

Instructional Design Quality Evaluation of Eastern Mediterranean University Open Courses

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ABSTRACT

Online learning is taking the place of class room teaching by creating the availability of open course materials for learners to access via different platforms. This paper seeks to evaluate Eastern Mediterranean University Open Courses (EMU OCs) base on the first principle of instruction. Data collection was carried out using an inventory to evaluate various EMU Open Courses. The total of 12 courses was chosen from EMU OCs. Data analysis was done using descriptive quantitative methods with Statistical Package for the Socials Sciences (SPSS). It was observed that, most of the EMU OCs score low points when evaluated with the principles of instruction.

Keywords: Instructional Design Quality; Open Courses; Massive Open Online Courses; Cooperative, Collaborative Learning; Distance Education; Instructional Design

I. INTRODUCTION

Eastern Mediterranean University (EMU) engagement in Open Courses (OCs), provides free educational resources for faculties, students and individual learners through the web with the aim of promoting and developing learners' skill in the society. Information technology (IT) has grown to a stage where learners and instructors rely mostly on it for successful execution of various educational tasks. It has taken control over our learning processes and provided ways for institutions to access wide variety of learning resources. Accessing these resources does not depend on your geographical location, because the changes in IT education has created many ways which learners and instructors can access this instructional materials without stressed (Nables et al, 1989). For example such as the internet, terms like e-learning, web based learning (distance education, e-education) and eLearning systems which as well improves the quality of learning experience and extended to the reach of both instructors and students (Chukwuemeka, Edori & Bakare, 2015). As much as these technologies are creating massiveness and accessibility through connections, the problem we need

to look at is, the effectiveness of the resources to the learner, the skills needed to access these instructional materials, the methods of designing the instructional materials base on the principles of instructions, the rate of completion by participants and the accessibility of the platform website (Merrill.1999; Rolin, 2014; Atsusi, 2014).

II. THEORETICAL FRAMEWORK

Transformation of distance education has led to the development of online learning in Northern Cyprus. This development of OCs in Northern Cyprus started in the 1990s and has motivated learners to register for the Open Courses that was established as part of Anadolu University program in Turkey in 1982. As to the result of this, EMU joined the movement in 1995 by launching its own distance and Open education with few participants that enrolled. As time goes on, the number increased from the year 1995 to 2000 with a total number of 2500 and also multiplied more from 2000 to 2014 (Isman and Dabaj, 2005). For successful design quality of open courses the principles of instruction needs to be ensured and adhered.

The principles of instruction is summarize into five such as “problem centered, activation, demonstrations, application, integration” for comprehensive understanding.

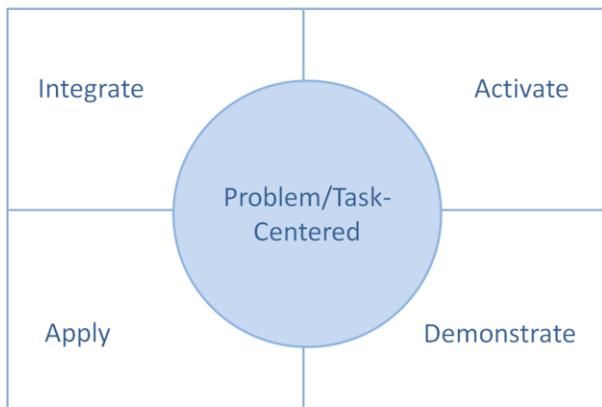


Figure 1: First Principles of Instruction (Merrill, 2002).

A. Problems centered principles

Problems centered principles is activated when learners are engage in activities that help them solve problems practically such as engaging in internship, cognitive apprenticeship etc. Engagement on real life task encourages learners to learn faster than engaging on only class activities that require them to only memories information. Merrill is of the view that “problem centered” activities involves all activities that the learner will participate in practically, that is, starting from least difficult task to the most simple task. This type of activities promotes understanding of the courses. Online instructional materials should include these principles to enable fast learning. Merrill (2009) uses the term ‘problem’ to point out ‘a wide range of activities, with the most critical characteristic being that the activity is some whole task rather than only components of a task and that the task is representative of those the learner will encounter in the world following instruction’. He gave a problem-based examples with topic-centered instruction where a subject is taught in separation from the real-world tasks. Instructional effectiveness of a course will be enhanced if the learning activities in the course give learners an opportunity to solve real-world problems, working through a progression of interrelated tasks, from the least difficult to the most difficult, that reflect the complexity of real-world settings (Margaryan et al, 2014).

B. Activation Principles

An activation principle is activated when learner uses preexisting knowledge for a new skill or knowledge. This principle is --- as the most important principles of instructions that instructor must apply before moving further. This means that the instructor should start from where learners stopped by using previous knowledge of the learner, so that learners can recall and describe their previous knowledge and can apply it in their new courses. But if a learner has no previous knowledge then the program should begin by helping learners acquire such knowledge. Solving real world examples can be use by instructors to lay a foundation for the learners to activate his knowledge (Merrill, 2009).

C. Demonstration Principles

Demonstration principles is achieved when learners pay attention and observed practical demonstration from their instructors on what will be learned. Instructors should solve examples for learners on what will be taught so that the leaners can see and apply their newly skills to their knowledge. Effectiveness of a course as argued by Merrill is achieved when examples are displayed to learner in/through both good and poor solution practices.

D. Application Principles

An application principle is achieved when learners are able to apply what they have learnt to solve problems or a given task. Merrill is of the view that applying new knowledge to a task is the most important and is necessary for effective learning. Learners should apply their newly acquire skills to solve a given task. Also application should go beyond requiring learners to answer multiple choice questions but the learners should be able to solve different task (Merrill, 2009).

E. Integration Principles

Integration principles is promoted when learners is able to reflect on, discuss on and defend their newly acquire knowledge. With all the knowledge that learners have acquired, it should reflect in their everyday life, in their behaviors, speech etc. (Merrill, 2002).

F. Other Principles

This first principles focus on learning activities but further argument split it in to five further principles which focus on learning resources and learning supports that assist learners in carrying out learning activities which includes;

- i. Collective knowledge is achieved when learner is able to contribute to collective knowledge.
- ii. Collaboration is achieved when learner work and collaborate with others.
- iii. Differentiation is achieved when different learner are provided with place to learned and according to their need.
- iv. Authentic resources is achieved when learning resources are drawn from real world settings.
- v. Feedback is achieved when feedback is given to learners from their instructors on their performance (Margaryan et al, 2014).

III. METHODS AND MATERIAL

This study seeks to evaluate instructional design quality of Eastern Mediterranean University open courses. "What is the instructional design quality of open courses which are offered by Eastern Mediterranean University?" The study further addresses the aforementioned question through the following 4 sub-research questions:

- i. To what extent are the courses problem centered?
- ii. To what extent do the course activities help activate, demonstrate, apply and integrate learners' relevant knowledge?
- iii. To what extent do the courses promote collective knowledge and collaboration?
- iv. To what extent do the course provide activity options to meet different, authentic and feedback learning needs?

A. Research Design

Quantitative method was used for this study. Survey was used to gather online data via EMU OCs websites. Quantitative method of research is a phenomenon where data are collected, analyzed using mathematical based method in statistics and generated into statistical information (Driscoll et al, 2007).

B. Research Participants

Random sample is a technique that is used to represent a sample and a single way use to acquire a descriptive sample. 12 sample OCs courses were chosen randomly via www.openeducationeuropa.eu which contains the population for this study.

C. Data Collection Instruments

The inventory consisted of three parts developed by Margaryan and Collis (2005). The first part of the inventory aimed at collecting data about the independent variables such as course name, course date, course website, course types, course platforms, course director and date of analysis. Objective and Organization section had 6 items and the first principles of instruction section had 24 items. The objectives and organization items and first principles section comprises of Yes/No and a four point Likert-scale items. The four point Likert-scale items represented as, none as 0, to some extent as 1, to large extent as 2, to very large extent as 3 which the all reflect the evidence of the principles on the courses. None, Not applicable and no information as 99 and 88 as no information about the principles on the courses. The principles are categorized into 29 questions that is group accordingly as 3.1-3.5 and 3.9 as the problem centers questions, 3.10 as activation principles, 3.6-3.7 as demonstrations principle, 3.11 as applications principles, 3.12 as integration principles, 3.14-3.16 as collectives principles, 3.17-3.20, 3.23-3.24 as collaborations principles, 3.13 as differentiation's principles, 3.8 as authentic resources and 3.21-3.22 as feedback principles (Margaryan et al, 2014). The examination of the course descriptions, the course materials and resources, the learning activity specifications, the learners' submission and discussion was done in order to know the criteria of each item of the courses that was surveyed. For instances, if the first principles of instructions is reflected on the courses or not reflected, at the end of the data collection, all data analysis are examined through the survey questionnaire for perfection and completeness. The data descriptive statistics test was carried out using the Statistical Package for the Social Sciences (SPSS). The Frequency tables and descriptive analysis were constructed to display the results with respect to each of the research questions. Descriptive analysis is use to summarize data into a meaningful meaning and for better understanding (Cheryl, 2009).

D. Data Analysis

The study evaluated the quality instructional design of EMU OCs based on the first principle of instruction. The EMU OCs websites was reviewed in order to form an appropriate data gathering instrument for this study. The courses were categorized into subjects for easy searching and navigation. After the collection and analysis of the 12 courses, the data were reviewed to ensure the accuracy and to have a correctness data.

IV. RESULT AND DISCUSSION

This section presents the findings of the Instructional design quality of 12 open courses which are offered by EMU.

A. Question 1: To what extent are the courses problem centered?

In order to answer the first sub-research question “to what extent are the courses problem centered?”, 12 EMU OCs accessed through the Open Educational Europa Networks were analyzed, below is the statistical representation of the Cases tested and OCs Problem center principles findings in Table 1.

TABLE 1
EMU OCS PROBLEMS CENTERS PRINCIPLES

Valid	EMU problem centers principles (n=12)				
	None	To some extent	To large extent	To very large extent	No info
1.Real-world problems	6(50%)	3(25.5%)	1(8.3%)	0%	2(16.7%)
2.Real world learners encounter	2(16.7%)	5(41.7%)	1(1.8%)	0%	4(33.3%)
3.Work place problems	0%	3(25%)	1(16.7%)	0%	0%

4.Ill-structure problems	5(41.7%)	3(25%)	2(16.7%)	0%	2(16.7%)
5.Divergent from one another	3(25%)	0%	2(16.7%)	0%	7(58.3%)
6.Activities build upon each other's	2(16.7%)	1(1.8%)	1(1.8%)	0%	8(66.7%)

As seen in Table 1, case 1 with 50% indicates that the OCs of EMU did not include activities that are relevant to real world problems. In case 2, 41.7% indicates that, the problems in the courses typical to those that the learner will encounter in the real world are included in EMU OCs. In case 3, 25 % indicates that, the activities in the course that relate to the participants real workplace problem was included in the OCs. In case 4, 41.7% indicates that, the problems that are ill-structured were not included in the OCs. In case 5, 58.3% indicates that, there was no information given, regarding the problems that are divergent from one another. In case 6, 66.7% indicates that, no information was give regarding the activities which are built upon each other.

Table 1 shows that EMU OCs accessed through the Open Education European Networks are not problem centered.

B. Question 2: To what extent do the courses activities help activate, demonstrate, apply and integrate learners' relevant knowledge?

In order to answer the second sub-research question “to what extent do the courses activities help activate, demonstrate, apply and integrate learners' relevant knowledge?”, 12 EMU OCs accessed through the Open Educational Europa Networks were analyzed, below is the statistical representation of the Cases tested and OCs Activation according to Activations, Demonstrations, Applications and integration principles findings in Table 2.

TABLE 2
ACTIVATION, DEMONSTRATIONS, APPLICATION
AND INTEGRATION PRINCIPLE OF EMU OCS

Valid Cases	EMU activations principles (n=12)				
	None	To some extent	To large extent	To very large extent	No info
Activation					
1. Prior knowledge	3(25%)	2(16.7%)	1(8.3%)	2(16.7%)	4(33.3%)
Demonstration					
2. Examples solutions	6(50%)	3(25%)	0%	0%	3(25%)
Application					
3. Newly acquired skills	5(41.7%)	3(25%)	0%	3(25%)	3(25%)
Integration					
4. Integrate new skills into everyday work	6(50%)	3(25%)	0%	0%	3(25%)

As seen from Table 2, in case 1, 33.3% indicates that, the activities that attempt to activate learners' relevant prior knowledge, gave no information regarding the activities the learners are involved in previously. In case 2, 50% indicates that, demonstrations examples of problem solution are not included in the EMU OCs. In case 3, 41.7% indicates that, the application example that require learners to apply their newly acquired knowledge and skill are not included in the EMU OCs. In case 4, 50% indicates that, the activities that require learners to integrate their new knowledge is not included in the OCs.

Table 2, generally signifies that activations principles were not adopted in the overall EMU OCs accessed through Open Educational Europa Networks.

C. Question 3: To what extent do the courses promote collective knowledge and collaboration?

In order to answer the third sub-research question "to what extent do the courses promote collective knowledge and collaboration?", 12 EMU OCs accessed through the Open Educational Europa Networks were analyzed, Table 3 below shows the statistical representation of the Cases tested and OCs Collective and Collaborative principles findings.

TABLE 3
COLLECTIVE KNOWLEDGE, COLLABORATIONS

Valid Cases	EMU collective and collaborative principles (n=12)				
	None	To some extent	To large extent	To very large extent	No info
1. Learn from each other's	4(33.3%)	1(8.3%)	2(16.7%)	0%	5(41.7%)
2. Consumed knowledge	8(66.7%)	0%	0%	0%	4(33.3%)
3. Build on others	7(58.3%)	0%	2(16.7%)	0%	3(25%)
Collaboration					
4. Collaborate with other learner	5(41.7%)	4(33.3%)	0%	0%	3(25%)
5. Outside collaborate	11(91.7%)	0%	0%	0%	1(8.3%)
6. Peer interaction groups	7(58%)	0%	0%	0%	5(41.7%)
7. Clearly identified	7(58.3%)	0%	0%	0%	5(41.7%)

As seen from Table 3, in case 1, 41.7% indicates that, the activities that require participants to learn from each other was not included in the EMU OCs. In case 2, 66.7% indicates that, the activities that require participants to contribute to collective knowledge are not included in the EMU OCs. In case 3, 58.3% indicates that, the activities that require learners to build on other participants submission was not included in the EMU OCs. In case 4, 41.7% indicates that, the activities that require participants to collaborate with other course participants was not included in the EMU OCs. In case 5, 91.7% indicates that, the activities that required learners to collaborate with others outside the course was not included in the EMU OCs. In case 6, 58% courses did not include peer interaction group that comprises with different backgrounds. In case 7, 58.3% indicate that, the individual contribution of each learners were not included in the OCs. Table 3, generally signifies that, the

collective and collaborative principles were not adopted in the overall EMU OCs accessed through the Open Educational Europa Networks.

D. Question 4: To what extent do the courses provide activity options to meet different, authentic and feedback learning needs?

In order to answer the fourth sub-research “to what extent do the courses provide activity options to meet different, authentic and feedback learning needs?”, 12 EMU OCs accessed through the Open Educational Europa Networks and were analyzed, Table 4 below shows the statistical representation of the Cases tested and OCs differentiation, Authentic resources and feedback principles.

TABLE 4
DIFFERENTIATION, AUTHENTIC RESOURCES AND
FEEDBACK PRINCIPLES

Valid	EMU differentiation, Authentic resources and feedback principles (n=12)				
	None	To some extent	To large extent	To very large extent	
Cases					No info
Differentiation	-				-
1. Learning need	7(58.3%)	0%	1(8.3%)	2(16.7%)	2(16.7%)
Authentic resources	-				-
2. Real world settings	3(25%)	1(8.3%)	3(25%)	0%	5(41.7%)
-	Feedback principles				-
Feedback	Yes	No	-		No info
3. Feedback by instructors	3(25%)	6(50%)	0%	0%	3(25%)
4. Feedback explained	0%	4(33.3%)	0%	0%	8(66.7%)

As seen from Table 4, in case 1, 58.3% indicates that, the activities options for participant with various learning need was not included in the EMU OCs. In case 2, 41.7% indicates that, there was no information regarding the authentic resources that are reused from real world setting in the EMU OCs. In case 3, 50% indicates that, the feedback activities were not included in the EMU OCs. In case 4, 66.7% indicate that, there was no information on whether the feedback was properly explained. The Table 4, generally signifies that, differentiation, authentic resources and feedback principles gave no information to the researcher and were actually lacking in the OCs accessed through Open Educational Networks.

V. CONCLUSION

This study examined the instructional quality of EMU Open Courses. The analysis consisted of 12 EMU OCs courses which were evaluated. Firstly, the courses were examined whether or not the courses specified learning objectives and if the objectives were measurable. Secondly, the courses were analyzed whether or not they had specific learning outcome. Thirdly, the course were analyzed whether the course materials were well organized or not. Fourthly, the courses were determine whether or not their requirements and overall descriptions were clearly outline.

Conclusively the studies shows that EMU OCs lacks the problem center principles in most of the courses as seen from Table 1. In Table 2, it shows that, a significant number of EMU OCs shows limited and none information patterning activations principles in the OCs. The Table 3, generally signifies that, the collective and collaborative principles were not adopted in the overall EMU OCs accessed. Differentiation, authentic resources and feedback principles gave no information to the researchers and were actually lacking in the OCs accessed through Open Educational Networks. Therefore the overall EMU OCs scored low points in all the principles of instruction.

VI. RECOMMEDATION

Future studies of EMU OCs could use these principles to carry out systematic comparative studies and should investigate the instructional design materials and experiences, effectively using those principles. Practical

examples should be demonstrated either in video, pictures or audio format and should be included in the course materials. Real life examples should be included in EMU OCs. Collective and collaborative learning should be included using conference meeting application for collaborating. Feedback information, in form of email should be included so that learners will be motivated after each task is completed. Lastly, further research and possible improvements on EMU OCs can be made in the future using the first principles of instruction.

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