

Effectiveness of Electronic and Programmed Book at the Level of Performance of the Pole Vault for Female Students in Faculty of Physical Education, Minia University (Comparative Study)

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Abstract: The research aims to make comparative between the effectiveness of electronic and programmed book at the level of performance of the pole vault for female students in Faculty of Physical Education, Minia University. The questions of the research as follows: 1.Is the e- book has an effect on pole-vault performance in the Faculty of Physical Education for Girls, Minya University? 2.Is the programmed book has an effect on pole-vault performance in the Faculty of Physical Education for Girls, Minya University? 3.Which of the two methods are more effective? The two researchers have used two experimental groups and by following pre and post measurements of both groups and the basic sample consist of 30 female students 3rd year (Educational department) 2008/2009 and they were divided into two equal groups. The two researchers made the pre measurements of the two groups in the performance of the pole-vault and then the basic study was made by using the first experimental group of the e- Book and the second one of the programmed Book. The study takes 6 weeks, two units per week. The two researchers recommend using e- book in learning the pole-vault with female students in Faculty of Physical Education, Minya University.

Key words: E-book • Programmed book • Pole-Vault

INTRODUCTION

Modern technologies focus on presenting technology in studies. It is noted that technology has imposed changes in the educational progress in general and reconsidering teaching methods in particular, and changes what so called traditional education into electronic education. There is no doubt that educational materials presented by computer achieve positive results and increase education quality for it contains educational attractive means like photos and drawings [1].

Programmed education has been invaded by newer technologies, which are being used by one of the two researchers who participated in this study to teach some of the track and fields competitions to the Faculty of Physical Education students, Minya University. So, it was considered one of the traditional methods used in teaching despite the clear results which programmed education has achieved in studying some of the track and fields competitions.

As the pole-vault is one of the recent competitions listed for female in the Egyptian Athletes Federation and requires a good technical and physical preparation, the

two researchers saw the necessity of teaching it by using an educational method to simplify it. As there is no study has dealt with electronic or programmed brochure especially the studies which dealt with it through another educational methods [2-4].

Hence, a question crosses the two researcher's minds: which method is more effective in teaching Pole-vault Competition Electronic or Programmed brochure?

Aim of the Study: A comparison between the effectiveness of electronic brochure and programmed brochure in teaching pole-vault in Faculty of Physical Education for Girls, El Minya University.

Questions of the Study:

- Is the Electronic brochure has an effect on teaching pole-vault in the Faculty of Physical Education for Girls, El Minya University?
- Is the Programmed brochure has an effect on teaching pole-vault in the Faculty of Physical Education for Girls, El Minya University?
- Which of the two methods are more effective?

MATERIALS AND METHODS

The two Researchers used the experimental method by using two experimental groups to follow the measurements of both groups before and after.

Community and the Sample of the Study: 39 students of third year in Education Department, Faculty of Physical Education, Minya University in the academic year 2008/2009 were selected intentionally as the basic sample. 30 of them rated 76.92 % of the study's community and they were divided into two groups each one of them consisted of 15 students .The first group used electronic brochure and the second group used programmed brochure in teaching pole-vault , the selected sample was based on the following :

- They have already learned the skills of long, high and triple jump in the past few years which speeds up the process of learning pole-vault.
- Female student has already earned basic physical attributes which help her to learn pole-vault easily.

Similarity of the Sample: The two Researchers ensure the moderation of distributing the individuals of the two groups in the lights of the following variables: rates of growth, age, height, weight, intelligence, physical abilities and the technical performance of pole-vault jump (Table 1).

Table 1 shows that the values of torsion coefficient of growth rate and intelligence, physical abilities tests and the technical performance of the Pole-vault jump for the two groups is limited between ± 3 which refer to the moderation of the distribution of the sample in these variables.

Equality of the Two Groups of the Research: Parity between the two search groups was set from 23 to 24/2/2009 in the variables of: rates of growth, age, height, weight, intelligence, physical abilities and the technical performance of pole-vault jump) (Table 2).

Table 2 shows that there are no statistically significant differences between the two groups of the study in the variables of the rates of growth, age, height, weight, intelligence, physical abilities and the technical

Table 1: Arithmetic average , median, standard deviation and torsion coefficient of growth rate and intelligence, physical abilities tests and the technical performance of the pole-vault jump for the two groups of the study (N=30)

Second experimental Group ((N=15)				First experimental Group (N=15)				Measurement	
Torsion Coefficient	Standard Deviation	Average	Average	Torsion Coefficient	Standard Deviation	Average	Average	Unit	Variables
1.01	0.57	19.1	19.29	0.91	0.59	19.2	19.38	Year	Age
0.8	4.5	162.5	163.7	0.8	4.61	162.5	163.73	cm	Height
-0.33	8.56	59	58.07	-0.01	8.76	60	59.97	Kg	Weight
0.07	5.36	65	65.13	-0.61	4.27	65	64.13	Degree	Intelligence
-1	0.19	7.34	7.28	-0.45	0.15	7.35	7.33	Sec.	30 M /Running
0	1.18	29.6	29.6	0.6	1.64	29.6	29.93	cm.	Vertical Jump
1.36	0.22	2	2.1	1.34	0.21	2	2.09	M	Throw of medical ball /weight 30Kg
0.11	1.61	20	20.06	0.41	1.41	20	20.19	Sec.	Running Multi-pronged
0.07	3.03	13	13.07	0.26	3.13	13	13.27	No	Sit Bending The Knees
-0.36	0.56	1	0.93	-0.18	0.55	1	0.97	Degree	Pole-vault technical performance

Table 2: Significance statistical differences between the two groups of the study in the variables of rates of growth, age, height, weight, intelligence, physical abilities and the technical performance of pole-vault jump (N=30)

Value	Second experimental Group (N=15)		First experimental Group (N=15)		Measurement	
	S	A	S	A	Unit	Variables
0.407	0.57	19.29	0.59	19.38	Year	Age
0.02	4.5	163.7	4.61	163.73	cm	Height
0.601	8.56	58.07	8.76	59.97	Kg	Weight
0.565	5.36	65.13	4.27	64.13	Degree	Intelligence
0.8	0.19	7.28	0.15	7.33	Sec.	30 M /Running
0.638	1.18	29.6	1.64	29.93	cm	Vertical Jump
0.086	0.22	2.1	0.21	2.09	M	Throw of medical ball /weight 30Kg
0.242	1.61	20.06	1.41	20.19	Sec.	Running Multi-pronged
0.178	3.03	13.07	3.13	13.27	No.	Sit Bending The Knees
0.164	0.56	0.93	0.55	0.97	Degree	Pole-vault Technical Performance

Value of (v) indexed at (28) and signified level (05.0) = 701.1

performance of pole-vault jump where all the values of v indexed at the significant level of 05.0 which shows their parity in that variables .

Methods of Collecting Data:

First

Devises and Tools:

- Restameter device for measuring heights in cm and weights in Kg.
- Dynamometer device for measuring the muscles strength and the extended material of the two legs.
- Dynamometer back device for measuring the strength of the back muscles set.
- Sponge mattresses with different heights.
- Poles with different heights.
- A measuring cm Tape.
- High jump machine.
- Ropes, elastics ropes, calcareous.

Second

Tests:

Intelligence Test: The two researchers used Katell intelligence test which was diverted into its Arabic version by Ahmed Salama and Abd El Salam Abd El Ghafar and was developed by Raymond B. Cattell [5]. It is a non verbal test because it does not relay on language but it subjected individuals performance to their abilities of determining similarity and difference between shapes included in the test.

Physical Abilities Tests: After reading the available references, Arabian and foreign studies; the physical abilities of Pole-vault were found which are muscular strength of the two legs, transition speed, fitness, muscular strength of the arms and muscular strength of the abdominal muscles group.

Third

Personal Data Form: Researcher used a form to register personal data of the basic sample individuals under study.

Fourth

Technical Performance Evaluation Form: Researchers used a form to register the before and after technical performance measurements of the pole-vault jump of both study groups.

Scientific Transactions of Research Tests and Technical Performance Form of Pole-vault Jump:

The two researchers found it in the period from 19 to 26 / 2/2009 as follows:

Validity: Both validity tests and technical performance evaluation form of pole-vault were calculated through validity comparison terminal on a survey sample of the study community and outside the basic study community consist of 8 students .And their degrees were arranged in the ascending order to select high-level students 4 students rated 50% and also students with low-level (4 students)rated 50%. Significance differences between the two groups were calculated in those tests as shown in Table 3.

Table 3 shows that there are statistical significant differences between High-level students and Low-level students in tests and technical performance evaluation form of Pole-vault up to High- level students .As all calculated (Z) value greater than the value (Z) indexed, which indicates the validity of both tests and the technical performance evaluation form and its ability of distinguishing between the two groups.

Stability: To calculate the stability tests and technical performance evaluation form the two researchers used the method of applying the test and re-test it on a sample consist of 8 students of the sample community and from outside the community with a7 days lag between the first and second applications of IQ test and 3 days to Physical tests and the evaluation form of technical performance. Then the correlation was found between the two applications (Table 4).

Table 3: Significance differences between high-level students and low-level students in tests and technical performance evaluation form of pole-vault Jump in "MAN" way and bending barometer

Statistical significance	Value (z)	Low-level (N=4)		High-level (N=4)		Unit	Measurement Variables	
		S	A	S	A			
ST	2.34	2.22	63.25	1.73	67.5	Degree	Intelligence	Physical test
ST	2.32	0.02	7.42	0.05	7.24	Sec.	30 M /Running	
ST	2.32	0.41	29.13	1.14	30.85	cm	Vertical Jump	
ST	2.32	0.06	1.95	0.15	2.18	M	Throw of medical ball /weight 30Kg	
ST	2.35	0.58	20.5	0.94	18.33	Sec.	Running Multi-pronged	
ST	2.32	2.22	10.75	1.26	16.25	No.	Sit Bending The Knees	
ST	2.14	0.58	0.5	0.25	1.38	Degree	Pole-vault Technical Performance	

Value of (Z) indexed at the signified level of 05.0 =1.96

Table 4: Correlation transactions between the first application and the second application in tests and technical performance evaluation form of pole-vault (N=8)

Correlation	Second application		First application		Measurement unit	Variables	
	S	A	S	A			
0.94	5.28	65.13	4.65	64.25	Degree	Intelligence	Physical tests
0.85	0.2	7.26	0.17	7.3	Sec.	30 M /Running	
0.9	1.14	29.05	2.11	29.68	cm	Vertical Jump	
0.85	0.24	2.08	0.26	2.13	M	Throw of medical ball /weight 30Kg	
0.92	1.77	19.58	1.47	19.83	Sec.	Running Multi-pronged	
0.98	2.77	12.63	2.36	12.88	No.	Sit Bending The Knees	
0.84	0.52	1.13	0.68	0.94	Degree	Pole-vault Technical Performance	

The value of C indexed at 6 degree and signified level (05.0) = 707.0

Table 4 shows that the correlation coefficients between the first application and the second application of study tests and technical performance evaluation form ranged from 0.84 to 0.98 which is significant statistical correlation as all the calculated value of C are greater than indexed value of C at the signified level of 0.05. This indicates the stability of that tests and the technical performance evaluation form.

Fifth

Poll of Experts: A poll of experts form was set up including 10 experts in curriculum and teaching methods of tracking and field competitions on the relative importance of the axes of both electronic and programmed brochure of Pole-Vault.

Seven axes were identified (date, physical abilities, law, technical stages, utilities and alternative, educational steps and common mistakes).

The two researchers approved by 75% as the relative importance was from 70% to 100% that indicates the importance of all axes .Also the necessity of referring to security and safety factors was a result of this step.

- The electronic brochure of Pole-vault was first designed with the assist of one of the specialists and it was presented through personal interviews to experts to give their opinion on it. Both researchers took into account unifying the content of electronic and programmed brochure. The necessity of supporting the brochure with animations and videos was a result of that step.
- The programmed brochure of Pole-vault was first designed and presented through personal interviews to experts to give their opinion on. The brochure is appropriate As a result to this step.

Surveys: The two researchers have made it on a sample consist of 8 students from study community and from outside the study community on 16-18/2/2009 as follows:

- First survey was made to the test devises and tools and how to perform study tests.
- Second survey was made after making the required amendments of the electronic brochure where it was presented to the exploratory sample to find out how clear the content is and the validity of formulation. As a result of this survey it was necessary to increase illustrating videos.
- Third survey was made as the programmed brochure was presented to the exploratory sample to find out how clear the content is and the adequacy of photos and drawings in clarifying the performance of pole-vault .As of this survey it was necessary to add some illustrating photos.

The Basic Study

Pre- Measurement: These measurements were made on the two groups of the study at 25/2/2009 to evaluate the technical performance of the Pole-vault jump. 10 Scores set by 3 judges where the average is calculated to every student then the final score is register in the considered form.

Basic Experimental: After making the required amendments to both the electronic and programmed brochures and designing their final shape ,the basic experiment was applied from 1/3/2009 – 9/4/2009 where it takes 6 weeks ,two units per week ,and the unit time is 120 min taking into account parts of the unit commitment for both groups as follows:.

First Experimental Group: It was applied on Sunday before the beginning of the school day and on Wednesday after the end of the school day by using the Electronic brochure through a CD-ROM at the beginning of the introductory section of every unit for 15 min while applying will continue on the playground through the main part.

Second Experimental Group: It was applied on Monday before the beginning of the school day and on Thursday after the end of the school day by using the programmed brochure through the main part.

Post Measurement: These measurements were made on the two groups of the study on 12/4/2009 on technical performance of pole-vault and under the same circumstances.

RESULTS AND DISCUSSION

Table 5 shows there are statistical significant differences between average of both pre and post measurements of the first experimental group in the technical performance of Pole-vault and it goes for post measurements as the calculated value of Z is greater than the indexed value of Z at the signified level of 0.05 and the percentage change was 86.58%.

The two researchers built up those differences to the progress in the technical performance of Pole-vault caused by using electronic brochure which included photos and animation of the Pole-vault in addition to the video which illustrates the technical performance strictly. This gives the students the opportunities to watch it more than once when in needed. Also, it helps in preventing and correcting some of the errors, which led to learn the competition in quick steps and clear mastering.

This indicates what the results of previous studies have reached [6]. Hence, the researchers have answered the first question of this study.

Table 6 shows there are statistical significant differences between average of both pre and post measurements of the second experimental group in the technical performance of Pole-vault and it goes for post measurements as the calculated value of Z is greater than the indexed value of Z at the signified level of 0.05 and the percentage change was 86.58%.

The two researchers built up those differences to the progress in the technical performance of Pole-vault caused by using programmed brochure as it analyzes the technical side and enrich it with knowledge and educational steps supported by serial photos and drawings. The presence of the teacher as a guide helps in clarifying and illustrating some of the complicated technical stages and solving any problem facing students during applying the tests. Also implementing the tests with the students self performance pays attention to the individual differences and not to move from one frame to another unless ensuring total proficiency of the technical stage and correcting common errors; helps in learning the competition.

And this is goes with what the results of prior studies have reached [2, 7-11]. Hence, the researchers have answered the second question in this study.

Table 5: Significance differences between average of both pre and post -measurements of the first experimental group in the technical performance of pole-vault (N=15)

Change percentage	Significance Level	(z) value	Differences Average	differences Standard deviation	Average Of post measurement	Average Of pre measurement
86.58 %	Sig	27.46	6.26	0.23	7.23	0.97

The value of Z indexed at 14 degree and signified level 05.0 = 1.761

Table 6: Significance differences between average of both pre and post- measurements of the second experimental group in the technical performance of pole-vault (N=15)

Change percentage	Significance Level	(z) value	Differences Average	differences Standard deviation	Average Of post measurement	Average Of pre measurement
85.76 %	Sig	23.33	5.60	0.24	6.53	0.93

The value of Z indexed at 14 degree and signified level 05.0 = 1.761

Table 7: Significance differences between averages of both pre and post- measurements of the two experimental groups the first one and the second one in the technical performance of pole-vault (N=30)

Change percentage	SignificanceLevel	(Z)Value	Second experimental group(N=15)		First experimental group(N=15)	
			S	A	S	A
0.82 %	Sig	3.11	0.58	6.53	0.65	7.23

The value of Z indexed at 28 degree and signified level 05.0 = 1.701

Table 7 shows there are statistical significant differences between the average of both measurements the two experimental groups in the technical performance of Pole-vault and it goes for the first experimental group, as the calculated value of Z is greater than the indexed value of Z at the signified level of 0.05. Also, the differences between change percentage in the two experimental groups the first and the second (0.82%) and it goes for the first experimental group.

Table 7 shows there are statistical significant differences between the average of both measurements of the two experimental groups in the technical performance of pole-vault and it goes for the first experimental group which uses the electronic brochure which indicates its effectiveness in learning pole-vault better than the second experimental group which used the programmed brochure.

The two researchers built up this progress to the electronic brochure which include serial animations in addition to video that uses sounds and images to clarify the technical performance strictly with the ability of watching it more than once which helps to master the performance quickly and attract students to learn and not to feel board, hence we have answered the third and last question in this study.

CONCLUSION

- Electronic brochure is effective in learning pole -vault at the Faculty of Physical Education, Minya University.
- Programmed brochure is effective in learning pole -vault at the Faculty of Physical Education, Minya University.
- Electronic brochure is more effective than programmed brochure in learning pole-vault for the study students.

Recommendation:

- The necessity of using the electronic brochure in learning pole-vault at the Faculty of Physical Education.
- Using short, light and flexible poles in order to facilitate the education process.
- Providing the factors of safety and security during learning pole -vault because of its difficult stages and complicated movements.

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