Summary of the Study

Introduction

The computer-based programs and software used to present various knowledge and experience have become today one of the modern trends to achieve several learning outcomes. Such media often include a written script, static or animated pictures or illustrations, etc.

Teaching using multimedia will undoubtedly provide an opportunity for a learner to be exposed to unfamiliar learning issues, phenomena and situations. This will entail a learner to explain such exposures in the light of his previous experiences, creating the so called "active learning". This type of learning enables the learner to acquire information displayed on the screens of computers in the forms of texts, audios, illustrations and pictures of different types. As such, teaching using multimedia can affect learners' achievement and comprehension. In fact, it can enable the learner to acquire practical skills, which help him continue learning.

Problem and questions of the study

Based on the foregoing, the problem of the study of the female students' weak level of technical skills, which urged the researcher to attempt to develop such skills, examine the problem, search for innovative techniques, propose solutions within a multimedia program and measure their effectiveness.
The problem of the study is stated in the main following question:

What is the effectiveness of a proposed program, using a multimedia-based program in developing some technical skills of first year technical secondary female students? This problem may be decomposed into the following questions:

1. What technical skills that need to be developed for the first year technical secondary female students?

2. What is the proposed program for using multimedia programs to develop the technical skills for the first year technical secondary female students?

3. What is the impact of using the multimedia program on developing the technical skills of the first year technical secondary female students?

Importance of the study

1. Surmounting the difficulties of the applied aspects of developing the technical skills of the first year technical secondary female students.

2. Attempting to raise the efficacy of graduates of the technical education, ready –made garments section using the multimedia program proposed to develop the technical skills.

3. Introduction of new educational software.
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**Objectives of the study**

1. Identifying skills needed and developing technical skills of the first year technical secondary female students.

2. Developing technical skills of the first year technical secondary female students using the proposed multimedia program.

3. Identifying the effectiveness of the proposed program in developing the technical skills of the first year technical secondary female students.

**Limitations of the study**

The current study is limited to the randomly selected sample of the first year technical secondary female students, ready-made garments section. It will be limited to some technical skills necessary for garments use and design by the sample of the study.

**Tools of the study**

The current study will use the following tools:

1. A questionnaire to identify the technical skills for garments use and design to be presented to specialists.

2. A scorecard to measure the students' levels of technical skills of garments use and design to be employed in observing the students' performance and interaction with the proposed multimedia program to indicate its effectiveness.
3. An achievement test to measure the cognitive aspect.

**Hypotheses of the study**

- There is a statistically significant difference between the mean scores of the control group students in the pre and post applications of the cognitive test in favor of post application.

- There is a statistically significant difference between the mean scores of the control group students in the pre and post applications of the cognitive test in favor of post application.

**Methodology of the study**

The study will use the following methods:

**Descriptive method:** to survey and analyze the literature and prepare the theoretical framework and tools of the study.

**Quasi-experimental method:** to use the field application of the study. This design includes two groups, control and experimental, in order to examine the effectiveness of the proposed interactive multimedia-based program in developing the technical skills of the first year technical secondary female students.

**Procedures of the study**

The study will employ the following procedures:

To answer of the first question: "What is the effectiveness of a proposed program, using a multimedia-based program in
developing some technical skills of first year technical secondary female students?"], the following procedures will be pursued:

1. Surveying previous research, studies and literature, which addressed the multimedia topic?

2. Preparing a list of technical skills needed for garments use and design by referring to the following resources:
   a. Previous research and studies.
   b. Literature, which addressed technical skills.
   c. Exploring opinions of experts, teachers and supervisors.

3. Submitting the initial list to experts to identify its validity.

To answer the second question: "What technical skills that need to be developed for the first year technical secondary female students?", the following procedures shall be pursued:

1. The program will be built as follows:
   - Identifying the bases and requirements of building the proposed program in terms of planning and date collection and analysis.
   - Submitting the design of the proposed program to jury to control it in terms of the validity of the following:
     o Objectives identified.
     o The list of skills to be addressed in the program.
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1. Preparing a test to the measure the cognitive aspect in the industrial design unit to be submitted to a group of jury to control it.

2. Preparing a scorecard to identify the technical skills to be submitted to a group of jury to control it.

3. Selecting the sample of the study.

4. Pre-application of the test and recording results.

5. Post-application of the scorecard and record and statistical treatment of results.

6. Concluding and interpreting results.

7. Submitting recommendations and suggestions.

Results of the study

The following results were concluded:

I. Testing the validity of the first hypothesis
For the first hypothesis that is "There is a statistically significant difference between the mean scores of the control group students in the pre and post applications of the cognitive test in favor of post application" at a confidence level of 0.01 with a degree of freedom (29), the impact of significant being more than 0.8, which is equal to 11.64.

This indicates that the value of calculated "T" is higher than the value of tabled "T", which indicates a statistically significant difference in favor of the post application of the cognitive test. As such, the validity of the first hypothesis has been verified.

II. Testing the validity of the second hypothesis

For the second hypothesis that is "there is a statistically significant difference between the mean scores of the control group students in the pre and post applications of the scorecard test in favor of post application" to validate it at a confidence level of 0.01 with a degree of freedom (69), the impact of significant being more than 0.8, which is equal to 38.88.

This indicates that the value of calculated "T" is higher than the value of tabled "T", which indicates a statistically significant difference in favor of the post application of the scorecard. As such, the validity of the second hypothesis has been verified.

Analysis of results

I. Analysis of the cognitive test results
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The researcher calculated the mean scores of students in the pre and post applications of the cognitive test and then calculated the percentage of each.

The improvement of students' levels ranged between 32.07 percent to 69.20 percent.

II. Analysis of the scorecard results

The researcher calculated the mean scores of students in the pre and post applications of the scorecard and then calculated the percentage of each.

The improvement of students' levels ranged between 22.53 percent to 70.86 percent.

Recommendations of the study

The researcher recommends the following:

1. Using the results of the study and the research, which addressed the production of learning programs in general and multimedia-based programs in particular.

2. Paying attention to the design and production of interactive multimedia-based learning programs to develop technical skills.
3. Expanding the production of learning programs, concerned with interaction between the program and learners.

4. Uploading learning programs on learning websites and electronic learning centers so that they can be used by learners anywhere and anytime.

5. Expanding the use of hypermedia and multimedia-based programs to help learners acquire skills.

6. A number of technological programs on other learning units may be designed in order to help students acquire practical skills in these units in terms of their relation to other variables.

7. Urging schools to use technological programs and multimedia for their effectiveness in increasing achievement and developing different skills.

8. Paying attention to the production of learning programs serving technical education and helping unleash the potentials of thinking and reflection.

9. Expanding the application of modern teaching methods and avoiding, as much as possible, traditional methods, which focus on memorizing without active participation from students.

10. Providing a conducive learning environment of freedom, security and stability, achieving and developing creativity.
Suggestions of the study

The researcher suggests conducting the following research:

1. Conducting research to examine the impact of interaction between the variables of designing multimedia programs and some cognitive patterns of female students and the impact of all these on the aspects of learning.

2. Considering employing multimedia programs into electronic learning labs as structured learning software.

3. Conducting research to employ multimedia programs in developing new technical skills of design.

4. Conducting research to employ multimedia programs in developing skills of those with special needs.

5. Conducting similar research to identify the impact of multimedia programs on developing the skills of other subjects and developing the attitude towards the use of computer.

6. Conducting evaluative studies on current multimedia programs and suggesting more useful ones for teachers.

7. Conducting research on interactive multimedia programs in other different fields.