Effect of Software Supported Micro Teaching on Learning Pole Long Jump for Children of (10 – 11) Years

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Abstract:

The objective of the current study was to identify the effect of using software supported micro teaching on the level of technical and numerical performance in the long jump skill with pole for children of (10 to 11) years. The researcher applied the experimental method to a sample of (20) children divided into two groups representing the experimental and control groups of (10) children each. The research tools included physical tests, evaluation of the level of technical and numerical performance in long jump with pole, the proposed educational program by using micro teaching method electronically supported.

Results:

1- The method of micro teaching supported with software had a significant positive effect at 0.05-level on the level of technical and numerical performance in pole long jump for children of (10 to 11) years.

2- The use of the traditional method was significantly positive at 0.05- level on the level of technical and numerical performance in pole long jump for children of (10 to 11) years.

3- The software supported micro teaching method was more effective than that of the traditional method in developing the level of technical and numerical performance in the event of pole long jump for children of (10 to 11) years.

Research introduction and problem:

Micro teaching is one of the most striking educational innovations in the field of teaching and training. The idea of micro teaching has been established according to a hypothesis stating that performance of compound skills is a complex process and practicing such compound

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skills by the student for the first time is horrible and a great problem that may lead the student to feel disabled and to wish not to learn. It provides a chance to discover aspects of failure in teaching and how to treat them through the actual practice and feedback by searching for suitable methods for distinguished performance of compound skills.(5:566)

The programmer in the micro teaching technique is trying to reduce complexes existed in traditional teaching situations by decreasing the number of students to (5) students. After the teacher presents the skill where the students participate the student and the teacher view, analyze and criticize it and if there is a tangible need to present and to plan the lesson once again, the teacher will plan the micro lesson one more time and to teach it to a group of students and to record the skill with the visual recorder. It is possible to re-present the skill more than one time as per the necessity for developing the skill needed to be improved in students and allotting each class to teach students components of each motor skill. .(9:9)

Bastawissi Ahmed Bastawissi (1997) indicated that jumping events were considered as single movements of triple phases where approaching was generally called preliminary phase, takeoff was called the main phase and after that was called the final phase. Also jumping movements were considered as work and fighting to gain a distance horizontally as in the long and triple jump or to conquer a distance vertically as in the high jump and consequently, the body should generate a considerable power to defeat the external force. (3:260)

Events of International Federation of Athletics for children are carried out in three age groups as follows:

The 1st group: children of 8 to 9 years.

The 2nd group: children of 10 to 11 years.

The 3rd group: children of 12 to 13 years. .(2:34)

Through her teaching and training at Children Sports Academy(1)(4)(6) (7)(9)(10)(12)(14), Faculty of Physical Education for Girls, Zagazig University; the researcher noticed that the

level of technical and numerical performance of the long jump with pole was low for children of (10 to 11) years. The researcher related the reason of that to the traditional method being followed and not using hypermedia in teaching the long jump skill with pole for children as the traditional method i.e. learning with orders technique, depends on explaining the skill verbally and performing the model without actual participation of children in the educational situation meaning that the teacher does not consider individual differences among children and some children cannot follow the model visually and consequently, those children have less motivation to learn the long jump skill with pole affecting the level of child's technical and numerical performance of such skill under investigation.

Through her reading and reviewing available reference studies in the field of micro teaching, the researcher noticed that no one to the knowledge of the researcher has studied the use of micro teaching technique to teach the skill of long jump with pole for children of (10 to 11) years. Hence, it is apparently important to use the micro teaching technique supported with hypermedia to match the development and upgrading educational strategies and that made the researcher carry out the current study to improve the level of technical and numerical performance of the skill of long jump with pole for children of (10 to 11) years.

Research objectives:

The purpose of this study was to identify the following:

1- The effect of using software supported micro teaching on the level of technical and numerical performance of the skill of long jump with pole for children of (10 to 11) years.

2- The effect of using the traditional method i.e. learning with orders technique, on the level of technical and numerical performance of the skill of long jump with pole for children of (10 to 11) years.

3- Differences between the effects of learning with software supported micro teaching technique and the traditional method on the level of technical and numerical

performance of the skill of long jump with pole for children of (10 to 11) years.

Research hypotheses:

1- There are significant differences between means of the pre and post-measurements of the experimental group in the level of technical and numerical performance of the skill of long jump with pole in favor of the post-measurement.

2- There are significant differences between means of the pre and post-measurements of the control group in the level of technical and numerical performance of the skill of long jump with pole in favor of the post- measurement.

3- There are significant differences between means of the two post-measurements of the experimental and control groups in the level of technical and numerical performance of the skill of long jump with pole in favor of the experimental group.

Research procedures:

Method:

The researcher used the experimental method through the experimental layout depending on the pre and post-measurements of two groups representing the experimental and control groups as this method suited the nature of the current study.

Research people and sample:

The research sample was selected intentionally from children of (10 to 11) years participated in Children Sports Academy, Faculty of Physical Education for Girls, Zagazig University in 2015/2016 academic year. They included (30) children and (10) children were excluded as a sample for the pilot study and consequently, the main research sample comprised (20) children who were divided into two groups of (10) children each as one experimental group and the other as a control group.

The researcher found out equality between the experimental and control groups in all variables under investigation as shown in Tables (1 and 2) below.

Table (1)

Significance of differences between the experimental and control groups in age, height and weight

Variables / Items	Units	Experimental group n =10		Control group n= 10		*t* Value
		$\bar{x}$	SD	$\bar{x}$	SD	
Age	Year	١٠.٤٠	٠.٤١	١٠.٣٠	٠.٣٨	٠.٥٤
Height	cm	١٣٧.٢٠	٣.٨٥	١٣٦.٧٠	٣.٦٦	٠.٢٨
Weight	kg	٣٦.٠٠	٢.٩٣	٣٥.٤٥	٢.٨٤	٠.٤١

Value of tabulated t at 0.05 significance level = 2.101

Data in Table (1) illustrate that there are no significant differences at (0.05) level of significance between the experimental and control groups in means of growth (age, height, weight) indicating that the two research groups are equivalent in such variables.

Table (2)

Significance of differences between the experimental and control groups in physical variables and the level of technical and numerical performance in the skill of long jump with pole

Variables / Items	Units	Experimental group n=10		Control group n=10		*t Value*
		$\bar{x}$	SD	$\bar{x}$	SD	
Power of muscles of legs	m	١.١٥	٠.٢٠	١.١٠	٠.١٧	٠.٥٧
Power of muscles of arms	m	١٩.٠٠	٢.٣٩	١٨.٧٥	٢.٢٤	٠.٢٣
Transitive speed	Sec.	٤.٧٢	٠.٤٢	٤.٧٩	٠.٣٩	٠.٣٧
Agility	Sec.	٧.٨٣	٠.٦٦	٧.٩١	٠.٥٧	٠.٢٧
Flexibility of torso and thigh	cm	٤.٠٠	١.٥١	٣.٨٠	١.٤٢	٠.٢٩
Pole-long jump: level of technical performance	Score	١.٠٠	٠.٥٨	٠.٩٠	٠.٥١	٠.٣٩
Numerical level	m	١.٣٠	٠.٣٧	١.١٥	٠.٣٤	٠.٨٩

Value of tabulated t at 0.05 significance level = 2.101

Data in Table (2) show that there are no significant differences at 0.05-significance level between the experimental

and control groups in physical variables and the technical and numerical performance level in the skill of pole-long jump indicating that the two groups are equivalent in such variables.

Tools of collecting data:

I. Physical tests under investigation:

1- Stand long jump test.

2- Throwing a soft ball to the farthest distance.

3- Test of start-up (30m) sprint.

4- Paro's zigzag run test.

5- Stand bend torso forward test.

II. Evaluation of the level of technical performance of pole long jump:

The researcher computed the score of the level of technical performance of the skill of pole long jump by three female judges of members of Teaching Board, Dept. of Field and Track Events, Faculty of Physical Education for Girls, Zagazig University that each female judge should give a score for the child of (10) scores against his technical performance in the skill of pole long jump and the mean of the scores of the three judges was to be computed.

III. Measurement of the numerical level of pole long jump:

The educational program using hypermedia:

Building the program:

- The program should be suitable for the age of children of (10 to 11) years.
- The program should consider individual differences among children.
- The program should be characterized by graduation from easy to difficult.
- The program should help achieve the principle of activeness between children and the program.
- The program should consider security and safety factors among children.
- The program should consider availability of possibilities and necessary tools for applying the program.

Requirements for the production of educational software:

The software was designed by the assistance of a specialized programmer for software as the best types of software were selected to enable him to prepare, to implement and to set up the software in the form of digital

files to treat them easily in implementing the educational computer program through a program of authoring and designing the software used in the current research. Such software allows the user to design and to implement educational programs as his needs and it provides an integrated educational environment connecting the content presented and functions targeted by the program.

Considered one of the software programs for authoring to produce the educational software, Microsoft Visual Basic 6.0 was used and it is also easy for translating the educational scenario into programs for computer. The software was implemented on a computer compatible with IBM devices:
Evaluation of the educational software:

It was presented to a sort of experts specialized for field and track events and methods of teaching at faculties of physical education to assure of the extent of clarity of the software sides and to comment on the extent of achieving the objectives needed and the researcher carried out the requested modifications

After designing and producing the software, the researcher tried two units of the software on the pilot study of (10) children from 27/7/2015 to 30/7/2015 to make sure that the software was suitable for children, to know notices given by children around the software and the extent of the validity of computer devices to implement the software .

Pre-measurements:

The researcher conducted the pre-measurements of the experimental and control groups in physical variables and the level of technical and numerical performance of pole long jump from 1/7/2015 to 3/8/2015.

The main experiment:

I. Teaching:

The researcher illustrated that the educational software was used with hypermedia for pole long jump as a practical model in carrying out the main experiment that the researcher should comment on that model as a specialist with concentration on technical phases of pole long jump and

educational steps for no more than (10) min. for the event phases (approach, takeoff, flight and landing phases). Children of the experimental group viewed models of the event of pole long jump in a hall annexed to the field then they moved to the field to implement what they have viewed through the computer and to carry out educational steps and graduated exercises to develop the level of technical and numerical performance of pole long jump (teaching) for (25) min.

Criticism sessions:

Performance of each child was filmed separately in a step to present it in the criticism session to receive feedback. The teacher commented and instructed together with her mates on the performance of each child in respect of positive and negative performance for (10) min.

Re-teaching:

After the child viewed the model of performance, educational steps and technical exercises of the pole long jump event one more time, he practiced them to modify the performance according to what happened in the session of criticism and development of positive aspects for (25) min.

The researcher indicated that the initialization and physical preparation period was (15) min. in addition, the final part was (5) min.

Application of the proposed educational program:

The content of the proposed educational program was implemented by using the micro teaching technique which was supported with hypermedia on the experimental group for (6) weeks by (18) educational units from 5/8/2015 to 15/9/2015 and in the meantime the traditional program i.e. learning by orders technique was applied to the control group. Appendix (6) illustrates a model of a daily educational unit.

Post-measurements:

The researcher conducted the post-measurements of the experimental and control groups in the level of technical and numerical performance in the pole long jump event on Thursday, 17/9/2015 with the same order and conditions of the pre-measurements.

Presentation and discussion of results:

1- Presentation and discussion of results of the 1st hypothesis:

Table (3)

Significance of differences between the pre and post-measurements of the experimental group in the level of technical and numerical performance of pole long jump n= 10

Variables / Items	Units	Pre-measurement		Post-measurement		*t* Value
		$\bar{x}$	SD	$\bar{x}$	SD	
The level of technical performance of pole long jump	Score	١.٠٠	٠.٥٨	٨.٨٠	١.٠٢	
The numerical level of pole long jump	m	١.٣٠	٠.٣٧	٣.٩٥	٠.٤٩	١٢.٧١*

Value of tabulated t at 0.05 significance level = 2.262

*Significant at 0.05 lev

Data in Table (3) illustrate that there are significant differences at 0.05-level between the pre and post-measurements of the experimental group in the technical and the numerical level of performance in pole long jump in favor of the post-measurement.

The researcher attributed this improvement in technical and numerical level of performance of pole long jump in individuals of the experimental group to the positive effect of micro teaching technique supported with hypermedia which provided a chance to the student to know the nature of his performance of the pole long jump event in respect of strength and weakness aspects and to benefit from multiple sources of feedback from the teacher and her mates in criticizing the student and also to the CD containing the educational software of the pole long jump event and consequently, the student was able to understand completely the technical phases of the pole long jump event, hence, the level of technical and

numerical performance of children of the experimental group was improved. This result was in agreement with that of Mohsen Hummus (1997) who indicated that micro teaching depended on models and images of the kinetic performance previously been analyzed and evaluated and presented them to students to provide feedback for student then practicing the kinetic performance and amending its technical errors and consequently, this educational technique contributed to develop technical performance more than any other techniques.(8:94)

This result was in harmony with that of Sahar Abdel Aziz Mohammed (2002), Taghrid Mohammed Al-Iraqi (2006), Mohammed Hosni Al-Sayed (2007), Sabry Jaber Hassan (2009), Araz Serdar Mohammed (2014), Mohammed Tawfik Mohammed (2014) and Younis Sami Al-Gady (2014) who agreed that micro teaching was effective on improving the level of skill performance and making the student able to record his notices about his skill performance in the educational lesson with the result that the student was able to amend technical errors in the kinetic performance.

2- Presentation and discussion of results of the 2nd hypothesis:

Table (4)

Significance of differences between the pre and post-measurements of the control groups in the level of technical and numerical performance in pole long jump n=10

Variables / Items	Units	Pre-measurement		Post-measurement		*t* Value
		$\bar{x}$	SD	$\bar{x}$	SD	
The level of technical performance of pole long jump	Score	٠.٩٠	٠.٥١	٧.٦٠	٠.٩٦	١٧.١٣*
The numerical level of pole long jump	m	١.١٥	٠.٣٤	٣.٤٠	٠.٤٥	١٠.٩٧*

Value of tabulated t at 0.05 significance level = 2.262

*Significant at 0.05 level

Data in Table (4) show that there are significant differences at 0.05- level between the pre and post-measurements of the control group in the level of technical and numerical performance of pole long jump in favor of the post-measurement.

The researcher related this improvement in the level of technical and numerical performance of pole long jump in children of the control group to the existence of the teacher during implementing the lesson and her ability to perform the practical model and vocal explanation of the pole long jump event in addition to her ability to amend technical errors once appeared during implementing the education lesson by children, thus, this process contributed to improve the level of technical and numerical performance of pole long jump.

3- Presentation and discussion of the 3rd hypothesis:

Table (5)

Significance of differences between the two post-measurements of the experimental and control groups in the level of technical and numerical performance of pole long jump

Variables / Items	Units	Experimental group n=10		Control group n=10		*t* Value
		$\bar{x}$	SD	$\bar{x}$	SD	
The level of technical performance of pole long jump	Score	٨.٨٠	١.٠٢	٧.٦٠	٠.٩٦	٢.٥٧*
The numerical level of pole long jump	m	٣.٩٥	٠.٤٩	٣.٤٠	٠.٤٥	٢.٤٨*

Value of tabulated t at 0.05 significance level = 2.101

*Significant at 0.05 level

Data in Table (5) show that there are significant differences at 0.05-level between the two post-measurements of the experimental and control groups in the level of technical and numerical performance in pole long jump in favor of the experimental group.

The researcher attributed this improvement in the level of

technical and numerical performance of pole long jump in children of the experimental group to the effectiveness of micro teaching technique supported electronically with hypermedia treating with few students hence; it provided them with the chance to achieve the biggest amount of benefit from the educational lesson. In addition, this teaching technique depended on teaching then receiving feedback through criticism sessions, then re-teaching and amending technical errors that contributed to superiority of individuals of the experimental group to the control group in the level of technical and numerical performance in pole long jump.

In this concern, Richard & Jensen (1997) indicated that the micro teaching technique included two of the education elements i.e. the element of effective sharing from the student and the element of feedback that improved and developed the kinetic performance.(15:108)

Table (6)

Percentages of improvement of the post-measurement to the pre-measurement of the experimental and control groups in the level of technical and numerical performance of pole long jump

Variables / Items	Experimental group n=10			Control group n=10		
	Pre	Post	Improvement %	Pre	Post	Improvement %
The level of technical performance in pole long jump	١.٠٠	٨.٨٠	780.00%	٠.٩٠	٧.٦٠	٧٤٤.٤٤%
The numerical performance in pole long jump	١.٣٠	٣.٩٥	٢٠٣.٨٥%	١.١٥	٣.٤٠	١٩٥.٦٥%

Data in Table (6) demonstrate that children of the experimental group were better that those of the control group in percentages of improvement of the post-measurement to the pre-measurement in the level of technical and numerical performance in pole long jump. This result was in agreement with those indicated by Abdel Latif Bin Hamad and Mahdi Salem (2004) who emphasized that hypermedia stimulated the student, increased his experience and made him much more ready to learn and to go for it and if such hypermedia were used perfectly, learners would learn quickly and the result of learning would be improved.

Conclusions:

1- ypermedia supported micro teaching had significantly positive effect at 0.05-level on the level of technical and numerical performance of pole long jump in children of (10 to 11) years.

2- The use of traditional method had significantly positive effect at 0.05-level on the technical and numerical level in pole long jump in children of (10 to 11) years.

3- Micro teaching technique supported with software was more effective than that the traditional method in improving the technical and numerical level in the pole long jump event for children of (10 to 11) years.

Recommendations:

4- Micro teaching technique supported with hypermedia should be used in teaching the pole long jump event for children of (10 to 11) years.

5- Devices such as camera, computer units, big display screens and Internet network representing requirements for micro teaching should be provided for Children Sports Academy, Faculty of Physical Education for Girls, Zagazig University.

6- Training courses should be arranged for athletics couches to review the latest and most effective methods and techniques of teaching athletic skills for children.

7- More scientific studies introducing micro teaching supported electronically and how to apply them to learn skills of athletics for children of different ages should be implemented.

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