Instructional Quality of Massive Open Online Courses (MOOCs) and Open Courses (OCs)

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ABSTRACT

Information and Communication Technology (ICT) is playing a very important role in today Education. The purpose of the study is to assess and compare Massive Open Online Courses (MOOCs) and Open Courses (OCs) based on the first principles of instruction. Inventory was used for the collection of data through evaluations of the various MOOCs and OCs. The chosen 57 courses were grouped into xMOOCs, cMOOCs, Eastern Mediterranean University (EMU) and other Universities (OTU) OCs. This study, it is obtained that the instructional design of various courses is not successful. Moreover, it is observed that the principles of instruction showed that there is statistical significant difference in designing instructional materials by the MOOCs and OCs designers. Data were analyzed with SPSS by descriptive methods. EMU OCs score very low point in the problems center principles with average score in the objectives and organizations.

Keywords: Distance Education, Online learning, MOOCs, Open Courses, Learners.

ÖZ

Günümüzde Bilgi ve İletişim Teknolojileri (BİT), eğitim alanında önemli bir rol oynamaktadır. Bu çalışmanın amacı, Kitlesel Açık Çevrimiçi Kurslar'ı (MOOC) ile Açık Kurslar'ını (OC) temel oluşturulma ilkelerine göre değerlendirmek ve karşılaştırmaktır. Çeşitli MOOC ve OC'lerin değerlendirilmesiyle, veri toplama süreci için bir envanter kullanılmıştır. Kurslar xMOOC'ler, cMOOC'ler, Doğu Akdeniz Üniversitesi Açık Kursları ve diğer üniversitelerin Açık Kursları olarak gruplandırılmış ve toplamda 57 adet kurs seçilmiştir. Çeşitli kursların öğretim tasarımı başarısız bir şekilde tasarlanmıştır; ancak çoğu kurs talimat ilkelerini izlememektedir. Ayrıca, farklı MOOC ve OC tasarımcılarının öğrenim materyalleri kullanımında büyük ölçüde istatistiksel bir fark gözlemlenmiştir. Veriler, Sosyal SPSS aracılığıyla betimsel nicel yöntemlerin kullanılmasıyla analiz edilmiştir. Doğu Akdeniz Üniversitesi Açık Kursları sorunlar merkezinde düşük bir sonuç alırken, amaçlar ve düzenlemeler açısından ortalama bir sonuç almıştır.

Anahtar Sözcükler: Uzaktan Eğitim, Çevrimiçi Eğitim, Kitlesel Açık Çevrimiçi Kurslar (MOOC), Açık kurslar, Öğrenciler.

DEDICATION

This thesis is dedicated to Almighty God and to my lovely family and friends who stood by me during this work. My gratitude goes to my wonderful parents, Mr. and Mrs. Dakop Yoila Obida whom their prayer and support saw me through.

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Chapter 1

INTRODUCTION

Information technology is increasing at a high speed. It has a strong influence on online learning that is playing a unique role in sharing and accessing higher educational resources for educating the society; this trend in the information technology has created ways for distance learning (Altbach, 2010). This has reshaped the learning processes of the learner and the areas of their life from broadcasting, publishing to social networking (Luppicini, 2005). This area of study leads us to the understanding on how educational technology creates global massiveness and neglecting the barriers associated with the internet learning. Education is about sharing knowledge with vast openness of the mind to learn. Therefore openness is the cornerstone of open courses giving privileges to learners and educators around the world to create, share, use, update and revise course materials and other educational resources (Hammer, 2013). These routines are generally used to portray online learning, distance learning, OCs, e-learning, and Massive Open Online Courses, and they have the long history of educating learners and the society (Hammer, 2013). All these are connected through information communication technology (ICT). This has brought these changes in the 21st century of education and has affected the demand of modern society (Charles, 2012). Few years ago, the idea of online learning and distance learning has expanded the growing number of Open Courses (OCs) and Massive Open Online Courses (MOOCs) to be enrolled and

be accessed by internet users. For example, is there any learning method that is special for OCs and MOOCs? I.e. engaging in this movement by platforms requires different methods that instructional designers will consider in designing the materials. Using principles or theories for creating instructional materials, mediums of delivering, geographical factors etc. is needed to know the learning styles of learners and methods of engagement. Are the instructional materials effective for learning? Candidates are required to consider this in designing materials (Mikropoulos, 2009; Lovett et al., 2008). These trends in distance learning gave way to several institutions to engage in Open Courses (OCs) and Massive Open Online Course (MOOCs), to be promoted through their platforms such as Eastern Mediterranean University and designing of quality instructional materials by those platforms are necessary. This study will guide the researcher in accessing the instructional quality design of Eastern Mediterranean Universities OCs, other Universities OCs and MOOCs that are promoting this pedagogy.

Distance learning has a long history that is over centuries, involving various methods of teaching approach, including technological evolution concerning the delivering and designing of the instructional materials, communication between students and teachers (Mikropoulos, 2009). edX, Udacity, EMU, Coursera, and various provider of MOOCs and OCs have different methods of designing instructional resources and sharing it to the general public and it is my desire to evaluate this instructional design based on instructional quality of those resources using the first principles of instructions and what gave to the openness.

Openness has always been part of education since the inception of the word education and sharing qualified it to be open and sharing which we can say that sharing is another way of defining education. The internet has accelerated the sharing of educational resources that has made it easier for the learner to access. Within the last decade movement for more openness and sharing has created massive expansion in the educational system with changes in the institutional approaches and policies of many institutions (beldarrain, 2006). Therefore OC is a development that is inherent in the nature of academia, when digital publication or content is organized as courses generally at the college or university level, the digital content can be texture, audio or video content and they are generally available without instructors. Open Courseware and MOOCs is aiming at large-scale participation and open access via the web. MOOCs have two basic features namely open access and large scale (Open Education Consortium, 2015). Open course is drawing much attentions because it link towards the possibilities of organizing programs that could lead to certification and degree for free. OC began to draw attention when MIT provided her open courseware to the world to access her content. Harvard, Yale, University of Chicago and other reputable top ranking universities have joined in the open courses movement. However, according to finding the open courseware started in 1999 by University of Tubingen in Germany when she started the movement by publishing videos of lecture online for its first times initiative, however, the movement became effective when on the 22 October 2002 MIT launched her Open Courseware at the Massachusetts Institute of Technology (MIT). Another similar project was pre-launched at Yale, the University of Michigan and the University of California and Berkeley was among the initiator. The reason behind MIT OC is to enhance the learning of human worldwide by creating the availability of her instructional

resources accessible via the internet which MIT believed that it will create room for student to become prepare for their classes and be more active in participating in class. As in the result of this movement, it has created room for other institutions to create open courseware project and some are being funded by other institutions such as William and Flora Hewlett Foundation.

MOOCs are built on the characteristics of massiveness, openness, and a connectivist philosophy. Reilly (2010) describe MOOC as using similar strategies to social networking to connect to the masses but with the help of a subject expert or provider to connect and facilitate the content in order to organize a massive range of free online resources and materials. Learners have the chance to participate with others throughout the world. As the name implies, MOOCs come with so many advantages for helping in boosting the learning structure processes of the student in terms of the accessibility, student engagement, and lifelong learning experiences. This advantage has brought a lot of controversy which surround the ideas of MOOCs and OCs. One of the beneficiary is accessibility, increased potential for students engagement and expanded lifelong learning opportunities (Carr,2012; Duderstadt,2012;McAuley et al., (2010). Accessibility in MOOCs enhances the accessibility that MOOCs offers in her resources to the participants (De waard, 2011). Low cost and free access create much participant to enroll in MOOCs courses which its format offers access and flexibility and does not need prerequisites to enroll. cMOOCs lay emphases on connected, collaborative, and they are built upon a group of individuals who are relatively free from institutional constraints. cMOOCs gives us a platform where to explore new pedagogies beyond traditional classroom setting. Instructional model, which is known as xMOOCs, is an extension of the cMOOCs pedagogy models

practices within the institutions themselves which are dominated by the drill and grill of instructional method with video presentation, quizzes, and testing. Also, xMOOCs can be grouped into two model as profit and non-profit which serve a different purpose. xMOOCs being offered by MIT is seen as a continued development of open courseware initiative offering the opportunity to the learners from different parts of the world to access high-quality teaching and learning for free. Organization interested on the financial aspect of offering xMOOCs help and support Universities to offer xMOOCs for profit such as coursera and udacity. The massive and open nature of MOOCs offer chances for expanding access to higher education and create a space for experimentation with online teaching and learning within the educational institutions.

This approach has generated high interest within the society and government setups and organization neglecting the barriers in delivering it. The propositions for institutions, to engage with MOOCs, are identified as education access and experimentation. So many participant of MOOCs and OC perhaps come across this platform as a result of self-searching or directed by others participant which the participant takes independent initiative in setting their learning needs and goal and chooses the course available to participate with a minimum professional assistance (Brookfield, 1986 & Knowles 1975). Participant could perhaps benefit most from MOOCs and OCs (Hiemstra, 1991). They can take their own initiative, locate and relate materials to their own experiences, enhance their inquiry skills and abilities, target content that addresses their specific needs or problems, and be active participants in decision-making and assessment of their own learning. All of these

attributes are elements of self-directed and participant learning (Brookfield, 1986; Knowles, 1975; Merriam & Caffarella, 1991).

1.1 Problem Statement

Eastern Mediterranean University (EMU) engagement in Open Courses (OCs), provide free educational resources for faculty, student 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. It has taken the control over our learning processes and provided ways for institutions in accessing learning resources. Accessing these resources does not matter where you are or your geographical location, because the changes in IT in education has created a way which learners and instructors can access this instructional materials (Nables, 1989). More time is spent by researchers, instructors and learners to search material to aid their learning process with the use of educational technology tools such as computer, internet and various digital means that serves as benefit to them. Institutions provide those tools to their faculty or organizations for creating and designing quality instructional materials. The internet as a medium, through which participant connect and access these resources, has created a massive community of networks that has affected our social behavior and thinking process (Nables, 1989). As much as this technology is creating massiveness and accessibility through connections, the problem we need to look at is, how effective are those resources to the learner, the skills needed to access those instructional materials, the methods of designing the instructional materials base on the principles of instructions, the rate of completion by participant and the accessibility of the platform website (Merrill, 1999; MOE, 2014).

Problem of this study is based on few points which are; how effective are the deigned instructional materials, does it identify a particular problem, does it engage the participants, is there activities that require learners involvement, does it need any requirement for enrolment i.e. prior knowledge being used, does it encourage cooperative or group learning, do leaners apply new knowledge to solve problems, and is there feedback after any activities to learner. This problem statement above is our main concern as the examiner access the instructional design quality of the OCs and MOOCs resource materials in regards to first principles of instruction (Myles et al, 2013; Anoush et al, 2014).

1.2 Purpose of Study

The main purpose of this study is to assess and compare OCs and MOOCs in terms of instructional design quality based on the first principles of instruction.

1.3 Research Questions

This study will be discussed using the following research questions as mention below:

1. What is the instructional design quality of OCs which can be accessed through the Open Education Europa Networks?
    1.1 What is the instructional design quality of OCs which are offered by EMU?
    1.2 What is the instructional design quality of OCs which are offered by other Universities?
2. What is the instructional design quality of MOOCs?
    2.1 What is the instructional design quality of cMOOCs?
    2.2 What is the instructional design quality of xMOOCs?

3. What are the differences between open courses of (EMU and other University OCs) and MOOCs in terms of instructional design quality based upon the first principles of instruction?

1.4 Importance

Research has shown that, the quality design of instructional materials affects the learning process of students and instructors. Learners engagement in solving real activities activate their learning skills and this study will help instructors in designing quality instructional materials that will engage the student in problem center, collaborations, demonstrations etc. (Merrill, 2002). This study is important because it help learners to understand that Learning is a continuous process that is no longer limited to single place, time or border which means we can access learning anytime and anywhere (Glance, 2013). It's my belief that this study will be of valuable contributions to the instructional designer of Eastern Mediterranean University Open Course instructors and the general public.

1.5 Limitation

This study was faced with the following limitation.

- Resource material were limited due to the time of data gathering.
- Accessing the courses in MOOCs is limited because at the point of this study only few courses are open for enrollment.
- The data for this research was collected by self -report with knowledge of OCs and MOOCs.
- Some questions were not answered in the questionnaire.

1.6 Definition of key Terms

Open Courses (OCs): Are free instructional materials produced by institutions such as lecture note, videos, assignments, syllable etc. which are freely accessible online (Pedrotti and Nistor, 2014)

MOOCs: Massive Open Online Courses are online courses which are aimed at unlimited participation and it is open via the internet (Boundless, 14 Nov. 2014)

cMOOCs: stand for connectivist which are based on connectivism theory of learning with networks developed informally (Yuan and Power, 2013).

xMOOCs: stand for content based MOOCs that followed a more behaviourist approach (Yuan, 2013).

Instructional design: is the development of instructional materials that makes the achievement of knowledge and skills more proficient, effective and interesting.

Distance Learning: is another form of learning that separate us from school environment and class setting where there is no instructors to help guide the student's activities. This makes school activities easier for students because student can work on their own, at any time and place (Ohene & Essuman, 2014).

Online learning is another form of learning that allows the use of internet and computer for learning. Student can access educational resources anytime and any anywhere without finding stress.

And organize information's. This tools include, the web, PC, phone etc. (Ohene & Essuman 2014).

Chapter 2

LITERATURE REVIEW

Access to education brings growth and changes to the society through the use of technologies. Instructional technology are tools in education used by both teachers and students who control this technology by designing instructional materials using these tools and these tools connect learners and instructors together.

2.1 Distance Education

Distance education (DE) is the use of digital tools for designing and delivering of instructions to the learners that are not present in person and in an educational setting.

Ohene and Essuman (2014) defined distance education as the use of print or electronic communications media to deliver instruction when teachers and learners are separated in place between times. Though, others stress online education over education, defining it as "getting people and often video images of people into the same electronic space, so they can help one another study" (Sandra, 1995). Distance separates people and not everyone have the privileges to travel to places in need for knowledge and not everyone stay close to the institution of learning. The internet is a recent development from technology which is used in education as a tool to access instructional material anywhere and anytime. In the early days of distance education, written letters was the earliest technology used to access information. Study shows that in 1728 was a documented record where the first course was introduced as an

advert in the Boston Gazette (Miller, 2014). As Caleb Philipps offers to teach shorthand to learners anywhere in the country through the exchange of letters, also in 1873 the United State founded a correspondences school that was called the society to encourage studies at home. 20 years later the University of Chicago started offering correspondence courses that became the first traditional institution in the United States to start offering courses in school environment. In 1906, a primary Calvert School, in Baltimore joined the trend which is a primary school. As the trend continued in delivering resources and new technology were developed, this development lead to the evolution of distance education and at that time the distance education was delivered in a different format for a wide range of educational purpose. Transmission of Information started in 1922 through radio broadcast as course information was transmitted through the broadcasting station in Pennsylvania State College and she also benefited from it. Later, State University of Iowa in 1925 joined the movement by offering credit-based courses for five radio stations and in 1953 the television broadcast took over as it was becoming very common and the University of Houston responded by televising college classes for credit base courses. The telephone means of delivering was a long time technology which the University of Wisconsin started a statewide educational program for physicians using the telephone format in 1965 (Miller, 2014).

The first virtual college started where courses were offered through tele-courses with no physical campuses in operations, and it was first practiced by Coastline Community college. This virtual college accelerated the distance education development and the evolution of the internet technology that will revolutionize distance learning. The western behavioral sciences institute school of management

and strategic studies started the online program in 1981. At that period, not all institution are taking the advantage of the internet technology, then the offline education center was initiated by the computer assisted learning center in New Hampshire that functioned offline. As the technological advancement in education moved from one stage to another, various institutions opened online courses for learning and degree certificates were issued to learners. Though, the 1990s institution adopted a different means of educating learners by introducing real-time and asynchronous online technology that brought great expansion on distance learning and various institutions, independent companies are working hard to deliver ready-made templet for online delivering of courses (Miller, 2014). Advancement in technology in 2000 transformed the educational system where institutions used online technology to deliver learning content and the accessibility of content using the internet is becoming extensive and new platforms are being develop (Miller, 2014). Distance educations has become ubiquitous in Northern Cyprus educational system whereas Northern Cyprus institutions have adopted this technology such as the web in delivering course instructions and it has a great benefit to the institutions and societies (Dabaj, 2005).

2.1.1 Distance Education in Northern Cyprus

Transformation of distance education leads to the development of distance education in Northern Cyprus. This development of DE in Northern Cyprus started in the 1990s. This motivated learners to register for the Open Education 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 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 (Dabaj, 2005).

The impacts of distance education on learners, instructors and their performances when students are able to manage their time, easily identify and take charge of their knowledge and objectives. Richardson (2007), figure out "face to face versus online tutoring support in business studies courses in distance education argue that in campus-based programs, the move from paper-based to electronic materials may be happening simultaneously with the move from face-to-face to online supports. This makes it hard to disentangle their respective consequences for the quality of the students' experience. In distance education, however, there is usually a separation between the central design and production of instructional materials and the provision of support at a local level. They detect that attendance is higher when students are physically together and higher with video conferencing since interaction is more harmonious with communicating in-person. They also proposed that education results and evaluations of instruction and technology would be better with higher degrees of presence.

Simonson (2003), mentioned that the students taking courses online need to know if the course contents delivered online worth it and also if learning online is a reliable method of learning. For the student's requirement to be satisfied, the researchers used a surprising survey. Their results showed that online education is as effective as the traditional learning (face-to-face education) and more students were expected to start utilizing the online programs. This showed that the development of distance education is inevitable. The researchers used the quantitative research method and they aimed at the development and the implementation of effective online learning

practices. They focused on the limitations and sponsors of course content and the pedagogical method, as defined by students and lecturers in online learning. They also used a cognitive apprenticeship model in order to pronounce their analysis of data. In their findings, it showed awareness for the course improvement and pedagogies as well as offering opportunities for additional research. Bradley (2011), states out to the development in the admissions to online education in all aspects of instruction. This backed the developing consensus concerning the worth of distance education proving that they have reached the standards of traditional education.

2.2 Open Courses

Openness has always been part of education since the inception of the word education, and sharing qualified it to be open which it can be said that sharing is another way of defining education. The internet has accelerated the sharing of educational resources which has made it easier for the student to access. Within the last decade, movement for more openness and sharing has created massive expansion in the education system with changes in the institutional approaches and policies of many universities. Therefore, open courses is a development that is inherent in the nature of academia, when digital publication or content is organized as courses generally at the college or university level, the digital content can be texture, audio or video content and they are generally available without instructors. The short form of OC is general use now to refer to as open courseware and another term that is use now as a result of the impact of online education is refers to as MOOCs (Levy, 2011). MOOCs are aimed at large scale participation and open access via the web, where it has two basic features namely open access and large scale. Open course is drew much discussion because open courses link towards the possibilities of organizing programs that could lead to certification and degree for free. Open

courses began to take attention when MIT provided MIT open courseware to the world. However, according to finding the open courseware started in 1999 by University of Tubingen in Germany. Who started the movement by publishing videos of lecture online for its times initiative. However the movement became effective on the 22 October 2002 after MIT launched her Open Courseware. Another similar project was pre-launched at Yale, University of Michigan and the University of California Berkeley who are among the initiator. The reason behind MIT OCs is to enhance the learning of human worldwide by creating the availability of her instructional resources accessible via the internet which MIT believed that it will create room for student to become prepare for their classes and be more active in participating in class. As in the result of this movement, it has created room for other institutions to create open courseware project and some are being funded by other institutions such as William and Flora Hewlett foundation (Altbach, 2010).

Changes in the educational system have really changed from the past and the methods of delivering. Institutions of higher learning have been the expansion of online supportive educational programs including MOOCs and OCs. In recent the expansion of online education which has paved way for MOOCs and OCs have increased to a higher level compared to the time of establishment to a certain percentages. Neuman (2013), titled “open educational resources”, mentioned that the idea behind OCs is simple but a powerful learning tool that is made freely and legally available on the Internet for participant to use, study, reproduce and redistribute.

Online resources provide learners with the opportunities to access OCs in all places and have equal access to the collective knowledge and provide many more people

around the world with access to quality education by designing quality instructional materials to be access through the Internet for lower cost or free. It gives opportunities for almost anybody to partake in the OCs learning, translate and tailor educational materials previously reserved only for students at elite schools. In addition, OCs has the capability to initiate jobs and economic development in communities which are left without development. Lots of participants worldwide have gain access to the OCs which has open the educational lockbox, however if OCs is going to democratize education and change the classroom and instruction, then it must change from the periphery of education practice to center stage. OCs are about sharing educational materials which are designed to connect learners and instructors for easier accessibility through the internet.

2.3 MOOCs in Details

MOOC establishment has brought about changes in the educational sector since its establishment in 2008 with various courses being introduced by the provider. Institution opinions on MOOC and OC are mixed with positive views of their ability to learn about online pedagogy and attract new students. But the problem is that whether they have the capacity to give sustainable methods for offering quality courses (Elaine, 2011).

According to finding it shows that over 6.7 million students register for at least one online course during fall 2011 but later increase with about 570,000 students over the previous year, 32% of higher education student now enrolled for at least one online courses, among the institutions only 2.6% currently have MOOC and 9.4% are report that show that MOOCs are in the planning stage (Elaine, 2011). Most academic providers are not convinced about the effectiveness of MOOCs when it comes to

methods of offering online courses but they are with the point that MOOCs provide an important avenue for institutions to learn about online pedagogy.77% of academic rate MOOC learning outcomes as the same or higher than the face-to-face method. 30.2% of the chief academicians believe that their faculty will accept the value and legitimacy of online education with a lower rate as recorded in 2004, most institution believe that lower rate for online courses is barrier to adoption of online education (Elaine, 2011).

MOOCs have been endorsed as the major advancement of higher education when it comes to quality matter according to a US quality bench making and certification programs, he argued that MOOCs provides quality because they are designed for the typical learners and it is being integrated with established higher education programs. However, some argued that the lack of originality in the MOOC propositions and exaggerated predictions of the scale of their impact on education and the learning MOOCs consider not only free of charge but they are considered to be open and it is expected that the participant contribute openly and create a new knowledge within the MOOCs platform (Gaebel, 2013).

2.3.1 What are MOOCs?

MOOCs are built on the characteristics of massiveness, openness, and a connectivist philosophy. McAuley et al (2010) describe MOOCs as using similar strategies to social networking to connect to the masses but with the help of a subject experts or provider to connect and facilitate the content in order to organize a massive range of free online resources and materials. Learners have the chance to participate with others throughout the world. Massiveness, which MOOCs accommodated, has registered large numbers of students, which are more than million have participated

in MOOCs activities (Carr, 2012; McAuley et al, 2010). MOOCs Openness, point out here as the key concept that includes the freeness to register and participate in every activities provided by the instructional designer in terms of registration, curriculum and assessment with accessing and sharing of learning materials. The enrollment and assessment and the availability of the resource materials are open to a range of different learning environments (Rodriguez, 2012).

2.3.2 Classification of MOOCs, xMOOCs and cMOOCs

MOOCs is classified into two types which are xMOOCs and cMOOCs. Connectivism in regard to MOOCs provide an online teaching method that is inspired by connectivist philosophy, however, the format is referred to cMOOC known as Connectivist Massive Open Online Course. Connectivism value autonomy, diversity, openness and interactivity. Connectivism teaching strategies give instructors the privileges and the role of helping the learners to interact actively with other students. However, it can be said that MOOCs are no longer cMOOCs as it was when it was established. The early MOOCs continue to draw within the connectivist tradition theory when MOOCs was first introduces by Stanford University in 2011 that change the ways MOOCs is being offer. cMOOCs lay emphases on connected, collaborative, and they are built upon a group of individual who are relatively free from institutional constraint (Yuan and Power, 2013).

Instructional model, which is known as xMOOCs, is an extension of the cMOOCs pedagogies models practices within the institutions themselves which is dominated by the drill and grill of instructional method with video presentations, quizzes, and testing. Also, xMOOCs can be grouped into two model as profit and non-profit which serve a different purpose. xMOOCs being offer by MIT is seen as a continued

development of open courseware initiative offering the opportunity to learner from different parts of the world to access high-quality teaching and learning for free. Organization interested on the financial aspect of offering xMOOC helps and support Universities to offer xMOOCs for profit such as coursera and udacity. EdX is a non-profit platform that offers MOOCs which is founded by MIT and Harvard University with million dollar resources to support MOOC project which is being contributed by the two universities. Presently, edX is offering over 50 courses with the future plan of having more than hundred courses to offer. Coursera is for profit which started with $22 million total investment from venture capitalist which is partner with Stanford University, Princeton University and the university of Michigan and Pennsylvania. Presently Cousera have more than 197 courses and Udacity is also for profit which started with $21 million being funded by Sebastian Thrun, David Stavens and mike Sokolsky. Udacity has more than 20 online courses and after completion of a course, a certificate is being offered on completion (Yuan and Power, 2013). They can take their own initiative, locate and relate materials to their own experiences, enhance their inquiry skills and abilities, target content that addresses their specific needs or problems, and be active participants in decision-making and assessment of their own learning. All of these attributes are elements of self-directed and participant learning (Brookfield, 1986; Knowles, 1975; Merriam & Caffarella, 1991).

2.4 Principles of Instructions in Details

Developing quality instructional materials promote activities, such as engaging and interaction of leaners. However, the motivation of learners help student learn fast when face with more challenging problems. Therefore, we look at instructional design as creating the environment for learning by structuring the content and

creating activities that engages student and facilitate meaningful learning. We can say that instructional design supports the processes of learning than teaching whereby the structural designer are not the subject matter but how it will collaborate with the expert to create an environment where learners participate in rich meaningful learning experiences. Instructional design is defined as "a systematic processes that are employed to develop education and training programs in a constant reliable fashion" (Reiser & Dempsey, 2007). Model of instructional design may be view as a framework for developing modules or lesson that increase and enhanced the possibilities of learning and encouragement of the learner so that the learner learned faster and gain understanding of the subject. We can also look at instructional design as a system that facilitates the transfer of knowledge, skills and attitude to the receiver or seeker of the instructions. The overall processes of learning is being analyzed to achieve the goal and the development of delivery systems in order to meet that need.

According to Nables and Reynoldsburg (1989), stated that in order to promote higher order thinking on the web, online learning providers such as MOOCs and OCs must create challenging programs or activities that enable learners to link new information to old, acquire meaningful knowledge through participation and use their metacognitive abilities. That means, it is the instructional quality and strategy that influences the quality of learning and not the technology. Kozma (2001), argued that, the actual attribute of the computer web platform is needed to bring real life models and simulations to learners thus, this medium does influence learning, however, it is not the computer per say that makes the student learn but the design of the real life models and simulations and the learner interaction with those model and simulation.

The MOOCs platform is only a pilot that gives accesses and delivers the resources to the learners (Clark, 2001). Goal of any instructional system is to promote learning and understanding of the courses being offered by MOOCs and OCs provider. This means that any materials developed by the instructor should and must follow the principles and standard of learning. MOOCs and OCs providers should put into account, because the medium or platform is not what determine the quality of learning rather it is the design of the learning materials that determines the effectiveness of the learning. The online developer must know the different approaches to learning in order to select the most appropriate instructional strategies. Learning strategies should be selected to motivate learners and participant, and create in-depth processing, cater for the individual and societal differences, promote meaningful learning, encourage interaction and feedback, facilitate contextual learning and provide support during the learning processes. Cognitivist view learning as an internal process that has to do with memory, thinking, reflection, abstraction, motivation and metacognition while the cognitive psychology sees it as learning from information processing point of view where the learner's uses different types of memory during teach (Merrill, 2007).

2.4.1 First principle of instruction

First principles of instructions are relevant to complex learning of real world and whole task base on a synthesis of instructional design theories. Merrill (2002) argue that student learning will be promoted when instruction is problem or task center. It is worth to mention that, when learning is moving forward learners begin to acquire skill in the context of the real-world problems. Which point it out that, memorizing and practical learning is an aspect of acquiring skill in the sense that when learners are engaged in solving problems and building knowledge they learn better then when

an information is giving to them without a problem or exercises to solve. 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 setting. Instructions becomes more effective when learners are engaged in an activity and learn another component in the context of the whole task that is required to improve their knowledge and skills. Cognitive psychology recognition has shown that learner learn with understanding when they partake in activities and solving problems (Mayers, 1992). Problem definition varies according to theories while some sees problems as engaging inform of simulations of devices. While others feel that being involved in some real world task defines problems (Merrill, 2002). Student learning is activated with what they already know or can do what is to be newly learned. Previous knowledge is essential when learners are encouraged to recall, relate and applied their prior knowledge to the new knowledge being acquire. Early learner education background affects their future learning when acquiring a new skill because their prior knowledge is activated when the program is related to their prior studies. Understanding of the past knowledge of the learner is necessary but most instructors do not apply this principle rather they jump to what they want to teach neglecting the fact that learners will find it difficult to assimilate the current knowledge. If the learner had not received any foundation, it is important for the instructor to start from the foundation so that the learner can learn fast and be able to use it as the learning continues. Introducing activities and motivational themes into instructional materials will facilitate the activation of learner. Clark and Blake (1997) suggested that presenting dynamic schema and analog models will promote quick transfer of knowledge to learners.

1) Student is exposed to demonstrations of what they are to learn.

2) They have opportunities to try out what they have learnt, with the instructors' coaching and feedback and

3) They integrate what they have learnt into their personal lives.

If any of this principles are missing in the instructional design of the resources it automatically brings a negative impact on the learning process (Merrill, 2002).

2.5 Related Research Studies

Rita at el (2011), mentioned that information technology has a serious effect on educations and the structure of the learning environment, the place and the presence of learners and educators within the institution boundaries are influenced by the high increase of technology through the web. Stephen Downes (2004), are of the view that online learning is an infant as they struggle with the advancement of new technology and practices (Mcauley, 2010). Whereas online courses that were considered as best 12 months ago are now considered to be outdated due to advancement in information technology.

Chapter 3

METHODOLOGY

This chapter explains the method that will be used and with detailed explanations about the research design, samples, data collection and data analysis. The aim is to access the instructional design quality of MOOCs and OC base on their quality instructional design.

3.1 Research Design

Quantitative method gives us the understanding of goal measurement and the numerical examinations of data gathering through surveys and questionnaires (Labaree,2015). Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon. It shows the relationship between variables such as time, performance etc. This may begin with a plan and methods that are used to explore and understand the meaning given to social or human problems (Richardson, 2009). Theories give ways to understand events and it explains why things occur. Researcher's uses theories to help design questions, select relevant data and interpret data. With the proposed explanations of the underlying causes and influences of the observe phenomena (Richardson, 2009). The thesis will be discussed based on the first principle of instruction. The quantitative method was used for this thesis. Survey was used to gather online data via the website of OCs and MOOCs via Open Education Europa Networks. Quantitative method of research is a phenomenon where data are

collected, analyzed using mathematical based method in statistic and been generated into statistical information (Driscoll et al, 2007).

3.2 Samples

Random sample was used to collect data from the Eastern Mediterranean University website and European Open Education Network website. Random sample is a technique that is used to represent a sample and a single way use to acquire a descriptive sample.

57 sample courses where chosen randomly from both xMOOCs, cMOOCs and other university offering open courses via openeducationeuropa.eu which contains the population for this thesis. EMU courses were chosen in an orderly manner by the examiner.

3.3 Data Collection Tool

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 are 6 items and they first principles of instructions are 24 items. The objectives and organization items and first principles 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 (Manuela, et al, 2014). The examiner went through the course descriptions, the course materials and resources, the learning activity specifications, the learners' submission and discussion 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 were also put into a database in Statistical Package for the Social Sciences (SPSS), and were analyzed according to descriptive statistics test. 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 (Thompson, 2009).

3.4 Data Analysis

The thesis view the quality instructional design of OCs and MOOCs courses, based on the first principle of instruction (Merrill, 2013). The examiner registers for few courses in coursera, Edx and Udacity and also for cMOOCs so that the examiner can have access to the materials. The examiner reviews the websites of MOOCs and OCs provider in order to form an appropriate data gathering instrument for this study. Although there was some data that appear to be useful, none of them was considered to be fully sufficient towards the purpose of this study. 57 courses were chosen for this thesis, 15 courses are xMOOCs and 15 courses are cMOOCs and 15 courses are from other universities and 12 EMU Open Courses. Observation shows that, few

courses are open while some are yet to begin enrollment while some courses are not available. Accesses to some course environment for MOOCs were not possible. In some courses, a close examination conducted shows that some of the courses have rounded up. As in the case of Open Courses the resource materials of most OCs are not up to date but can be accessed since the university still offers it. The examination of all related course information took much time. xMOOCs finding and assessment took less time compare to the assessment of cMOOCs. Assessment of the Open Courses of EMU and other universities OCs took less time because it was straight forward. The xMOOCs provided via the same platform are typically centralized and standardized in their design. cMOOCs are typically scattered and have a complex structure than xMOOCs. Analysis of the cousera platforms shows that courses are group into on-demand, eligible for verified certificate and specialization, whereas, specializations and certification courses require some amount of money to register for the course. On-demand course is always open for learner to enroll. Total number of 756 courses is in English and 19 courses are in other languages. The courses are categories into subject for easy searching and navigation. After the collection and analysis of the whole 57 courses the data were review to ensure the accuracy and to have a correct data.

Chapter 4

FINDINGS

The aim of the study was to assess the instructional design of Open Massive Online Courses and Open Courses. Quantitative data was examined to gain a comprehensive understanding of instructional design and awareness of the topic under study.

4.1 Instructional design quality of open courses which can be accessed through the open education Europa Networks

27 OCs courses were accessed through the Open Educational Europa Networks, below can be found the cases and OCs problem center principles in the Table 1 below.

Table 1. Overall problem center principles.

Valid	**Open courses problem centres principles (n=27)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Real-world problems	12(44.4%)	9(33.3%)	2(7.4%)	0%	4(14.8%)
Real world leaners encounter	7(25.9%)	11(40.7%)	2(7.4%)	0%	7(25.9%)
Work place problems	2(7.4%)	5(18.5%)	3(11.1%)	4(14.8%)	13(48.1%)
Ill-structure problems	4(14.8%)	5(18.5%)	4(14.8%)	0%	14(51.9%)
Divergent from; one another	8(29.6%)	0%	4(14.8%)	0%	15(55.6%)
Activities build upon each other's	5(18.5%)	2(7.4%)	2(7.4%)	0%	18(66.7%)

Instructional quality design of OCs that was accessed through the open education European networks will be discussed according to the first principles of instructions.

As seen in Table 1, case 1 with 44.4% indicates that the OCs of EMU and Other university did not include activities that are relevant to real world problems. In case 2 40.7% indicates that, the problems in the courses typical to those learner will encounter in the real world are to some limit. In case 3, 48.1 % indicate that, the activities in the course that relate to the participants real workplace problem left no information to the researcher. In case 4, 51.9% indicate that, the problems are ill-structure left no information to the researcher. In case 5, 55.6% indicate that, there was no information left, regarding the problems divergent from one another. In case 6, 66.7% indicate that the activities build upon each other left no information regarding the activity. From this Table 1, the OCs accessed through the Open Education European Networks are not problem centers. Signifies that majority of the course did not include activities that are have problem example.

27 OCs courses were accessed through the Open Educational Europa Networks, below can be found the cases and OCs activation principles according to Activation, Demonstrations, Application and integration principles in the Table 2.

Table 2. Overall OCs activations principles.

Valid	**Overall OCs activations principles (n=27)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Activation					
Prior knowledge	7(25.9%)	3(11.1%)	2(7.4%)	4(14.8%)	11(40.7%)
Demonstration					
Examples solutions	19(70.4%)	4(14.8%)	0%	0%	4(14.8%)
Application					
Newly acquired skills	13(48.1%)	2(7.4%)	0%	6(22.2%)	6(22.2%)
Integration					
Integrate new skills into everyday work	15(55.6%)	5(18.5%)	0%	0%	7(25.9%)

As seen from Table 2, in case 1, 40.7% indicate that, the activities that attempt to activate learner's relevant prior knowledge, left no information regarding the activities the learners are involved. In case 2, 70.4% indicates that, demonstrations examples of problem solution are not included in the OCs. In case 3, 48.1% indicate that, the application example that require learners to apply their newly acquired knowledge and skill are not included in the OCs. In case 4, 55.6% 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 are not adopted in the overall OCs through Open Educational Europa Networks.

27 OCs courses were accessed through the Open Educational Europa Networks, below can be found the cases and OCs collectives and collaborative principles according to collaboration principles in the Table 3.

Table 3. OCs collectives according to collaborative principles.

Valid	**OCs collective and collaborative principles (n=27)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Learn from each other's	12(44.4%)	2(7.4%)	4(14.8%)	0%	9(33.3%)
Consumed knowledge	20(74.1%)	0%	0%	0%	7(25.9%)
Collaboration					
Collaborate with other learner	14(51.9%)	8(29.6%)	0%	0%	5(18.5%)
Outside collaborate	24(88.9%)	0%	0%	0%	3(11.1%)
Peer interaction groups	17(62.9%)	0%	0%	0%	10(37%)
Clearly identified	17(63%)	0%	0%	0%	10(37%)

As seen from Table 3, in case 1, 44.4% indicate that, the activities that require participants to learn from each other was not included in the OCs. In case 2, 74.1% indicates that, the activities that require participants to contribute to collective

knowledge are not included in the OCs. In case 3, 51.9% indicates that, the activities that require learners to build on other participants submission was not included in the OCs. In case 4, 51.9% indicates that, the activities that require participants to collaborate with other course participants was not included in the OCs. In case 5, 88.9% indicates that, the activities that required learners to collaborate with others outside the course was not included in the OCs. In case 6, 62.9% courses did not include peer interaction group that comprises with different backgrounds. In case 7, 63% indicate that, the individual contribution of each learners were not included in the OCs. The Table 3, generally signifies that, the collective and collaborative principles were not adopted in the overall OCs access through the Open Educational Europa Networks.

27 OCs courses were accessed through the Open Educational Europa Networks, below can be found the cases and OCs Differentiation, Authentic and feedback principles in the Table 4.

Table 4. OCs differentiation, Authentic and feedback principles.

Valid	**OCs differentiation, Authentic resources and feedback principles (n=27)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Differentiation					
Learning need	18(66.7%)	0%	2(7.4%)	4(14.8%)	3(11.1%)
Authentic resources					
Real world settings	8(29.6%)	2(7.4%)	6(22.2%)	0%	11(40.7%)
	Feedback principles				
Feedback	**Yes**	**No**			**No info**
Feedback by instructors	5(18.5%)	15(56.6%)	0%	0%	7(25.9%)
Feedback explained	0%	9(33.3%)	0%	0%	18(66.7%)

As seen from Table 4, in case 1, 66.7% indicate that, the activities options for participant with various learning need was not included in the OCs. In case 2, 40.7%

indicate that, there was no information regarding the authentic resources that are reused from real world setting in the OCs. In case 3, 56.6% indicates that, the feedback activities was not included in the OCs. Incase 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.

4.1.1 Instructional design quality of open courses which are offered by EMU

12 EMU OCs were accessed through the Open Educational Europa Networks, below can be found the cases and OCs Problem center principles in the Table 5.

Table 5. EMU OCs problems centers principles.

Valid	**EMU problem centres principles (n=12)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Real-world problems	6(50%)	3(25.5%)	1(8.3%)	0%	2(16.7%)
Real world leaners encounter	2(16.7%)	5(41.7%)	1(1.8%)	0%	4(33.3%)
Work place problems	0%	3(25%)	1(16.7%)	0%	0%
Ill-structure problems	5(41.7%)	3(25%)	2(16.7%)	0%	2(16.7%)
Divergent from one another	3(25%)	0%	2(16.7%)	0%	7(58.3%)
Activities build upon each other's	2(16.7%)	1(1.8%)	1(1.8%)	0%	8(66.7%)

As seen in Table 5, 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 learner will encounter in the real world are

included in EMU OCs. In case 3, 25 % indicate that, the activities in the course that relate to the participants real workplace problem was included in the OCs. In case 4, 41.7% indicate that, the problems are ill-structure was not included in the OCs. In case 58.3% indicate that, there was no information left, regarding the problems divergent from one another. In case 6, 66.7% indicate that, the activities build upon each other left no information regarding the activity. From this Table 5, EMU OCs accessed through the Open Education European Networks are not problem centers.

12 EMU OCs were accessed through the Open Educational Europa Networks, below can be found the cases and OCs Activation according to Activations, Demonstrations, Applications and integration principles in the Table 6.

Table 6. Activation, demonstrations, application and integration principle of EMU OCs.

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

As seen from Table 6, in case 1, 33.3% indicate that, the activities that attempt to activate learner's relevant prior knowledge, left no information regarding the activities the learners are involved. In case 2, 50% indicates that, demonstrations examples of problem solution are not included in the EMU OCs. In case 3, 41.7%

indicate 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 6, generally signifies that activations principles are not adopted in the overall EMU OCs through Open Educational Europa Networks.

12 EMU OCs were accessed through the Open Educational Europa Networks, below can be found the cases and OCs Collective and Collaborative principles in the Table.

Table 7. Collective knowledge, collaborations.

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

As seen from Table 7, in case 1, 41.7% indicate 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. The Table 7 generally signifies that, the collective and collaborative principles were not adopted in the overall EMU OCs accessed through the Open Educational Europa Networks.

12 EMU OCs were accessed through the Open Educational Europa Networks, below can be found the cases and OCs differentiation, Authentic resources and feedback principles principles in the Table 8.

Table 8**.** Differentiation, Authentic resources and feedback principles

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

As seen from Table 8, in case 1, 58.3% indicate that, the activities options for participant with various learning need was not included in the EMU OCs. In case 2, 41.7% indicate 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. Incase 4, 66.7% indicate that, there was no information on whether the feedback was properly explained. The Table 8, 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.

4.1.2 Instructional design quality of open courses offer by other Universities.

15 other university OCs were accessed through the Open Educational Europa Networks, below can be found the cases and OCs Problem centers principles in the Table 9.

Table 9. Other university OCs problem centers principles.

Valid	**Other university problem centres principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Real-world problems	6(40%)	6(40%)	1(6.7%)	0%	2(13.3%)
Real world leaners encounter	5(13.3%)	6(40%)	1(6.7%)	0%	3(20%)
Work place problems	2(13.3%)	2(13.3%)	2(13.3%)	2(13.3%)	7(46.7%)
Ill-structure problems	2(13.3%)	2(13.3%)	2(13.3%)	0%	9(60%)
Divergent from one another	5(33.3%)	0%	2(13.3%)	0%	8(58.3%)
Activities build upon each other's	3(20%)	1(6.7%)	1(6.7%)	0%	10(66.7%)

As seen in Table 9, case 1 with 46.7% indicates that the OCs of other university included activities that are relevant to real world problems. In case 2 40% indicates that, the problems in the courses typical to those learner will encounter in the real world are included in other university OCs. In case 3, 46.7 % indicate that, there was no information left regarding activities in the course that relate to the participants real

workplace problem in the OCs. In case 4, 60% indicate that, there was no information left regarding ill-structure problems of the OCs. In case 5, 58.3% indicate that, there was no information left, regarding the problems divergent from one another. In case 6, 66.7% indicate that, the activities build upon each other left no information regarding the activity. From this Table, other university OCs that was accessed through the Open Education European Networks are not problem centers.

15 other university OCs were accessed through the Open Educational Europa Networks, below can be found the cases and OCs Activations principles according to Activation, Demonstrations, Applications and Integration principles in the Table 10.

Table 10**.** Other university OCs activation principles.

Valid	**Other university activations principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Activation	-				-
Prior knowledge	4(26.7%)	1(6.7%)	1(6.7%)	2(13.3%)	7(46.7%)
Demonstration	-				-
Examples solutions	10(66.7%)	3(20%)	0%	0%	3(25%)
Application	-				-
Newly acquired skills	8(53.3%)	1(6.7%)	0%	3(20%)	3(20%)
Integration	-				-
Integrate new skills into everyday work	9(60%)	2(13.3%)	0%	0%	4(26.7%)

As seen from Table 10, in case 1, 46.7% indicate that, the activities that attempt to activate learner's relevant prior knowledge, left no information regarding the activities the learners are involved. In case 2, 66.7% indicates that, demonstrations examples of problem solution are not included in the other university OCs. In case 3, 53.3% indicate that, the application example that require learners to apply their newly acquired knowledge and skill are not included in the other university OCs. In

case 4, 60% indicates that, the activities that require learners to integrate their new knowledge is not included in the OCs. Table 10, generally signifies that activations principles are not adopted in the overall other university accessed OCs through Open Educational Europa Networks.

15 other university OCs were accessed through the Open Educational Europa Networks, below can be found the cases and OCs collective and collaborative principles according to collaboration principles in the Table 11.

Table 11**.** Collective knowledge, collaborations of other university OCs.

Valid	**Other university OCs collective and collaborative principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Learn from each other's	8(53.3%)	1(6.7%)	2(13.3%)	0%	4(26.7%)
Consumed knowledge	12(80%)	0%	0%	0%	3(20%)
Build on others	9(60%)	0%	2(13.3%)	0%	4(26.7%)
Collaboration	-				-
Collaborate with other learner	9(60%)	4(26.7%)	0%	0%	2(13.3%)
Outside collaborate	13(86.7%)	0%	0%	0%	1(13.3%)
Peer interaction groups	10(66.7%)	0%	0%	0%	5(33.3%)
Clearly identified	10(66.7%)	0%	0%	0%	5(33.3%)

As seen from Table 11, in case 1, 53.3% indicate that, the activities that require participants to learn from each other was not included in the other university OCs. In case 2, 80% indicates that, the activities that require participants to contribute to collective knowledge are not included in the other university OCs. In case 3, 60% indicates that, the activities that require learners to build on other participants submission was not included in the other university OCs. In case 4, 60% indicates that, the activities that require participants to collaborate with other course

participants was not included in the OCs. In case 5, 86.7% indicates that, the activities that required learners to collaborate with others outside the course was not included in the other university OCs. In case 6, 66.7% courses did not include peer interaction group that comprises with different backgrounds. In case 7, 66.7% indicate that, the individual contribution of each learners were not included in the OCs. The Table 11, generally signifies that, the collective and collaborative principles were not adopted in the overall other university OCs accessed through the Open Educational Europa Networks 15 other university OCs were accessed through the Open Educational Europa Networks, below can be found the cases and OCs Differentiation, Authentic and feedback principles in Table 12.

Table 12**.** Differentiation, Authentic resources and feedback principles.

Valid	**Other university OCs differentiation, Authentic resources and feedback principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Differentiation					
Learning need	11(73.3%)	0%	1(6.7%)	2(13.3%)	1(6.7%)
Authentic resources					
Real world settings	5(33.3%)	1(6.7%)	3(20%)	0%	6(40%)
	Feedback principles				
Feedback	**Yes**	**No**			**No info**
Feedback by instructors	2(13.3%)	9(60%)	0%	0%	4(26.7%)
Feedback explained	0%	5(33.3%)	0%	0%	10(66.7%)

As seen from Table 12, in case 1, 73.3% indicate that, the activities options for participant with various learning need was not included in the other university OCs. In case 2, 40% indicate that, there was no information regarding the authentic resources that are reused from real world setting in the other university OCs. In case 3, 60% indicates that, the feedback activities was not included in the other university OCs. In case 4, 66.7% indicate that, there was no information on whether the feedback was properly explained. The Table 12, 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.

4.2 Instructional design quality of MOOCs which can be accessed through the open education Europa Networks

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 13. Change that needs to be promoted in the skill set of the learner population.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result for MOOCs (n=30)
Yes	7(46.7%)	3(20%)	10(33.3%)
No	8(53.3%)	12(%)	20(66.7%)

As seen from Table 13, analysis of the courses show that 33.3% of overall MOOCs signified that the courses specify the change that needs to be promoted in the skill set of the learner population while 66.7% MOOCs did not reflect the change that needs to be promoted in the skill set of the learner populations in all the courses.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 14. The course objectives of MOOCs.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	8(53.3%)	1(6.7%)	9(30%)
To some extent	4(26.7%)	3(20%)	7(23.3%)
To large extent	0%	3(20%)	3(10%)
To very large extent	3(20%)	8(53.3%)	11(36.7)
No information	0%	0%	0%

As seen from Table 14, majority of the courses showed that 30% of MOOCs courses did not include the extent which the courses objectives are measurable as none, to some extent 23.3%, 10% to large extent, 36.7% to very large extent of overall MOOCs included the objectives principles in the courses. While 0% signifies no information regarding the objectives. From the Table 14, it can be seen that to a very large extent with the highest percentage signifies that the course objectives of MOOCs are effective.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 15. The organization of MOOCs course materials.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	2(13.3%)	1(6.7%)	**3(10%)**
To some extent	3(20%)	1(6.7%)	4(13.3%)
To large extent	2(13%)	6(40%)	8(26.7%)
To very large extent	7(46.7%)	7(46.7%)	14(46.7%)
No information	1(6.7%)	0%	1(3.3%)

As seen from Table 15, 10 % of both MOOCs did not include that , the course material are organize while 13.3% to some extent, 26.7% to large extent and 46.7% to very large extent signifies that MOOCs materials are well organize. 3.3% as no information signifies that there is no information about the course organization. From the Table 15, it can be seen that to a very large extent with the highest percentage signifies that, the overall MOOCs course materials are organize.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 16. The course requirements for enrolment.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
Yes	10(66.7%)	7(46.7%)	17(56.7%)
No	5(33.3%)	8(53.3%)	13(43.3%)

As seen from Table 16, majority of the courses shows that the course requirement are outlined clearly with 56.7% overall MOOCs that included the requirement in the courses while 43.3% overall MOOCs did not include the course requirement. From Table 16, it can be seen that majority of overall MOOCs included the requirement for enrolment in the MOOCs courses.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 17. The course description.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
Yes	7(46.7%)	7(46.7%)	14(46.7%)
No	7(46.7%)	8(53.3%)	15(50%)
No info	0%	3.3%%	1(3.3%)

As seen from Table 17, 46.7% of MOOCs included the course description on the courses while 50% of the overall MOOCs did not the course description in the courses. 3.3% has no information regarding the course descriptions. From the Table 17, it can be seen that majority MOOCs courses did not include the course description in the courses.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 18. Overall objectives principles relevant to real-world problems of MOOCs.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	2(13.3%)	1(6.7%)	3(10%)
To some extent	2(13.3%)	5(33.3%)	7(23.3%)
To large extent	3(20%)	2(13.3%)	5(16.7%)
To very large extent	3(20%)	2(13.3%)	3(10%)
No information	5(33.3%)	7(46.7%)	12(40%)

As seen from Table 18, 23.3% to some extent, 16.7% to large extent and 10% to very large extent included the objective that are relevant to real-world problem in the overall MOOCs courses while 10% of did not include the activities that is signifies as none. 40% as no information about the objective of the courses. From Table 18, we can see that no information has the highest percentage that signifies that, majority of the courses has no information about the objectives principles.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 19. The problems in the course typical to those learners will encounter in the real world.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	0%	0%	0%
To some extent	3(20%)	2(13.3%)	5(16.7%)
To large extent	4(26.7%)	4(26.7%)	8(26.7%)
To very large extent	2(13.3%)	2(13.3%)	4(13.3%)
No information	6(40%)	7(46.7%)	13(43.3%)

As seen from Table 19, majority of the courses included the problems that are typical of those learner will encounter in the real world with 16.7% to some extent, 26.7% to large extent and 13.3% to very large extent while 43.3% of overall MOOCs has no information about the problems. From Table 18, we can see that no information has the highest percentage that signifies that, majority of the courses has no information about the problems learner will encounter in the real world.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 20. The activities in the course related to the participants' real workplace.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	0%	3(20%)	8(26.7%)
To some extent	3(20%)	5(33.3%)	10(33.3%)
To large extent	4(26.7%)	3(20%)	6(20%)
To very large extent	2(13.3%)	1(6.7%)	2(6.7%)
No information	6(40%)	3(20%)	4(13.3%)

As seen from Table 20, the extent that the activities shows that the course relate to the participants real workplace problems is included in 33.3% to some extent, 20% to large extent and 6.7% to very large extent of both MOOCs courses while 26.% as none did not include the activities in the courses. 13.3% signifies no information about the courses. From the Table 20, we can see that to some extent with below average signifies that, courses included the activities that are related to participant real work place.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 21. The ill-structured of MOOCs

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	1(6.7%)	5(33.3%)	6(20%)
To some extent	1(6.7%)	1(6.7%)	2(6.7%)
To large extent	3(20%)	1(6.7%)	4(13.3%)
To very large extent	4(26.7%)	2(13.3%)	6(20%)
No information	6(40%)	6(40%)	12(40%)

As seen from Table 21, 20% of both MOOCs did not include problem that have more than one correct solution in the courses while 6.7% to some extent, 13.3% to large extent and 20% to very large extent are ill-structure that include more than one correct solutions. 40% signifies no information about the structure problems in both MOOCs courses. From Table 21, we can see that no information has the highest percentage that signifies that, majority of the courses has no information about the structure problems.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 22.The problems that are divergent in MOOCs courses.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	0%	3(20%)	3(10%)
To some extent	6(40%)	5(33.3%)	11(36.7%)
To large extent	1(6.7%)	1(6.7%)	2(6.7%)
To very large extent	0%	0%	0%
No information	8(53.3%)	6(40%)	14(46.7%)

As seen from Table 22, 36.7% to some extent, 6.7 to large extent, of both MOOCs courses include problem that are divergent from one another while 10% of MOOCs show that, the problem are divergent from one another are not included in the

courses. With 46.6% as no information about the problem that are divergent from one another. From Table 22, we can see that no information has the highest percentage that signifies that, majority of the courses has no information about the problems.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 23. Activities built upon each other.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	5(33.3%)	5(33.3%)	10(33.3%)
To some extent	3(20%)	2(13.3%)	5(16.7%)
To large extent	2(13.3%)	3(20%)	5(16.7%)
To very large extent	4(26.7%)	1(6.7%)	5(16.7%)
No information	1(6.7%)	4(26.7%)	5(16.7)

As seen from Table 23, 33.3% of overall MOOCs shows none of the activities is built upon each other while 16.7% is included activities build upon each other in MOOCs courses and 16.7% as no information about the activities.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 24. The activities that attempt to activate learners' relevant prior knowledge.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	6(40%)	6(40%)	12(40%)
To some extent	4(26.7%)	4(26.7%)	8(26.7%)
To large extent	1(6.7%)	2(13.3%)	3(10%)
To very large extent	2(13.3%)	1(6.7%)	3(10%)
No information	2(13.3%)	2(13.3%)	4(13.3%)

As seen from Table 24, the activities the attempt to activate learners relevant prior knowledge or experience was not included in 40% of both cMOOCs and xMOOCs as none. The extent for the activities to activate learner's relevant prior knowledge was included to a very large extent in 20% both MOOCs, and to some extent in 26.7% MOOCs while 13.3% has no information about the activities. As seen from the Table, below average of the both MOOCs did not include activies that attempt to activate leaner prior knowledge as none.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 25. The solutions that represent a range of quality from excellent to poor examples.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	0%	5(32.3%)	5(16.7%)
To some extent	1(6.7%)	1(6.7%)	2(6.7%)
To large extent	4(26.7%)	3(20%)	7(23.3%)
To very large extent	0%	0%	0%
No information	10(66.7%)	6(40%)	16(53.3%)

As seen from Table 25, 53.3% as no information about examples of solution while 6.7% to some extent , 23.3% to large extent included solutions that represent a range of quality from excellent examples and 16.7% as none did not include the example in both MOOCs courses. From Table 25, we can see that no information has the highest percentage that signifies that, majority of the courses has no information about the activities.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 26. The activities that require learners to apply their newly acquired knowledge.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	7(46.7%)	6(40%)	13(43.3%)
To some extent	6(40%)	4(26.7%)	8(26.7%)
To large extent	2(13.3%)	2(13.3%)	2(6.7%)
To very large extent	0%	1(6.7%)	4(13.3%)
No information	0%	2(13.3%)	3(10%)

As seen from Table 26, 43.3% of the courses did not include activities that will require learners to apply their newly acquired knowledge or skill on overall MOOCs as none while 26% to some extent, 6.7% to large extent, and 13.3% to very large extent of overall MOOCs signifies that the principles is included in the courses. 10% has no information about the courses. From Table 26, we can see that below average of MOOCs courses did not include activities that required learner to apply their newly skills.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 27.The activities that require learners to integrate their new skill into everyday work.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	6(40%)	6(40%)	6(50%)
To some extent	2(13.3%)	3(20%)	3(25%)
To large extent	5(13.3%)	0%	13.3%%
To very large extent	1(6.7%)	2(13.3%)	20%
No information	1(6.7%)	4(26.7%)	3(25%)

As seen from Table 27, activities require learners to integrate the new knowledge or skill into everyday work is included in 25% to some extent, 13.3% to large extent, 20% to very large extent MOOCs courses while 50% average percentage of the courses did not include the principles that require learner to integrate their newly skill. 25% as no information about the activities. From Table 27, we can see that, the average percentage of both MOOCs courses did not include the activities.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 28. The activities that require participants to learn from each other.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	1(6.7%)	7(46.7%)	8(26.7%)
To some extent	1(6.7%)	3(20%)	4(13.3%)
To large extent	3(20%)	3(20%)	6(20%)
To very large extent	9(60%)	1(6.7%)	11(36.7%)
No information	1(6.7%)	1(6.7%)	1(3.3%)

As seen from Table 28, the activities that require learner to learn from each other were included in 36% to very large extent, 20% to large extent and 13.3% to some extent of both MOOCs courses while 26.7% of both MOOCs courses did not include the principles in the courses as none while 3.3% has no information about the activities. As seen from Table 28, 36% below average of both MOOCs courses included activities that require participant to learn from each other's.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 29. The activities that require participants to contribute to the collective knowledge.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	8(53.3%)	6(40%)	14(46.7%)
To some extent	3(20%)	4(26.7%)	7(23.3%)
To large extent	3(20%)	3(20%)	6(20%)
To very large extent	1(6.7%)	2(13.3%)	2(6.7%)
No information	0%	0%	1(3.3%)

As seen from Table 29, majority of MOOCs did not include the activities that require participants to contribute to the collective's knowledge, rather than merely consume knowledge with 46.7% of both MOOCs as none while 23.3% to some extent, 20% to large extent and 6.7% to very large extent of both MOOCs include the activities that require participants to contribute to the collective knowledge and rather than merely consume knowledge. 3.3% as no information about the activities. From Table 29, we can see that below average of MOOCs courses did not include activities that required participant to contribute to the collective knowledge.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 30. The activities that require learners to build on other participants' submissions.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	10(66%)	7(46.7%)	17(56.7%)
To some extent	1(6.1%)	3(20%)	4(13.3%)
To large extent	4(26.7%)	2(13.3%)	6(20%)
To very large extent	0%	0%	0%
No information	0%	3(20%)	2(6.7%)

As seen from Table 30, majority of the courses did not include the activities that require learners to build on other participants submissions with high percentages of 56.7% overall MOOCs as none while 20% to large extent, 13.3% to some extent included the activities that require learners to build on other participants submissions and 6.7% as no information about the activities. From Table 30, we can see that above average of MOOCs courses did not include activities that required learner to build on other participant submissions.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 31.The activities that require participants to collaborate with other course participants of MOOCs.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	10(66%)	8(53.3%)	18(60%)
To some extent	2(13.3%)	3(20%)	5(16.7%)
To large extent	2(13.3%)	3(20%)	5(16.7%)
To very large extent	0%	0%	0%
No information	1(6.7%)	3(20%)	2(6.7%)

As seen from Table 31, activities that require participants to collaborate with other course participants. 33.4% of both MOOCs included the principles into the courses to large and to some extent while majority of the courses shows that, the principles was not included in both MOOCs with high percentage of 60% MOOCs courses. 6.7% as no information about the activities. From Table 31, we can see that above average of MOOCs courses did not include activities that required participants to collaborate.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 32. Activities that require participants to collaborate with others outside the course of MOOCs.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	12(80%)	9(60%)	21(70%)
To some extent	1%	3(20%)	4(13.3%)
To large extent	0%	0%	0%
To very large extent	0%	0%	0%
No information	9(60%)	3(20%)	5(16.7%)

As seen from Table 32, 13.3% to some extent of MOOCs, require participants to collaborate with others while 70% of both MOOCs did not include the principles into the courses as none while 16.7% has no information about the outside collaboration. From Table 26, we can see that above average of MOOCs courses did not include activities that required learner to collaborate with other participant outside.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 33. The activities that require peer-interaction.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	6(40%)	4(26.7%)	10(33.3%)
To some extent	0%	3(20%)	3(10%)
To large extent	0%	0%	0%
To very large extent	0%	0%	0%
No information	9(60%)	8(53.3%)	17(56.7%)

As seen from Table 33, activities that require that, the peer-interaction groups be comprised of individuals with different backgrounds, opinions, and skills was

included in both MOOCs courses of 10% to some extent while majority of the courses shows that the principles was not included with of 33.3% of both MOOCs and with high percentage of 56.7% as no information about the activities. From Table 33, we can see that above average of MOOCs courses did not have no information about the activities that required peer interactions.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 34**.** Individual contribution to collective knowledge

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**Overall result of MOOCs (N=30)**
None	8(53.3%)	6(40%)	16(53.3%)
To some extent	1(6.1%)	1(6.7%)	2(6.7%)
To large extent	0%	0%	0%
To very large extent	0%	0%	0%
No information	6(40%)	8(53.3%)	12(40%)

As seen from Table 34, both MOOCs of 6.7% clearly identified learner group contribution with low percentage of the courses that included the principles in the course while majority of both 53.3% cMOOCs and xMOOCs did not include the principles into the courses. From Table 34, we can see that above average of MOOCs courses did not include activities that required individual collective knowledge.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 35. Activity options for participants with various learning needs.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	4(26.7%)	6(40%)	20(66.7%)
To some extent	6(40%)	4(26.7%)	0%
To large extent	1(6.7%)	2(13.3%)	3(10%)
To very large extent	2(12.3%)	2(13.3%)	4(13.3%)
No information	2(13.3%)	1(6.7%)	3(10%)

As seen from Table 35, activity options for participants with various learning needs is included in 33.3% both MOOCs with the principles that required various learning needs while 66.7% MOOCs courses did not include the principle on the courses. 10% as no information about the activities. From Table 35, we can see that above average of MOOCs courses did not include activities that required participants with various learning needs.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 36. The resources reused from real-world settings.

Valid case	CMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
None	7(46.7%)	4(26.7%)	11(36.7%)
To some extent	5(33.3%)	1(6.7%)	6(20%)
To large extent	1(6.7%)	3(20%)	4(13%)
To very large extent	1(6.7)	0%	1(3.3%)
No information	1(6.1)	1(6.7%)	8(26.7%)

As seen from Table 36, 36.7% of cMOOCs and xMOOCs did not include the resources reused from real-world settings while 20% to some extent, 13% to large extent and 3.3% to very large extent included resources reuse from real world setting and 26.7% as no information. From Table 36, we can see that below average of MOOCs courses did not include the activity.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 37. Feedback principles.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
Yes	0%	0%	0%
No	11(73.3%)	10(66.7%)	21(70%)
No info	4(26.7%)	5(33.3%)	9(30%)

As seen from Table 37, the result shows that, majority of the courses did not include feedback on activities by the instructor in the courses with 70% cMOOCs and xMOOCs while there is no information on 30% of both MOOCs.

30 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs and xMOOCs.

Table 38. Feedback explanations.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	Overall result of MOOCs (N=30)
Yes	1(6.7%)	0%	6.7%
No	2(13.3%)	5(33.3%)	8(26.7%)
No info	12(80%)	10(66.7%)	22(73.3%)

As seen from Table 38, the result shows that, 73.3% as no information and 26.7% as none did not include feedback explanation on activities by the instructor in the MOOCs courses while 6.7% MOOCs included the feedback explanation in the courses. From Table 38, we can see that no information about the activities with above average of both MOOCs

4.2.1 Instructional design quality of xMOOCs.

15 xMOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and xMOOCs Problem center principles in the Table below.

Table 39. xMOOCs problem centers principles.

Valid	**xMOOCs problem centres principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Real-world problems	1(6.7%)	5(33.3%)	2(13.3%)	2(13.3%)	7(46.7%)
Real world leaners encounter	0%	2(13.3%)	4(26.7%)	2(13.3%)	7(46.7%)
Work place problems	3(20%)	5(33.3%)	3(20%)	1(6.7%)	3(20%)
Ill-structure problems	5(33.3%)	1(6.7%)	1(6.7%)	2(13.3%)	6(40%)
Divergent from one another	3(20%)	5(33.3%)	1(6.7%)	0%	6(40%)
Activities build upon each other's	5(33.3%)	2(13.3%)	3(20%)	1(6.7%)	4(26.7%);8

As seen in Table 39, case 1 with 46.7% indicates that, the xMOOCs did not include activities that are relevant to real world problems. In case 2, 46% indicates that, the problems in the courses typical to those learner will encounter in the real world are included in xMOOCs. In case 3, 33.3% indicate that, the activities in the course that relate to the participants real workplace problem is included in the xMOOCs courses. In case 4, 40% indicate that, there was no information left regarding ill-structure problems of the xMOOCs courses. In case 5, 40% indicate that, there was no information left, regarding the problems divergent from one another. In case 6, 33.3% indicate that, the activities build upon each other was not not included in the xMOOCs courses. From this Table 39, that xMOOCs that was accessed through the Open Education European Networks are not problem centers.

15 xMOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and xMOOCs activation principles according to Activation, Demonstrations, Application and integration principles in the Table 40.

Table 40. xMOOCs activation principles.

Valid	**xMOOCs activations principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Activation					
Prior knowledge	6(40%)	4(26.7%)	2(13.3%)	1(6.7%)	2(13.3%)
Demonstration					
Examples solutions	5(33.3%)	1(6.7%)	3(20%)	0%	6(40%)
Application					
Newly acquired skills	6(40%)	4(26.7%)	2(13.3%)	1(6.7%)	2(13.3%)
Integration					
Integrate new skills into everyday work	6(40%)	3(20%)	0%	2(13.3%)	4(26.7%)

As seen from Table 40, in case 1, 40% indicate that, the activities that attempt to activate learner's relevant prior knowledge is not included in the xMOOCs courses. In case 2, 40% indicates that, there is no information regarding demonstrations examples of problem solution in the xMOOCs courses. In case 3, 40% indicate that, the application example that require learners to apply their newly acquired knowledge and skill are not included in the xMOOCs courses. In case 4, 40% indicates that, the activities that require learners to integrate their new knowledge is not included in the xMOOCs courses. Table 40, generally signifies that activations principles are not adopted in the courses accessed through the Open Educational Europa of Networks.

15 xMOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and xMOOCs Collective and Collaborative principles according to collective knowledge, collaboration principles in the Table 41.

Table 41. Collective knowledge, collaborations of xMOOCs.

Valid	**xMOOCs collective and collaborative principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Collective knowledge					
Learn from each other's	7(46.7%)	3(20%)	3(20%)	1(6.7%)	1(6.7%)
Consumed knowledge	6(40%)	4(26.7%)	3(20%)	1(6.7%)	1(6.7%)
Build on others	5(33.3%)	2(13.3%)	3(20%)	1(6.7%)	4(26.7%)
Collaboration					
Collaborate with other learner	8(53.3%)	3(20%)	3(20%)	0%	1(6.7%)
Outside collaborate	9(60%)	3(20%)	0%	0%	3(20%)
Peer interaction groups	4(26.7%)	3(20%)	0%	0%	8(53.3%)
Clearly identified	6(40%)	1(6.7%)	0%	0%	8(53.3%)

As seen from Table 41, in case 1, 46.7% indicate that, the activities that require participants to learn from each other was not included in the xMOOCs courses. In case 2, 40% indicates that, the activities that require participants to contribute to collective knowledge are not include in the xMOOCs courses. In case 3, 33.3% indicates that, the activities that require learners to build on other participants submission was not included in the xMOOCs courses. In case 4, 53.3% indicates that, the activities that require participants to collaborate with other course participants was not included in the xMOOCs courses. In case 5, 60% indicates that, the activities that required learners to collaborate with others outside the course was not included in the xMOOCs courses. In case 6, 53.3% indicate that, there is no information regarding the courses that comprises with different backgrounds. In case 7, 53.3% indicate that, there was no information regarding individual contribution of each learners. In Table 41, generally signifies that, the collective and collaborative

principles were not adopted in the xMOOCs courses accessed through the Open Educational Europa Networks.

15 xMOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and xMOOCs Differentiations, Authentic and feedback principles in the Table 42.

Table 42**.** Differentiation, Authentic resources and feedback principles.

Valid	**xMOOCs differentiation, Authentic resources and feedback principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Differentiation					
Learning need	6(40%)	4(26.7%)	2(13.3%)	2(13.3%)	1(6.7%)
Authentic resources	-				-
Real world settings	4(26.7%)	1(6.7%)	3(20%)	1(6.7%)	4(26.7%)
Cases	**Feedback principles**				Cases
Feedback	**Yes**	**No**			**No info**
Feedback by instructors	0%	10(66.7%)	0%	0%	5(33.3%)
Feedback explained	0%	5(33.3%)	0%	0%	10(66.7%)

As seen from Table 42, in case 1, 40% indicate that, the activities options for participant with various learning need was not included in the xMOOCs courses. In case 2, 26.7% indicate that, the authentic resources that are reused from real world setting in the xMOOCs are not included. In case 3, 66.7% indicates that, the feedback activities was not included in the xMOOCs courses. In case 4, 66.7% indicate that, there was no information on whether the feedback was properly explained. The Table 42, generally signifies that, differentiation, authentic resources and feedback principles gave no information to the researcher and were actually lacking in the xMOOCs courses accessed through Open Educational Networks.

4.2.2 Instructional design quality of cMOOCs

15 cMOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and cMOOCs Problem center principles in the Table 43.

Table 43. cMOOCs problem centers principles.

Valid	**cMOOCs problem centres principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Real-world problems	2(13.3%)	2(13.3%)	3(20%)	3(20%)	5(33.3%)
Real world leaners encounter	0%	3(20%)	4(26.7%)	2(13.3%)	6(40%)
Work place problems	5(33.3%)	5(33.3%)	3(20%)	1(6.7%)	1(6.7%)
Ill-structure problems	1(6.7%)	1(6.7%)	3(20%)	4(26.7%)	6(40%)
Divergent from one another	0%	6(40%)	1(6.7%)	0%	8(53.3%)
Activities build upon each other's	5(33.3%)	3(20%)	2(13.3%)	4(26.7%)	1(6.7%)

As seen in Table 43, case 1 with 33.3% indicates that, there is no information regarding activities that are relevant to real world problems cMOOCs courses. In case 2, 40% indicates that, there is no information regarding courses that are typical to those learner will encounter in the real world that are in cMOOCs. In case 3, 53.3% indicate that, the activities in the course that relate to the participants real workplace problem is included in the cMOOCs courses. In case 4, 40% indicate that, there was no information left regarding ill-structure problems of the cMOOCs courses. In case 5, 53.3% indicate that, there was no information left, regarding the problems divergent from one another. In case 6, 33.3% indicate that, the activities build upon each other was not included in the cMOOCs courses. From this Table 43,

that cMOOCs that was accessed through the Open Education European Networks are not problem centers.

15 cMOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and cMOOCs activation principles according to Activation, Demonstrations, Application and integration principles in the Table 44.

Table 44. cMOOCs activation principles.

Valid	**cMOOCs activations principles (n=15)**				**Cases**
Case	None	To some extent	To large extent	To very large extent	No info
Activation					
Prior knowledge	6(40%)	4(26.7%)	1(6.7%)	2(13.3%)	2(13.3%)
Demonstration					
Examples solutions	0%	1(6.7%)	4(26.7%)	0%	10(66.7%)
Application					
Newly acquired skills	7(46.7%)	6(40%)	2(13.3%)	0%	0%
Integration					
Integrate new skills into everyday work	6(40%)	2(13.3%)	5(33.3%)	1(6.7%)	1(6.7%)

As seen from Table 44, in case 1, 40% indicate that, the activities that attempt to activate learner's relevant prior knowledge is not included in the cMOOCs courses. In case 2, 66% indicates that, there is no information regarding demonstrations examples of problem solution in the cMOOCs courses. In case 3, 46% indicate that, the application example that require learners to apply their newly acquired knowledge and skill are not included in the cMOOCs courses. In case 4, 40% indicates that, the activities that require learners to integrate their new knowledge is not included in the cMOOCs courses. Table 44 generally signifies, that activations principles are not adopted in the cMOOCs courses accessed through the Open Educational Europa of Networks.

15 cMOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and cMOOCs Collective and Collaborative principles according to collective knowledge, collaboration principles in the Table 45.

Table 45. Collective knowledge, collaborations of cMOOCs.

Valid	**cMOOCs collective and collaborative principles (n=15)**				**Cases**
Case	None	To some extent	To large extent	To very large extent	No info
Collective knowledge					
Learn from each other's	1(6.7%)	1(6.7%)	3(20%)	9(60%)	1(6.7%)
Consumed knowledge	0%	8(53.8%)	3(20%)	3(20%)	1(6.7%)
Build on others	10(66%)	1(6.7%)	4(26.7%)	0%	0%
Collaboration					
Collaborate with other learner	10(66%)	2(13.3%)	2(13.3%)	0%	1(6.7%)
Outside collaborate	12(80%)	1(6.7%)	0%	0%	2(13.3%)
Peer interaction groups	6(40%)	0%	0%	0%	9(60%)
Clearly identified	8(53.3%)	1(6.7%)	0%	0%	6(40%)

As seen from Table 45, in case 1, 60% indicate that, the activities that require participants to learn from each other was included in the cMOOCs courses. In case 2, 53.8% indicates that, the activities that require participants to contribute to collective knowledge are included in the cMOOCs courses. In case 3, 26.7% indicates that, the activities that require learners to build on other participants submission was included in the cMOOCs courses. In case 4, 60% indicates that, the activities that require participants to collaborate with other course participants was not included in the cMOOCs courses. In case 5, 80% indicates that, the activities that required learners to collaborate with others outside the course was not included in the cMOOCs courses. In case 6, 60% indicate that, there is no information regarding the

courses that comprises with different backgrounds. In case 7, 53.3% indicate that, the activities that require individual contribution of each learner was not included. In Table 45, generally signifies that, the collective and collaborative principles were not limited in the cMOOCs courses accessed through the Open Educational Europa Networks.

15 cMOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and cMOOCs Differentiations, Authentic and feedback principles in the Table 46.

Table 46. Differentiation, Authentic resources and feedback principles.

Valid	**cMOOCs differentiation, Authentic resources and feedback principles (n=15)**				**Cases**
Cases	None	To some extent	To large extent	To very large extent	No info
Differentiation					
Learning need	4(26.7%)	6(40%)	1(6.7%)	2(13.3%)	2(13.3%)
Authentic resources					
Real world settings	7(46.7%)	5(33.3%)	1(6.7%)	1(6.7%)	1(6.7%)
Cases	**Feedback principles**				Cases
Feedback	**Yes**	**No**			**No info**
Feedback by instructors	0%	11(73.3%)	0%	0%	4(26.7%)
Feedback explained	1(6.7%)	2(13.3%)	0%	0%	12(80%)

As seen from Table 46, in case 1, 40% indicate that, the activities options for participant with various learning need was included in the cMOOCs courses. In case 2, 46.7% indicate that, the authentic resources that are reused from real world setting in the cMOOCs are not included. In case 3, 73.3% indicates that, the feedback activities was not included in the cMOOCs courses. In case 4, 80% indicate that, there was no information on whether the feedback was properly explained. The Table 46, generally signifies that, differentiation include principle reflected to some extent in cMOOCs courses while authentic resources and feedback principles gave no

information to the researcher and were actually lacking in the cMOOCs courses accessed through Open Educational Networks.

4.3 The differences between open courses of EMU and other university OCs and MOOCs.

57 MOOCs were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU OCs, Other university OCs and xMOOCs.

Table 47. Change that needs to be promoted in the skill set of the learner population.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
Yes	7(46.7%)	3(20%)	0%	0%
No	8(53.3%)	12(80%)	12(100%)	12(100%)

As seen from Table 47, analysis of the courses shows the differences. 46.7% of cMOOCs, 20% of xMOOCs signified that the courses specify the change that needs to be promoted in the skill set of the learner population. 100% courses of EMU and 100% of other University OCs did not include the change that needs to be promoted in the courses. The result from Table 47, deduces that cMOOCs and xMOOCs has lower capacity to improve the skill set of the learner populations while EMU and other university has OCs that promote learners skills set. Invariably majority of all the OCs does not promote learners set skills in the population.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 48**.** The course objectives measurable

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	8(53.3%)	1(6.7%)	7(58.3%)	8(53.3%)
To some extent	4(26.7%)	3(20%)	1(8.3%)	3(20%)
To large extent	0%	3(20%)	2(16.7%)	3(20%)
To very large extent	3(20%)	8(53.3%)	2(16.7%)	0%
No information	0%	0%	0%	1(6.7%)

As seen from Table 48, majority of the courses showed that cMOOCs courses and other university OCs of 53.3%, EMU OCs of 58.3% and xMOOCs of 6.7% courses did not include the extent which the courses objective are measurable. 26.7% of cMOOCs, 53.3% xMOOCs, 16.7% of EMU OCs and 20% of other university OCs show that the courses objectives are measurable to some extent and to very large extent while other University OCs of 6.7% shows that the researcher don't have idea regarding objective information about the course. The result from Table 48, deduces that majority of cMOOCs lack objective while majority of xMOOC includes the course objectives, EMU and other university OCs on the other hand lacks the availability of course objectives that are accessed through the Open Educational Europa Networks.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 49. The course materials.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	2(13.3%)	1(6.7%)	3(25%)	3(20%)
To some extent	3(20%)	1(6.7%)	2(16.7%)	5(33.3%)
To large extent	2(13%)	6(40%)	5(41.7%)	5(33.3%)
To very large extent	7(46.7%)	7(46.7%)	2(16.7%)	2(13.3%)
No information	1(6.7%)	0%	0%	0%

As seen from Table 49, 2 cMOOCs of (13.3%) courses, 1(6.7%) of xMOOCs, 3 EMU OCs of (25%) courses and 20% of other University OCs signifies that none of the courses included the principles of the course materials that are organized. Majority of the courses shows that the course materials are well organize to large extent with 2(13%) of cMOOCs, 6(40%) of xMOOCs, (41.7%) of EMU OCs and 5(33.3%) of other University OCs. No information about the course with 1(6.7%) of cMOOCs. The result from Table 49, explains the majority of cMOOCs and xMOOC contains course materials principles while EMU and other university OCs almost evenly includes the course materials principles that are accessed through the Open Educational Europa Networks.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 50. The course requirements.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
Yes	10(66.7%)	7(46.7%)	7(58.3%)	9(60%)
No	5(33.3%)	8(53.3%)	5(41.7%)	6(40%)

As seen from Table 50, majority of the courses show that the course requirement are outlined clearly with 10cMOOCs of (66.7%) courses, 7xMOOCs of (46.7%) courses, 58.3% of EMU OCs and 9(60%) of other University OCs. 5(33.3%) of cMOOCs, 8(53.3%) of xMOOCs, 5(41.7%) of EMU OCs and of other University OCs did not include the course requirement in some of the courses. The result from Table 50, explain that more than average of the selected sample of cMOOCs includes course

requirement while a little bit above average of the selected sample of xMOOCs does not include the course requirement. EMU and other university OCs has its majority of its selected sample including the course requirement that are accessed through the Open Educational Europa Networks.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 51. The course description

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
Yes	7(46.7%)	7(46.7%)	11(91.7%)	13(86.7)
No	7(46.7%)	8(53.3%)	1(8.3%)	2(13.3%)
No info	1%	0%	0%	0%

As seen from Table 51, the result show that, majority of the courses include the course descriptions clearly on 7(46.7%) cMOOCs courses, 7(46%) xMOOCs courses, 11(91.1%) EMU OCs and 7(46.7%) of other University OCs. The course requirement was not included in 7cMOOCs of (46%), 8xMOOCs of (53.3%), 1 EMU OCs of (8.3%) and 2 other university OCs courses. Findings from Table 51, displays that half of cMOOCs and xMOOCs of the selected samples includes courses descriptions while the remaining does not. EMU and other university OCs highly include the course descriptions that were accessed through Open Educational Europa Networks.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 52. The course objectives relevant to real-world problems

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	2(13.3%)	1(6.7%)	6(50%)	6(40%)
To some extent	2(13.3%)	5(33.3%)	3(25%)	6(40%)
To large extent	3(20%)	2(13.3%)	1(8.3%)	1(6.7%)
To very large extent	3(20%)	2(13.3%)	0%	0%
No information	5(33.3%)	7(46.7%)	2(16.7%)	2(13.3%)

As seen from Table 52, the course objective are relevant to real-world problem shows that 2(13.3%) of cMOOCs, 1(6.7%) of xMOOCs, 6(40%) of EMU OCs and 6(40%) of other University OCs reflects none of the real world problem on the courses. 20(35.3%) courses indicate the objectives of the real world problems on the course. With no information on 5cMOOCs, 7xMOOCs, 2 EMU, and other University OCs on the courses. Findings from Table 52, show that majority of the selected sample for cMOOCs and xMOOCs includes courses objectives that are relevant to real world problems while EMU OCs has majority of its lacking the relevant course objectives that are important to real world. Half of the majority of the selected samples of other university OCs lacks the course objectives relevant to real world problems while the other half include the relevant objectives to real world problems. Some courses provided no information on the availability of the relevant course objectives that are useful to real life situations.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 53. The problems in the course typical of those learners will encounter in the real world.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	0%	0%	2(16.7%)	5(33.3%)
To some extent	3(20%)	2(13.3%)	5(41.7%)	6(40%)
To large extent	4(26.7%)	4(26.7%)	1(8.3%)	1(6.7%)
To very large extent	2(13.3%)	2(13.3%)	0%	0%
No information	6(40%)	7(46.7%)	4(33.3%)	3(20%)

As seen from Table 53, majority of the courses include the problems in the course typical of those learner will encounter in the real world with 4cMOOCs and 4xMOOCs of (26.7%) To large extent of the courses. EMU OCs with 5(41.7%) and other university OCs having 6(40%) courses that learner will encounter in the real world. No information about the problems that the learner will encounter in the real world with 6(40%) cMOOCs courses and 7(46.7%) xMOOCs. EMU OCs and other University OCs having 4(33.3%) and 3(20%) courses have no information about the principles. Findings from Table 53, shows that majority of the selected samples of cMOOCs and xMOOCs courses contains problems in the course typical to those learners will encounter in the real world while half of the selected sample of EMU other university OCs has included the problems in the course typical to those learners will encounter in the real world. Most of the selected courses from cMOOCs, xMOOCs, EMU and other university OCs provided no information and lacks the problems of the course typical of to those learner will encounter in real world.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 54. The course that relate to the participants' real workplace problems.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	0%	3(20%)	0%	2(13.3%)
To some extent	3(20%)	5(33.3%)	3(25%)	2(13.3%)
To large extent	4(26.7%)	3(20%)	1(1.8%)	2(13.3%)
To very large extent	2(13.3%)	1(6.7%)	2(16.7%)	0%
No information	6(40%)	3(20%)	6(50%)	7(46.7%)

As seen from Table 54, the activities shows that the course relate to the participants real workplace problems is included in 9 cMOOCs courses, with no information on 6 courses. 12 courses in xMOOCs included the activities that relate to the participant real workplace problems and 20% no information on 3 courses. 25% to some extent in EMU open courses included the principles on the courses, while 50% courses has no information about the principles which the researcher has no clue about it. There is no information included the principles on the 2(13.3%) courses and 7(46.7%) courses of the other University OCs. Finding from Table 54, show that majority of the selected samples of cMOOCs and xMOOCs includes courses that relates to participant real workplace. EMU and other university OCs has some of its selected sample including the courses that relates to participant real work place problems. Most of the remaining course does not contain and left no information about the courses that relates to the participant real work place problems.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 55. Problems ill-structured – i.e. have more than one correct solution.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	1(6.7%)	5(33.3%)	5(41.7%)	2(13.3%)
To some extent	1(6.7%)	1(6.7%)	3(25%)	2(13.3%)
To large extent	3(20%)	1(6.7%)	2(16.7%)	2(13.3%)
To very large extent	4(26.7%)	2(13.3%)	0%	0%
No information	6(40%)	6(40%)	2(16.7%)	9(60%)

As seen from Table 55, 6.7% cMOOCs, 33.3% xMOOCs, 41.7% EMU OCs and 13.3% other university OCs did not include the extent the problems are ill-structure in the courses. To some extent with 6.7% cMOOCs and xMOOCs, 25% EMU OCs and 2(13.3%) of other University OCs more than one correction on the courses. To large extent with 20% cMOOCs, 6.7% xMOOCs, 16.7% EMU OCs, and 13.3% other university OCs included the problem ill structure on the courses. To very large extent shows that the principle reflected high in 26.7% cMOOCs, and 13.3% xMOOCs courses. While No information that show no clue by the researcher in the percentages of the courses of xMOOCs, cMOOCs, EMU OCs and other University OCs. Finding from Table 55, shows that majority of the selected sample of cMOOCs are problem ill-structured while some of xMOOCs, EMU and other university OCs are also problem structured. Most courses in all the selected MOOCs and OCs gave no information and lacked problems ill-structure in the courses.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 56. The problems differences from one another.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
None	0%	3(20%)	3(25%)	5(33.3%)
To some extent	6(40%)	5(33.3%)	0%	0%
To large extent	1(6.7%)	1(6.7%)	2(16.7%)	2(13.3%)
To very large extent	0%	0%	0%	0%
No information	8(53.3%)	6(40%)	7(58.3%)	8(58.3%)

As seen from Table 56, to some extent on 6.7% cMOOCs, 5(33.3%) xMOOCs courses include problem that are divergent from one another and to large extent 2(16.7%) EMU OCs and 2(13.3%) other university OCs show that's the problem are divergent from one another to a large extent. While high percentages of all the course show No information about the courses. Findings from Table 56, majority of the selected samples of cMOOCs, EMU and other university OCs gave no information about the problems that are different from one another in the courses while xMOOC selected samples courses has half of its majority including the problems that are different from one another in the courses and the remaining giving no information on the problem differences. Majority of the samples of the selected OCs of cMOOC, EMU and other university gave no information about the problems differences from one another.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 57. The activities built upon each other.

Valid case	cMOOCs (N=15)	cMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	5(33.3%)	5(33.3%)	2(16.7%)	3(20%)
To some extent	3(20%)	2(13.3%)	1(1.8%)	1(6.7%)
To large extent	2(13.3%)	3(20%)	1(1.8%)	1(6.7%)
To very large extent	4(26.7%)	1(6.7%)	0%	0%
No information	1(6.7%)	4(26.7%)	8(66.7%)	10(66.7%)

As seen from Table 57, 5(33.3%) cMOOCs and xMOOCs, 2(16.7%) EMU OCs and 3(20%) other University OCs show None of the activities is built upon each other courses 3(20%), 2(13.3%), 1(1.8%) and 1(6.7%) of the cMOOCs, xMOOCs, EMU OCs and other university courses include To some extent that activities are built upon each other. To very large extent show 5 courses both cMOOCs and xMOOCs courses include the activities to a very large extent. Majority of 8(66.7%) of EMU OCs and 10(66.7%) of other university show no information about the principles about activities build upon each other. Finding from Table 57, shows that, the majority of the selected samples of EMU and other universities gave no information about the activities in the courses build upon each other's while majority of the selected samples of cMOOCs courses include activities that are built upon each other's.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 58. The activities that attempt to activate learners' relevant prior knowledge.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	6(40%)	6(40%)	3(25%)	4(26.7%)
To some extent	4(26.7%)	4(26.7%)	2(16.7%)	1(6.7%)
To large extent	1(6.7%)	2(13.3%)	1(8.3%)	1(6.7%)
To very large extent	2(13.3%)	1(6.7%)	2(16.7%)	2(13.3%)
No information	2(13.3%)	2(13.3%)	4(33.3%)	7(46.7%)

As seen from Table 58, the extent that the activities attempt to activate learner's relevant prior knowledge or experience was not included in both 6(40%) cMOOCs and xMOOCs, 3(25%) EMU OCs and 4(26.7%) other universities OCs as None. The extent for the activities to activate learner's relevant prior knowledge was included to a very large extent in 2(13.3%) cMOOCs, 1(6.7%) xMOOCs, 2((16.7%) EMU OCs and 2(13.3%) other OCs universities. With No information about the principles in 15/57 of the courses. Findings from Table 58, shows that half of the result of the selected samples of cMOOCs, xMOOCs and EMU OCs includes the activities that attempt to activate learners relevant prior knowledge while the other half gave no information and lacks the activities that attempt to activate learners relevant prior knowledge. On the other hands, other university OCs has its majority of the selected sample that gave out no information's and lack the activities that attempt to activate learner prior knowledge.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other univeristy and xMOOCs.

Table 59**.** Solutions that represent a range of quality from excellent to poor examples.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
None	0%	5(32.3%)	6(50%)	10(66.7%)
To some extent	1(6.7%)	1(6.7%)	3(25%)	3(20%)
To large extent	4(26.7%)	3(20%)	0%	0%
To very large extent	0%	0%	0%	0%
No information	10(66.7%)	6(40%)	3(25%)	2(33.3%)

As seen from Table 59, examples of solution where not included in 5(32.3%) xMOOCs, 6(50%) EMU OCs and 10(66.7%) other universities OCs which is none. And the example of solutions that represent a range of quality from excellent example to poor examples where included in 4(26.7%) cMOOCs, 3(20%) xMOOCs to large extent and 3(25%) EMU OCs and 3(20%) other universities OCs where included To some extent. No idea about the principles on 10(66.7%) cMOOCs, 6(40%) xMOOCs, 3(25%) EMU OCs and 2(33.3%) other universities OCs as No information. Findings from Table 59, shows that majority of the selected samples of cMOOCs, xMOOCs, and other university OCs gave out no information and lack the solution that represent a range of quality from excellent to poor examples. Half of the selected sample of EMU OCs, lacks the solutions that represent the range of quality from excellent to poor examples.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 60**.** Activities that require learners to apply their newly acquired knowledge.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
None	7(46.7%)	6(40%)	5(41.7%)	8(53.3%)
To some extent	6(40%)	4(26.7%)	1(16.7%)	1(6.7%)
To large extent	2(13.3%)	2(13.3%)	0%	0%
To very large extent	0%	1(6.7%)	3(25%)	3(20%)
No information	0%	2(13.3%)	0%	3(20%)

As seen from Table 60, majority of the courses did not include activities that will require learners to apply their newly acquired knowledge or skill on 7(46.7%) cMOOCs, 6(40%) xMOOCs, 5(41.7%) EMU OCs and 8(53.3%) other universities OCs as none. That signifies that the principles is included in the courses. To some extent show that few percentage of the courses included the activities that require leaners to apply their newly acquired knowledge or skill with 6(40%) of cMOOCs, 4(26.7%) of xMOOCs, 1(16.7%) of EMU OCs and 1(6.7%) of other universities OCs. Finding from Table 60, shows that majority of the selected samples of cMOOCs, EMU and other university OCs lack the activities that require learners to apply their newly acquired knowledge. Majority of xMOOCs selected sample include the activities that require learners to apply their newly acquired knowledge.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 61. The activities that require learners to integrate the new knowledge or skill into their everyday work.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	6(40%)	6(40%)	6(50%)	9(60%)
To some extent	2(13.3%)	3(20%)	3(25%)	2(13.3%)
To large extent	5(13.3%)	0%	0%	0%
To very large extent	1(6.7%)	2(13.3%)	0%	0%
No information	1(6.7%)	4(26.7%)	3(25%)	4(26.7%)

As seen in Table 61, activities require learners to integrate the new knowledge or skill into everyday work which 5(13.3%) cMOOCs, 3(20%) xMOOCs, 3(25%) EMU OCs and 2(13.3%) of other universities OCs included the principles into the courses. Majority of the courses shows that the principles was not included with high percentage of 6(40%) of cMOOCs and xMOOCs, 6(50%) of EMU OCs and 9(60%) of other universities OCs. And few percentage of the course shows that, there is no clue of the information by the researcher. Findings from Table 61, shows that majority of the selected samples of cMOOCs include the activities that required learners to integrate their new knowledge or skills into their everyday work. Majority of selected samples of xMOOCs, EMU and other university OCs lack the activities that required learners to integrate their skills into their everyday works also most of the selected samples of cMOOCs lack the activities that required learners to integrate their skills into everyday work.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 62. The activities that require participants to learn from each other.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	1(6.7%)	7(46.7%)	4(33.3%)	8(53.3%)
To some extent	1(6.7%)	3(20%)	1(8.3%)	1(6.7%)
To large extent	3(20%)	3(20%)	2(16.7%)	2(13.3%)
To very large extent	9(60%)	1(6.7%)	0%	0%
No information	1(6.7%)	1(6.7%)	5(41.7%)	4(26.7%)

As seen from Table 62, few courses, the researcher could not identify the principles on the courses that is reflected as No information on the table. Activities that require participants to learn from each other's is included in cMOOCs with, To very large extent with 9(60%) courses with the principles that required learning from each other's, xMOOCs with To some extent and large extent having same percentage 3(20%) and EMU OCs courses with 2(16.7%) courses and 13.3% other universities OCs show that there is activities that require learners to learn from each other's. majority of the courses of xMOOcs and EMU OCs did not include the principle on the courses. With high percentage of 7(46.7%) xMOOCs and 8(53.3%) of other universities OCs and EMU OCs with 4(33.3%) of courses having None. cMOOCs courses score high percentage on the principles with 9(60%) courses. Finding from Table 62, shows that majority of the selected samples of cMOOCs and xMOOCs include the activities that required participants to learn from each other's while the most of the selected samples of other university OCs and xMOOCs lack the activities that required participants to learn from each other's. Some of the selected courses also provided no information on the activities that require participants to learn from each other's.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other univeristy and xMOOCs.

Table 63. The activities that require participants to contribute to the collective knowledge, rather than merely consume knowledge.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	8(53.3%)	6(40%)	8(66.7%)	12(80%)
To some extent	3(20%)	4(26.7%)	0%	0%
To large extent	3(20%)	3(20%)	0%	0%
To very large extent	1(6.7%)	2(13.3%)	0%	0%
No information	0%	0%	4(33.3%)	3(20%)

As seen from Table 63, majority of cMOOCs, EMU OCs and other Universities OCs did not include the activities that require participants to contribute to the collectives knowledge, rather than merely consume knowledge. With high percentages of the courses 8(66.7%) of EMU OCs and 12(80%) of other universities OCs and 8(53.3%) of cMOOCs. while 4(26.7%) of xMOOCs show that to some extent they include the activities that require participants to contribute to the collective knowledge and rather than merely consume knowledge. Results of Table 63, shows that majority of the selected samples of MOOCs and OCs courses lacks the activities that required participants to contribute to the collective's knowledge rather than merely consumed knowledge. Majority of xMOOCs include the activities that required participants to contribute to collective's knowledge.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 64. The activities that require learners to build on other participants' submissions

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	10(66%)	7(46.7%)	7(58.3%)	9(60%)
To some extent	1(6.1%)	3(20%)	0%	0%
To large extent	4(26.7%)	2(13.3%)	2(16.7%)	2(13.3%)
To very large extent	0%	0%	0%	0%
No information	0%	3(20%)	3(25%)	4(26.7%)

As seen from Table 64, majority of the courses did not include activities that require learners to build on other participants submissions with high percentages of cMOOCs 10(66%), xMOOCs 7(46.7%), EMU OCs of 7(58.3%) and 9(60%) of other universities that is signified as none. cMOOCs, xMOOCs, EMU OCs and other universities has percentage of 4(26.7%), 2(13.3%), 2(16.7), and 2(13.3%) to large extent which include the extent that activities require learners to build on other participants submissions. Results from Table 64, show that's majority of the selected samples of MOOCs and OCs lacks the activities that required learners to build on other participants solutions. Most courses of, cMOOCs and xMOOCs selected samples include the activities that required learners.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 65. The activities that require participants to collaborate with other course participants

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	10(66%)	8(53.3%)	5(41.7%)	9(60%)
To some extent	2(13.3%)	3(20%)	4(33.3%)	4(26.7%)
To large extent	2(13.3%)	3(20%)	0%	0%
To very large extent	0%	0%	0%	0%
No information	1(6.7%)	3(20%)	3(25%)	2(13.3%)

As seen from Table 65, Activities require participants to collaborate with other course participants. Which 2(13.3%) cMOOCs, 3(20%) xMOOCs, 4(33.3%) EMU OCs and 4(26.7%) of other universities OCs included the principles into the courses. Majority of the courses shows that the principles was not included with high percentage of 10(66%) of cMOOCs, 8(53.3%) of xMOOCs, 5(41.7%) of EMU OCs and 9(60%) of other universities OCs. And few percentage of the course shows that, there is no clue of the information by the researcher. Finding from Table 65, shows that majority of the selected samples of MOOCs and OCs lack the activities that required participants to collaborate with other course participants while some include such activities. Others gave no information about the activities that required participants to collaborate.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 66. The activities require participants to collaborate with others outside the course.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
None	12(80%)	9(60%)	11(91.7%)	13(83.7%)
To some extent	0%	3(20%)	0%	0%
To large extent	0%	0%	0%	0%
To very large extent	0%	0%	0%	0%
No information	9(60%)	3(20%)	1(8.3%)	2(13.3%)

As seen from Table 66, 3(20%) of xMOOCs require participants to collaborate with others outside the course. 12(80%) cMOOCs, 9(60%) xMOOCs, 11(91.7%) EMU

OCs and 13(83.7%) of other universities OCs did not include the principles into the courses. Majority of the courses shows that the principles were not included with high percentage. And few percentage of the course shows that, there is no clue of the information by the researcher. Finding from Table 66, shows that majority of the selected samples of MOOCs and OCs lack the activities of that required participants to collaborate with other outside the course while gave no information about the activity.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 67. The activities that require that the peer-interaction groups be comprised of individuals with different background.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
None	6(40%)	4(26.7%)	7(58.3%)	10(66.7%)
To some extent		3(20%)	0%	0%
To large extent	0%	0%	0%	0%
To very large extent	0%	0%	0%	0%
No information	9(60%)	8(53.3%)	5(41.7%)	5(33.3%)

As seen from Table 67, activities require that the peer-interaction groups be comprised of individuals with different backgrounds, opinions, and skills was included in 3(20%) xMOOCs courses. Majority of the courses shows that the principles was not included with high percentage of 6(40%) of cMOOCs, 4(26.7%) of xMOOCs, 7(58.3%) of EMU OCs and 10(66.7%) of other universities OCs. And below average of the course shows that, there is no clue of the information by the researcher. Finding from Table 67, shows that majority of the selected samples of

cMOOCs and xMOOCs gave no information about the activities that requires peer interactions and EMU and other university did not include such activities.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 68. Individual contribution.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
None	8(53.3%)	6(40%)	7(58.3%)	10(66.7%)
To some extent	1(6.1%)	1(6.7%)	0%	0%
To large extent	0%	0%	5(41.7%)	0%
To very large extent	0%	0%	0%	0%
No information	6(40%)	8(53.3%)	3(25%)	5(33.3%)

As seen from Table 68, 1(6.1%) of both cMOOCs and xMOOCs clearly identified learner of the group contribution with low percentage of the course that include the principles in the course. Majority of the courses 8(53%) cMOOCs, 6(40%) xMOOCs, 7(58.3%) EMU OCs and 10(66.7%) of other universities OCs did not include the principles into the courses. Majority of the courses shows that the principles was not included with high percentage. And below average of the course shows that, there is no clue of the information by the researcher. Findings from Table 68, shows that majority of the selected sample of cMOOCs, EMU and other universities OCs lack individual contributions and also gave out no information about individuals contribution. Majority of xMOOCs courses also gave out no information.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, OTU and xMOOCs.

Table 69. Activity options for participants with various learning needs.

Valid case	cMOOCs (N=15)	xMOOCs (N=15)	EMU OCs (N=12)	Other University OCs (N=15)
None	4(26.7%)	6(40%)	7(58.3%)	11(73%)
To some extent	6(40%)	4(26.7%)	0%	1(1.6%)
To large extent	1(6.7%)	2(13.3%)	1(8.3%)	2(13.3%)
To very large extent	2(12.3%)	2(13.3%)	2(16.7%)	0%
No information	2(13.3%)	1(6.7%)	2(16.7%)	1(6.7%)

As seen from Table 69, few courses, the researcher could not identify what extent are there activity options for participants with various learning needs on the table with no information. Activity options for participants with various learning needs is included in cMOOCs with, To large extent with 6(40%) courses with the principles that required various learning needs, xMOOCs with To some extent and large extent having 4(26.7%)/2(13.3). EMU OCs courses with 2(16.7%) courses and 13.3% other universities OCs show that there is activities that require learners with various need. majority of the courses of xMOOCs and EMU OCs did not include the principle on the courses. EMU OCs with 7(58.3%) of courses having none. Finding from Table 69, shows that majority of the selected sample of EMU and other university OCs lacks the activities option for participants with various learning need. While most courses of the selected samples of cMOOCs and xMOOCs includes the activities options for the participants with various learning needs.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 70**.** The resources reused from real-world settings.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
None	7(46.7%)	4(26.7%)	3(25%)	5(33.3%)
To some extent	5(33.3%)	1(6.7%)	1(8.3%)	1(6.7%)
To large extent	1(6.7%)	3(20%)	3(25%)	3(20%)
To very large extent	1(6.7)	6(40)%	0%	0%
No information	1(6.1)	1(6.7%)	5(41%)	6(40%)

As seen from Table 70, majority of cMOOCs, EMU OCs and other Universities OCs did not include the resources reused from real-world settings. With percentages of the courses 3(25%) of EMU OCs and 5(33.3%) of other universities OCs and 7(46.7%) of cMOOCs. while 5(33.3%) of cMOOCs show that, to some extent they include the resources reused from real-world settings. Finding from Table 70, shows that majority of the selected samples of cMOOCs lack the resources reuse from real world setting. Majority of xMOOCs also include the resources reuse from real world settings. Most courses especially EMU and other universities gave no information.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 71. Feedback on activities.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
Yes	0%	0%	3(25%)	2(13.3%)
No	11(73.3%)	10(66.7%)	6(50%)	9(60%)
No info	4(26.7%)	5(33.3%)	3(25%)	4(26.7)

As seen from Table 71, the result shows that, majority of the courses did not include feedback on activities by the instructor in the course 11(73.3%) cMOOCs courses, 10(66.7%) xMOOCs courses, 6(50%) EMU OCs and 9(60%) of other University OCs. The course feedback was included in 3 EMU OCs of (25%) and 2 other university OCs courses. Finding from table 71, shows that majority of the selected samples of MOOCs and OCs has no feedback on activities and most gave no information on the activities.

57 courses were accessed through the Open Educational Europa Networks, below can be found the cases and overall results of cMOOCs, EMU, Other university and xMOOCs.

Table 72. Feedback principles.

Valid case	**cMOOCs (N=15)**	**xMOOCs (N=15)**	**EMU OCs (N=12)**	**Other University OCs (N=15)**
Yes	1(6.7%)	0%	0%	0%
No	2(13.3%)	5(33.3%)	4(33.3%)	5(33%)
No info	12(80%)	10(66.7%)	8(66.7%)	10(66.7%)

As seen from Table 72, the result shows that, majority of the courses did not include feedback explanation on activities by the instructor in the courses. 2(13.3%) cMOOCs courses, 5(33.3%) xMOOCs courses, 4(33.3%) EMU OCs and 5(33%) of other University OCs did not include the feedback principles. Findings of Table 72, shows that majority of the selected samples of MOOCs and OCs gave no information about feedback principles while most of them has no feedback principles.

Chapter 5

CONCLUSION

The study examines the instructional quality of OCs and MOOCs. The analysis consisted of 57 courses of MOOCs and OCs that were group into 15xMOOCs, 15cMOOCs, 15 Other Universities OCs and 12 EMU OCs. Most of the courses applied only few of the principles on the courses. Data were gathered through an inventory and were analyzed using techniques of analysis. The instructional quality design of each courses were analyzed using set criteria of first principles of instructions. Most of the analyzed courses showed limited evidence of the first principles of instruction and some showed none existence of the principles of instruction in the courses. The courses were accessed through the Open Education of European Networks. Not all the courses implemented the first principles of instruction, while some of the courses did not reflect any of the principles to the course. Firstly, the courses were examine whether or not the courses specified learning objectives and determine the extent to which course objectives were measurable. Secondly, the course were analyzed whether or not the course had specific learning outcome, that is , what the learner will be able to do upon completion of the courses, Thirdly the course were analyzed whether the extent to which course materials were well organized or not. Fourthly, the course were determine whether or not the course requirement and the overall description were clearly outline.

EMU OCs, score low point in the problem center principles, were out of the 12 OCs only 4 courses had real world problem were learner can practice and solve examples that are related to the course. EMU OCs, include problems that learners will encounter in the real world setting, were the course specified what learner will do after the complete the course. The activations principles of EMU OCs score low point, were 5 out of 12 EMU OCs included, that learner should have a basics background on a particular course before enrolling on the course. The demonstration principle score is low point in EMU OCs, only 3 out of the 12 courses show that the instructions demonstrate what to be learned rather than merely telling information about what is to be learned. Collective knowledge and collaborations principles reflect low point in EMU OCs. Where 3 out of 12 EMU OCs include that learners should learn from each other. 12 out of the 12 EMU OCs did not include sharing of knowledge within participant, where learner will work as a team and everyone will share what they have learned. Collaborating with other learners outside the course shows that majority of the EMU OCs did not include the principles with 33.3% without the principles. 50% of EMU OCs did not include feedback principles where the instructor will give feedback after each problem solving.

5.1 Recommendations

Based on the results, EMU OCs lacks the quality of instructional principle that shows 50% of the courses did not include feedback on the course activities. Therefore, the courses need to be improved using the first principle of instructions. The ten principles are fundamental criteria of instructional design quality that needs to be applied for the evaluations of any form of structure courses. Although these recommendations were offered for online courses in mind that they may also be useful for MOOCs and OCs in general, considering that most of the learners in the

current study are involved in technical areas such as information technology. The future studies of EMU could use these principles to carry out systematic comparative studies of instructional quality of different types of courses and should investigate the instructional design materials and experiences effectively using the principles.

Practical examples should be demonstrated either in video, pictures or audio format and should be included in the course materials. Feedback information, inform of email should be included so that learner will be motivated after each task is completed. Certain recommendations or further research and possible improvements in practice of online courses can be made in the future using the first principles of instruction.

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APPENDICES

Appendix A: Inventory

SECTION 1. COURSE DETAILS

1.1. Course name:
1.2. Course dates:

1.3. Course website:
1.4. Course type: ☐ cMOOCs ☐ xMOOCs OCs ☐

1.5. Course platform:

1.6. Course director:
1.7. Date of analysis:

SECTION 2. OBJECTIVES AND ORGANISATION

2.1. Does the course specify the learner population that will engage in the course?
Yes ☐ No ☐

2.2. Does the course specify the change that needs to be promoted in the skill set of the learner population?
Yes ☐ No ☐

2.3. To what extent are the course objectives measurable?
None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/A ☐ N/I ☐

2.4. To what extent are the course materials well organised?
None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I

2.5. Are the course requirements clearly outlined?
Yes ☐ No ☐

2.6. Is the course description clear?
Yes ☐ No ☐

SECTION 3. FIRST PRINCIPLES

3.1. To what extent are the course objectives relevant to real-world problems?
None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/A ☐ N/I ☐

3.2. To what extent are the problems in the course typical of those learners will

encounter in the real world?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/A ☐ N/I ☐

3.3. To what extent do the activities in the course relate to the participants' real workplace problems?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.4. To what extent are the problems ill-structured – i.e have more than one correct solution?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/A ☐ N/I ☐

3.5. To what extent are the problems divergent from one another?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/A ☐ N/I

3.6. Are there examples of problem solutions?

Yes ☐ No ☐ N/A ☐

3.7. If there are examples of solutions, to what extent do these solutions represent a range of quality from excellent examples to poor examples?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/A ☐ N/I ☐

3.8. To what extent are the resources reused from real-world settings?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.9. To what extent do the activities build upon each other?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.10. To what extent do the activities attempt to activate learners' relevant prior knowledge or experience?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.11. To what extent do the activities require learners to apply their newly acquired knowledge or skill?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.12. To what extent do the activities require learners to integrate the new knowledge or skill into their everyday work?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.13. To what extent are there activity options for participants with various learning needs?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.14. To what extent do the activities require participants to learn from each other?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.15. To what extent do the activities require participants to contribute to the collective knowledge, rather than merely consume knowledge

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.16. To what extent do the activities require learners to build on other participants' submissions?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.17. To what extent do the activities require participants to collaborate with other course participants?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.18. To what extent do the activities require participants to collaborate with others outside the course?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/I ☐

3.19. To what extent do the activities require that the peer-interaction groups be comprised of individuals with different backgrounds, opinions, and skills?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/A ☐ N/I ☐

3.20. To what extent can the individual contribution of each learner in the group be clearly identified?

None ☐ To some extent ☐ To large extent ☐ To very large extent ☐ N/A ☐ N/I ☐

3.21. Is there feedback on activities by the instructor(s) in this course?

Yes ☐ No ☐

3.22. If there is feedback, is the way feedback will be provided clearly explained to the participants?

Yes ☐ No ☐ N/A ☐

3.23. Are the peer-interaction groups given specific directions for interaction?
Yes ☐ No ☐ N/A ☐

3.24. Does each member of a peer-interaction group have a specific role to play?
Yes ☐ No ☐ N/A ☐

Appendix B: List of OCs and MOOCs included in the study

No	University name	**Topic**	**Website**	**platforms**
1	EMU	Thermodynamics	http://openeducationeuropa.eu/en/course/thermodynamics	Emu
2	EMU	Intro to robotic	http://openeducationeuropa.eu/en/course/intro-robotics	Emu
3	EMU	Communication-systems-II	http://openeducationeuropa.eu/en/course/communication-systems-ii	Emu
4	EMU	Circuits-and-systems-analysis	http://openeducationeuropa.eu/en/course/circuits-and-systems-analysis	Emu
5	EMU	Introduction-logic-designdigital-logic-design-I	http://openeducationeuropa.eu/en/course/introduction-logic-designdigital-logic-design-i	Emu
6	EMU	Circuit-theory-II	http://openeducationeuropa.eu/en/course/circuit-theory-ii	Emu
7	EMU	Advanced-heat-transfer	http://openeducationeuropa.eu/en/course/advanced-heat-transfer	Emu
8	EMU	Dynamics-machinery	http://openeducationeuropa.eu/en/course/dynamics-machinery	Emu
9	Emu	Communications-systems-I	http://openeducationeuropa.eu/en/course/communications-systems-i	Emu
10	EMU	Performance-analysis-computer-systems-and-networks	http://openeducationeuropa.eu/en/course/performance-analysis-computer-systems-and-networks	Emu
11	EMU	Theories-personality	http://openeducationeuropa.eu/en/course/theories-personality	Emu
12	EMU	Introduction-psychology-II	http://openeducationeuropa.eu/en/course/introduction-	Emu

			psychology-ii	
13	METU	Systems-engineering	http://openeducation europa.eu/en/course/ systems-engineering	METU
14	METU	Fundamentals-electrical-and-electronics-engineering	http://openeducation europa.eu/en/course/ fundamentals-electrical-and-electronics-engineering	METU
15	METU	Understanding-social-behavior	http://ocw.utm.my/course/view.php?id=30http://openeducationeuropa.eu/en/course/understanding-social-behavior	METU
16	METU	Educational-psychology	http://openeducation europa.eu/en/course/ educational-psychology	METU
17	Delft university technology	Electrical-machines-and-drives	http://openeducation europa.eu/en/course/ electrical-machines-and-drives	DELFT
18	Università di Napoli Federico II	Digital-communication	http://openeducation europa.eu/en/course/ digital-communication	UNF
19	Universiti Teknologi Malaysia	Programing language1	http://openeducation europa.eu/en/course/ non-equilibrium-thermodynamics	UTM
20	Delft university technology	Non-equilibrium-thermodynamics	http://ocw.vu.edu.pk/CourseDetails.aspx?cat=Computer+Science%2fInformation+Technology+&course=CS201	DELFT
21	Virtual university of Pakistan	Digital logic design	http://ocw.vu.edu.pk/ CourseDetails.aspx? cat=Computer+Science%2fInformation+Technology+&course=CS302	VU
22	Dixie State College of Utah	Calculus 1	http://ocw.dixie.edu/mathematics/calculus-i	DIXIE

23	METU	Electromagnetic Theory	http://ocw.metu.edu.tr/course/view.php?id=56	METU
24	New Jersey Institute of Technology	Circuit Analysis: Transform Methods	http://ocw.njit.edu/nce/ecet/ecet-300/index.php	Njit
25	Universiti Teknologi Malaysia	Data communication & switching systems	http://ocw.utm.my/course/view.php?id=7	Utm
26	Universiti Teknologi Malaysia	Introduction to biotechnology	http://ocw.utm.my/course/view.php?id=73	Utm
27	Universiti Teknologi Malaysia	Theory electromagnetic	http://ocw.utm.my/course/view.php?id=213	Utm
28	cMOOCs	Digital Logic and Computer Organization	https://www.oercommons.org/courses/digital-logic-and-computer-organization	MIT
29	cMOOCs	Circuit theory	https://www.oercommons.org/courses/circuits	Openstax
30	cMOOCs	Computer Networks	https://share.coursera.org/wiki/index.php/Comnetworks:Main	Wiki
31	cMOOCs	Introduction to Psychology	https://share.coursera.org/wiki/index.php/Intropsych:Main	Wiki
32	cMOOCs	Introthermodynamics	https://share.coursera.org/wiki/index.php/Introthermodynamics:Main	Openstax
33	cMOOCs	Signal and system	https://www.oercommons.org/courses/signals-and-systems	Openstax
34	cMOOCs	Digital Communication System Properties	https://www.oercommons.org/courses/digital-communication-system-properties-2	Openstax
35	cMOOCs	Calculus One	https://share.coursera.org/wiki/index.php/Calc1:Main	Wiki

36	cMOOC	Introduction to Robotic	http://www.oercommons.org/courses/2-12-introduction-to-robotics-fall-2004/view	Openstax
37	cMOOCs	Introduction-communication-science	http://openeducationeuropa.eu/en/mooc/introduction-communication-science	Mooc.uva.nl/portal
38	cMOOCs	Algorithms	https://share.coursera.org/wiki/index.php/Algo1:Main	Wiki
39	cMOOCs	Game programming	https://share.coursera.org/wiki/index.php/Gameprogramming:Main	Wiki
40	cMOOCs	Computers network	https://share.coursera.org/wiki/index.php/Comnetworks:Main	Wiki
41	cMOOCs	Thermodynamic	https://share.coursera.org/wiki/index.php/Introthermodynamics:Main	Wiki
42	cMOOCs	Bio statistics	https://share.coursera.org/wiki/index.php/Biostats:Main	Wiki
43	xMOOCs	artificial-intelligence-planning	http://openeducationeuropa.eu/en/mooc/artificial-intelligence-planning	Coursera
44	xMOOCs	introduction-clinical-psychology-children-and-young-people	http://openeducationeuropa.eu/en/mooc/introduction-clinical-psychology-children-and-young-people	Coursera
45	cMOOC	Introduction to Robotic	http://www.oercommons.org/courses/2-12-introduction-to-robotics-fall-2004/view	Wiki
46	cMOOCs	Digital-signal-processing-1st-edition	http://openeducationeuropa.eu/en/mooc/digital-signal-processing-1st-edition	Cousera

47	xMOOCs	Autonomous-mobile-robots	http://openeducationeuropa.eu/en/mooc/autonomous-mobile-robots	edX
48	xMOOCs	Computer Architecture	https://www.coursera.org/course/comparch	Coursera
49	xMOOCs	Fundamentals of Computing	https://www.coursera.org/specialization/fundamentalscomputing/9?utm_medium=catalog	Coursera
50	xMOOCs	Programming Languages	https://www.coursera.org/course/proglang	Cousera
51	xMOOCs	Artificial Intelligence for Robotics	https://www.udacity.com/course/cs373	Udacity
52	xMOOCs	The Hardware/Software Interface	https://www.coursera.org/course/hwswinterface	Cousera
53	xMOOCs	Data Analysis	https://www.udacity.com/course/ud651	Udacity
54	xMOOCs	Signals and systems	https://www.edx.org/node/4421#.VHM2P9KUfTY	edX
55	xMOOCs	Circuits and electronics	https://www.edx.org/course/circuits-electronics-mitx-6-002x#.VHM3zdKUfTY	edX
56	xMOOCs	Electricity & Magnetism	https://www.edx.org/course/electricity-and-magnetism-ricex-phys102x#.VHM5ytKUfTY	edX

57	xMOOCs	Introduction to logic	https://www.coursera.org/course/intrologic	Cousera