



Cairo University
Institute of Educational Studies
Department of Educational Technology

**The Effect of the difference of Formative Evaluation Strategy at the
independent and dependent in E- learning Environments on
Developing the Achievement and the skills Performance of Students
of Instructional Technology**

A dissertation submitted in partial fulfillment of the requirements for the
PHD of Educational Technology

Submitted by

Hamdy Ahmed Abdel-Azeem Abdel-Gawad

Supervised by

**Prof. Dr. Hanaa Mohammed
Gamal-eldeen**

**Assistant Professor of Educational
Technology
Institute of Educational Studies
Cairo University**

Dr. Nader said Ali Shemy

**Assistant Professor of Educational
Technology
Faculty of Specific Education
Fayoum University**

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Research Summary

Introduction:

The field of educational technology began moving towards interest in research in the design variables in the manner consistent with the capabilities, aptitude and the different needs of learners, this kind of research that interest in research in the instructional design variables in line with the different learning styles of learners, known as Aptitude Treatment Interaction; And this research is going in this direction, which examines the effect of the difference of formative evaluation strategy at the independent and dependent in e- learning environments on developing the achievement and the skills performance of students of instructional technology.

This research uses formative evaluation strategies and in particular self-evaluation and peer evaluation as methods of treatment; The formative evaluation is considered a tool or a way to help increase the effectiveness of teaching , improve and develop it, through the use of the teacher's formative evaluation as a teaching way to help students learn, and enables the learner to achieve the desired objectives easily and conveniently; One of the forms of formative evaluation for learning, is a self-evaluation, and defined that it is the student's ability to observation, analysis and judgment on his performance, on the basis of a set of standards, as well as the ability to determine how he could develop this performance; The peer evaluation is linked closely to self-evaluation, where include that every student evaluate the works of peers, for example, two students can exchange appointments, tasks, or work performed by each of them, and each of them evaluate the quality, accuracy, or other appropriate action; However, this requires a structured and prepared, in order to be consistent peer evaluation, and the judgments resulting from it are correct.

The learning style is considered of the most important students' educational aptitudes, and that gained the attention of many researchers, especially field independence versus field dependence; Learning style associated with the way in which the individual realizes the situation or the subject and its details, it examines an individual's ability to isolate or extract the subject perceived separate and independent from the whole field, it examines an individual's ability to analytical perceive; And individuals who are characterized by independence from the cognitive domain called Analytic, which realize parts of field in the form of a separate or independent of his ground organization, they have the ability to analyze the elements of the situation and the information and the realization of these elements independently, also, they have an internal guide style, they do not need for an external reference frame; In contrast, individuals who are characterized by depending on the field called global, those who fail to analyze the components of the compound or complex stimulus, and then respond to it as a whole or as a single unit, as well as they are less able to regulate situations and stimuli in their environment, and require an external reference for guidance in dealing with the information and acquisition of interaction tools, they also find it difficult to solve problems, and they have less ability from independents to

recover and remember a large amount of information, they also need feedback more than field independent.

Because of the role played by the skills of scripting for educational technology specialist, the attention to programming skills in general, and scripting skills that support the multimedia and web pages production programs specifically, is essential to preparation of educational technology specialist; Therefore, most educational technology specialist preparation programs include the course of programming using ready-made programs; For this reason, this research is the effect of the difference of formative evaluation strategy (self - peer) at the independent and dependent in e-learning environments on developing the achievement and the skills performance of students of instructional technology.

The Research Problem:

Research Problem is determined by answering the following key question:

What is The Effect of the difference of Formative Evaluation Strategy at the independent and dependent in E- learning Environments on Developing the Achievement and the skills Performance of Students of Instructional Technology?

To answer this key question requires answering the following sub- question:

1. What is the list of scripting skills (cognitive and practical) necessary for students of educational technology?
2. What is the design of self-evaluation strategy at the independent and dependent in e-learning environments?
3. What is the design peer-evaluation strategy at the independent and dependent in e-learning environments?
4. What is the image of a tutorial program in light of formative evaluation strategy (self - peer) for the development of scripting skills (cognitive and practical) on students of educational technology?
5. What is the effect of difference of formative evaluation strategy (self - peer) on cognitive skills for students of educational technology?
6. What is the effect of difference of formative evaluation strategy (self - peer) on practical skills for students of educational technology?
7. What is the effect of difference of learning style (independent - dependent) on cognitive skills for students of educational technology?
8. What is the effect of difference of learning style (independent - dependent) on practical skills for students of educational technology?
9. What is the effect of difference of formative evaluation strategy (self - peer) for independent and dependent on cognitive skills?
10. What is the effect of difference of formative evaluation strategy (self - peer) for independent and dependent on practical skills?

Research Objectives:

Current research aims to achieve the following:

1. Prepare a list of scripting skills (cognitive and practical) necessary for students of educational technology.

2. Design of a self-evaluation strategy at the independent and dependent in e-learning environments.
3. Design of a peer-evaluation strategy at the independent and dependent in e-learning environments.
4. Detection of the effect of difference of formative evaluation strategy (self - peer) on (cognitive - practical) skills for students of educational technology.
5. Detection of the effect of difference of learning style (independent - dependent) on (cognitive - practical) skills for students of educational technology.
6. Detection of the effect of difference of formative evaluation strategy (self - peer) for independent and dependent on (cognitive - practical) skills for students of educational technology.

The Research Importance:

The importance of Current research in that it may be useful as follows:

1. This research presents for teachers a new vision of the educational process, which emphasizes the importance of spreading the culture of formative assessment generally in e-learning environments, and self-evaluation and evaluation of peer particularly for their application and benefit from the diverse features of these methods.
2. This research presents two designs for teachers to apply strategies of self-evaluation and peer evaluation in the educational process.
3. This research helps in the development of scripting skills at students of educational technology.
4. This research is considered one of researches concerned with the Aptitude Treatment Interaction, that interest in research in the instructional design variables in line with the different learning styles of learners.
5. This research is considered one of development researches search in the field of educational technology, and this is what it emphasizes modern educational directions.
6. This research is considered one of Arab leading researches - Within the limits of researcher knowledge - that examines the formative evaluation strategy (self - peer) in e- learning environments.

The Research Limits:

Current search limited to:

1. Spatial limits: Department of Educational Technology - Faculty of Specific Education - Fayoum University.
2. Course limits: the course of programming using ready-made programs, which students are taught the language of Action Script within the program Flash.
3. Formative Evaluation Strategy Limits: include (Self Evaluation Strategy - Peer Evaluation Strategy).

The Research Sample:

The research sample has been composed (40) students of fourth year students Department of Educational Technology - Faculty of Specific Education - Fayoum University; Where they studied the program Flash on third year by the course of producing educational programs, and they studying on fourth year how to add the interactions in the Flash using the language of Action Script by course of programming using ready-made programs.

Research Methodology:

1. The researcher used the descriptive method in the theoretical framework, to describe the phenomenon under study, diagnose, and to shed light on different aspects, and collect data about it, as well as to reach out to determine the skills of scripting.
2. The researcher used the semi - experimental method, to detect the effect of the difference of formative evaluation strategy at the independent and dependent in e- learning environments on developing the (cognitive - practical) scripting skills of students of instructional technology.

The Research Tools:

1. An achievement (pre/post) test developed by the researcher; to measure the cognitive aspects of scripting skills.
2. An evaluation card developed by the researcher.
3. Witken's Group Embedded Figures Test.

The Research Hypotheses:

1. There are significant differences at level (0.05) between the means scores of the students who studied by Self Evaluation Strategy, and the students who studied by Peer Evaluation Strategy, in the post achievement, which returns to the main effect of the Formative Evaluation Strategy.
2. There are significant differences at level (0.05) between the means scores of the students who studied by Self Evaluation Strategy, and the students who studied by Peer Evaluation Strategy, in the post practical skills, which returns to the main effect of the Formative Evaluation Strategy.
3. There is a significant difference at level (0.05) between the means scores of the field independent students and the field dependent students in the post achievement, which returns to the main effect of the learning style.
4. There is a significant difference at level (0.05) between the means scores of the field independent students and the field dependent students in the post practical skills, which returns to the main effect of the learning style.
5. There are significant differences at level (0.05) between the means scores of the students in the post achievement, which returns to the difference effect between the Formative Evaluation Strategy & the learning style.
6. There are significant differences at level (0.05) between the means scores of the students in the post practical skills, which returns to the difference effect between the Formative Evaluation Strategy & the learning style.

Research Procedures:

First: The theoretical study:

1. Review the educational literature and previous research studies relevant to the current research, which focused on developing the skills of scripting, especially using the language of "Action Script", and also focused the learning style (independent / dependent).
2. Review the educational literature and previous research studies for the Formative Evaluation, and especially self-evaluation and peer evaluation.

Second: Building research tools:

Based on previous theoretical study, the researcher can reach to build research tools as follows:

1. Content analysis to the course of programming using ready-made programs, For a list of the skills of Action Script.
2. Build a list of skills of Action Script, that is necessary for the students of Educational Technology.
3. Build the self-evaluation strategy at the independent and dependent in e- learning environments.
4. Build the peer evaluation strategy at the independent and dependent in e- learning environments.
5. Build measurement tools:
 - a. An achievement (pre/post) test
 - b. An evaluation card.
6. Get the Witken's Group Embedded Figures Test.
7. Building an educational program for students on the skills of scripting in the light of the list of skills.
8. Selection and preparation of e-learning environment used in the experiment.

Third, Make the search experience:

1. Application the Witken's Group Embedded Figures Test.
2. Divide the students into groups.
3. Training the student on the skills of (self - peer) evaluation.
4. Application pre-measurement tools.
5. Application the experience.
6. Application post-measurement tools.
7. Collecting the results, and processing for statistical analysis.

Fourth: The statistical treatment of the results:

1. A statistical analysis of the results.
2. Interpret and discuss the results.
3. Results and recommendations and suggestions.

Research Results:

Design results:

1. Build a list of skills of Action Script, that is necessary for the students of Educational Technology.

2. Build the self-evaluation strategy at the independent and dependent in e- learning environments.
3. Build the peer evaluation strategy at the independent and dependent in e- learning environments.
4. Building (design and production) tutorial program in light of the formative evaluation strategy (self / peer) to develop the scripting skills for educational technology students.

Statistical results:

1. The 1st hypothesis was accepted, since there is a significant difference at level (0.01) between the means scores of the students who studied by Self Evaluation Strategy, and the students who studied by Peer Evaluation Strategy, in the post achievement, in favor of the Peer Evaluation Strategy group.
2. The 2nd hypothesis was accepted, since there is a significant difference at level (0.01) between the means scores of the students who studied by Self Evaluation Strategy, and the students who studied by Peer Evaluation Strategy, in the post practical skills, in favor of the Peer Evaluation Strategy group.
3. The 3rd hypothesis was accepted, since there is a significant difference at level (0.05) between the means scores of the field independent students and the field dependent students in the post achievement, in favor of the independent students.
4. The 4th hypothesis was accepted, since there is a significant difference at level (0.05) between the means scores of the field independent students and the field dependent students in post practical skills, in favor of the independent students.
5. The 5st hypothesis was not accepted, since there are no significant differences at level (0.05) between the means scores of the students in the post achievement, which returns to the difference effect between the formative evaluation strategy and the learning style.
6. The 6th hypothesis was not accepted, since there are no significant differences at level (0.05) between the means scores of the students in the post practical skills, which returns to the difference effect between the formative evaluation strategy and the learning style.

Research Recommendation:

in the light of the results of the current research recommends the Following:

1. The application of the self-evaluation strategy in e-learning environments Suggested vision, as an integrated educational strategy in other courses for students of educational technology.
2. The application of the peer-evaluation strategy in e-learning environments Suggested vision, as an integrated educational strategy in other courses for student of educational technology.
3. Work on spreading the culture of Alternative evaluation in general, and the culture of self-evaluation, and peer evaluate in particular, within the educational institutions among all parties to the educational process as

teachers, administrators, students and parents; This is an attempt to overcome the belief that the evaluation is the responsibility of the teacher without the other.

4. Training the students to conduct self-evaluation of their work, as well as peer assessment, enough and frequent Training, to benefit from the educational advantages of the self- peer evaluation.
5. Use the tutorial, which is designed to teach educational technology students the skills of Action Script.
6. Use the list of skills developed by that the researcher, to develop the skills of the scripting language of Action Script within the program Flash.
7. Further research on self-evaluation and peer evaluation as integrated educational strategies.
8. Paying attention to the kind of research concerned with Aptitude Treatment Interaction, which fit between the method of learning and individual differences of the learners.