



Cairo University
Institute of Educational Studies
Department of Instructional Technology

**The effect of Web based learning programs on Developing IT and
Self learning skills for the students of Educational Technology
on collages of Special Education**

Submitted by
Reham Mostafa Kamal El Din
A thesis Abstract for the master Derge

Under the Supervision of

Prof. Dr./ Mostafa A. Elsamea

Prof. of Instructional Technology
Institute of Educational Studies
Cairo University

Prof. Dr./ Mohamed A. Khames

prof. at Instructional Technology
women's college
Ain Shams University

Research Abstract

Introduction:

We are currently living in the information age, which has influenced all aspects of our lives. As Mohamed Attia Khames states, *“The march of the information age has begun rapidly, and we do not know exactly to what extent it will reach, but we do know that whoever lags behind this march will certainly become rural in the age of information and globalization.”*

Undoubtedly, these modern technologies have already brought about fundamental changes in educational systems. Information technology is considered one of the achievements of the scientific and technological revolution that has had a major and direct impact on shaping the life of modern man. Information has become an integral part of human life and one of his basic needs.

Despite the importance of information technology and its skills, students are unable to master these skills, although such skills are of utmost importance to educational technology specialists. There is, therefore, a need for alternative educational methods to compensate for this deficiency through modern teaching approaches. This necessity has been confirmed by several sources such as scientific conferences, previous studies and research, and exploratory investigations.

Research Problem:

In light of the above, the problem of the current research can be formulated as follows:

“There is an urgent and essential need to develop students’ educational information technology skills in the Faculty of Specific Education through web-based programs.”

This problem can be reformulated in the following main research question:

“What is the effectiveness of a web-based program in developing educational information technology skills among students of Educational Technology in Faculties of Specific Education?”

The main research question branches into the following sub-questions:

1. What are the educational information technology skills that students should acquire?
2. What are the specifications and design standards of a web-based program, developed through an appropriate instructional design and development model, to foster these skills among students?
3. What is the effectiveness of this program in developing such skills among students?

Research Objectives:

1. To identify the impact of using a web-based program on developing students’ educational information technology skills.
2. To examine the level of information literacy among students.
3. To determine students’ achievement in the Educational Information Technology course.
4. To investigate whether the use of information networks and the web improves students’ achievement.

Research Significance:

The significance of this research lies in the following:

1. The findings represent particular importance to those responsible for delivering the Educational Information Technology course, taking into account the integration of modern technologies in the educational process.
2. This research contributes to revealing the effectiveness of individualized e-learning environments that employ multimedia technologies and the web to achieve instructional objectives.
3. The research may assist learners in performing new tasks in the context of information technology and e-learning environments.
4. It may also support the use of the web in training students on other academic courses.

Research Hypotheses:

1. There is a statistically significant difference at the level of (0.05) between the mean scores of the control group and the experimental group in the post theoretical achievement test and the post practical test, in favor of the experimental group.
2. There is a statistically significant difference at the level of (0.05) between the pre-test mean scores of the experimental group in both the theoretical and practical tests, and their post-test mean scores, in favor of the post-tests.
3. There is a statistically significant difference at the level of (0.05) between the mean scores of the control group and the experimental group in the post-tests, in favor of the experimental group.

Research Methodology and Experimental Design:

This study adopts the systematic developmental technological approach, which incorporates the descriptive method in identifying information technology skills and instructional design standards, in addition to the experimental method to test the program and compare between the experimental and control groups.

Research Variables:

- **Independent Variable:** A web-based program for developing educational information technology skills among Educational Technology students.
- **Dependent Variable:** Students' achievement and skills development.
- **Control Variable:** Pre-testing of achievement and skills.

Research Sample:

The research sample consisted of fourth-year students in the Educational Technology specialization at the Faculty of Specific Education. This group was selected because training students on the use of the web requires them to be already familiar with the basics of computer use, which they had studied in earlier academic years according to the curriculum plan of the Educational Technology specialization.

Research Tools:

1. A pre/post test to measure students' knowledge acquisition.
2. Observation checklists to assess students' performance of practical skills.
3. A web-based program for developing educational information technology skills.

Research Results:

1. There are statistically significant differences between the mean scores of the experimental group and the control group in the post theoretical achievement test in favor of the experimental group.
2. There are statistically significant differences between the mean performance scores of the experimental group and the control group in the observation checklist results across all information technology skills (1, 2, ..., 6), in favor of the experimental group after the experiment.

Research Recommendations

In light of the findings of the current research, the researcher recommends the following:

1. Utilizing the web-based educational program designed in this study to train Educational Technology students in information technology skills.
2. Applying the design principles and standards that were followed in producing this program when developing other educational programs.
3. Emphasizing the importance of adopting *Mohamed Attia Khames's* model in designing computer-based educational programs, given its high capability of enhancing and improving performance. This model is characterized by flexibility, adaptability to the purposes of different courses and curricula, and high production accuracy.
4. Designing and developing web-based programs for general and higher education curricula.
5. Conducting further studies and research on the design and development variables of web-based educational programs.
6. Providing modern computer laboratories and appropriate software for the production and presentation of web-based training programs that employ digital simulation, as well as ensuring the availability of the necessary equipment and facilities in universities.
7. Offering financial support and moral encouragement to faculty members and teachers for using web-based programs in education.
8. Training faculty members, teachers, and educational technology specialists to develop and implement web-based educational programs.
9. Establishing and updating networks and infrastructures for delivering web-based education across educational institutions.
10. Founding specialized centers in both general education and universities for the design and development of web-based learning.
11. Raising awareness of web-based learning and training among educators and administrators through media campaigns, conferences, seminars, and workshops.
12. Organizing effective training courses for Educational Technology specialists on the design and development of web-based education delivery.
13. Enhancing the theoretical knowledge and practical skills necessary for employing web-based learning among teachers and university faculty members in various educational and training institutions through in-service training programs and workshops.
14. To foster the spirit of web-based learning, *Bailey & Luketehans (1998)* recommended reducing learners' technology-related anxiety and sending them encouraging emails to help overcome procrastination.
15. Dispatching overseas study missions to advance the educational process in Egyptian universities.