



Effect of Using E-Learning on Learning Swimming Lifesaving Skills for Faculty of Physical Education Students

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Abstract

The research aimed to identify and compare the effect of using traditional teaching and e-learning on learning swimming saving skills for students at Faculty of Physical Education Al-Azhar University. Thirty subjects randomly recruited from fourth grade students at faculty of physical education, Al-Azhar University in the academic year 2016/2017 participated in main study. Physical tests and Egyptian Diving & Lifesaving Federation lifeguard license test used as data collection tools. Results revealed that e-learning is more effective than traditional teaching method in learning swimming lifesaving skills and performance level for students at faculty of physical education, Al-Azhar University

Introduction

Technological, informational development and huge Cultural Revolution characterize current era. This made keeping pace with this development urgent and necessary. The real power usually with who have information and can optimally use and apply according to era requirements.

This require teachers and learners who are able to obtain and analyse information and ensure its validity, applicability and utilize it in teaching and learning processes to achieve desired goals.

This means that teacher must be familiar with all details of educational process, seeks to communicate it to each learner. Teacher often faces problems, the most important of which is individual differences between learners, hence there is need to have learning media that facilitate learning process and provide greater opportunities for conducting it in correct and comprehensive way in all its (Abdulfatah, 2003, p40)

E-learning is of teaching styles that rely on electronic media in achieving educational goals and deliver educational content to learners regardless of spatial and temporal barriers. (Salem, 2001, p. 59)

It is a form of education in which information and communication technology support synchronous and asynchronous interaction between teachers and learners, in order to create educational syllabuses at anytime, anywhere, in the fastest time, cheapest cost and in a way enable learner's evaluation by teachers. (Shaaban, 2007, p. 29)

E-learning helps learners to keep abreast of developments and efficiently interact with it, as well as to increase communication between them and accessibility to the teacher in the fastest time and outside official working hours. (Gazar, 2004, p, 221)

Abdulraouf (2007, p.47) points out that e-learning gives the learner learning skill and makes him in a constant state of vitality, attention and activity, as well as giving the teacher the ability to cope with increasing numbers of learners and reduce administrative burdens.

Swimming is of most exciting multi-types and multi-methods aqua sports, each of which includes a range of motor skills that help its practitioners to grow fully. Lifesaving skills are of the most important skills that student needs in a deeper and deeper way, due to its huge benefits. It is of swimming students' specialization syllabuses at Faculty of Physical Education, Al-Azhar University. Because of lifesaving different skills,

learners must learn according to their own learning speed.

Through researchers' experience, they found that many learners do not perform swimming lifesaving skills correctly during learning process, although necessary tools availability and this may be due to the following:

- Using traditional teaching method, which have minimal learners' participation.
- Inability to achieve required educational goals due to limited time allocated for teaching, as well as student's negative attitude as a recipient only.

In spite of some researchers' attempts to use modern teaching methods to teach some sport skills, but none of them dealt with e-learning as learning method for swimming lifesaving skills. Hence, there is need to conduct this research to identify the effect of using E-learning on learning swimming lifesaving skills for Faculty of Physical Education students. Al-Azhar University.

The research is important as it responds to sport teaching recent global trends, which calls for the need to provide an educational environment based on students' positivity, it can shed light on how to put swimming lifesaving skills in form of educational situations cope with e-learning. Finally, possibility of developing teacher and learner competencies.

The research aimed at identify and compare the effect of using traditional teaching and e-learning on learning swimming saving skills for students at Faculty of Physical Education Al-Azhar University

Research hypothesized the following:

There are statistically significant differences between control group pre and post measurements in swimming lifesaving skills cognitive achievement and performance level towards post measurement.

There are statistically significant differences between experimental group pre and post measurements in swimming lifesaving skills cognitive achievement and performance level towards post measurement

There are statistically significant differences between experimental and control group post measurements in swimming lifesaving skills cognitive achievement and performance level towards experimental group.

Research Terms

E-Learning:

Is the kind of education that depends on using technological media in information communication, skills acquisition and interaction between student and teacher and between student and university, provided synchronously or asynchronously and adopting self-learning principle (Abdulaaty & Abo-Khatwa, 2009, p. 15 and Maarek & Almousa, 2005, p. 216)

- Lifesaving Skills:

A set of skills that to be mastered by lifeguard to be able to save drowned person. (Procedural definition)

Method

Subjects

Forty subjects randomly recruited from fourth grade students at faculty of physical education, Al-Azhar University in the academic year 2016/2017 participated in the study (15 subjects in experimental group, 15 in control group and 10 for pilot study). Overall sample homogeneity confirmed and non-significant difference found between experimental and control groups in research variables and some variables that may affect research experiment (appendix 5 tables 1, 2, 3).

Measures

1- Growth rates:

Age, height and weight measured.

2- Physical tests:

The most important physical variables and tests measure them identified and presented to aqua sports and teaching methods experts (appendix 1), the following tests selected:

- Legs muscular power: Long jump from stability (cm)
- Arms muscular power: push-up from standing on hands.
- Speed: 20 meters sprint (sec).
- Agility: shuttle running 3×9 meters (sec).
- Trunk Flexibility: Bend trunk front downwards from stand (cm).
- Heel Flexibility: foot sole flexion range (cm).
- Overall coordination: rope jump (number).

- Cardiovascular endurance: Harvard step test (number).

3- Apparatus:

Medical scale, restameter, stopwatch, measure tape, and tools for the learning program (Life collars – lifesaving dolls - lifesaving skills photo model – lifesaving skills photographs – digital camera - laptop - plastic ropes with floating 50 mm thickness balls

4- Skill level evaluation:

Egyptian Diving & Lifesaving Federation lifeguard licence test used to evaluate swimming lifesaving skills performance level because of it suitability for research objectives. Evaluation done by a committee of three staff members in Faculty of physical education, Al-Azhar University (appendix 2)

5- Cognitive achievement evaluation:

Cognitive test prepared by (Abdulazim, 2010) (appendix 3) used because of it suitability for research objectives, the test included some facts and concepts about aqua lifesaving, lifeguard security and safety factors, first aid, lifesaving skills and its teaching methods.

Procedures

Pilot Study:

Conducted on (10) students from research community and not in main study sample and aimed at ensure tools and devices validity, identify how to implement the educational program, and checking tests used validity and reliability.

Physical and skill tests validity and reliability:

Content validity ensured by present these tests to experts (appendix 1) who approved all the tests. In addition, internal validity conformed. Also, tests reliability checked using Test/retest method with 10 days interval between tests, validity and reliability proofed (appendix 5. table (4))

Cognitive test validity and reliability

Content validity confirmed by presenting test to experts, doing any amendment required. Test reliability determined using Guttman spilt half reliability (Al-Gharib, 1990). Split-half reliability coefficient was 0.87, indicating test reliability.

Proposed educational program:

Researchers selected Hassan Al-Batee model (Abdulaaty & Abo-Khatwa, 2009) after reviewing references dealt with electronic educational models (Zaher, 1999 and Alhady, 2005). This model suits students' characteristics, available facilities, and learning conditions (Al-Shazly, 1999; Salem, 2000; Abdulazim, 2010; Abdulmagid, 2011; Ahmed, 2013 and Zaki, Nada, & Zaki, 2005), that's to prepare the e-learning educational program, allowing the student to fully control learning path under researchers' supervision, in a way that fulfil expected educational objectives (appendix 4).

Main study timetable

E-learning educational program consisted of (10) educational unites performed in (10) weeks (the period allocated to teach swimming lifesaving skills for fourth grade students – swimming specialization at Faculty of physical education , Al-Azhar University, one unit/week, each unit 60 minutes, total program time 600 minutes. Experimental group taught using e-learning program while control group taught using traditional method.

Pre measurements:

Conducted for both groups in 4, 5/10/2016, groups' homogeneity checked.

Main experiment implementation:

E-learning program used with experimental group and traditional method used with control group in the period from Sunday 9/10/2016 to Sunday, 18/12/2016.

Post measurements:

Conducted for both groups in 20, 21/12/2016

Statistical process:

SPSS statistics software program used to analyse research data utilizing the following states tics: mean, standard deviation, Pearson correlation coefficient, T test). 0.05 significance level adopted throughout the research.

Results

Table (5)
Difference significance between pre and post measurements for control group
in swimming lifesaving skills cognitive achievement (n=15)

| Variable | Pre-measurement | | Post-measurement | | T |
|-----------------------|-----------------|------|------------------|------|-------|
| | Mean | SD | Mean | SD | |
| Cognitive achievement | 22.67 | 5.48 | 39.64 | 4.98 | 8.57* |

* Significant at 0.05 level (T significant= 2.145)

Table (5) results reveal statistically significant post means in swimming lifesaving skills' cognitive differences at (0.05) between control group's pre and achievement in favour of post measurement.

Table (6)
Difference significance between pre and post measurements for control group
in swimming lifesaving skills performance level (n=15)

| Lifesaving skills | Pre-measurement | | Post-measurement | | T |
|---------------------------------|-----------------|------|------------------|------|-------|
| | Mean | SD | Mean | SD | |
| 100m freestyle swimming | 5.23 | 0.96 | 7.20 | 0.66 | 6.33* |
| Lifesaving skills routine 100 m | 1.67 | 1.17 | 5.08 | 0.72 | 9.29 |
| Doll dragging for 21 m | 1.08 | 0.83 | 5.08 | 0.65 | 14.20 |
| Fellow dragging for 21 m | 1.62 | 1.17 | 5.83 | 0.82 | 11.03 |
| Total lifesaving skills | 9.60 | 2.11 | 23.19 | 1.64 | 10.17 |

* Significant at 0.05 level (T significant= 2.145)

Table (6) results reveal statistically significant post means in swimming lifesaving skills' performance differences at (0.05) between control group's pre and skills in favour of post measurement.

Table (7)
Difference significance between pre and post measurements for experimental group
in swimming lifesaving skills cognitive achievement (n=15)

| Variable | Pre-measurement | | Post-measurement | | T |
|-----------------------|-----------------|------|------------------|------|--------|
| | Mean | SD | Mean | SD | |
| Cognitive achievement | 21.89 | 6.01 | 46.53 | 3.18 | 13.56* |

* Significant at 0.05 level (T significant= 2.145)

Table (7) results reveal statistically significant and post means in swimming lifesaving skills' cognitive differences at (0.05) between experimental group's pre achievement in favour of post measurement.

Table (8)
Difference significance between pre and post measurements for experimental group
in swimming lifesaving skills performance level (n=15)

| Lifesaving skills | Pre-measurement | | Post-measurement | | T |
|---------------------------------|-----------------|------|------------------|------|--------|
| | Mean | SD | Mean | SD | |
| 100m freestyle swimming | 5.34 | 1.41 | 8.45 | 0.51 | 7.76* |
| Lifesaving skills routine 100 m | 1.50 | 1.10 | 8.56 | 0.58 | 13.72* |
| Doll dragging for 21 m | 1.25 | 0.85 | 7.30 | 0.28 | 25.23* |
| Fellow dragging for 21 m | 1.79 | 1.06 | 8.00 | 0.72 | 18.13* |
| Total lifesaving skills | 9.88 | 2.48 | 32.31 | 1.38 | 29.57* |

Significant at 0.05 level (T significant= 2.145)

Table (8) results reveal statistically significant differences at (0.05) between experimental group's pre and post means in swimming lifesaving skills' performance skills in favour of post measurement.

Table (9)
Difference significance between post measurements for control and experimental group
in swimming lifesaving skills cognitive achievement (n1= n2=15)

| Variable | Control group | | Experimental group | | T |
|-----------------------|---------------|------|--------------------|------|--------|
| | Mean | SD | Mean | SD | |
| Cognitive achievement | 39.64 | 4.98 | 46.53 | 3.18 | 13.56* |

* Significant at 0.05 level (T significant= 2.145)

Table (9) results reveal statistically significant differences at (0.05) between control and experimental groups' post means in swimming lifesaving skills' cognitive achievement in favour of experimental group.

Table (10)
Difference significance between post measurements for control and experimental group
in swimming lifesaving skills performance level (n1= n2=15)

| Lifesaving skills | Control group | | Experimental group | | T |
|---------------------------------|---------------|------|--------------------|------|--------|
| | Mean | SD | Mean | SD | |
| 100m freestyle swimming | 7.20 | 0.66 | 8.45 | 0.51 | 7.76* |
| Lifesaving skills routine 100 m | 5.08 | 0.72 | 8.56 | 0.58 | 13.72* |
| Doll dragging for 21 m | 5.08 | 0.65 | 7.30 | 0.28 | 25.23* |
| Fellow dragging for 21 m | 5.83 | 0.82 | 8.00 | 0.72 | 18.13* |
| Total lifesaving skills | 23.19 | 1.64 | 32.31 | 1.38 | 29.57* |

Table (10) results reveal statistically significant differences at (0.05) between control and experimental groups' post means in swimming lifesaving skills' performance level in favour of experimental group.

in swimming lifesaving skills' cognitive achievement in favour of post measurement.

Discussion

In light of research hypotheses and results reached, the researchers discussed and interpreted results as follows:

Table (5) results reveal statistically significant differences between control group's pre and post means

Researchers attribute these differences to traditional teaching method (verbal explanation and model performance), which cannot be overlooked. It provides more new and diverse information about some facts and concepts about swimming lifesaving, lifeguard safety factors, first aid and lifesaving skills and its teaching methods. In addition, students using of textbook that includes some illustrations contributed greatly to learning especially that it exists with the students to use whenever they want.

Table (6) results reveal statistically significant differences at (0.05) between control group's pre and post means in swimming lifesaving skills' performance skills in favour of post measurement.

Researchers attribute these differences to traditional teaching method (verbal explanation and model performance), which allow direct contact between teacher and learner; it showed positive progress when comparing pre and post measurements. This method depends on teacher as main key through skill verbal presentation and model demonstration, progression in skill learning and giving feedback and continuous evaluation. In addition, students used to work in this way in learning other motor skills. All of this contributed to create some knowledge of learned skill and improved control group swimming lifesaving skills performance. So, first hypothesis accepted.

Table (7) results reveal statistically significant differences between experimental group's pre and post means in swimming lifesaving skills' cognitive achievement in favour of post measurement.

Researchers attribute these differences to e-Learning-based program used with experimental group, which creates an active and stimulating learning environment that leads learner to master what he learns, which increases learning effectiveness and learners motivation to learn knowledge, theoretical concepts and information related to swimming lifesaving skills, the matter which led to significant increase in post measurement. In this regard, Salama (2006) points out that using e-learning environment has an effect on learners' positively recall syllabus content, understanding and organizing subject in meaningful way. This result is consistent with Hussain (2005), Hamdy (2010) and Abdulfatah (2011) study results that proofed e-learning positive effect on cognitive achievement.

Table (8) results reveal statistically significant differences between experimental group's pre and post means in swimming lifesaving skills' performance skills in favour of post measurement.

Researchers attribute these differences to using e-learning environment, which adds suspense, attraction and motivation to exert effort in learning factors, students do not bored and have good understanding of swimming lifesaving skills. This what Zaher (1999) and Alghorab (2003) point out that e-learning transfers educational material to student in his place of residence to suit his needs and abilities, in addition to providing

rich interactive multimedia content by establishing multiple digital relationships between faculty staff, teaching material, and students., all this combined with e-learning low cost.

This result is in line with Gazar (2004), Hussain (2005), Hamdy (2010), Abdulfatah (2011) and Hassan (2012) study results that proofed e-learning positive effect on skills performance level. So, second hypothesis accepted.

Table (9) results reveal statistically significant differences between control and experimental groups' post means in swimming lifesaving skills' cognitive achievement in favour of experimental group.

Researchers return these differences to e-learning used with the experimental group in learning, and its method of learned ideas and concepts presentation and clarification. In addition to huge amount of information and concepts about swimming lifesaving skills, student is able to control demonstrating this information as per his learning speed. The student has sufficient time to understand this information in an interesting way, away from boredom or fatigue that may creep into him, thus increasing cognitive achievement rate. In the other side, traditional method (verbal explanation and model demonstration) used with control group consider students as information receptors and recipients only, so their role is negative in educational process, which reduces their motivation to learn.

In this regard Zeitoun (2002) emphasizes that old view of learning (traditional method) considers that learner is merely a mind in which information flows only as a recipient, whereas the modern view of learning perceives the learner as interactive living human. Its purpose is his growth and maturity, not preservation of information, but allow learner to build knowledge according his own process pattern, it consider learner builder of his knowledge and not a negative recipient.

This result is in line with Hussain (2005), Lim, Morris & Kupritz (2007), Hamdy (2010), Abdulfatah, (2011) and Hassan (2012) study results that proofed e-learning superiority on traditional teaching method in cognitive achievement.

Table (10) results reveal statistically significant differences between control and experimental groups' post means in swimming lifesaving skills' performance level in favour of experimental group.

The researchers attribute these differences to use e-learning with experimental group, which its content

characterized with integration, comprehensiveness, positive, flexibility, clarity and safety in addition to the computer use in presentation, which helped to participation of more than a sense in learning process, increase learners excitement to learn skills according to their abilities. In addition to considering individual differences between learners, which made them more involved and positively motivated to learn and understand difficult parts of the skill learned. This is consistence with what Sharaf (2000) argues that using technology in e-learning education provides learner with an opportunity to view learned skill optimal performance, which reduces errors occurrence in performance.

In the other hand, traditional method did not allow some students to follow explanation; hence, they face difficulties in understanding what required from them, students also are not able to view skill performance model properly and from all angles. In this regard, Allawi (1994) argues that learner may not have the opportunity to view enough because skill passes in front of him quickly without giving it enough attention and it leaves only some vague impressions, which leads learner to acquire wrong performance of motor skills educated.

This result is in line with Gazar (2004), Hussain (2005), Hamdy (2010), Abdulfatah (2011) and Hassan (2012) study results that proofed e-learning superiority on traditional teaching method in skill performance level. So, third hypothesis accepted.

Conclusions

1- E-learning has positive effect on swimming lifesaving skills and performance level for students at faculty of physical education, Al-Azhar University

2- Traditional teaching method has positive effect on swimming lifesaving skills and performance level for students at faculty of physical education, Al-Azhar University

3- E-learning is more effective than traditional teaching method in learning swimming lifesaving skills and performance level for students at faculty of physical education, Al-Azhar University

Recommendations

1- Using e-learning in teaching swimming lifesaving skills at faculties of physical education.

2- Interest to be given to teach both cognitive content and skill [performance aspects of in teaching swimming lifesaving skills.

3- There is a need to hold training courses for those who teach swimming lifesaving skills in order to familiarise then with modern educational methods.

4- Establishing laboratories for modern technological methods that help in teach various motor skills at faculties of physical education.

5- Conduct similar studies using e-learning on motor skills in various sports, because of their positive effect in educational process

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