# Educational Program using Educational Modules and its Impact on the Level of Skillful Performance of some Basic Skills in Swimming

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**Introduction and Research Problem:**

The scientific development has added a lot of modern education technology which can be used in the preparation of the fields of expertise for students to be prepared with a high degree of efficiency. The educational technology plays an important role in the field of education by facing the problems that hinder the development of educational process based on curricula, teachers, methods and methods of teaching and helping the educational process to follow the modern age and interact with it and with all its developments (6: 95).

The skills of swimming sport need a long time and a great effort from the trainer to impart and learn to the female students in addition to increasing the number of female students in the practical lectures as well as the modernity of motor skills for them, but the period of time for teaching the course is only one semester (the second semester of the basic stage) which is a period of about one and a half month, so this period needs to be supported to acquire and learn the basic skills included in the course. As current educational methods are no longer able to keep pace with modern educational philosophies, it is very important to choose educational method to make the students the base of the educational process and to allow them to be able to learn, which make the departments of sports colleges to reconsider the educational curricula, methods and means to help the learner to learn the basic skills effectively.

However, the importance of the educational modules is due to the fact that it is an important attempt for self-learning and the separation of education as it provides each student with the opportunity to divide the subject of the unit according to his abilities and speed of learning. The student does not move to the following

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next part of the subject until he masters the previous part. According to self-learning framework, the educational unit provides content, experience and activities for learning so that the student can learn according to his circumstances and abilities.

**Research Objective:**

The research aims to design an educational program using educational modules on the level of skillful performance of some basic skills in swimming sport for students of the first squad at Faculty of Physical Education - Assiut University.

**Research Hypotheses:**

1-There are statistically significant differences between the averages of pre-measurement and post measurement scores for the experimental group in the level of skillful performance in favor of the post measurements of the skills under consideration.

2-Increasing the percentage of improvement between the averages of pre-measurement and post measurement scores the skillful performance in favor of the post measurements (for the sample under consideration).

**Research Procedures:**

**Research Methodology**

The researcher has used the experimental method for its relation to the nature of the research. One experimental design was used for one group in pre-measurement and post measurement.

**Community and Sample of the Research**

The research community is represented in the students of the first squad in the Faculty of Physical Education, Assiut University, for the academic year (2017 - 2018). The researcher has chosen the sample in random intentional manner which is 15 students from the total research community, which is (35) students.

**Statistical Description of the Research Sample:**

The researcher has conducted homogeneity among the members of the research sample in the basic variables of growth rates (age, height, weight), mental abilities (IQ) and some physical abilities and skillful tests in swimming.

Table (1) shows the homogeneity between the individuals of the sample under consideration through the research variables.

**Table (1)**

**Arithmetic average, standard deviation, median, torsion coefficient for the growth rates, intelligence, physical tests, and skillful tests of the sample under consideration (N = 15)**

| No. | Research variables | | Measurement unit | mean | deviation | Median | torsion coefficient |
|---|---|---|---|---|---|---|---|
| 1 | age | | Year | 19.20 | 0.41 | 19.00 | 1.67 |
| 2 | height | | cm | 160.33 | 0.98 | 160.00 | 0.81 |
| 3 | weight | | kg | 60.53 | 1.73 | 60.00 | -0.40 |
| 4 | intelligence | | degree | 26.67 | 1.80 | 26.00 | 0.92 |
| 5 | **Physical tests** | Sprint 30 m from high beginning | Time | 37.67 | 1.23 | 38.00 | 0.84- |
| 6 | | Wide Bounce | cm | 120.73 | 3.31 | 121.00 | 0.29- |
| 7 | | Slant Prostration | number | 37.13 | 1.41 | 38.00 | 45.0- |
| 8 | | Trunk Flexibility | cm | 25.33 | 1.72 | 25.00 | 0.67 |
| 9 | | Running Shape & | time | 5.69 | 0.51 | 5.70 | 0.30 |
| 10 | **Skillful tests** | Buoyancy on the abdomen | time | 7.33 | 1.18 | 7.00 | 0.16 |
| 11 | | Sliding front with blows of the legs | meter | 54.07 | 3.28 | 53.00 | 0.49 |
| 12 | | Stand in water | time | 23.07 | 6.39 | 21.00 | 0.66 |
| 13 | | Rhythm of the breath | once | 4.87 | 0.83 | 5.00 | 0.27 |
| 14 | | legs blows on the abdomen | Meter | 5.80 | 0.77 | 6.00 | 0.38 |
| 15 | | Jump by the head | meter | 4.87 | 0.83 | 5.00 | 0.27 |
| 16 | | Swimming with arms on the abdomen | Time | 14.20 | 0.77 | 14.00 | 0.38 |
| 17 | | Bears test | time | 107.00 | 5.42 | 106.00 | 1.03 |
| | | | rotation | 22.80 | 1.61 | 23.00 | 0.10- |
| 18 | | American Red Cross | time | 2.40 | 0.91 | 2.00 | 0.6 |

Table (1) shows the homogeneity of the individuals of the research sample in the selected measurements, where the torsion coefficients ranged from (+3) indicating that the sample is homogeneous and represents a normal community

in the selected variables, since it become closer to zero the distribution is moderate.

**Data collection methods:**

**First: Tests used:**

Growth rates (age - height - weight). (Annex 2)-

Mental intelligence test. (Annex 3)-

-Physical abilities test.(Annex 5)

Skillful abilities test. (Annex 7)-

**Second: Forms:**

- Data registration forms.
- Survey forms of experts (questionnaire)
- Design of the proposed educational program.

**Application Procedures:**

**Survey Study:**

The researcher tested the educational program on a random sample of (10) female students from the research community and outside the original sample, in the period from 12/2 to 13/2/2017 AD. The results of the experiment of the program on female students include the following:

The fear of some students from using computer.-

-Difficulty of understanding some words.

-Knowing the time spent by the student in learning the computer to display the educational module.

-Knowing the time spent by students in the transition from the computer lab to the swimming pool and which takes (5) minutes.

**Pre-measurement:**

The pre-measurement was conducted on f the sample under consideration and found homogeneity among it in the variables (length, weight, age, mental abilities, swimming fitness components, basic skills, and under consideration) from Tuesday 14/2/2017 to Thursday, 16/02/2017 AD.

**Basic Experiment:**

The researcher has conducted the basic experiment on the research sample for three months (12 weeks), two lectures per week, and the lecture time is(120) minutes, during the period from Sunday 19/2/2017 to Thursday, 11/5/2017 AD. The researcher took into account the following:

-The field of practical application is very close to the place of presentation of the program, so that the learner can exist after viewing for application in the shortest possible time.

-The time and form of the educational unit has been

adhered as part and time of the application as a whole.

-Some colleagues shared as assistants in the implementation of pre and post measurements under consideration and in programming and implementation of the program.

-Registration forms of the research variables were used for easy processing of the results.

**Post measurement:**

After the end of the period specified for the implementation of the program, the researcher has carried out the post measurements of the experimental group in the research variables (basic skills "under consideration") in the period from Sunday, 14/5/2017 to Monday 15/5/2017 AD. The researcher took into account to conduct the post measurements under the same conditions as the pre-measurements.

**Statistical Processes:**

The researcher has conducted the statistical processes

Using:

-Arithmetic average.

- standard deviation.

Median. - Torsion coefficient-

-Correlation coefficient . - Test (t) for differences significance.

-Percentage.- Improvement percentage.

**Presentation, interpretation, and discussion of the results:-**

**First: the presentation of the results of the first hypothesis:-**

the significance of the differences between the averages of degrees of pre and post measurements in the skillful variables under consideration.

**Table (2)**

**Differences between the averages of degrees of pre and post measurements in the skillful variables (n = 15)**

| No. | Skillful variables | Measurement unit | Pre-measurement | | Post measurement | | T value | Statistical significance |
|---|---|---|---|---|---|---|---|---|
| | | | Arithmetic average | Torsion coefficient | Arithmetic average | Torsion coefficient | | |
| 1 | Buoyancy on the abdomen | time | 7.73 | 1.03 | 4.07 | 0.96 | 8.55 | significant in the post measurement direction |
| 2 | Sliding front with blows of the legs | meter | 54.00 | 3.16 | 35.20 | 3.05 | 9.57 | |

**Follow Table (2)**

**Differences between the averages of degrees of pre and post measurements in the skillful variables (n = 15)**

| No. | Skillful variables | Measurement unit | Pre-measurement | | Post measurement | | T value | Statistical significance |
|---|---|---|---|---|---|---|---|---|
| | | | Arithmetic average | Torsion coefficient | Arithmetic average | Torsion coefficient | | |
| 3 | Stand in water | time | 17.93 | 2.40 | 85.49 | 3.44 | 9.77 | |
| 4 | Rhythm of breath | once | 4.60 | 0.74 | 7.00 | 0.85 | 7.20 | |
| 5 | legs blows on the abdomen | meter | 5.67 | 0.62 | 8.93 | 0.88 | 7.18 | |
| 6 | jump test by the head | meter | 4.73 | 0.70 | 6.87 | 0.74 | 8.38 | |
| 7 | Swimming with arms on the abdomen | time | 13.80 | 0.68 | 10.67 | 0.82 | 7.12 | |
| 8 | Bears test | Time | 104.69 | 4.08 | 54.69 | 3.46 | 7.62 | |
| | | rotation | 24.13 | 0.99 | 17.00 | 1.65 | 8.95 | |
| 9 | American Red Cross | time | 2.20 | 0.86 | 5.53 | 0.74 | 9.34 | |

- The tabular value of (t) at free degree 14 and the level of 0.05 = 2.14

Table (2) shows that there are statistically significant differences between the averages of the pre and the post measurements in all the skillful tests under consideration, where the calculated T value ranged between 7.12 and 9.77, which is greater than its tabular value at level of (0.05).

**Interpretation and discussion of the results of the first hypothesis:**

Table (2) shows that there are statistically significant differences between the degrees averages of the pre and post measurements of the experimental group in the performance of the basic skills in the swimming pool "under consideration", where the calculated "T" value is greater than the value of the tabular "T" at a significant level (0.05).

The researcher attributed this positive impact to the new educational environment that was available to the students with its audio and visual effects and the diversity of the educational program in terms of presenting the scientific content and the use of many educational and technological means such as (pictures, drawings, video, educational

brochures and educational modules), and this is to illustrate the typical performance.

This interaction is a new one that encourages the positive scientific thinking and stimulates the thinking of the female learners and works on the process of education according to the desire and speed of each student, all this make the students feel the importance of their role in the educational process and then absorb the correct form of performance of the skills "under consideration" which achieved through the program of educational modules, where the researcher has used "computer" as an educational mediator which helps to gain a dynamic perception of the stages of skillful performance.

In addition, the use of "computer in the educational process helps to overcome many of the problems in the field of education and it helps to divide the skill and to be clear. It also works on the analysis of performance to reach the stage of mechanism, during learning, as confirmed by" Abdel Hamid Sharaf, 2000 AD (3), Kamal Abdel Hamid (2003) AD (5), Mustafa Abdel Samie (1999) AD, (7), and Fika Mustafa 2001AD (9). 166,165:7) (117-119:3) (5-200) (342:9))

**Second: Presentation of the results of the second hypothesis:** The percentages of improvement between the degrees averages of pre and post measurements in the skillful variables.

**Table (3)**

**The improvement percentage between the averages of pre and post measurements of the skillful variables (n = 15)**

| No. | Skillful variables | Measurement unit | Pre-measurement | | Post measurement | | difference between the two averages | difference between the two averages |
|---|---|---|---|---|---|---|---|---|
| | | | Arithmetic average | Torsion coefficient | Arithmetic average | Torsion coefficient | | |
| 1 | Buoyancy on the abdomen | time | 7.73 | 1.03 | 4.07 | 0.96 | 3.66 | 89.92% |
| 2 | Sliding front with blows of the legs | meter | 54.00 | 3.16 | 35.20 | 3.05 | 18.8 | 53.41% |
| 3 | Stand in water | time | 17.93 | 2.40 | 85.49 | 3.44 | 67.56 | 79.02% |

**Follow Table (3)**

**The improvement percentage between the averages of pre and post measurements of the skillful variables (n = 15)**

| No. | Skillful variables | Measurement unit | Pre-measurement | | Post measurement | | difference between the two averages | difference between the two averages |
|---|---|---|---|---|---|---|---|---|
| | | | Arithmetic average | Torsion coefficient | Arithmetic average | Torsion coefficient | | |
| 4 | Rhythm of breath | once | 4.60 | 0.74 | 7.00 | 0.85 | 2.4 | 34.28% |
| 5 | legs blows on the abdomen | meter | 5.67 | 0.62 | 8.93 | 0.88 | 3.26 | 36.51% |
| 6 | jump test by the head | meter | 4.73 | 0.70 | 6.87 | 0.74 | 2.14 | 31.15% |
| 7 | Swimming with arms on the abdomen | time | 13.80 | 0.68 | 10.67 | 0.82 | 3.13 | 29.33% |
| 8 | Bears test | Time | 104.69 | 4.08 | 54.69 | 3.46 | 50 | 91.42% |
| | | rotation | 24.13 | 0.99 | 17.00 | 1.65 | 7.13 | 41.94% |
| 9 | American Red Cross | Time | 2.20 | 0.86 | 5.53 | 0.74 | 3.33 | 60.22% |

Table (3) shows that the percentage of improvement between the averages of pre and post measurements in all the skillful tests under consideration, which ranged from (29.33% : 91.42%) in favor of post measurements (for the sample under consideration).

The researcher has attributed that the reason for the improvement of the post measurements in comparison with the pre-measurements for the experimental group students who used the educational program is because the use of computers and modules designed in learning process which attracts the attention of students and increases their concentration and not feel bored, and raises their interest and enthusiasm and suspense and increases their positivism which leads to the survival of the impact of what they learned.

In addition to the fact that the educational modules program ensures good content that is well organized and coordinated in a manner that takes care of the level, abilities and needs of the students using a variety of written texts, stationary and moving pictures and clips of educational films and presenting these media and linking them attractively, which lead to attract the attention of the students and increase their enthusiasm to do

more and then increase motivation to achieve a high rate of performance towards learning the basic skills in the swimming pool "under consideration".

This is in line with the results of the studies of Rehab Ahmed Hafez 2007 AD (1), Sherif Fouad Al-Jarouni 2006 AD(2), Ali Abdul Mohsen Abdul Rahman 2002 AD (4), Mounir Mustafa Abdeen 2006AD (8), Hannon And Others 2008 AD (10), which indicated the effectiveness of educational modules in the learning process.

**Conclusions:**

1-There are statistically significant differences at the level of (0.05) between the pre-measurement and the post measurement of the skillful performance in favor of the post measurements for the sample under consideration.

2-The program, based on educational modules, leads to the superiority of post measurements in comparison with the pre-measurements in the level of skillful performance of the experimental group under consideration.

3-The effectiveness of the educational program based on the modules and its positivism in learning the basic swimming skills "under consideration" for the experimental sample members.

**Recommendations:**

1-The need for application of the educational modules to learn swimming skills on the students of the Faculty of Physical Education Assiut University.

2-The faculties of physical education should interest in introducing modern technological methods within the programs of preparing students.

3-Working on the production of several educational programs in the system of modules in various sports activities in cooperation with experts and specialists in the technology of education.

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