Assisting Students of Al-Quds Open University to Design Computerized -Teaching Lessons According to ADDIE

مساعدة طلبة جامعة القدس المفتوحة على تصميم دروس محوسبة وفق نموذج ADDIE

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Abstract

This Action research aimed at Assisting Students of Faculty of Educational Sciences at Al-Quds Open University to design computerized lessons using the Power Point software and according to ADDIE model. The study sample consisted of 40 students who were taking a course titled Technology of Education during the second semester of the 2014-2015 academic year and three academic instructors . To collect the required date , the researchers used focus group technique and structured interviews to get information from the 40 students and the three academic instructors involved in the course Technology of Education in QOU /Nablus Branch. In addition to these methods, a workshop with a guiding checklist was employed to help students learn about computerized lessons and how to design them. The findings indicated that empowering students with instructional design skills had a positive impact on their skills in designing computerized teaching lessons which increased since the students were able to choose suitable texts, graphs, photos that fit the content of the computerized lesson in accordance with the basics of instructional design The research findings, moreover, pointed out that the guiding checklist the researchers constructed contributed to solving problems that face the students in designing computerized lessons.

Key Words: instructional design, ADDIE, computerized lessons, Al Quds Open University

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ملخص

هدف هذا البحث الإجرائي إلى مساعدة طلبة كلية العلوم التربوية في جامعة القدس المفتوحة في تصميم دروس محوسبة باستخدام برمجية العروض التقديمية وفق نموذج ADDIE . تكونت عينة الدراسة من ٤٠ طالبا كانوا مسجلين لمقرر تكنولوجيا التعليم في الفصل الثاني من العام الأكاديمي ٢٠١٤/٢٠١٥ إضافة إلى ثلاثة من أعضاء هيئة تدريس هذا المقرر. ولغرض جمع البيانات اللازمة استخدم الباحثان أسلوب المجموعات البؤرية المركزة والمقابلات المقننة لجمع معلومات من مجموع الطلبة المشاركين وأعضاء هيئة التدريس الثلاثة الذين يمثلون عينة الدراسة , كما عمد الباحثان إلى تنظيم ورشة عمل مستخدمين قائمة إرشادية توجيهية لمساعدة الطلبة على معرفة الدروس المحوسبة وكيفية تصميمها . أشارت النتائج إلى تمكين الطلبة من مهارات التصميم التعليمي كان له أثرا ايجابيا في زيادة معرفة الطلبة ومهاراتهم في تصميم الدروس التعليمية المحوسبة حيث استطاع الطلبة اختيار نصوص ملائمة وصور وإشكال تلائم محتوى هذه الدروس وفق مبادئ التصميم التعليمي. كما أشارت النتائج إلى أن القائمة الإرشادية التي بناها الباحثان ساهمت في ايجاد حلول لمشاكل واجهت الطلبة اثناء تصميم الدروس المحوسبة.

الكلمات المفتاحية: التصميم التعليمي, نموذج ADDIE, الدروس المحوسبة, جامعة القدس المفتوحة .

Introduction

As a result of the fast evolution of technologies and the rapid population growth, most societies nowadays face big challenges affecting their existence on this earth. Most communities are living in the period of Information and Communication Technologies (ICT) which have a great impact on all spheres of life including education. ICT in this regard plays a significant role in helping individuals and communities as well to cope with the changes and challenges of the 1st century in general, and the educational challenges in particular.   Under such circumstances, the educational system is supposed to work hard in order to get the full potential of advanced technologies to enhance the educational process in the fields of planning, designing, implementing and evaluating all the entire educational spectrum as a tool for achieving specific learning objectives.

Information and Communication Technology (ICT) should not be a goal by itself, rather it should be used as a tool and an enabler for promoting pedagogical innovation and developing the quality of teaching and learning. According to the European Commission, the importance of ICTs lies less in the technology itself than in its ability to create greater access to information and communication in underserved populations (Tamilselvan ; Sivakumar , Sevukan , 2012).

Many educators these days stress the importance of Information and Communication Technologies for Education (ICT@E) since ICT @E has the potential to transfer education into a deep- rooted pedagogy that has specific principles and tenants to help in reforming education and achieving the best educational outcomes. In this regard, ICT emphasizes the action practical side of learning where learners are given the opportunity to practice what they learn by means of technological advancements used in the form of computer-assisted learning programs .

In the past , educators used to think of technology as a variety of activities and tasks that aim to enable learners to actively interact with the educational tasks and activities so as to be able to build their own experiences. Therefore, traditional technology in the past used to involve PowerPoint presentations, visual illustrations, educational wall charts ,models, realia , simulation, dramatization, educational puppets, posters, Overhead projectors and so forth. After that, new forms of technologies were introduced to assist learning and teaching including the

computer and the Internet which has paved the way for computer-assisted learning (CAL) which is simply defined by Schittek et al .(2001) as the learning procedures and environments facilitated through computers. Such definition points to using computers to aid or support the education or training of people. CAL can test attainment at any point, provide faster or slower routes through the material for people of different aptitudes, and can maintain a progress record for the instructor. This trend of educational technology is sometimes referred to as computer-aided (or assisted) instruction, CAI, computer-based learning, CBL, and computer-managed instruction, CMI.

As a result of the fascinating developments in the hardware and software components, the computerized lessons were introduced to assist both teachers and learners since they have the potential to help the teacher to save time and effort , ease instruction and curb the negative effects of traditional teaching. On the other hand, computerized lessons were considered important for the learners community since they can motivate learners to learn, attract their attention, overcome boredom and routine, help learners to acquire new concepts and build up accumulative experiences.

However, to reap the optimal benefits of the computerized lessons, they must be planned in accordance with clear and outstanding educational standards. This means that they should be designed with the target learners in mind which necessitates that they should be centered around interactive tasks and activities that motivate learners to actively interact with the material being delivered. Hence, the instructional design is somewhat equivalent to instructional engineering which is defined as a method for the analysis, design, development and delivery planning of computer-based learning systems, integrating concepts, processes and principles of instructional design, software engineering and cognitive modeling (Paquette et al. 2005).

In this regard, Penn State University gives several definitions of instructional design:

1- Instructional Design as a Process: the systematic development of instructional specifications using learning and instructional theory to ensure the quality of instruction. It includes development of instructional materials and activities; and tryout and evaluation of all instruction and learner activities.

2- Instructional Design as a Science: the science of creating detailed specifications for the development, implementation, evaluation, and maintenance of situations that facilitate the learning of both large and small units of subject matter at all levels of complexity.

3- Instructional Design as Reality: Instructional design can start at any point in the design process. Often a glimmer of an idea is developed to give the core of an instruction situation. By the time the entire process is done the designer looks back and she or he checks to see that all parts of the "science" have been taken into account. Then the entire process is written up as if it occurred in a systematic fashion. (http://www.umich.edu/~ed626/define.html).

McGriff (2000) defined instructional design as the systematic approach to the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) of learning materials and activities. In this case, instructional design seems to work for a learner-centered rather than the traditional teacher-centered approach to instruction, so that effective learning can take place. This means that every component of the instruction is governed by the learning outcomes, which have been determined after a thorough analysis of the learners' needs. According to Mcriff (2000) the ADDIE Model is an iterative instructional design process, where the results of the formative evaluation of each phase may lead the instructional designer back to any previous phase.

Based on the concept of instructional design mentioned above, Paquette (2004) defined instructional engineering as a method that supports the analysis, the design and the delivery planning of a learning system, integrating the concepts, the processes and the principles of instructional design, software engineering and cognitive engineering. This point to the fact that the instructional designer who might be the teacher is an instructional engineer who has the major role in the whole educational process.

The effectiveness of computerized lessons greatly depends on the good quality of instructional design that should take into consideration all components and parts to be skillfully integrated so as to result in meaningful and useful learning. In this regard, ADDIE model is a very popular model used to describe a

systematic approach to instructional development. According to Molenda (2003) ADDIE is an acronym referring to the major processes that comprise the generic ISD process: analysis, design, development, implementation, and evaluation.

Hence, designing computerized lessons plays a significant role among the students of Faculty of Education at Al-Quds Open University who can benefit a lot from the technical and educational skills involved in the instructional design which can enhance their capacity as would-be teachers and as student-teachers in their practicum course.

Therefore, the present study aims to explore the benefits of assisting the students enrolled in the course Technology of Education at QOU/Nablus Branch in designing computerized lessons in accordance with ADDIE model through using PowerPoint software.

Section One

Statement of the Problem

All students of Faculty of Education at Al-Quds Open University study Technology of Education which aims to help them integrate different types of technologies in their teaching practices through demonstrations, hands-on use, and projects. By studying this course, students are expected to gain experience with the roles technology plays to support teaching methods and learning strategies associated with a continuum of learner- and teacher-centered educational approaches and goals. As part of the practical side of this course, students are expected to produce computerized projects that may include a concept-and-computerized based aids relevant to their specialization. The researchers, being instructors of this course, noticed that most students were unable to design computerized lessons in accordance with the principles of instructional design ADDIE .Their inability was shown in many aspects including : lack of some major elements in these computerized lessons, ambiguity in formulating some elements especially the behavioral objectives, and lack of interrelatedness between the various components of the target computerized lessons.

To identify the extent of this problem, the researchers initially interviewed a number of students in this course and asked them some questions regarding the problems they face in designing computerized lessons. Moreover, the two

researchers interviewed three instructors who teach this course at QOU and asked them the following questions: How do you feel about the computerized lessons which are designed by the students of this course? What are the most obvious problems that face the students of technology Of Education when designing computerized lessons? As a result of these interviews , the researchers concluded that the major reasons that hinder students success in designing computerized lessons were:

1-Students' lack of knowledge of the basics of instructional design .

2-Students' weakness in formulating concise and correct behavioral objectives.

3-Students' inability to interconnect the various components of the computerized lesson.

Hence, this study is centered around one major question: How to assist the students of the course Technology of Education at QOU/Nablus Branch in designing computerized lessons in accordance with ADDIE model through using PowerPoint software.

Questions of the study

The study seeks to answer the following questions:

1-What are the problems facing the students of Technology of Education when designing computerized lessons in accordance with ADDIE model and PowerPoint software?

2-What are some effective activities to be used with students of Technology of Education to help them design computerized lessons in accordance with ADDIE model and PowerPoint software?

Objectives of the study

This study aims at achieving the following objectives :

1-Exploring the problems facing the students of Technology of Education at QOU/Nablus Branch when designing computerized lessons in accordance with ADDIE model and PowerPoint.

2-Identifying some suitable activities and tasks that can help the students of Technology of Education in designing computerized lessons through PowerPoint software.

3-Empowering students of Technology of Education at QOU/Nablus Branch to employ Instructional System Design (ISD) through using ADDIE model to design computerized lessons.

Significance of the Study

The significance of the study is derived from the important subject it discusses which is centered around assisting the students of the course Technology of Education at QOU/Nablus Branch in designing computerized lessons in accordance with ADDIE model through using PowerPoint software. Therefore, the results of the study are hoped to:

1-equip the students of the course Technology of Education at QOU/Nablus Branch with the required skills to design computerized lessons through PowerPoint. Such significance agrees with cognitive theories which state that learning performance depends on processing capacity and prior knowledge which helps learners to link what they already know to new information and apply it to new contexts.

2-enhance students' positive attitudes towards using the computer for designing computerized lessons that can be used in teaching.

3-attract instructors' attention towards the importance of instructional design as a tool for designing computerized lessons that contribute to the organization of a given lesson to meet students' individual differences and attributes.

4- contribute to the aim of enhancing the educational process on one hand , and enhancing learner-centered approaches on the other hand.

5- add new insights into the literature of ADDIE model in the Palestinian context.

Study limitations

This study was limited to the students of the course Technology of Education at Al-Quds Open University in Nablus Branch in the second semester of the academic year 2014/2015.

Definition of terms

●**Computerized lessons :** according to the researchers own definition, computerized lessons refer to using the potentials of the computer to present lessons' objectives, content, tasks, activities and evaluation through PowerPoint.

● **Technology of Education Course** : a basic course given to all students of the Faculty of Education at Al-Quds Open University which involves a theoretical and

practical sides. One major objective of this course is to provide students with the necessary knowledge and skills in the field of technology of education and its roles in enhancing the teaching-learning process .Moreover, the course aims to equip students with the necessary skills and abilities to produce traditional, non-traditional and electronic educational aids that can be used in the teaching situations.

 Instructional Design: according to the researchers of this study, instructional design refers to the educational engineering of the various components of the lesson including the objectives, content, activities and evaluation in such a way that helps in achieving effective learning .In other words, it is the systematic process by which instructional materials are designed, developed, and delivered to help teachers teach and learners to learn.

● **ADDIE Model:** ADDIE is an acronym referring to the major processes that comprise the generic ISD process: analysis, design, development, implementation, and evaluation. Analysis involves the process of defining what is to be learned; Design the process of specifying how it is to be learned ; Development the process of authoring and producing the materials; Implementation the process of installing the project in the real world context; Evaluation the process of determining the adequacy of the instruction (Molenda, 2003).

Section Two

Literature review

A great deal has been written on the effectiveness of using computerized instruction to teach different subject matters in the Arab World and the Western world as well. In the Arab context, Humaid and Al-Abdullah (2014) investigated the effectiveness of a computer program designed by PowerPoint to teach second grade's students science. The study also aimed to promote the principle of integrating technology into education , in addition to showing how to use computer software in teaching science. The sample consisted of (100) students from the second grade , and it was divided into two groups : an experimental group consisted of (50) students who was taught by using the computer program, and a control group consisted of (50) students who was taught by the usual methods. The research tools were a pre-post test and a computer program designed by

PowerPoint that deals with several issues of second grade's science. The results revealed that the experimental group who were taught by using the computer program scored higher than the control group that were taught by the traditional methods.

Al-Fashatki (2012) aimed to investigate the effectiveness of computer-assisted learning on the achievement of students of Department of Science at Tabuk University. The sample of the study consisted of 46 students who study at the Department of Science at Tabuk University . The students were randomly assigned into two equal groups : the first one was the experimental group which included 23 students who were taught through the computer –assisted program and a control group of 23 students who were taught through the traditional method . A pretest and a posttest were used before and after the study implementation. The results revealed that there were statistically significant differences at (α ≤ 0.05) in students achievement between the two groups and the differences were in favor of the experimental group who was taught with the computer –assisted program. The results also revealed that the performance of the experimental group was better than that of the control group.

Harba (2011) aimed at measuring the effect of using the principle of performativity on training student-teachers in employing Authorware program to create interactive programs. The researcher used the descriptive analytical design and the experimental design to obtain the required data. Thirty-one junior students majoring in classroom teacher at the university of Tishreen were chosen through the random cluster sample. Results revealed that there were statistically significant differences in the students' means between the pretest and posttest of the performativity principle in terms of designing a question using click –for-a-response icon. Furthermore, the results indicated that there were no statistically significant differences in the students' means on the posttest between the males and the females in terms of designing a question using click –for-a- response icon. There were also statistically significant differences in the students' means between the pretest and posttest of the performativity principle in terms of designing a question using hot-spot icon.

As-Smairat and Al-Hejazeen (2010) aimed to investigate the effect of using computer programs as a means of introducing the content of course titled

(Accounting Principles) for Karak University College students. The sample of the study consisted of 76 students in 2 classes, with 38 students in each group. The results showed that there were statistically significantly in teaching using computer course at (α = 0,05) related to the teaching approach, These also showed that there were statistically significantly difference in the achievement due to the students gender. In the students achievement ascribed to the interaction of teaching approach and gender.

Al-Natour and Al-Ajlouni (2009) intended to highlight and recognize the role of the KidSmart software in facilitating children's accessibility to Information and Communication Technology (ICT) tools and processing and dealing with them to describe the extent to which Kindergarten stage teachers have the necessary skills in the field of ICT in Jordanian public kindergartens. Study tool was distributed amongst teachers (266) who work in public kinder- gartens, and parents (719) who have children attending these kindergartens, with the collaboration of Kindergarten supervisors. Results indicated that the means concerning the items of Handling of ICT skills, Access to and dealing with ICT tools, and Ease of access and interacting with ICT tools were ranged between medium and good level. Besides, results indicated that female teachers feel very comfortable when they use ICT in kindergartens. Outcomes indicated that the percentage of users having devices and software at home were acceptable; there was disparity between parents' viewpoints regarding the appropriate age to introduce computer to children in kindergartens and at home.

Aqel and Barhoom (2008) aimed to investigate the effectiveness of computerized information and communication curriculum in improving the basic computer skills at 6th primary class in UNRWA schools. For this purpose the researchers designed a note card to apply on the (38) sample from 6th primary class. The results revealed that that there was statistical significant differences between the controlled group after and before the study in the fields (management , files) in favor of the after study group. The study also discovered that there was statistical differences between the controlled group and the experimental group in all fields(manage ,files and folders)in favor of the experimental group.

Abu Ward (2006)aimed to investigate the effect of using Multimedia Programming through teaching on acquiring the primary skills in (Visual Basic

program) among the females of 10th grade and their attitudes towards Technology subject. The sample consisted of two groups from Basheer Al-Rais Secondary Girls' School in Gaza, each group included thirty girls. The researcher used computerized educational programming through the

Multimedia program. Results showed that there were statistical significant differences at ($\alpha \leq 0.05$) in the average of acquiring the primary programming skills for Visual Basic in the

proposed unit (Khawarizmiat and the Computer Programming) between the experimental group who studied the computerized programmatic, and the others who studied by the traditional way, for the experimental group. Moreover, there were statistically significant differences at ($\alpha \leq 0.05$)differences in the average of the girls' attitudes towards Technology subject between the experimental group who studied the computerized programmatic, and the others who studied by the traditional way, for the experimental group.

Al-Aajlouni (2003) aimed to investigate the effect of using a computer set connected to a Data Show for presenting the instructional material on the achievement of the students of Faculty of Educational Sciences at The University of Jordan. The results indicated that there were statistically significant differences at ($\alpha \leq 0.05$) in students' ability to design and produce instructional materials due to method of teaching and the differences were in favor of the experimental group in addition to other statistically significant differences at ($\alpha \leq 0.05$) in students' achievement due to the interaction between method of teaching and student's achievement.

On the other hand, in the West, Jones (2009) aimed at discussing the use of PowerPoint software in nursing education arguing that PowerPoint may not always be appropriate as a teaching and presentational tool, as it may fail to engage students. The researcher also argues that the software has become overused and both educators and students have become overly dependent on it. Moreover, PowerPoint is of limited use for learning. It does not naturally facilitate enquiry or activity; the prepared slide sequences are designed to close down rather than open up interaction. It is about delivery, not debate. The study suggested that PowerPoint use becomes more limited on the number of sessions per teaching module or course that could be delivered using PowerPoint and that educators and

nurses find other ways in which to engage their audiences that interview presentations for any post, clinical or educational, do not use PowerPoint

Selwyn (2007) described PowerPoint as 'business oriented' rather than 'education oriented', designed as a 'linear mode of technology… based around the presentation and one-way distribution of information'. Taylor (2007), in a humorous paper with a serious message, suggested that the overuse of PowerPoint software indicates an inability or unwillingness to teach, and that enriched – or in his terms, 'busy' – slideshows distract students from learning rather than help them learn. However, to compensate for the weaknesses of PowerPoint in education , Jones (2003) suggested that the major teaching issue with PowerPoint – its linearity – can be remedied by using hyperlinks and bookmarks, and linking and embedding files. Jones, in this regard, previously did not seem to agree that PowerPoint, or at least the practice of putting slideshows online, leads to students not attending classes, he suggests that: 'The most significant potential negative effect, especially where "complete" presentations are made available to students, is the danger of encouraging students to sit passively through the session since they may perceive that they have "got the notes".

Regarding the application of ADDIE , Wang and Hsu (2009) aimed to discuss the process of applying instructional design principles to the creation of second life learning activities that aim to provide a near-real life environment and gives users access to objects or phenomena impossible to observe or examine in real life. Results revealed that ADDIE constituted a systematic method that helped the instructor design learning tasks that would take place in an SL virtual environment and that would ensure SL's function as a tool assisting teaching and learning. Moreover, three-fourths of the participants had learning outcomes that matched the learning goals and the students were satisfied with the "near face-to-face" opportunity that SL provided them to meet with the instructor and classmates online. All students were willing to allocate time for SL-based class sessions even though attendance at the sessions was not required.

Soto (2013) aimed at identifying which instructional design (ID) models are currently used in designing virtual world instruction and why. The goal was to identify specific ID elements being used to develop virtual world instruction that

enable effective utilization of the technology to support desired learning experiences for students. The results found that analysis, design, development, implementation, and evaluation (ADDIE) was the most commonly used process for the design of virtual world instruction. It was also deemed the most appropriate since ADDIE summarizes five phases of an ID process. Furthermore, participants' responded that ADDIE was the most appropriate because ADDIE model provides a set of guidelines, model keeps a team focused on the same tasks, and creates a common language for the team. It provides a context of participation that positions the players as active agents of change and lastly, ADDIE is a process more than a model, and offers a fundamental approach since most of the other models are based on ADDIE.

The aforementioned review of literature showed that most researchers employed the experimental design for the purpose of investigating the effectiveness of using the computer with its various applications and software on students' achievement and attitudes. The present study, on the other hand, intended to use the action research approach for assisting the students of the course Technology of Education at QOU/Nablus Branch in designing computerized lessons in accordance with ADDIE model through using PowerPoint.

Section three

Methodology

Subjects

The population of this study consisted of 40 undergraduate students enrolled in the course Technology of Education in the Faculty of Education at Al-Quds Open University /Nablus branch in the second semester of the academic year 2014/2015. The students were mostly above 21 years old in either their junior or senior years.

Research design

This action research study is based on an evaluative, investigative and analytical research method designed to diagnose problems or weaknesses and help the educators develop practical solutions to address them quickly and efficiently. The general goal is to create a simple, practical, repeatable process of

interactive learning, evaluation, and improvement that leads to increasingly better results for students and teachers as well. According to Hine (2013) undertaking a unit in action research methodology provides those professionals working in the education system with a systematic, reflective approach to address areas of need within their respective domains.

Broadly speaking, action research enables researchers to develop a systematic, inquiring approach toward their own practices or within a broader community (Mills, 2011, Cited in Hine (2013).

According to Hensen (1996) , action research (a) helps teachers develop new knowledge directly related to their classrooms, (b) promotes reflective teaching and thinking, (c)expands teachers' pedagogical repertoire, (d) puts teachers in charge of their craft, (e) reinforces the link between practice and student achievement, (f) fosters an openness toward new ideas and learning new things, and (g) gives teachers ownership of effective practices.

Stringer (2008) stated that the common process of action research inquiry is divided into five key steps that form a cycle : designing the study, collecting data, analysing data, communicating outcomes, and taking action.

Instruments and data collection

To collect the required date , the researchers used focus groups technique and structured interviews to get information from the 40 students and the three academic instructors involved in the course Technology of Education in QOU /Nablus Branch .

Procedures

The study lasted for one full semester (4 months between January –May 2015). At the beginning of the semester , the researchers designed a well-organized action plan to carry out the study in accordance with the best action research standards. The plan involved :

 1-Identifying methods for data collection that suit this type of research . The methods went according to Denzin (1978) who identified four basic types of triangulation:

 a-Data triangulation: involves time, space, and persons; b-Investigator triangulation: involves multiple researchers in an investigation; c-Theory

triangulation : involves using more than one theoretical scheme in the interpretation of the phenomenon; d- Methodological triangulation: involves using more than one method to gather data, such as interviews, observations, questionnaires, and documents.

2- Identifying specific methods for data collections which involved: interviews, workshop, and focus groups. This part agrees with Denzin's methodological triangulation.

3-Idnetifying the human resources needed for data collection. To achieve this objective, three academic instructors who teach the course Technology of Education were interviewed so as to get some information about the problems facing students when designing computerized lessons. Additionally, the researchers organized a workshop for the 40 students who represent the purposive sample of the study . The workshop aimed at training students on how to design computerized lessons in accordance with ADDIE. During this workshop, students discussed the components of ADDIE with examples of each component.

4-Identifying the materialistic resources. To achieve this objective, the two researchers constructed a guiding checklist that covers the basic requirements of designing computerized lessons through PowerPoint in accordance with ADDIE model . The checklist was given to the 40 students to be studied and discussed in groups .

5-The two researchers conducted structured discussions with the target students so as to anticipate the possible difficulties that may appear during the implementation.

6- Making a special timetable for implementation which included planning , preparation and duration for each stage.

Data collection Procedures

Data collection passed through the following :

1-Structured Interviews: Three academic instructors who teach the course Technology of Education at QOU were interviewed . They were asked a number of questions such as :What are the most apparent problems facing the students of the course Technology of Education at QOU in designing computerized lessons?

How can instructors help these students to learn how to design quality computerized lessons in accordance with ADDIE model?

Their responses were varied accordingly. One instructor stated that students need some training on how to skillfully employ PowerPoint to design computerized lessons. A second instructor suggested providing students with ready-made PowerPoint models that help the target students in designing good samples through imitation. The third instructor suggested a more active role of the instructor who should work hard to empower students and enable them to practice the basics of instructional design including content, activities, evaluation and lastly the formulation of behavioral objectives.

2-Focus groups: The researchers held two focus groups with the 40 students enrolled in this study who were studying the course Technology of Education . Specific issues including the importance of designing computerized lessons through PowerPoint and their significance for achieving the intended behavioral objectives, difficulties facing students in designing computerized lessons through PowerPoint were openly discussed. The participants concluded that the computerized lessons are crucial for the educational process since they have the potential to stimulate students to learn and actively interact with the educational context which helps in achieving the intended learning outcomes. The participating students added that they are expected to overcome some anticipated problems in the field of designing computerized lessons with the help of their instructors who should provide them with the required knowledge and skills that enable them to fully understand the basic components of the computerized lessons and how to use the pillars of computerized lessons and make use of these pillars to design their own computerized lessons with the guidance of the instructor.

Section Four

Data Analysis

The analysis of the collected data indicated that students of the course Technology of Education at The Faculty of Education at QOU need to acquire the basic skills of instructional design as a prerequisite to learn how to design computerized lessons . Such requirement necessitates the importance of training

students and providing them with the necessary skills and knowledge for designing computerized lessons by means of a guiding checklist and good sample models in accordance with the ADDIE model.

Follow –up Procedures

Evidence –based data.

Using the data collected in this study through different triangulated methods and through in-depth literature review, the researchers were able to start the action research plan that aimed to create a positive change with regard to students' ability to design computerized lessons .The plan also aimed to identify the major factors that might be responsible for this expected change.

As one key method for data collection to answer the questions of the study , the researchers held a workshop on the issue of designing computerized lessons by means of ADDIE model for instructional design. The participating students in this workshop were given a guiding checklist that covers the basics and requirements of designing computerized lessons in accordance with the ADDIE model through using PowerPoint. The guiding checklist comprises five major components : Introductory pages, behavioral objectives,   content, activities, and evaluation . These components were skillfully presented in such a way that maintains clearness and interconnectivity and supported by helpful remarks and notes to facilitate students' understanding.

Two days after the completion of the workshop, the researchers sent the final version of the guiding checklist to the 40 students enrolled in the study so as to refer to it while designing the computerized lessons in this course. Two weeks later, students were asked if the guiding checklist was helpful and they replied through face –to-face interviews that they the checklist helped them a lot especially in dealing with certain difficulties that faced them in the process of designing computerized lessons in addition to helping connect the components of the computerized lesson in an appropriate way.

Interpretation of Results:

To assess the extent of students' improvement in their ability to design computerized lessons, the researchers met the participating students two weeks after the workshop to get some feedback . Students' responses and their feedback revealed that the workshop was so useful since it was supplemented by a guiding checklist to enhance students' capacity in designing computerized lessons. The workshop merits were in the following domains:

1-It developed their knowledge of instructional design and the use of ADDIE to design computerized lessons.

2-It enabled them to formulate concise behavioral objectives and to interconnect the various components of a given lesson .

3-It enabled them to use a number of photos , diagrams and other visual aids that contribute to their understanding and meets students' characteristics and levels.

In this regard, one female student maintained " No doubt , I have learnt a lot of how to design a computerized educational aid through integrating the key components : identifying the topic, formulating the objectives, choosing the content, specifying suitable activities and lastly evaluation. Moreover, I learnt from this experience the importance of including interactive activities that can motivate students and create interest among users. This experience enabled me to create a type of interconnection between the objectives, the content, the activities and lastly evaluation which developed my knowledge and skills of some computer programs" . Another student stated " The workshop and the guiding checklist of the computerized lessons benefited me a lot and taught me self-reliance , responsibility , and the ability to use different means for information delivery".

At the end of implementing the action research plan, means and percentages of students' responses with regard to the workshop and the guiding checklist were calculated and the results are shown in table (1) below.

Table (1):Means and percentages of the responses of students of Technology of Education with regard to the benefits gained from the workshop and the guiding checklist

No	Responses	Means	Percentages
1.	The workshop benefited me most by showing me how to design computerized lesson.	4.80	96
2.	It helped me to formulate behavioural objectives .	4.60	92
3.	It enabled me to plan for the computerized lesson.	4.00	80
4.	It helped me to know about the components of the computerized lesson.	4.20	84
5.	It taught me how to choose suitable graphs, photos that fit the content of the computerized lesson.	4.60	92
6.	It helped me design suitable activities for the computerized lessons.	3.80	76
7.	It helped me to formulate evaluative questions which cover the computerized lesson.	4.40	88
8.	It helped me to build up questions that measure the objectives of the computerized lesson.	3.60	72
9.	It helped me connect the major components of the lesson (Objectives, content , activities and evaluation).	4.00	80
10.	It enabled me to choose the suitable content that meets learners' levels and abilities.	3.60	72
11.	It assisted me in exploring some PowerPoint applications.	4.60	92
12.	The workshop enhanced my skills in designing computerized lessons.	4.40	88
13.	It enabled me to explore the principles of instructional design.	4.40	88

Table (1) above showed that the responses of the students of Technology of Education at QOU with regard to the benefits gained from the workshop and the guiding checklist scored a mean between (3.60-4.80). The analysis of the collected data through the aforementioned techniques including the workshop, the

focus groups and the guiding checklist , revealed that the majority of students gained the following benefits :

1- Students' skills in designing computerized lessons increased.

2-They were able to formulate correct and concise behavioural objectives for the computerized lessons.

3- They were able to choose suitable texts, graphs, photos that fit the content of the computerized lesson in accordance with the basics of instructional design.

4- They were able to explore some PowerPoint applications in teaching .

5-They were able to explore the principles of instructional design.

6-They learnt how to formulate evaluative questions which cover the computerized lesson.

Discussion of results:

As shown above, the analysis of the collected data which was obtained through different techniques including the workshop, the focus groups and the guiding checklist revealed a number of educational benefits to the target students of the course Technology of Education at the Faculty of Education at QOU. Such results and benefits indicate that students' mastery of the principles of computerized lessons have the potential to help them design good computerized lessons that meet the best educational standards. Moreover , the use of ADDIE model helped students   design quality computerized lessons that meet the behavioral objectives of the lessons. The result agrees with Wang and Hsu (2009) who found that ADDIE constituted a systematic method that helped the instructor design learning tasks that would take place in an SL virtual and that three-fourths of the participants had learning outcomes that matched the learning goals and the students were satisfied with the "near face-to-face" opportunity that SL provided them to meet with the instructor and classmates online. The result also seems to be in consistent with Soto (2013) whose study revealed that analysis, design, development, implementation, and evaluation (ADDIE) was the most commonly used and appropriate process for the design of virtual world instruction since it summarizes five phases of an ID process and it provides a set of guidelines, model keeps a team focused on the same tasks, and creates a common language for the team.

Regarding the use of PowerPoint software for designing computerized lessons, the results agrees with Al-Aajlouni (2003) who found statistically significant differences in students' ability to design and produce instructional materials due to using a computer set connected to a Data Show for presenting the instructional material and the differences were in favor of the experimental group. This result seems to be in consistent with Harba (2011) whose study revealed statistically significant differences in the students' means between the pretest and posttest of the performativity principle in terms of designing a question using hot-spot icon and of designing a question using click –for-a- response icon. The result seems to disagree with Selwyn (2007) who described PowerPoint as 'business oriented' rather than 'education oriented', designed as a 'linear mode of technology… based around the presentation and one-way distribution of information' and also disagrees with Taylor (2007) who suggested that the overuse of PowerPoint software indicates an inability or unwillingness to teach, and that enriched – or in his terms, 'busy' – slideshows distract students from learning rather than help them learn.

The result also disagrees with Jones (2003) who found that the most significant potential negative effect, especially where "complete" presentations are made available to students, is the danger of encouraging students to sit passively through the session since they may perceive that they have "got the notes.

Furthermore, the guiding checklist used in this study for the purpose of designing quality computerized lessons helped students to produce creative computerized lessons that took into consideration the key principles of the instructional design . More importantly the careful use of the guiding checklist was able to save time and effort for both the instructor and the students and enabled them to design appropriate computerized lessons in accordance with their specialization. Such result agrees with

Conclusion and recommendations.

In light of the above results, the following points are worth mentioning here :

1- The computerized lessons are considered effective educational aids that have the potential to create positive interaction between the teacher and the students on one hand, and between the students and the instructional material on the other hand.

2-Empowering the students of the course technology of Education in terms of their knowledge and skills of instructional design can enhance their capacity to design and develop good computerized lessons. Such knowledge and skills can also help the students in planning and designing the entire computerized lesson.

3-Using a well-designed guiding checklist for designing a Power-Point –based computerized lesson helped the students of Technology of Education to overcome some problems facing the students when designing computerized lessons especially when this checklist provided the students with the basic components of the computerized lesson and how to connect them .

Consequently and upon the aforementioned conclusion , the researchers provide the following recommendations:

1-Giving more emphasis to the issue of empowering students of Technology of Education to acquire the skills of instructional design so as to enable them to design quality computerized lessons .

2-Providing students with suitable guiding checklists that tackle the design and components of computerized lessons to help them design their own computerized lessons in accordance with the best standards of instructional design.

3-Providing students with incentives to encourage them to design computerized lessons an accordance with their specializations so as to enhance interaction between the students and the instructional material on one hand , and between the students themselves .

 4-Carrying out more action research studies that aim to help instructors to deal with some expected difficulties in the field of computerized lessons .

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