.2	9.7	1.4	6.10	0.000	Significant
		Post-test	30.2	0.9					

(15) for each group, with a significance level of 0.05 and degrees of freedom (n - 1) = 14

Table (2)
shows the results of the post-test between the two research groups

The test and the measurement unit	The group	The number	Arithmetic mean	Standard deviation	(t)	(sig)	The significance of the difference
The performance of serving	Experimental	15	90.8	0.7	17.6	0.000	Significant
	Control	15	5.105	1.9	5.0	0.000	Significant
The performance of receiving a serve	Experimental	15	35.3	0.5	10.9	0.000	Significant
	Control	15	3.2	0.9	6.10	0.000	Significant

(15) for each group, with a significance level of 0.05 and degrees of freedom $(n_1 + n_2) - 2 = 28$

Discussion:

Referring to Table (2), it is evident that the students from both the experimental and control groups showed improved levels in the post-test results. The pre-test results indicate that the students from these groups outperformed the students in the control group in learning the skills of serving and receiving. The improvement was particularly noticeable among the students in the experimental group after the post-tests were conducted, as there was a significant difference in their learning rates compared to their performance in the pre-tests. The researchers attribute this learning to the suitability of the Bybee model for this group of female students and their respective levels. This suitability was achieved by enhancing the cognitive structure mechanism in designing motor programs for both skills. Additionally, it can be attributed to the role of the Bybee model in various situations prior to exercise execution, providing teachers with a degree of freedom of opinion while respecting the views expressed. Moreover, it involves monitoring and diagnosing common errors and providing corrective feedback during the performance of each skill by each student in both groups, facilitating skill acquisition and knowledge correction. Correcting the mistakes made by the student during skill application plays a pivotal role in enhancing the student's proficiency and learning

of volleyball skills. These factors aided in mastering the skills of serving and receiving in volleyball. The results showed that the control group, which demonstrated improved performance levels, practice, and application, continued their learning without interruption. The educational program, designed according to the Bybee model, holds particular importance. It broadens scientific, intellectual, and cultural perceptions, equips learners with knowledge and experience, fosters a spirit of collaboration among individuals and participating groups, and opens avenues for expressing pressing needs and demands faced by individuals. It also motivates others to participate in the program's activities, creating new incentives for productive and beneficial work for the community. The researchers, (Hanin and Mona), affirmed that the Bybee model "provides powerful motivation for performance in volleyball skills, and thus, the research objectives were achieved as previously stated" (5). Likewise, a study by (Malath and Njala) indicated that "fundamental skills and essential movements take place within the small court, demanding the player to make swift decisions in order to change their direction of movement with ease and speed" (6). The studies indicate that the performance of physical education students in volleyball skills has generally been enhanced through the use of modern strategies and models. A study by (Sarah

and Bushra) supported the notion that "educational methods and techniques played a significant role in enhancing student performance" (10). The study by (Shaimaa and Nuhad) asserts that "the learning process and task performance enable students to engage with educational materials with enthusiasm. It fosters a flow of experiences and directs attention towards the task at hand, allowing for optimal utilization of knowledge resources" (11).

Conclusions:

Through the presentation, analysis, and discussion of the results, the researchers have drawn the following conclusions:

- 1- There are statistically significant differences between the pre-test and post-test results for both the control and experimental groups, in favor of the post-test scores, in the skills of setting and receiving the volleyball for the female students.
- 2- There are statistically significant differences in the results of the post-tests between the control group and the experimental group in favor of the experimental group.

Recommendations:

- 1- The necessity of using the educational curriculum according to the Bybee model to acquire selected research skills is due to its positive impact.
- 2- Utilizing the study results as a foundation for initiating new research projects in the field of volleyball and other sports.

Author's declaration:

Conflicts of interest: None

We confirm that all tables and figures in this article are ours and written by the researchers themselves.

Ethical-Clearance: this manuscript approved by local ethical committee of physical education and sport sciences college for women on (May /2023)

Author's contributions:

All contributions of this study were done by the researchers (W.Q. and S.H.) who get the main idea and work on writing and concluding also with number of experts, Qutaiba Nabeel Thabit (College of Administration and Economics/ University of Baghdad) in Statistics, Maurizio Bertollo in revision, Inaam Ghalib in translating, Manal Bayyat in proofreading

Facilitate the task: this study was supported by Physical Education and Sport Sciences College for Women/ University of Baghdad.

References:

- 1- Alyaa Talib. (2021). An analytical study of the reality of blended learning for practical lessons in volleyball in colleges and departments of physical education and sports sciences in Baghdad. *Modern Sport*, 20(4), 0021.
<https://doi.org/10.54702/msj.2021.20.4.0021>
- 2- Ayat Tariq Lateef, & Nuhad Mohammed Alwan. (2022). The role of educational and technological competencies according to the (T-pack model in the degree of self-assurance of teachers of the faculties of physical education and sports sciences) at the University of Baghdad. *Modern Sport*, 21(4), 0035.
<https://doi.org/10.54702/ms.2022.21.4.0035>
- 3- Trowbridge, L. W. & Bybee, R.W. (1990). *Becoming Secondary School Teacher*, (5th edition), Merrill Publishing Company, New York.
- 4- Danya Salman. (2022). The effect of using the mental visualization strategy in the style of cooperative groups in learning the two skills of setting from the top and receiving from the bottom in volleyball. *Modern Sport*, 21(2), 0019.
<https://doi.org/10.54702/msj.2022.21.2.0019>
- 5- Haneen Mohammed Hussein, & Muna Talib Albadry. (2021). Self-programming of information and its relationship to some offensive skills in volleyball among female students. *Modern Sport*, 20(3), 0055.

- <https://doi.org/10.54702/msj.2021.20.3.0055>
- 6- Malath Haider, & Njlaa Abbas. (2021). Decision-making and its relationship to spiking and blocking performance in volleyball for emerging players. *Modern Sport*, 20(3), 0035. <https://doi.org/10.54702/msj.2021.20.3.0035>
- 7- Dania Salman, & Shaymaa Jaafer. (2022). The effect of the Intustel model in learning the skills of transmitter and transmitter receiving volleyball for female students. *Modern Sport*, 21(3), 0054. <https://doi.org/10.54702/msj.2022.21.3.0054>
- 8- Muhammad Sobhi Hassanein and Hamdi Abdel Moneim. (1997). *The Scientific Foundations of Volleyball and Measurement Methods: Physical - Skill - Cognitive - Psychological - Analytical*, 2nd edition: Cairo, Al-Kitab Center for Publishing, p202.
- 9- Safa Abdul-Kareem Sadiq, & Najlaa Abbas Nseif. (2022). The relationship of three-dimensional intelligence to cognitive achievements in the subject of teaching methods. *Modern Sport*, 21(4), 0001. <https://doi.org/10.54702/ms.2022.21.4.0001>
- 10- Sarah Qassim, & Bushra Kadhum. (2021). The effect of a learning strategy for mastery in learning the skills of Setting volleyball for female students. *Modern Sport*, 20(3), 0089. <https://doi.org/10.54702/msj.2021.20.3.0089>
- 11- Shaimaa Adil, & Nuhad Mohammed. (2021). The percentage of the contribution of emotional achievement in the results of cognitive and skill learning to the skills of passing from the top and bottom of volleyball. *Modern Sport*, 20(3), 0103. <https://doi.org/10.54702/msj.2021.20.3.0103>

Educational Objectives: 1- Accustoming students to discipline and positive participation.

Stage: Second


Date: 10/22/2023

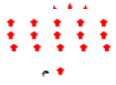
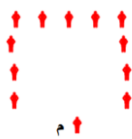
Educational Objectives: Students should learn the skill of setting

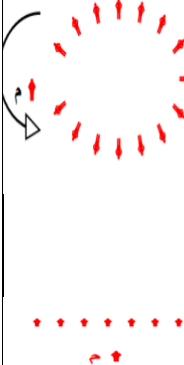
Duration: 90 minutes

Behavioral Objective: The student should perform the skill of setting proficiently

Equipment: Flex boards, volleyball

Lesson Sections	Activity Type	Duration	Explanation and Organization of Skill Content	Formations	Notes	
Preparatory Section 20 min.	Introduction	5 min.	Preparing the equipment - student attendance - standing in an orderly formation - taking attendance - chanting the sports salute slogan to start the lesson.		Adherence to the system and standing in an organized formation facing the school on the sidelines of the volleyball court.	
	General Warm-up	5 min.	Standing → walking → jogging → walking with wide steps → swinging arms → jogging →Jogging with forward and reverse arm rotations → High knee raises → Zigzag running Among cones → Regular Jogging → Walking → Stopping			Emphasizing the importance of warm-up exercises for all students and maintaining safe distances during implementation around the court
	Specific		Exercises:			Executing physical exercises

	Warm-up	10 min.	<ul style="list-style-type: none"> - Standing, lateral flexion: Extend and bend the arms to the sides alternately (4 repetitions). - Standing with arms out to the sides, alternate raising the arms high (4 repetitions). - Standing with arms out to the sides, stand with a slight lean forward (2 repetitions). - Standing, arms in front: bend the knees halfway (2 repetitions). 		correctly and correcting mistakes.
The main section 60 min.	The educational section	20 min.	The educational steps for the stages of the Bybee model are as follows: The school provides an initial idea about the lesson and then explains the details of the setting skill, demonstrates the skill, and allows the students to watch the skill performance on the screen. Additionally, a diagram illustrating the body parts involved in performing the skill is presented. Afterwards, the school divides the students into groups of (3-4) students each, and each group is asked the following question: Why is it necessary to push the ball with both hands and the same force when performing the preparation?		Selecting questions that align with the educational unit's objectives. Answering the questions in a way that is understandable for the students. Drawing attention to explaining the performance of the skill. After consultation and careful thought about the question, when reaching a solution, one student from each group presents the answer.
	The practical Section	40 min.			
	Exercise (1)	10 min.			
	Exercise (2)	10 min.	Here, adequate time is provided for groups to consult and think about the skill, linking previous experiences to the current ones within the available schedule. After making predictions and observations, educational groups provide their answers, which are then clarified by the teacher, relying on the theoretical and scientific aspects of the skill and its interpretation. This is done to maintain the balance of the ball and the proper execution of the preparations.		
	Exercise (3)	10 min.			
Exercise (4)	10 min.	Performing pre-prepared practical exercises while receiving immediate feedback and correcting mistakes. The female students stand along the side boundaries of the volleyball court, and each student performs a	Emphasize the importance of timing regulation for each exercise. Emphasizing the need to correctly perform the exercises. After each performance, the learner should watch the exemplary skill presentation. The learner should communicate with the instructor whenever they have questions or inquiries.		

			<p>warm-up exercise of walking in a straight line, attempting to reach the opposite side and then returning to the same spot. This exercise continues repetitively.</p> <p>The female students stand in a row in front of the wall on the volleyball court, spaced at a distance of 1.50 meters from each other. Each student has a ball and performs a volley towards the wall, and the exercise continues in this manner.</p> <p>The female students stand facing each other, with the first student holding a ball and positioned in the front half of the field, while the second student stands without a ball. The first student throws the ball upwards, and the second student passes it back to her from above. This exercise continues in a back-and-forth manner.</p> <p>Students stand within the boundaries of the court, arranged in a circular formation consisting of five students, with a sixth student positioned at the center. This central student engages in a reciprocal passing exercise with the other students. Subsequently, a rotation occurs among the students, facilitating the continuation of the exercise.</p>		
Concluding Section 10min.	short recreational activity	4 min.	Target Accuracy Game The students are divided into two groups, with each group positioned at the free-throw line, facing away from the target. The game begins by passing the ball from the last student in one group until it reaches the last student in the other group. Upon receiving the ball, the student at the front performs a pivot and executes a free-throw shot. After executing the shot, the player retrieves their ball and runs to the end of the line to prepare for another turn. The game continues in this manner, with the winning team being the one that achieves five successful shots before the other team.		<p>Emphasizing the participation of all female students in the game.</p> <p>Calmness and commitment.</p> <p>Performing the salute with a clear voice.</p>
	calming	3 min.			
	Departure	3 min.			

			Walk → Light Jog → Extend Arms to the Sides → Raise Arms High, Walk on Tip-Toes while Taking a Deep Breath → Walk Assigning the students a homework assignment to answer in the next educational unit. Equipment Return and Departure Salute.		
--	--	--	---	--	--

تأثير منهج تعليمي وفق أنموذج بايبي على تعلم بعض مهارات الكرة الطائرة للطالبات بكلية التربية البدنية وعلوم الرياضة

ورود قاسم حمد¹، سحر حر مجيد²، ختام موسى³
2&1 جامعة بغداد/ كلية التربية البدنية و علوم الرياضة للبنات
3 الجامعة الاردنية/ كلية علوم الرياضة - الاردن

أن أهمية البحث تكمن في أعداد منهج تعليمي مقترح وفق أنموذج بايبي وتعلم مهارتي الاعداد وأستقبال الارسال بالكرة الطائرة للطالبات وتكمن أهمية أنموذج بايبي بالمساعدة على توظيف المعلومات في المواقف المختلفة، وان مشكلة البحث جاءت بعد اطلاع الباحثات على الدراسات والمصادر السابقة لاحظت بأن هناك ضعف في الاداء المهاري في مهارتي الاعداد وأستقبال الارسال بالكرة الطائرة من قبل الطالبات لذلك أرأت الباحثات الى التعرف على أثر المنهج التعليمي وفق أنموذج بايبي لتعلم مهارتي الاعداد وأستقبال الارسال بالكرة الطائرة، وهدف البحث الى أعداد وحدات تعليمية وفق أنموذج بايبي بواقع وحدة تعليمية واحدة في الاسبوع وبمجموع (16) وحدة تعليمية من أجل الوصول الى تعلم مهارتي الاعداد وأستقبال الارسال بالكرة الطائرة للطالبات والتعرف على تأثير المنهج التعليمي في تعلم مهارة الاعداد وأستقبال الارسال بالكرة الطائرة للطالبات، وأستخدمت الباحثات المنهج التعليمي وفق أنموذج بايبي في تعلم المهارات، وتمثل مجتمع البحث بطالبات المرحلة الثانية والبالغ عددهن (82) طالبة وعينة البحث (30) طالبة من شعبتي (أ) وشعبته (د)، وان لعبة الكرة الطائرة تشمل على ست من المهارات الأساسية التي ينبغي على الطالبة تعلمها (الإرسال، إستقبال الارسال، الإعداد، الضرب الساحق، حائط الصد، الدفاع عن الملعب) وسوف تتناول الباحثات مهارتي (الاعداد وأستقبال الإرسال) إذ تعد أهم المهارات في هذه اللعبة لامتيازها بالطابع الهجومي والدفاعي لهذا يتحتم علينا البحث عن أحدث الاساليب، والوسائل والطرائق، وأستنتجت الباحثات وجود فروق في تعلم المهارات بين الاختبارات القبلية والبعديّة ولصالح المجموعة التجريبية، وهذا ما يحقق احد اهداف التنمية المستدامة للامم المتحدة في العراق (التعليم الجيد). وأوصت الباحثات على الاخذ بنتائج الدراسة لبداية مشاريع بحثية جديدة في لعبة الكرة الطائرة وألعاب أخرى

مستخلص البحث

أنموذج بايبي، مهارات الكرة الطائرة

الكلمات المفتاحية