The Effectiveness of an Electronic Educational Unit on Developing some Educational Communication Skills for Second Year Students at Faculty of Physical Education for Girls Al Gezira

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Introduction and research problem:

The use of e-learning methods has created various interests among the educational institutions, so it used as a tool to ensure student learning and to train the faculty staff members. Despite the advantages of e-learning, every educational institution needs to verify the benefits that accrue from it through the e-learning evaluation, which is based on the use of e-learning technology in all its stages. Hence, it is necessary to pay attention to both faculty members and students for using modern technology and its educational programs as it achieves innovative scientific success imbued with global potentials (6: 179).

It is not possible for anyone who works in university education not to join within the culture of change. The strategies showed that in order to accommodate the increasing numbers and the growing diversity of students, and at the same time, Internet connectivity and digital knowledge have witnessed a remarkable rise, therefore e-learning has flourished, and learning on the Internet now become the mainstream, e-learning has a lot of abilities to acquire knowledge, develop social skills, practice critical thinking and develop communication skills (10: 87).

Since the preparation of the student is one of the important and vital issues in the field of physical education, as it acquires its renewed vitality over the years if the community feels the need to develop and improve education and its quality.

Because of the importance of physical education faculties in preparing students and graduates, it has become necessary to constantly develop curricula and teaching curricula in order to achieve their desired goals and

contribute to the formation of a good teacher in line with the present and future modern changes. (8:7)

Therefore, curriculum developers, especially in developed countries, tended to build different curricula in the light of electronic educational units, and through these units, the learning resources, methods and educational attitudes are diversified (1: 41).

Muhammad Al-Sayed (2002) and Huknz (1990) mentioned that the educational unit is a teaching unit within sequential and integrated units that treat one concept through self-learning activities to master the unit objectives and help the learner to choose areas of activity that are commensurate with his abilities, speed and self-practice with less guidance from the teacher. And that the unit time depends on the length and quality of the goals and the content of the unit. (14: 82) (18: 180).

Since instruction is an organized communication process that aims to create learning, where the teacher always seeks to increase the interaction between him and the learner through communication studies for which he draws procedural goals, i.e. designs, implements and establishes them. So, the instructional communication is the basis of every educational situation. It aims to transfer various skillful and emotional experiences to learners to develop the learner's personality in its various aspects: mental, physical, psychological, religious, social, and artistic. (4: 17).

The method of applying e-learning and electronic assessments in Egyptian universities and the use of various educational platforms has become one of the teaching methods adopted in universities, and in light of this, a framework has been developed for the Ministry of Higher Education and Scientific Research to implement this on all sectors in Egyptian universities, it has become necessary to pay attention to e-learning and preparing students for that by using computers and smart devices for students, whether laptops, mobiles, tablets (5:5)

In view of the scientific innovations and technological development, we had to keep pace with those innovations and developments in the training process through electronic educational units. As, the educational unit helps in the evaluation process. (12:130)

It was difficult to develop the educational communication skills of all second-year students in physical education through the traditional training programs (face to face) due to their large numbers. From this point of view, the researcher found that we need to provide electronic educational units for the skill of educational communication for students of the second year,

strengthened by e-learning management systems using the Internet and its capabilities in the field of educational communication.

Research Objective:
This research aims to
1- Designing an electronic educational unit to develop the educational communication skill among students of the second year at the Faculty of Physical Education for girls using mobile phone.
2- The extent of the effectiveness of the electronic educational unit in developing the educational communication skill among students of the second year in the Faculty of Physical Education for girls using mobile phone.
3- Percentage of change rates between the pre and post measurements of (The educational communication skill) for the sample under study.

Research hypothesizes:
1- The electronic educational unit has a positive effect on the (educational communication skill) of the sample under study.
2- There are significant statistical differences between the pre- and post-measurement (of the educational communication skill) for the sample under study to the post-measurement.
3- Percentages of change rates between the pre- and post-measurement of (The educational communication skill) of the sample under study to the post-measurement.

Research Terminology:
- **Instructional communication:**
  A process of joint interaction with verbal and non-verbal symbols between the teacher and the learner, where the first provides educational experiences (cognitive, skill, and emotional) through the appropriate channels in order to achieve satisfactory educational outcomes.
- **The electronic educational unit:**
  The researcher defines it electronically as a small educational unit provided through the Internet in a form of structured interaction and mutual dependence, such as: written texts, presentations, electronic assessments. (5: 19).

Related Studies:

- Moaz Ahmed Abdelaziz (2021) study entitled by: The impact of a digital educational program on the development of some educational communication skills among students of field training at the Faculty of Physical Education.
- Saeed Shaaban Hassanin (2021) study entitled by: The impact of using one of the cloud computing applications on the learning outcomes of the Physical Education Curriculum course among students of the Faculty of Physical Education, Beni Suef University.
- Esraa Yasser Daoud (2019) study entitled by: Designing an electronic course for the curriculum in physical education and its impact on the cognitive achievement of third year students in the Faculty of Physical Education.
- Ahmed Badawy Abd El-Aal (2014) study entitled by: The impact of using educational modules to develop some teaching strategies for the performance competencies of physical education teachers on a sample of physical education teachers in the preparatory stage. (2)
- Ihab Saad Fayyad (2014) study entitled by: A technical model for guidance communication among educational supervisors and physical education teachers in Anbar Governorate - Iraq on a sample of physical education supervisors (7).
- Muhammad Fawzi Saif Al-Nasr study (2014) entitled by: The impact of using distance education by way of educational modules on the level of teaching skills of physical education teachers on a sample of physical education teachers (16)
- Muhammad Ibrahim Al-Lawandi study (2013) entitled by: The impact of a proposed program for communication skills on the teaching competencies of physical education teachers for the primary stage in Al-Azhar institutes in Al-Behera governorate (14)
- Hessa Ahmed Ali Khalifa study (2011) entitled by: A proposed strategy for distance training using educational modules for physical education teachers in light of their teaching adequacy in the Kingdom of Bahrain on a sample of physical education teachers (9).
- Yang. D. & Donung study (2000) entitled by: The impact of educational models on the acquisition of some teaching competencies by student teachers on a sample of students (19)
- Merwin, W, C & Shneider study (2002) entitled by: The effect of using educational modules on developing skills, knowledge and critical

thinking of secondary school social subjects' teachers on a sample of secondary school students (18)

Research procedures:

1- Research Methodology:

The researcher used the experimental method by designing one experimental group using the pre and post measurement for its relevance to the nature of the research.

2- Research Community and Sample:

The research community was the second-year students at the Faculty of Physical Education for Girls, Helwan University for the academic year 2021-2022, and their number was (935) female students enrolled in the faculty's records. The sample was chosen in a deliberate way from the students of the second year, and their number was (30) female students, representing a percentage of (3.20%) of the research community and an exploratory sample of (20) students from the same research community with a percentage of (2.13%).

Data Collection Tools:

The researcher identified the tools used in the research to suit the nature of the study, which were as follows:

1- Scan of studies, references, scientific research and the internet for the related topics of the research with the aim of:
   Determining the initial point of view for the survey and data collection tools.

1- Personal interviews with experts in the field of curricula and teaching methods, it was (5) experts, in order to determine the data collection tools and reach the final form of the educational unit for the educational communication skill for the second-year students.

The experts agreed on the final form of the educational unit and its components as follows:

1- Unit title
2- Secondary ideas for the unit
3- Guidelines and directions for the student
4- Unit Introduction
5- Behavioral objectives
6- Pre-Assessment

7- Correction key
8- Content of the educational unit
9- Educational activities
10- Teaching methods
11- Other Learning Resources
12- Post-Assessment
13- Suggested Literatures

Thus, the researcher designed the educational unit agreed upon the experts in its initial form, attachment (1). Also, the researcher conducted exploratory studies with the aim of conducting scientific treatments for the educational unit assessments.

Validity:

The researcher used the internal consistency validity to calculate the correlation coefficient between each question and the total sum of the educational unit test.

Table (1)
Correlation coefficient between each question and the total scores of the educational unit "to calculate the validity of the test"

N=20

Questions	Arithmetic Mean	Standard Deviation	T-Value
First	1,95	0,76	0,808 *
Second	2,10	0,72	0,753 *
Third	1,90	0,72	0,799 *
Fourth	2,10	0,72	0,509 *
Fifth	2,00	0,73	0,493 *
Sixth	1,80	0,70	0,844 *
Seventh	2,00	0,79	0,785 *
Eighth	1,95	0,76	0,780 *
Ninth	1,85	0,67	0,923 *
Tenth	1,95	0,76	0,761 *
Total Summation	19,6	7,51	0,683 *

The value of (T) tabulated at a level of significance of 0.05 and a degree of freedom of 18 = 0.444

It is obvious from Table (1) that there is a correlation between each unit question and the total summation, which indicates the validity of the test questions.

Reliability:

Alpha Cronbach's coefficient was calculated for the unit and came with a value of (0.88), which indicates the stability of the test for the proposed unit.

The stages of Designing the Educational Units:
First: The Analysis Stage:

It included two steps:
- The first step: Determine the aim of the electronic educational unit, which is providing the students of the second year with the educational communication skill.
- The second step: Determine the content of the educational unit and it consists of:
  - Speaking skill: voice tones skills - listening skills.
  - Signals, facial expressions, posture and signs skills - Emotions skills.

Second: The Design Stage:

The researcher designed the electronic educational unit according to the following components and criteria:
1- Title: It was considered that the unit's instructional design expresses what is inside and was characterized by its shortness of words.
2- Importance: It was considered that the educational design of the unit contains an introduction that gives a general idea of the importance of studying the educational unit and the justifications for its study.
3- Educational objectives: The educational units are provided with a number of objectives that are specified so that the student knows, before studying the unit, the desired learning outcomes, and it has considered that these objectives are characterized in their formulation with specificity and clarity, and the educational objectives of the unit are organized in an educational sequence from relatively simple objectives to more complex objectives, the goals also included the cognitive, skill and emotional aspects.

4- Educational activities: The educational unit is included with a set of enrichment activities that the students of the second year must follow to achieve the unit's aim. The educational design also considered the diversity and multiplicity of educational activities within the educational unit in order to suit the various levels and experiences of the second-year students.

5- Academic content: The design considered the translation of educational objectives into study content appropriate to the level of second-year students, supported by several models, practical examples and questions.

6- Suggested learning resources and readings: The instructional design was concerned with the presence of a list of sources and references at the end of the educational unit that includes additional readings that the student can refer to if she needs more knowledge about the topic of the unit or to delve into the study of one of the secondary elements or ideas included in the unit's content.

7- Design of pre and post Assessments: An assessment test (before and after) for the unit is designed to help the learner verify her level of proficiency, and the extent to which she is able to achieve the educational objectives included in the unit. The correction is done automatically, and the program determines the extent of her ability, the percentage of proficiency, and the right and wrong questions. By (80%), the student has completed the educational unit.

Third: The Production and Development Stage:

At this stage, the content of the educational unit was produced electronically by utilizing:

1- Google Drive services, where the pre-test and post-test were designed on Google Forms in Assessments design and provided with a correction key for each question, specifying the score for each question and the total score for the test, with adding the unit in a presentation form.

2- Facebook and WhatsApp: A special group was created for the training program entitled by (Educational Communication Skills) and prepared to communicate with the study sample.

Fourth: The implementation Stage (Application Stage):

The researcher added the basic study sample to the (Facebook, WhatsApp) group and clarified the purpose of the research in the description of the group with the attachment of the application timetable, and explained everything before starting the application of the research experiment, to help them in dealing with the program based on electronic educational units.

Fifth: The Evaluation Stage:

The researcher used (the initial evaluation, and the final evaluation) as follows:

A- Initial evaluation: in which the design of the electronic unit was adjusted in its initial form through:

1- The validity of the arbitrators: The unit was presented to a group of arbitrators from experts in curricula and methods of teaching physical education, to ensure the validity of the unit as well as to judge its suitability for educational aims, the validity and clarity of its formulation and the integrity of the content formulation and organization, as well as the activities included in the unit as well as judging the validity and effectiveness of the unit. Unit Assessment in measuring learning outcomes, and the arbitrators made some observations that were considered by the research when preparing the final form of the educational unit.

2- Exploratory experimentation of the educational unit: The unit was tested on the exploratory sample to determine the appropriateness of the method of displaying the educational unit and the ease or difficulty of the unit's content, activities and its test. The unit is individually and independently, and the exploratory experience has resulted of some observations that were taken into consideration when preparing the final form of the educational unit by the researcher.

Considering the observations and opinions received, whether from the arbitrators or from the students, the electronic educational unit was comprehensively reviewed until its final and acceptable form was taken to conduct the research experiment.

B- Final Evaluation: In this stage, the effectiveness of the training program based on electronic educational units was judged, and

this was done through the experimental procedures of the research.

Time distribution of the executive steps of the research:

Table (2)
Time distribution of the executive steps of the research

Stage	Period		
	From	**To**	**Duration**
Analysis	9/1/2022	16/1/2022	One Week
The validity of the arbitrators	23/1/2022	30/1/2022	One Week
Design	5/2/2022	19/2/2022	2 Weeks
Production	26/2/2022	12/3/2022	2 Weeks
Exploratory Experiment	13/3/2021	20/3/2022	One Week
Validity and Reliability	21/3/2022	28/3/2022	One Week
Application	2/4/2022	16/4/2022	2 Weeks
Final Evaluation	17/4/2022	24/4/2022	One Week
Summation	9/1/2022	24/4/2022	12 Weeks

Presentation and discussion of results:
First: Presentation of results:

Through the research problem and in order to achieve the research objectives and within the study of the research sample, the procedures and statistical treatments that made by the researcher, she presented her findings as follows:

Table (3)
The significance of the differences between the pre and post measurements
of the electronic educational unit questions

N=30

Questions	Pre- Measurement		Post Measurement		Differences	T-Value
	Arithmetic mean	Standard Deviation	Arithmetic mean	Standard Deviation		
First	0,617	0,490	0,950	0,220	0,223	4,511
Second	0,650	0,481	0,923	0,252	0,283	4,190
Third	0,617	0,490	0,967	0,181	0,250	5,264
Fourth	0,667	0,475	0,950	0,220	0,282	4,476
Fifth	0,600	0,494	0,950	0,220	0,250	4,698
Sixth	0,600	0,494	0,900	0,202	0,200	4,281
Seventh	0,550	0,502	0,950	0,220	0,400	5,548

Eighth	0,617	0,490	0,950	0,220	0,333	4,764
Ninth	0,600	0,494	0,900	0,202	0,200	4,281
Tenth	0,582	0,497	0,917	0,279	0,333	4,511
Total Summation	**6,100**	**4,907**	**9,267**	**2,236**	**3,267**	**23,973**

* The value of (T) tabulated is significant at the level of 0.05 = (2.262) and a degree of freedom of 29: 1,671

It is obvious from Table (3) that there are significant statistical differences between the two measurements, the pre and post measurements, in the scores of the ten questions for the educational unit and the total summation to the post measurement.

Table (4)
The change percentages between the pre and post measurements
of the electronic educational unit questions

N=30

Questions	Pre- Measurement		Post Measurement		Differences	Change Percentages
	Arithmetic mean	Standard Deviation	Arithmetic mean	Standard Deviation		
First	0,617	0,490	0,950	0,220	0,333	54,05%
Second	0,650	0,481	0,923	0,252	0,283	43,59%
Third	0,617	0,490	0,967	0,181	0,350	51,76%
Fourth	0,667	0,475	0,950	0,220	0,283	42,50%
Fifth	0,600	0,494	0,950	0,220	0,350	58,23%
Sixth	0,600	0,494	0,900	0,220	0,200	50,00%
Seventh	0,550	0,502	0,950	0,220	0,400	72,73%
Eighth	0,617	0,490	0,950	0,220	0,333	54,05%
Ninth	0,600	0,494	0,900	0,203	0,200	50,00%
Tenth	0,583	0,497	0,917	0,279	0,333	57,14%
Total Summation	**6,100**	**4,907**	**9,367**	**2,235**	**3,267**	**53,55%**

It is obvious from Table (4) that the change rates between the pre and post measurements in the electronic educational unit questions ranged between 42.50% to 72.73%, and the total improvement rate in the unit was 53.50%.

Second: Discussing the results:

It is obvious from Table (3) that there are significant statistical differences between the two pre and post measurements to the post measurement in the scores of the ten test questions.

These results indicate that there are differences between the pre and post measurements among the students of the basic research sample to the effectiveness of the proposed program based on electronic educational units on the communication skill of the second-year students.

The researcher believes that these differences are due to the effectiveness and impact of the electronic educational units in training the students and its topics were closely related to the students. This unit as designed in a consistent way with self-learning and considered the individual differences among students. These results can be explained by the fact that the e-learning environment is an extension of teaching methods based on research, inquiry and exploration and reflects the idea of computing learning environments in order to achieve interdependence with the use of technology in guiding and training students.

As, it provides fun and attractiveness atmosphere in the learning process, guidance and completion of the information that the students need so that they can reach the perfect form of learning outcomes which appear in real scientific behavior. And, it meets their needs by activating the students' motivation and their desire to gain more knowledge.

And, this satisfies the first and second hypotheses, which state that:

- The electronic educational unit has a positive effect on the (educational communication skill) of the sample under study.
- There are significant statistical differences between the pre- and post-measurement (of the educational communication skill) for the sample under study to the post-measurement.

As shown in Table (4), the rates of change (improvement) for the post measurement in the educational unit assessment (educational communication skill) improved between 42.5%: 72.73%, and the average of improvement rate per unit was 53,55%.

The researcher founds that the improvement in the educational communication skill is due to the use of the program designed by the electronic educational unit and the abundant and balanced information that included between the cognitive, emotional and performance aspects.

The researcher attributes that this improvement is gained from the content of the electronic educational unit that was based on self-learning, which makes

the student more self-reliant due to the availability of information and guidance that the student needs in the unit. The electronic educational unit was characterized by the organized logical sequence, and the suitable progress through the unit, with determining the point of reaching the goal of the unit. It also includes initial evaluation methods that achieved by the student which allow her to identify and know her educational level.

This result can be explained by the fact that the nature of the e-learning environment used creates the best conditions for teaching and guiding the students on the Internet in a productive way through the freedom that prevails in the atmosphere of education and the student bearing great responsibility, as well as helping to increase self-confidence, a sense of achievement and curiosity, especially that the education process is not defined with a specific time like traditional education, it is possible for the students that they are not ready psychologically or mentally to study the unit at any time as it is available within four days at any appropriate hour.

And, this satisfies the first and third hypotheses, which state that:

- The electronic educational unit has a positive effect on the (educational communication skill) of the sample under study.
- Percentages of change rates between the pre- and post-measurement of (The educational communication skill) of the sample under study to the post-measurement.

This was confirmed by some related previous studies, such as the study of Moaz Ahmed (2021), Saeed Shaaban (2021), Esraa Daoud (2019), Ahmed Badawy (2014), the study of Hessa Al-Khalifa (2011), Ali Abdul Majeed, Mervat Ibrahim (2009), and the study of Sherine Farouk (2005), which all emphasized the effectiveness of education by using electronic educational units.

The Conclusions:

Considering the sample, aims, hypotheses, procedures and results of the research, the researcher reached the following conclusions:

1- The electronic educational units have a positive impact on the educational communication skill of the sample under study.
2- There are significant statistical differences between the pre- and post-measurement of the sample under study to the post-measurement.
3- The percentage of improvement between the pre and post measurements under study in the educational unit in the educational communication

skill for second-year students ranged between 42.5% to 72.73% and average (53,55%).

The Recommendations:

Within the limits of the results and conclusions that have been reached, the researcher recommends the following:

1- Benefiting from the proposed program based on electronic educational units in teaching second-year students in the Faculty of Physical Education.
2- Benefiting from the specifications and design principles formulated in this research in designing other programs (based on electronic units) to develop all the skills of the second-year students.

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