

Effect of Using Blended Education on the Level of Performance of some Athletic Skills for Children

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Abstract

The purpose of the current investigation was to identify the effect of using blended education on the level of performance of some athletic skills for children in the State of Kuwait. The researcher applied the experimental method to suit the nature of the research. She used the experimental layout of two groups representing the experimental and control groups. The research sample was chosen intentionally including (32) schoolgirls by proportion of 66% of the total children of the research community of (48) children and schoolgirls by 100%. It was divided into three groups as follows: (12) schoolgirls as an experimental group, (12) schoolgirls as a control group and (8) schoolgirls as a pilot group.

The results showed that the educational program of using the blended learning method affected positively the level of performance of some athletic skills viz. pole long jump, children javelin throw, triple jump-short approach and long jump-short approach for schoolgirls children in The State of Kuwait.

The researcher recommended that more scientific studies be conducted by using the blended learning method in the field of motor learning on the level of schools of the intermediate stage to upgrade the educational process.

Introduction and research problem:

The contemporary societies are trying to keep up with the scientific and technological progress characterizing our modern era in different life scopes. Science is the first support and foundation being inevitable to invest human resources and to use individual's cognitive, professional and specialized abilities in all fields and various life paths for the individual to become prepared to contribute to build and to upgrade his society (6: 18). American Academy of Pediatrics Medicine and Centers for Disease Control and Prevention (2006) recommended that all children in the school age take part in a physical

activity of medium to strong intensity for at least 60 min. daily and the training program should continue in an atmosphere of correlation between safety and fun (19: 117).

E-education is considered the modern revolution in education methods and techniques that use the latest technical instrument and programs achieved in education processes starting from using electronic means of presentation to deliver lessons in traditional classrooms and using multimedia in class and self education processes and ending with building smart schools and virtual classrooms that enable students

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to attend and react with lectures and forums held in other countries through internet techniques and reactive television. In this respect Judith (2012) indicated that several innovations were appeared in methods and techniques of education changed the role of the teacher to a director and guide more than being a carrier of the scientific material (24: 137).

Christine (2005) showed that e-learning could provide multiple direct and indirect knowledge sources and media and web sites leading to encourage self learning, individual evaluation, correcting mistakes, using virtual classrooms, exchanging experiences and improving the informational level and necessary skills (32: 115).

Hence, new terms such as e-teacher, e-learner, e-school, e-library and e-evaluation have been appeared (2: 291).

Worthily indicated that technology whatever progressed and developed could not be evitable for traditional methods of education and learning. As the e-book is not evitable for the traditional book and as e-mail could not evitable for the traditional mail, e-learning will not substitute for traditional learning, human teacher or the university coliseum. As stated on the lips of the president of a Canadian university of her justification of refusing complete replacement of her university from a traditional university to an e-university where she stated that she would not replace members of the teaching board with computer sets (4: 72).

The field of e-education and its techniques will not be successful if it is

lacking of main factors that are originally contained in the current traditional education and because it is being the deeply educational process resulted from meeting learners and their group attendance planting educational values and supporting the importance of the combined work as a one team where each individual a specific role in the educational process (8: 67).

Therefore, several educators have tried to find out educational techniques and forms blending advantages of e-learning and face-to-face learning and they achieved what is known the blended education(27: 186).

The British term of blended learning is considered as one of the modern expressions led to disagreement on its translation to Arabic as some translated it as combined learning in addition to several translations such as mixed learning, mix learning, multiple introductions learning, mixture learning and interpersonal learning and from this point the blended learning has been appeared as a natural development for e-learning. Hence, this type of learning is combining e-learning and natural classroom traditional learning. It is the learning that cannot cancel e-learning or the traditional learning but it is a mix between both of them. Also the blended learning appeared to come over negatives of the e-learning. Results of some scientific studies showed that learners in the blended learning who had the chance to communicate and work face to face were able to hold discussions and

relationships more cohesive than those who were in e-learning only (25: 212).

The blended education is an integrated system instructing and helping the learner each stage of learning. This system blends the traditional education of face to face with forms of e-learning to create the more effective educational experience in that field (21: 259).

Whitelock and Jeife (2003) classified the blended education as it depended on integration between the traditional learning and that of depending on internet or blending a number of teaching methods and techniques irrespective of the use of technology (28: 99).

Steve (2001) (26) stated that there were three general objectives of the blended education viz. increasing the effectiveness of the learning process, increasing the learner's satisfaction towards learning, decreasing the necessary cost and time of learning and so this introduction would be the best and the most successful wording of using communication and information technology and sources of e-learning in education because we could not dispense or neglect the existing educational system.

Alekse, *et al.*, (2004) (18) defined the blended learning as a type of education where an effective group of means of multiple introduction, methods of teaching and types of learning was used ease the learning process. This type of education was built on the basis of blending traditional methods where students met

face to face and methods of e-education.

We find that the difference between the skilled and the traditional performances in various activities among teachers depends on forming the cognitive structure and how it is used and applied. The speed and effectiveness of learning is based on the ability of learner to activate correlations between the material in the subject of learning and the content of the cognitive structure in the learned individual in the type of the performed activity. Also the performance is based on the ability of the learner to derive relationships between information previously and newly gained (16: 117).

The research problem was concluded within the practical and scientific experience of the researcher in teaching field and track events and in her participation in committees of applied tests of the course of physical education for schoolgirls in the intermediate stage at Taima Intermediate School for Girls, Al-Jahra area, The State of Kuwait where she noticed that the level of the schoolgirls of (10 to 12) years was low in jump and throw skills, however, the International Athletics Federation innovated a world policy and special techniques for children athletics aiming to make athletics the most individual events to be performed at schools to the world level. From this standing point and because of the invalidity of the traditional method currently used in teaching field and track events for girls and not providing new educational situations for girls to make them active and positive and not giving attention to

the clear variance among girls in abilities and individual features that require the teacher to choose the suitable method to teach and to give attention to such individual differences. The foregoing context made the researcher study the effect of the blended education on the level of performance of some skills of athletics for children schoolgirls in The State of Kuwait.

Research objective:

The aim of this research was to identify the effect of using the blended education on the level of performance of some athletic skills for children in The State of Kuwait.

Research hypotheses:

- 1- Using the blended education has a positive effect on the level of performance of some athletic skills for children schoolgirls of the experimental group in The State of Kuwait.
- 2- Using the traditional education has a positive effect on the level of performance of some athletic skills for children schoolgirls of the control group in The State of Kuwait.
- 3- There are significant differences between the two post-measurements of the experimental and control groups in the level of performance of some athletic skills for children in favor of the experimental group.

Research terms:

Blended learning:

It employs technological innovations in blending the objective and the content, sources and activities of learning and methods of delivering information through the two learning face to face and e-learning techniques to create a reaction between the

member of teaching board as a teacher and a guide of students through innovations that must not be specified electronic tools (9: 99).

Heinze & Procter (2010) (22) defined it as a blend between e-learning and traditional learning face to face and hence, it combined advantages of both of them.

Related studies:

Jehan Ibrahim Abdu (2010) (5) carried out a study to know the effect of the blended learning on the results of learning some essential skills in volleyball for girls in the secondary stage. The researcher used the experimental method and the research sample consisted of (60) secondary school girls who were divided into two groups representing the experimental and the control groups of (30) girls each and the results showed that the proposed educational program using the blended learning had a positive effect on the learning outputs of some essential skills in volleyball for the secondary school girls.

Mohammed Hassan Abo Al-Taib (2013) (12) conducted a study to identify the effect of the blended learning using serial and random training on the level of skill performance and cognitive attainment in swimming in students at faculty of physical education. The researcher used the experimental method on a sample of (30) students who were divided into three groups representing two experimental groups and one control group of (30) students each. The results indicated that the effectiveness of the educational program was increased by using the

blended learning on the level of skill performance and cognitive attainment in swimming in comparison with the traditional method.

Nashwa Ahmed Al-Sayed (2013) (17) carried out a study aimed at knowing the effect of the blended learning technique on the cognitive attainment and the level of technical and numerical performance in shot put by spin event for girls at faculty of Physical Education for Girls, Zagazig University. The researcher applied the experimental method to a sample of (55) girls in the 1st grade at Faculty of Physical Education for Girls, Zagazig University, who were divided into two groups to represent the experimental group of (27) girls and the control group of (28) girls. The results showed that the blended learning had a positive effect on the cognitive attainment and the level of technical and numerical performance in spin shot put event.

Al-Husseini Al-Sayed Al-Husseini (2014) (7) studied the effect of a proposed e-educational program on learning aspects of field and track events for schoolboys in the second stage of the basic education. The study aimed at making a layout of an e-educational program to teach field and track events and to know the effect of the e-educational program on the level of technical and numerical level in field and track events. The researcher applied the experimental method to a sample of (30) schoolboys in the 1st grade of the prep education, who were divided into two groups to represent the experimental and control groups of (15) schoolboys each. The results concluded that the e-educational

program had a positive effect on the level of technical and numerical performance in field and track events.

Ibrahim Jaber Mohammed Hassan (2018) (1) set up a study of the effectiveness of the blended education on learning the skill of shot put for schoolboys in the prep stage to know the effectiveness of using several technological techniques in the educational process in shot put skill and the researcher used the experimental method and the schoolboys were divided into two groups to represent the experimental and control groups. The results insisted on the importance of the technological techniques for teaching the shot put event.

Research procedures:

Method:

The researcher used the experimental method to suit the nature of the research. She adopted an experimental layout of two groups to represent the experimental and control groups to develop the level of performance of some skills in athletics for children of schoolgirls in the intermediate stage in The State of Kuwait.

Research community and sample:

The researcher used the experimental method to suit the nature of the research and she applied the experimental layout of two groups representing the experimental and control groups to develop the level of performance of some athletic skills for schoolgirls children in the intermediate stage in The State of Kuwait.

Research community and sample:

The researcher chose the research sample intentionally from children of (10 to 12) years participating in Children Sport Academy, Al-Jahra area, The State of Kuwait. It included (32) schoolgirls representing 66% of the total children in the research community of (48) children and schoolgirls by 100% who were divided into three groups as follows:

1- The experimental group (the blended education technique) of (12) schoolgirls.

2- The control group (command learning technique) of (12) schoolgirls.

3- The pilot group of (8) schoolgirls.

Normality of distribution of the research sample individuals:

It was computed in some variables that may effect on the experimental variable such as rates of growth (age, height and weight) and some physical abilities affecting the level of performance of some athletic skills for children under the research as shown in Table (1).

Table (1)
Normality of distribution of the research sample individuals in growth rates and physical abilities of the level of performance of some athletic skills for children (n=32)

Variables	Unit	\bar{x}	SD	M	Skewness co-efficient
Age	yr.	11.52	0.40	11.42	0.75
Height	cm	136.40	4.96	135.02	0.83
Weight	kg	37.82	4.21	36.52	0.93
Leg muscular strength	m	1.17	0.22	1.12	0.68
Transitional velocity	sec	4.75	0.88	4.61	0.48
Trunk and hip flexibility	cm	3.52	1.65	3.02	0.91
Pole long jump	m	1.17	0.23	1.12	0.65
Children javelin throw	m	9.62	1.60	9.27	0.66
Triple jump-short approach	m	5.27	0.14	5.24	0.64
Long jump-short approach	m	2.66	0.12	2.64	0.50

Data in Table (1) show that all values of skewness coefficients of growth rates (age, height and weight), physical abilities and the level of performance of some athletic skills for children under investigation range from (0.50 to 0.93) meaning that they are between (± 3) indicating the normality of distribution of the

research sample individuals in such variables.

Equivalence of the two research groups:

The researcher found out the equivalence between the experimental and control groups in variables in which the main research sample individuals were homogeneous as stated in Table (2).

Table (2)
Significance of differences between the experimental and control groups in growth rates, physical abilities and the level of performance of some athletic skills for children

Variables	Units	Experimental group n=12		Control group (n=12)		t values
		X̄	SD	X̄	SD	
Age	yr.	11.55	0.46	11.45	0.44	0.93
Height	cm	136.4	4.9	135.15	4.82	0.76
Weight	kg	37.65	3.48	36.9	3.66	0.66
Leg muscular strength	m	1.3	0.25	1.25	0.27	1.13
Transitional velocity	sec	4.89	0.84	4.94	0.81	0.32
Trunk and hip flexibility	cm	3.35	1.34	3.15	1.36	0.54
Pole long jump	m	1.25	0.3	1.2	0.26	1.03
Children javelin throw	m	9.55	1.44	9.35	1.32	0.53
Triple jump-short approach	m	5.42	0.27	5.39	0.26	1.29
Long jump-short approach	m	2.78	0.24	2.79	0.25	0.36

Tabulated *t* value at (0.05) level = 2.074

Data in Table (2) illustrate that there are no significant differences at (0.05) level between the experimental and control groups in growth rates (age, height and weight), physical variables under investigation and the level of performance of some athletic skills for children indicating the equivalence of the two research groups in such variables.

Tools of collecting data:

The researcher scanned specialized scientific references in measurement and field and track events as well as piloting the expert's opinion where she was able to outline tools of collecting data as follows:

I. Equipment and tools used in the research:

- Restameter to measure the total height of the body in cm.
- Medical balance to define weight in kg.

- Memory stop watch 1/100 sec.
- Wooden graduated ruler.
- Educational field and track with its facilities.

II. Physical tests under investigation:

- Stand broad jump.
- 30m run test from crouch start.
- Stand trunk bend forward test.

III. Skill tests under investigation:

Having reviewed scientific references in field and track events skill tests were defined to assess the level of performance of athletic skills under investigation as follows:

- Pole long jump test.
- Javelin throw test for children.
- Triple jump from short approach.
- Long jump from short approach.

Educational program (blended learning):

The researcher reviewed several specialized scientific references and

related studies (20), (15), (10) discussing educational programs prepared by using blended education and e-education and through them she concluded the following steps to set up the educational program.

Time distribution of the educational program:

- 1- The experiment was applied over (6) weeks.
- 2- Time allotted for each lesson was (45) min.
- 3- The number of educational units was (2) per week.
- 4- The total number of educational units was (12).

Pre-measurements:

The researcher conducted them in the period from 11/10/2020 to 15/10/2020.

Application of the proposed educational program:

The content of the proposed educational program was carried out by using the blended learning

technique on the experimental group for (6) weeks by (12) educational units from 20/10/2020 to 24/11/2020. Also the traditional program (command learning technique) was applied to the control group individuals.

Post-measurements:

The researcher made them in the period from 25/11/2020 to 26/11/2020 on individuals of the experimental and control groups in the level of performance of athletic skills with the same order and conditions applied to the pre-measurements.

Statistical treatments under the research:

The plan of the statistical treatment of the initial data of the research included the following statistical techniques:

- Arithmetic mean- Standard deviation- Median- Skewness coefficient - *t* test - Percentages of improvement (%).

Presentation and discussion of results:

- I. Presentation of the results:

Table (3)
significance of differences between the pre and post-measurements of the experimental group in the level of performance of some athletic skills under investigation (n=12)

Variables	Units	Pre-measurement		Post-measurement		<i>t</i> values
		\bar{X}	SD	\bar{X}	SD	
Pole long jump	point	1.25	0.3	3.84	0.57	15.37*
Children javelin throw	m	9.55	1.44	13.21	0.80	8.55*
Triple jump-short approach	m	5.42	0.27	5.56	0.19	7.10*
Long jump-short approach	m	2.78	0.24	2.97	0.15	8.38*

Tabulated *t* value at (0.05) level = 2.201.

*Significant at (0.05) level.

Data in Table (3) show that there are significant differences at (0.05) level between the pre and post-measurements of the experimental

group in the level of performance of athletic skills (pole long jump, children javelin throw, triple jump from short approach and long jump from short

approach) in favor of the post-measurement.

Table (4)
significance of differences between the pre and post-measurements of the control group in the level of performance of some athletic skills under investigation (n=12)

Variables	Units	Pre-measurement		Post-measurement		<i>t</i> values
		\bar{X}	SD	\bar{X}	SD	
Pole long jump	point	1.2	0.26	3.26	0.52	12.06*
Children javelin throw	m	9.35	1.32	12.16	0.72	4.65*
Triple jump-short approach	m	5.39	0.26	5.42	0.18	3.87*
Long jump-short approach	m	2.79	0.25	2.80	0.16	6.65*

*Significant at (0.05) level

Data in Table (4) indicate that there are significant differences at (0.05) level between the pre and post-measurements of the control group in the level of performance of athletic

Tabulated *t* value at (0.05) level = 2.201. skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) in favor of the post-measurement.

Table (5)
significance of differences between the two post-measurements of the experimental and control groups in the level of performance of some athletic skills under investigation

Variables	Units	Experimental group (n=12)		Control group (n=12)		<i>t</i> values
		\bar{X}	SD	\bar{X}	SD	
Pole long jump	point	3.84	0.57	3.26	0.52	2.54*
Children javelin throw	m	13.21	0.80	12.16	0.72	3.29*
Triple jump-short approach	m	5.56	0.19	5.42	0.18	2.74*
Long jump-short approach	m	2.97	0.15	2.80	0.16	2.74*

Tabulated *t* value at (0.05) level = 2.074.

Data in Table (5) illustrate that there are significant differences at (0.05) level between the two post-measurements of the experimental and control groups in the level of

*Significant at (0.05) level

performance of athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) in favor of the experimental group.

Table (6)
Percentages of improvement of the post-measurement vs. the pre-measurement of the experimental and control groups in the level of performance of some athletic skills under investigation

Variables	Experimental group (n=12)		Improvement %	Control group (n=12)		Improvement %
	Pre-measurement	Post-measurement		Pre-measurement	Post-measurement	
Pole long jump	1.25	3.84	207.20	1.2	3.26	171.67
Children javelin throw	9.55	13.21	38.32	9.35	12.16	30.05
Triple jump-short approach	5.42	5.56	2.58	5.39	5.42	0.56
Long jump-short approach	2.78	2.97	6.83	2.79	2.80	0.36

Data in Table (6) clear that the individuals of experimental group are better than those of the control group in the percentages of improvement of the post-measurement vs. the pre-measurement in the level of performance of athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach).

II. Discussion of the results:

A- Discussion of the results of the 1st hypothesis stating: Using the blended education has a positive effect on the level of performance of some athletic skills for children schoolgirls of the experimental group in The State of Kuwait.

The results in Table (3) show that there are significant differences at (0.05) level between the pre and post-measurements of the experimental group in the level of performance of athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) in favor of the post-measurement.

The researcher related the improvement in the level of

performance of athletic skills under investigation in children of the experimental group to the effectiveness of the content of the educational program with the blended learning where technological innovations were applied to blend objectives and content, sources and activities of learning and methods of delivering information through face to face learning technique and e-education as this technique include excitement, thrill and wish to show physical and skill abilities. Mohammed Saad Zaghloul *et al.*, (2001)⁽¹³⁾ mentioned that the teacher should use modern techniques in teaching to stimulate the student's motivation, to use the suitable vocal model to achieve more return from the educational process. The mission of the teacher is not only to explain, to deliver and to follow traditional methods but he also becomes firstly responsible for drawing a layout for the strategy of learning skills to excel and to be capable of them.

This result is in agreement with those of the study of Jehan Ibrahim Abdo (2010) (5) and Mohammed

Hassan Abo Al-Taib (2013) (12) on the effectiveness of using the blended learning technique in learning motor skills in single and team sports.

Hence, the validity of the 1st hypothesis stating using the blended education has a positive effect on the level of performance of some athletic skills for children schoolgirls of the experimental group in The State of Kuwait is established.

B- Discussion of the results of the 2nd hypothesis stating using the traditional education has a positive effect on the level of performance of some athletic skills for children schoolgirls of the control group in The State of Kuwait.

The results in Table (4) refer to significant differences at (0.05) level between the pre and post-measurements of the control group in the level of skill performance of athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) in favor of the post-measurement.

The researcher attributed the improvement in the level of performance of athletic skills under investigation in the control group individuals to the program that has been followed (traditional learning technique) that affected on the children's responses to the learning process as a result of the exercise, practice and training as well as similarity of the control group to the experimental group in the educational environment in respect of facilities and period of time to learn and the learner who knew the content of performance

of skills under investigation that helped form the clear image of such athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach). Added to this the existence of the female teacher who gave a clear idea on how to perform rightly (model and vocal explanation) and providing children with feedback during carrying out the content of daily educational unit leading to improve the level of performance of individuals of the control group in athletic skills under investigation.

This result was in agreement with Joyce Harrison (1996) and Magdy Aziz Ibrahim (2004) who indicated that the command learning technique had some advantages such as achieving a great part of the course in a short time, the teacher giving the educational material logically making students remember and able to apply it quickly, being the lowest teaching method to cost and the role of the teacher is characterized by positivity as he is the source of effectiveness and activity in the educational process (23: 217)(11: 129).

Hence, the validity of the 2nd hypothesis stating using the traditional education has a positive effect on the level of performance of some athletic skills for children schoolgirls of the control group in The State of Kuwait is established.

C- Discussion of the 3rd hypothesis stating there are significant differences between the two post-measurements of the experimental and control groups in the level of performance of some athletic skills for children in favor of the experimental group.

The results in Table (5) conclude that there are significant differences at (0.05) level between the two post-measurements of the experimental and control groups in the level of performance of athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) in favor of the experimental group.

Also the results in Table (6) clear that the experimental group individuals are better than those of the control group in percentages of improvement of the post-measurement vs. the pre-measurement in the level of performance of athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach).

The researcher attributed the superiority of the experimental group individuals in the post-measurement and percentages of improvement as compared to individuals of the control group to using the blended learning technique that employed technological innovations in blending the objectives and content, sources and activities of learning and methods of delivering information through learning face to face and e-education techniques.

This result was in agreement with those of Al-Husseini Al-Sayed Al-Husseini (2014)(7) and Ibrahim Jaber Mohammed Hassan (2018)(1) on superiority of the blended e-learning techniques as compared to the command learning technique in learning motor skills in single and team sports.

In this respect Mohammed Saad Zaghloul, Makarem Abo Hargah and

Hani Said Abdel Monem (2001) indicated that education technology led to upgrade the educational process in the field of physical education through increasing stimulation and spread of activity and influence on behavioral trends, scientific and social concepts in the learner, performance of the skill in a united form and minimizing mistakes of performing the model together with remaining the effect of learning (13: 24). Hence, the validity of the 3rd hypothesis stating there are significant differences between the two post-measurements of the experimental and control groups in the level of performance of some athletic skills for children in favor of the experimental group is established.

Conclusions:

In the light of the research objectives, in the limit of the sample and the results achieved the researcher concluded the following:

- 1- The educational program with the blended learning technique positively affects the level of performance of some athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) for children schoolgirls in the State of Kuwait.
- 2- The traditional program with command learning technique positively affects the level of performance of some athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) for children schoolgirls in the State of Kuwait.
- 3- There are significant differences at (0.05) level between the two post-measurements of the experimental and

control groups in the level of performance of some athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) for children schoolgirls in favor of the experimental group.

4- The experimental group is superior to the control group in percentages of improvement of the post-measurement as compared to the pre-measurement in the level of performance of some athletic skills in favor of the experimental group.

Recommendations:

On the basis of the research results indicated and conclusions the researcher recommended the following:

1- It is necessary to use the blended learning technique to master athletic skills (pole long jump, children javelin throw, triple jump-short approach and long jump-short approach) for children schoolgirls in the State of Kuwait.

2- Considering the use of the blended learning technique in teaching the rest of athletic skills for children schoolboys and girls.

3- Encouraging coaches of athletics for children to use nontraditional techniques in teaching athletic skills for children in The State of Kuwait.

4- Carrying out more scientific studies with using the blended learning technique in the field of motor learning to the level of intermediate stage to upgrade the educational process.

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