A Web Instructional Strategy Based on Interactive Video to Improve Educational Technology Students' Skills of Developing Virtual Reality Environments

Abstract

Learning across the web offers many educational benefits, as well as its availability at any time and place, in addition to the direct interaction between students, educational content, students, teachers, students and other students. For further Education, so it is the logic of this current research aims to propose a design Strategy for learning through web-based Interactive Video, to take advantage of them in distance Education programs, and to test their effectiveness, it has been proposed to develop an Educational Environment, employed in solving the current problem of a lack of development of Virtual Reality Environments of Educational Skills of Educational Technology students.

The researcher designed this Strategy in the light of the model Mohamed Khamis (2003) for the Public Educational Strategy, and used the curriculum developmental in their application to a sample of Education College of Education in Damietta Technology students, and the results confirmed the strategic effectiveness of learning through web-based video interactive in developing skills virtual reality environments in the research sample. The researcher presented a set of recommendations and proposals can be utilized in the light of those results.

Key words: reality virtual environments - learning strategy across the Web.

Summary

The objective of the current research is to propose a design for Interactive web-based learning strategy for being used in distance learning programs to test its

effectiveness. A proposed educational Environment is designed to solve an existing problem. It is a lack of skills, to develop the Virtual Reality Environments of Educational Technology Students. The research problem is to answer the following.

Main question:

What is the effectiveness of a web-based Interactive Video strategy to develop some of the Virtual Reality Environment development skills of students of Educational Technology at the Faculty of Education?

The following questions are asked:

1- What are the skills of developing the virtual reality environments required for development of students of educational technology, Faculty of Education?

2- What are the criteria for designing a web-based interactive web-based learning strategy for developing some virtual reality environments development skills for students of educational technology at the Faculty of Education?

3- What is the proposed design of the interactive web based interactive video strategy to develop some of the virtual reality environments development skills of students of educational technology, Faculty of Education?

4- What is the effectiveness of the proposed web-based interactive video strategy to develop the cognitive aspects related to the development of virtual reality environments among students of educational technology, Faculty of Education?

5- What is the effectiveness of the proposed web-based interactive video strategy for the development of performance aspects related to the development of virtual reality environments among students of educational technology, Faculty of Education?

To answer research question the researcher used the descriptive research method, which based on content analysis, and the experimental research design based on (pre-post one group design).

The sample of the research: Was randomly chosen from third year students at Educational Technology Department of Faculty of Education in Damietta

To achieve the research aims, the researcher prepared the following instruments:

1- Introducing a web-based interactive video strategy for developing some virtual reality environments development skills for students of educational technology, Faculty of Education.

2- Determining the effectiveness of the proposed educational strategy through the web based on interactive video in the development of the cognitive aspects associated with the development of virtual reality environments for students of educational technology, Faculty of Education.

3- Determining the effectiveness of the proposed web-based interactive video strategy in developing the performance aspects related to the development of virtual reality environments among students of educational technology, Faculty of Education.

Research results depend on investigating achievements of following Hypothesizes:

1. There is a statistically significant difference at (0.05) between the average scores of the students of the research sample in the pre and post-application for the cognitive test to measure the cognitive aspects of the skills of developing the virtual reality environments in favor of the post application.

2. There is a statistically significant difference at (0.05) between the average scores of the students in the research sample in the pre and post applications of the observation card to assess the performance aspects of the skills of developing the virtual reality environments for the benefit of the post application.

3. The proposed educational strategy achieves an effective knowledge-to develop the virtual reality environments for students of educational technology that is not less than 1.2 when measured in the adjusted ratio for Black and not less than 0.6 according to Mc Gogian.

4. The proposed educational strategy is effective in achieving the performance side of the development of VR environments for students of the learning technology of at least 1.2 when measured in the adjusted rate of gain for Black and not less than 0.6 according to Mc Gogian.

The researcher follows the following steps to investigate the achievement of research hypothesizes & aims:

See Arab and foreign studies, study and writings relevant to the subject

Preparing a survey to identify a list of the skills of developing the virtual reality environments and presenting them to the experts to be judged and approved. Preparing a survey to identify a list of criteria for designing the interactive web-based educational strategy and presenting it to the experts; Design the proposed web-based educational strategy based on interactive video in light of its design criteria.

Preparing search tools:

1. Achievement cognitive test to measure the cognitive aspects of the skills of developing and validating the virtual reality environments of sample students. An observation checklist card to measure the facets of the skills of developing and validating the virtual reality environments of the sample students. An evaluation card for the skills of developing and validating their virtual reality environments.

2. Selecting the sample of the research from students of educational technology in the Faculty of Education Damietta University.

3. Applying the test and the observation card in advance on the research sample and recording the data.

4. Implementing the study of the proposed educational strategy through the web based on interactive video on the research sample.

5. Applying the assessment test and the observation card and the evaluation of the virtual reality environments in the sample and recording the data. Processing the residual data from the pre and post applications with appropriate statistical methods to reach the search results.

6. Presenting the results of the research, answering the questions and verifying his hypotheses in the light of the theoretical framework and the previous studies related to the subject of the research.

7. Presenting the research project, writing recommendations and proposals in the light of the results reached.

The results of the research show the following:

1. The first hypothesis, which states that there is a statistically significant difference at (0.05) between the average scores of the students of the research sample in the tribal and post-application applications, was accepted for measuring the cognitive aspects of the skills of developing the virtual reality environments for the post-application.

2. The second hypothesis, which states that there is a statistically significant difference at 0.05 between the average scores of the students in the research sample in the pre and post application of the observation card, was accepted to estimate the performance aspects of the virtual reality environment development skills for the post application.

3. The fourth hypothesis, which states that the proposed educational strategy is effective in achieving the cognitive aspect of the development of virtual reality environments of students of educational technology, is accepted to be at least 1.2 when measured in the adjusted rate of gain for black and not less than 0.6 according to McGuigan).

4. The fifth hypothesis that the proposed educational strategy is effective in achieving the performance side of the development of VR environments for

students of educational technology is not less than (1.2) when measured in the adjusted rate of gain for BlackBerry and not less than (0.6) according to Mc Goigan.

The research concluded the following recommendations:

1. Using the proposed web-based learning strategy to develop the skills of developing virtual reality environments for third-year students in the learning. Technology.

2. Using the electronic content that the researcher designed in this study to learn the skills of developing virtual reality environments.

3. Using open source learning resources to develop the skills of designing and producing digital learning elements for third-party students.

4. Using the list of skills reached in this study when learning the skills of developing virtual reality environments educational.

5. Using the list of proposed strategy criteria that were reached in this study when developing the educational virtual reality environments.

6. Training faculty members and their assistants on the skills of developing virtual reality environments and using them in building their educational curricula.

7. Including the proposed educational strategy within the educational strategies of web learning offered by the universities or professional academy for teachers.

8. Employing of the proposed educational strategy in the educational programs provided to prepare students of educational technology.

9. Employing of the proposed educational strategy for the preparation of students (postgraduate) specialized in education technology to save time and effort.

10. Employing interactive video in electronic environments.

11. Utilizing virtual reality environments in the preparation of students of educational technology.

12. Utilizing open source learning resources in electronic courses required by e-learning.

13. Coping with technological developments and modern trends in educational strategies, especially in view of the rapid development of communication technology and educational websites.

14. Disseminating a culture of learning the skills of developing virtual reality environments in university education.

The research concluded the following suggestions:

1. The effect of the integration of virtual reality educational environments and interactive video on the development of drawing skills in science for the sixth grade primary.

2. The impact of digital learning objects in the production of educational virtual reality environments.

3. Develop a proposed e-learning program for distance education that will employ the proposed educational strategy.

4. Evaluative study of the virtual reality environments produced in the light of the list of existing research criteria.

5. A study to employ a proposed web-based educational strategy based on interactive video for the development of many of the electronic skills that education technology students need.

6. A comparative study to determine which of the interactive applications are most suitable for providing support and assistance to students across the web.

7. The effectiveness of the proposed educational strategy in the current research in developing the skills of producing electronic lessons for teachers of educational technology.

8. The effectiveness of the proposed program in the current research to develop the skills of developing educational virtual reality environments in the field of ICT, provided by the Ministry of Education to teachers.

9. The effectiveness of integrating video conferencing with the TIMFIRE program and open source learning resources to develop the skills and production of digital learning objects.

10. Effectiveness of the development of virtual reality environments in the development of students' skills in electronic courses and their attitudes towards them.