

A training program supported by VISUAL BASIC technology and its effect on performance level of Spiking in volleyball

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Abstract

The research aimed to using Visual BASIC technology and monitor its effectiveness on skillful Performance level in volleyball (Spiking skill) for volleyball specialty in physical education female students. the researcher used the experimental method by the experimental design of one group using pre-post measurements, the study was conducted on a sample of (20) female students with 8.10% of the total population in the year 2019/2020, results indicated that Visual BASIC technology led to a higher level of skillful Performance under research in volleyball. Ayat Abdel-Halim Mohamed Assistant professor at department of Sports Games Training, Faculty of Physical Education for Girls in Gizera, Helwan University, Arab Republic of Egypt.

Keywords: Visual BASIC, Volleyball, Spiking.

Introduction:

Training programs based using materials or electronic means, such as 3D programs, Visual Basic graphic objects programs or using the Technological techniques in general, it is a way of tools that support the training process, using the latest methods in the fields of Training, physical and skill preparation programs adoption of computers , media , storage and networks, which has increased in the consolidation

of the concept of training using technology. [33: 52] [42: 124]

Visual BASIC (VB) software is one of the technological tools that contribute positively to the interaction of the trainees, as the results of the studies conducted in the field of training indicated the superiority of the trainees who used technological tools compared to other methods as the technological innovations address more than one sense

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that works to increase the understanding of An integrated presentation of information, which leads to an increase in physical or skill performance. [23: 704] [24: 15]

Many researches have indicated the effectiveness of using Visual Basic software, such as the study "Budiman et al." (2020) (16) The results indicated VB helps the development of physical performance and skills, the use of VB in the training field with positive and effective, the rate of integration when using VB and the use of software objects from images, files and texts with a success rate of 100%. Also, The Gburi study (2019) (20) indicated that VB as Training tool furnishes a background necessary for studying numerical analysis (numerical methods) theory. This program is a simple application tool, which provides an interactive and simplified interface for Trainees. The system consists of different techniques with different algorithms has been implemented to provide wider choice for the Trainees in order to make it easier for them to understand the fundamentals of numerical methods. The simulation results from the

testing of the system demonstrated that the system works correctly and meant all constraints.

Visual Basic (VB) is an enhancement of BASIC, a regular procedural language (Pietromonaco, 2002; Shelly, et al, 2003) [36][43]. VB has the added features of visual object-oriented components and the code for the procedural structures of sequence, iteration, and selection. An example of a visual object is a button. It has encapsulated properties and event procedures (Nelson, 2004; Schneider, 2001) [35][41]. VB has "public" and "private" procedures like objectoriented programming languages' public and private methods. Procedural languages lack such characteristics. The literature supports the idea that VB is different from procedural programming. (Buchner, 2009; Grehan, 2006a; Grehan, 2006b; Llewellyn et al, 2002; Spain, 2006) [15] [21] [22] [26] [45]. O'Brian (2004) describes VB as an object-oriented programming language, rather than a language like BASIC, C, or COBOL. Kai & McKim (1998) described how object-oriented programming can be performed in VB. Because of its object-

oriented methods and procedures, VB requires a different mindset from other programming languages (Shirer, 2000) [44].

On the other hand, Volleyball is the world's second popular sport after soccer. the United States Volleyball Association (USVBA) is the national governing body with its headquarters located in Colorado Springs, Colorado which is also the Olympic training center. The basics of the original game has changed drastically over the years.

Players are now expected to achieve the more advanced skills of the game and keep abreast of the new developments. The rebound aspect of volleyball creates unique challenges for all players. Volleyball makes broad motor skill demands on a player in spatial orientation, balance, rhythm, power, speed, and other abilities. Volleyball is not a copy of experiences of any other team sport, but it is the truest team sport. [13]

Attack (Spike)-Used to put the ball into the opponent's court in order to earn a point or side out. the fundamental action of attacking incorporates a quick approach followed by a strong, full arm swing, and follow-thru. [14]

Thus, through the practical observation, the

researcher noted that Spike skill's performance level for the students in is characterized by randomness, poor performance and lack of coordination in motor sequence, and students cannot develop a correct perception of the skill in mind which leads to weak performance level.

Therefore, this study is an attempt to training female students with one of the most modern strategies in the field of volleyball, by using Visual BASIC technology for studying its effect on skillful performance in volleyball.

Research objective:

This study aimed to improve the performance level of hitting skill in volleyball - the skill of spike- for students of specialization in volleyball using the technique of (Visual Basic).

Research hypotheses:

There are statistically significant differences between the average of the pre-and post-measurements for research group in the level of skillful Performance under research in favor to the post measurement.

Methodology Method

The experimental approach was used for one group, using pre- post measurements.

Research sample

The research society consisted of (247) female students of the fourth class students in faculty of physical education for girls in Gezira, Helwan university for the academic year 2019/2020. The basic sample was randomly selected from the female students of the research community. The total number of the sample was (20) volleyball specialty students with 8.10% of the total population, And (10) students of the total research community and outside the basic research sample as exploration sample. Thus, the basic sample and outside the basic research sample consisted of (30) female students by 12.15% of the total population.

Tools

1- Data recording forms: Forms for recording the data for the research sample were prepared. (Appendix 1)

2- Tools and devices: Restameter device for measuring height and weight, distance tape measure, Bearings, medical balls, tennis balls, volleyballs, volleyball court.

3- Fitness elements tests: (Appendix 2, 3) The fitness elements tests for the Spike

skill were identified through the following references: (Ahmed 2013)[6], (Zaki 2012) [47], (Farid et al. 2012) [18], (Mohamed, Hamdy 2005) [32], (Mohamed El-hafnawi 2013) [30], (Ayman 2006) [12], (Tarek, Ayman 2006) [46], (Mohamed, Ayman 2005) [31], (Ayat 2009, 2016a,b) [11,9,10], (Aly 2014) [8], (Ahmed, Aly 2005)[4], (Marwan 2012) [28], (Aly 2010) [7] and (Rehab et al. 2013) [38].

These references were used to identify:

- Fitness elements needed to perform the skill under research.

- Measurement tests for the fitness elements (physical tests).

The experts' opinion (Appendix 6) was reviewed. The experts pointed out that the fitness elements (accuracy, capacity, coordination, and flexibility) Shown in Appendix (2).

The experts also pointed to the most appropriate tests (Table 1 & Appendix 3) for measuring these physical elements, which obtained an agreement rate higher than 75%. as follows:

- Aiming at overlapping rectangles test. (Arm accuracy)

- Push a medical 3 kg ball a distance test. (Arm capacity)
 - The vertical jump (Jump up) to measure the muscular capacity of the legs (legs capacity)
 - Through tennis ball on wall and receive it test. (Coordination)
 - Trunk bending forward down (standing. folding) test. (Frontal Flexibility)
 - Trunk bending up (inclined lying) test from Prone falling position. (Background flexibility).
- 4- Skillful test (Spike): Through the following scientific studies and references: (Aly 2014) [8], (Ahmed, Aly 2005) [4], (Ayman 2006) [12], (Tarek, Ayman 2006) [46], (Mohamed, Ayman 2005) [31], (Ayat 2009, 2016a,b) [11,9,10], (Marwan 2012) [28], (Rehab et al. 2013) [38], (Afaf et al. 2014) [3] and (Mohamed, Hamdy 2005) [32] The skillful test was determined to measure the level of performance of the Spike. In addition, the expert opinion (Appendix 6) was used to determine the tests to measure the skills, Experts agreed to the tests of (The accuracy of setting test, straight Spike test) as shown in Table (1) & Appendix (4, 5).

Visual BASIC software design (The training program using VB technology):

Visual BASIC software was designed as shown below:

1- Objective of Visual BASIC software: The Visual BASIC software was aimed to know its effect on the performance level of the Spike skill in volleyball for volleyball specialty students.

2- Skillful level of the research sample: The skillful aspects was determined by the test under research (Appendix 4, 5).

3- Visual BASIC software content (Appendix 7): The Visual BASIC software content was determined through the following scientific references (Ayat 2009, 2016a,b)[11,9,10], (Ayman 2006)[12], (Tarek, Ayman 2006)[46], (Mohamed, Ayman 2005) [31], (Rehab et al. 2013) [38], (Afaf et al. 2014) [3], (Mohamed, Hamdy 2005) [32], (Aly 2014)[8], (Ahmed, Aly 2005) [4], (Marwan 2012) [28], (Aly 2010) [7], (Zaki 2012) [47], (Farid et al. 2012) [18], (Mohamed El-hafnawi 2013) [30] by including some multimedia; videos, pictures and texts in Visual BASIC software contains skillful aspects of the Set and Spike

skills in volleyball. The stages of the technical performance of the skills under research were described (Appendix 5).

Some illustrations of the



Visual BASIC software (Appendix 7):



4- Visual BASIC software features:

- Display and download text, images, graphics and video on full screen.
- Sound control during video playback.
- Repetition of images, graphics and video more than once.
- Pause during video playback.

5- Method of training: The training method (the educational style) was used in the study was the individual or self-learning method through the use of each individual student for Visual BASIC software.

Determination of severity:

Simple intensity: 35% - 50%,
medium intensity: 50% - 75%,

less than maximum intensity: 75% - 90%) from the maximum ability of the player. As shown in the following figures:

- Forming weekly intensity scores for the simple intensity week (35% - 50% of a gamer's max ability):

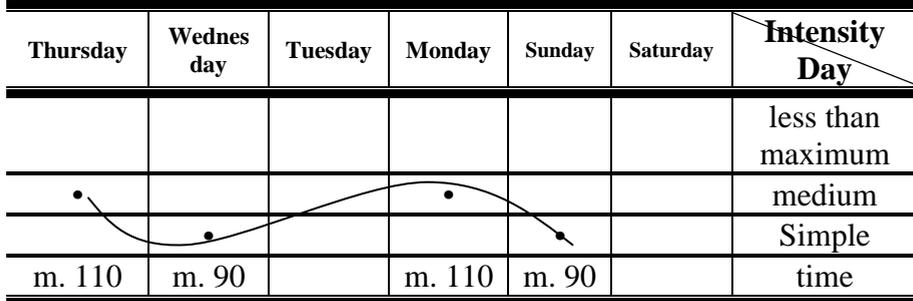


Figure (1) formation of the weekly stress scores for the simple week

- Formation of weekly intensity scores for the medium intensity

week (50% - 75% of player max ability):

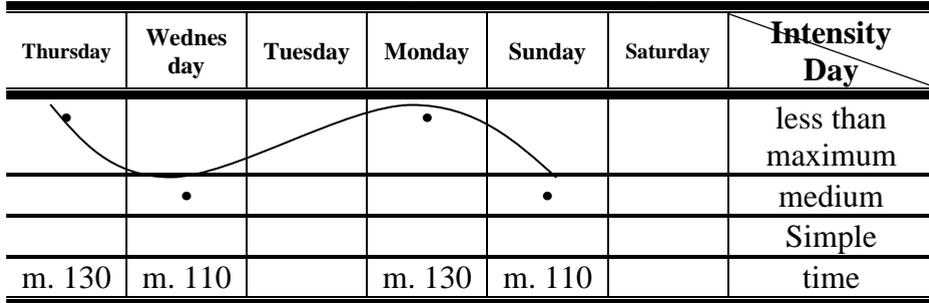


Figure (2) Formation of weekly intensity scores for the medium intensity week

- Formation of weekly intensity scores for the week with less than maximum intensity (75%

- 90% of the maximum ability of a player):

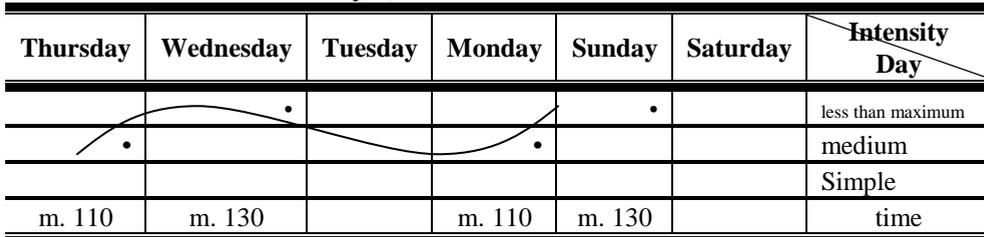


Figure (3) Forming the weekly intensity scores for the week of less than maximum intensity

6- The experts' opinion: The experts' opinion (appendix 6) of Visual BASIC software and agreement was obtained on Visual BASIC software was designed, and the experts agreed to instructions and contents of the Visual BASIC software (appendix 8).

7- The exploratory study: The Visual BASIC software was tested by presenting on the sample of the exploratory study in order to identify the clarity of the pictures, drawings and video were contained on the Visual BASIC software. The result of this experiment was

the clarity of all the contents of the Visual BASIC software.

Application:

Visual BASIC software was implemented on the basic study sample (20 students), as shown in table (3):

Distribution of the training program content (skill) on the total units for the research group:

The Training Program for the research group was supported by Visual BASIC software, Table (4) shows the distribution of training program content of the research group.

Results

Table (6)
Significance of the mean differences between the pre- post measurements of the research group in the level of Spike tests performance in volleyball

Parameters	Research group (Visual BASIC software) N=20				Mean Differences	T value
	Pre		Post			
	M	±SD	M	±SD		
Spike	1.19	0.20	4.10	0.96	2.91	4.96*

T Table value at a significant level (19, 0.05) = 1.68 (one direction)

Table (6) shows statistically significant differences between Pre-Post measurements of the research group at a significant level of 0.05.

Discussion

The results of Table (6) show that there are statistically significant differences between

pre and post mean values of this research group in skillful performance of Set, Spike skills at a significant level (0.05) for the post measurement.

These results indicate that the Visual BASIC software was a positive effect on the skillful level under

research (Spike skill). This indicates that the Visual BASIC software led to the correct perception of how to perform skill under research. The images, drawings, texts and videos were attached to the Visual BASIC software was a positive result on the level of skillful performance.

Also, The researcher attributed the reason for these differences to the experimental variable only, which is represented in the Visual BASIC software. The researcher also attributes the progress made to the research group to clarifying the performance of the skillful (Spike skill) through videos in the program. Thus, the higher level of skillful performance for the research group.

The previous results is consistent with many studies which was indicated that use of Visual BASIC software in the training process shows an improvement and effectiveness in the learning process and the higher level of skillful performance in general, such as the study of (Budiman et al 2020)[16], (Gburi 2018)[20], (Abadan 2019)[1].

Thus, the researcher attributed the reason of differences between pre and

post measurements to the experimental variable only, which is the Visual BASIC software. The researcher also attributes the progress in skills under research to relying on the Visual BASIC software and its various media (texts, pictures, graphics, audio and video) and thus a positive effect on Spike skill and this is due to the attractiveness and effectiveness of Visual BASIC software.

Accordingly, The Visual BASIC software contribute in a positive way in improving skillful performance, and active training using technology contributes positively to enhance skillful and physical variables in general.

On the other hand, The researcher attributes the progress of the experimental group to the interaction between the student and the Visual BASIC software which the students controlled what they are subjected to and controlled the sequence of the presentation, time. As Visual BASIC software help to the development of physical performance and skills, in addition to the formation of the optimal perception of the performance of skillful in how to emplement the skill under

research. Thus, provide the student feedback, which was helped to develop his movement perception. Therefore, the effectiveness of Visual BASIC software, This previous results is consistent with (Rehab 2017) [39], (Nashwa 2016) [34], (Abdel-Gawad 2015) [2], (Marwa 2014) [27], (Krishan, 2012) [17], (Garry L. White 2012) [19], (Gohar, 2011) [29] and (Khaled 2009) [25].

Accordingly, This proves that Visual BASIC software leads to higher level of training and performance as a result of the practice of what has been explained and presented on the program. Thus, reflected in the level of students' performance.

Thus, A research hypothes is achieved, which stated that there are statistically significant differences between the pre-and post-measurements for the research group (Visual BASIC software) in the level of skillful Performance under research in favor to the post measurement.

Conclusions

- Training program supported by VISUAL BASIC technology is easy and simple in training use of the skill of spiking in volleyball.

- Training program supported by VISUAL BASIC technology works to provide students or Trainees with wider options and thus facilitate their understanding of their educational or training uses.

- Training program supported by VISUAL BASIC has effective on the skillful performance level under research in volleyball for female students of physical education faculty.

- Training program supported by VISUAL BASIC is a simple application tool, which provides an interactive and simplified interface for students or trainees of Spiking in volleyball.

Recommendations

- Encouraging the using of Visual BASIC technology for the purpose of support volleyball skills training

- Encouraging the using Visual BASIC software because of its positive effect in raising the level of skillful performance in volleyball.

- Introducing learning through Visual BASIC within the curricula of the scientific subjects in the faculties of physical education.

- Conducting further studies on the effectiveness of Visual

BASIC software t in other cognitive and skillful aspects.

- Work to include technological uses in the training process in general and volleyball in special.

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