Effectiveness of mobile learning in the knowledge attainment and developing the performance of some individual playing skills for Badminton juniors

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Introduction and Problem:

Badminton practice requires special skills and precise technical performance which determines competitions results In light of the remarkable development in world players levels , This is what led researcher to conduct this study and use mobile learning to teach some of some of badminton individual playing skills. It may be more effective in developing educational and training methods used with badminton juniors and improving the outputs of the educational process according to the international development in the individual playing skills level

Study aims: Study aims Identify the effectiveness of mobile learning in cognitive achievement and develop the performance of some badminton skills

hypotheses:

1- There are statistically significant differences between pre. and post measurement of experimental group in badminton individual playing skills and knowledge attainment (in search) in favor to post measurement.

2- There are statistically significant differences between pre. and post measurement of control group in badminton individual playing skills and knowledge attainment (in search) in favor to post measurement.

3- There are statistically significant differences in the post measurement between the experimental and control groups in the badminton individual playing skills and knowledge attainment (in search) in favor to experimental group.

4- There are differences between the improvement rates of the experimental and control groups in the badminton individual playing skills and knowledge attainment (in search) in favor to the experimental group.

Study procedures-:

Methodology

Experimental approach by the pre. and post measurement for two groups, one experimental and other control.

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Community and Sample:

Table (1)
Classification of research sample

Research community	Selected sample	percentage	exploratory Sample	Basic sample	
				Experimental group	Control group
32	32	100%	8	12	12

Table (2)
SMA, standard deviation, intermediate and convolution coefficient for study sample in (growth, physical and skills variables, and knowledge attainment test) Sample = 32

Variables		Modules Measurement	SMA	standard deviation	Median	Convolution coefficient
Age		year	11.97	0.74	12.96	
Height		meter	1.55	1.06	1.61	- 0.50
Weight		Kg	55.85	10.98	54.45	0.50
Intelligence		Degree	39.99	1.13	40.56	0.58
Physical variables	Reaction speed	second	5.77	0.52	5083	-0.35
	Ability	meter	7.78	0.97	8.00	-0.68
	Reliability	Degree	2.16	0.77	2.00	0.62
	Harmonize	Degree	15.44	.019	15.00	0.41
	Agility	second	7.16	0.68	7.09	0.31
	Speed	second	1.72	0.15	1.75	-0.60
Individual playing skills variables	High direction serve	Degree	20.66	0.48	1.00	-2.13
	Forhand drop shot	Degree	19.31	0.47	0.00	1.89
	Backhand clear shot	Degree	21.41	0.50	0.00	2.46
	knowledge attainment	Degree	9.72	0.85	10.00	-0.99

Clear from Table (2) that all the values (under study) limited between (± 3) which indicates the moderation of distribution.

Terminology:

Mobile learning: Is a term that refers to the use of mobile and wireless devices in a the learning environment that is not controlled

by time or place, it is an extension of e-learning and a form of distance learning..

Table (3)

Indication of differences between experimental and control groups in pre. measurements in individual playing skills and knowledge attainment tests (in search) Sample(1) = Sample(2) =(24)

Tests	Modules Measurement	Experimental group		Control group		(T) Value
		SMA	standard deviation	SMA	standard deviation	
High direction serve	Degree	21.75	0.45	22.50	0.52	0.17
Forhand drop shot	Degree	20.25	0.14	21.42	0.51	0.80
Backhand clear shot	Degree	21.42	0.51	20.33	0.49	0.36
knowledge attainment	Degree	9.92	0.67	9.67	0.98	0.73

The value of "T" table at a significant level of 0.05 = 2.20

Table (3) shows that there are no statistically significant differences between the experimental and control groups in the individual playing skills and knowledge attainment variables, which indicating their equivalence in these tests.

Table (4)

SMA, standard deviation and value (T) between the distinguished group And the non-distinguished group in physical and skills variables

Variables	Modules Measurement	distinguished group		Non-distinguished group		(T) Value
		SMA	standard deviation	SMA	standard deviation	
Reaction speed	second	5.92	0.54	4.54	0.18	7.24*
Ability	meter	7.63	0.74	9.38	0.44	5.86*
Reliability	Degree	2.13	0.83	5.38	0.52	8.88*
Harmonize	Degree	15.50	2.67	21.13	0.83	6.03*

Follow Table (4)

SMA, standard deviation and value (T) between the distinguished group And the non-distinguished group in physical and skills variables Sample(1) = sample(2) = 8

Variables	Modules Measurement	distinguished group		Non-distinguished group		(T) Value
		SMA	standard deviation	SMA	standard deviation	
Agility	second	7.28	0.65	5.85	1.12	6.18*
Speed	second	1.68	0.16	1.36	0.10	10.17*
High direction serve	Degree	20.75	0.46	45.13	0.83	10.42*
Forhand drop shot	Degree	20.25	0.46	43.75	0.71	18.52*
Backhand clear shot	Degree	21.50	0.53	42.63	0.52	9.37*
knowledge attainment	Degree	9.50	0.93	25.50	0.93	34.56*

The value of the table "T" at a significant level of 0.05 = 2.36

Table (4) shows that there are statistically significant differences between distinguished And the non-distinguished group In all tests, which indicates the validity of these tests.

Table (5)

SMA, standard deviation and correlation coefficient value The first and second application of physical and skills variables

Variables	Modules Measurement	first application		Second application		correlation Coefficient
		SMA	standard deviation	SMA	standard deviation	
Reaction speed	second	5.92	0.54	5.84	0.49	0.97*
Ability	meter	7.63	0.74	7.75	0.71	0.88*
Reliability	Degree	2.13	0.83	2.25	0.71	0.91*
Harmonize	Degree	15.50	2.67	15.88	2017	0.97*
Agility	second	7.28	0.65	7.21	0.61	0.98*
Speed	second	1.68	0.16	1.65	0.14	0.77*

Follow Table (5)

SMA, standard deviation and correlation coefficient value The first and second application of physical and skills variables Sample = 8

Variables	Modules Measurement	first application		Second application		correlation Coefficient
		SMA	standard deviation	SMA	standard deviation	
High direction serve	Degree	20.75	0.46	20.88	0.64	0.84*
Forhand drop shot	Degree	20.25	0.16	20.38	0.52	0.75*
Backhand clear shot	Degree	21.50	0.53	20.63	0.74	0.90*
knowledge attainment	Degree	9.50	0.93	10.38	0.92	0.76*

*correlation Coefficient value (r) at a level of 0.05 = 0.632

It is clear from table (5) statistically significant correlation between the first and second applications for physical variables , which indicating stability for these tests.

Statistical Processes: Mean , SD , Mediator , Improvement rates, (%)Convolution coefficient , Simple correlation coefficient , (T) Test

Results:

Table (6)

Significance of differences between the results of pre.and post measurements for Experimental group in skills Performance and knowledge level Sample = 12

Variables	Modules Measurement	Pre.measurement		Post measurement		(T) Value
		SMA	standard deviation	SMA	standard deviation	
High direction serve	Degree	21.75	0.45	38.67	0.65	17.11*
Forhand drop shot	Degree	20.25	0.45	39.00	0.60	17.23*
Backhand clear shot	Degree	21.42	0.51	36.25	0.45	13.67*
knowledge attainment	Degree	9.92	0.67	25.08	0.67	47.14*

*The value of "T" table at a significant level of 0.05 = 2.20

Table (6) shows statistically significant differences between pre. and post measures for experimental group in favor of post measurement in all tests

Table (7)

Significance of differences between the results of pre.and post measurements for Control group in skills Performance and knowledge level Sample = 12

Variables	Modules Measurement	Pre.measurement		Post measurement		(T) Value
		SMA	standard deviation	SMA	standard deviation	
High direction serve	Degree	22.50	0.52	29.42	0.51	15.11*
Forhand drop shot	Degree	21.42	0.51	30.42	0.51	12.18*
Backhand clear shot	Degree	20.33	0.49	28.50	0.52	8.99*
knowledge attainment	Degree	9.67	0.98	21.42	1.08	24.54*

*The value of "T" table at a significant level of 0.05 = 2.20

Table (7) shows statistically significant differences between pre. and post measures for control group in favor of post measurement in all tests

Table (8)

Indication of the differences between the results of the two post tests for all of experimental and control group in skills Performance and knowledge level Sample = 12

Tests	Modules Measurement	Experimental group		Control group		(T) Value
		SMA	standard deviation	SMA	standard deviation	
High direction serve	Degree	38.67	0.65	29.42	0.51	5.00*
Forhand drop shot	Degree	39.00	0.60	30.42	0.51	3.02*
Backhand clear shot	Degree	36.25	0.45	28.50	0.52	3.45*
knowledge attainment	Degree	25.08	0.67	21.42	1.08	9.27*

*The value of "T" table at a significant level of 0.05 = 2.20

Table (8) shows statistically significant differences between the two post tests for experimental and control group in favor of experimental group in all tests.

Table (9)

The percentage of improvement between the results of the pre. And post measurement in the skills and knowledge variables for the experimental group

Skills	Modules Measurement	Pre. Test	Post Test	percentage of improvement %
High direction serve	Degree	21.75	38.67	77.79
Forhand drop shot	Degree	20.25	39.00	92.59
Backhand clear shot	Degree	21.42	36.25	69.23
knowledge attainment	Degree	9.92	25.08	152.82

Table (9) shows that there are improvement between pre. and post measurements in the skills and knowledge variables in favor post measurement for the experimental group**.**

Table (10)

The percentage of improvement between the results of the pre. And post measurement in the skills and knowledge variables for the control group

Skills	Modules Measurement	Pre. Test	Post Test	percentage of improvement %
High direction serve	Degree	22.50	29.42	30.76
Forhand drop shot	Degree	21.42	30.42	42.01
Backhand clear shot	Degree	20.33	28.50	40.19
knowledge attainment	Degree	9.67	21.42	121.51

Table (10) shows that there are improvement between pre. and post measurements in the skills and knowledge variables in favor post measurement for the control group**.**

discuss results:

Table (6) shows SMA and the standard deviation and

the value of (T) between the pre. and post measurements for experimental group in the individual playing skills and knowledge attainment tests. The tables show statistically significant differences at the level of (0.05) in all measurements in favor post measurements, researcher returns that progress to several reasons, such asع sing the mobile learning helped players move freely between frames and choose the right frame for them. The program took into consideration the individual differences between the players and also took into account their mental abilities and the abilities of each player , It also gave players a great deal of feedback that raised the level of performance, This is consistent with the results of the study of **" Mabrok Kamel Geweny" (2014)** ,and "**Karem Mohamed saad & Ali Elmetwally Ebrahim" (2013)** That the use of mobile learning as part of an educational program led to increased understanding and improved performance , It is also consistent with the results of the **"Naral, H., gebi, A. & Rekten, M." (2011)**, **"Prensky" (2009)** and **"kirvani, H." (2010)** , which agreed on the role of mobile learning in increasing student motivation towards learning and creating an interesting environment for learners.

from foregoing, it is clear that the first hypothesis of research has been achieved, which states that:

"There are statistically significant differences between pre. and post measurement of experimental group in badminton individual playing skills and knowledge attainment (in search) in favor to post measurement".

Table (7) shows SMA and the standard deviation and the value of (T) between the pre. and post measurements for control group in the individual playing skills and knowledge attainment tests. The tables show statistically significant differences at the level of (0.05) in all measurements in favor post measurement , researcher returns that progress to "traditional method" has introduced new skills for the players, also use of the student or the teacher as a model in teaching process, as well as the repetition of training and practice during the program period , These results are

consistent with the study of **"Karem Mohamed saad & Ali Elmetwally Ebrahim" (2013)** and **" Shereen Saber Ali " (2011)** that this method has a positive impact on the education process , From the above, it is clear that the second hypothesis of research, which states: "There are statistically significant differences between pre. and post measurement of control group in badminton individual playing skills and knowledge attainment (in search) in favor to post measurement".

Table (8) shows, SMA, the standard deviation and the value of (T) between the two post measurements for control and experimental group in individual playing skills and knowledge attainment tests at (0.05) in all skills and knowledge tests in favor of experimental group, the researcher returns the progress of the experimental group members of the control group in the skill level and knowledge to the program prepared using mobile learning, which took into account the level, abilities and trends and needs of players and individual differences, while the traditional way do not take into account individual differences among learners because it is difficult to diversify the educational unit و While the traditional method, which the control group underwent, lacks all of these media, relying on both verbal and practical models , These results are consistent with the study of **"Shawky Salah Aiiad" (2012)** and **"Mabrok Kamel Geweny" (2014) and " Karem Mohamed saad & Ali Elmetwally Ebrahim" (2013)** which confirmed the effectiveness of using mobile learning , From the above, it is clear that the third hypothesis of the research , which states:: "There are statistically significant differences in the post measurement between the experimental and control groups in the badminton individual playing skills and knowledge attainment (in search) in favor to experimental group".

Table (9), (10) shows the percentages of progress betwwen pre. and post measurement for experimental and control groups in individual playing skills tests. This result is consistent with "**Asaad Marzook Elbanna" (2012)** noted that learning

influenced by the method used by the teacher , From the above, it is clear that the improvement rate of the experimental group (mobile learning program) in all the individual playing skills tests better than the control group , From the above, it is clear that the fourth hypothesis of the research , which states "There are differences between the improvement rates of the experimental and control groups in the badminton individual playing skills and knowledge attainment (in search) in favor to the experimental group".

Conclusion:

Within limits of research objectives and results, researcher concluded the following:

The educational program using (mobile learning) had the greatest effect in increasing the knowledge attainment and individual playing skills performans for Badminton badminton juniors under 13 years.

Recommendations:

Within limits of research objectives and hypotheses, researcher recommends:

1- The application of mobile learning in education for ease of communication and interaction of students and break the routine of the lecture.Training national team trainers on mobile learning techniques.

2- Training national teams trainers on mobile learning techniques.

3- Establish mobile learning unit in sports clubs.

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