



**The Use of Avatars in Gender-Segregated Blended
Learning and MOOCs in Saudi Arabia**

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Declaration

I *Raniah Samir Adham*, confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

Abstract

Massive Open Online Courses (MOOCs) in the Arab World are still in their infancy. Many Arab countries are now starting to launch their MOOC platforms; however, there are only a few who have actually implemented such systems. One of the first MOOC platforms in the Arab World is 'Rwaq' MOOC in Saudi Arabia.

In Saudi Arabia, gender-segregation is a known issue within higher education that often deprives female tutors from providing online learning and MOOCs, and students may not be getting the benefit of their experience and teaching. The purpose of this study is to develop an Avatar tool to represent a female tutor in a MOOC course with the aim of alleviating the issues of gender-segregated society in online learning. Three case studies have been conducted concerning the experience of online courses within MOOCs in Saudi Arabian higher education.

Background research is reported concerning the most important aspects of the rise of MOOCs as a new system around the world, and the Arab world specifically. Then female-segregated education, gender-segregation in online learning, and cultural implications in Saudi Arabia, are analysed. In considering education technology, as an example, 3D Virtual Worlds and 2D animated Avatar videos, uses of Avatars in education and the adoption of the Avatar tool in MOOCs platform in Saudi Arabia are examined with relevant pedagogical approaches.

This study examines the female experience and socio-cultural barriers in online teaching, as well as current ways of coping with such issues. It also identifies the impact of the Avatar technology for female tutors using a mixed-method research approach. One of the objectives of the study is to develop a social interaction environment with learners in online learning within MOOCs. The ultimate objective of this study is to examine if this Avatar tool could alleviate issues of gender-segregation for female lecturers in online learning within MOOCs in Saudi Arabia.

The findings indicate that MOOC environments have had a positive effect on offering students a better learning experience. Additionally, female teachers showed positive attitudes towards teaching on MOOCs in terms of helping them to overcome the lack of interaction and communication with both male and female students. The Avatar as a representation of a female teacher can play a positive role in overcoming cultural and social barriers in Saudi Arabia. Overall, participants were more positive in the implement of an Avatar tool in term of inspiration, increased confidence, enhanced satisfaction and reduced social boundaries in the Arab world and Saudi Arabia in particular.

List of Publications

- 1- MOOCs as a Method of Distance Education in the Arab World- A Review Paper. European Journal of Open, Distance and e-learning, 18,123-138. 2015
- 2- The Use of Avatars in Gender Segregated Online Learning within MOOCs in Saudi Arabia- Global Learn Conference on Learning and Technology in Limerick, Ireland, April, 2016.
- 3- The Use of Avatars for Female Tutors on MOOCs - A Rwaq Case Study in Saudi Arabia. The International Review of Research in Open and Distributed Learning IRRODL, 2017. Accepted (In press)

List of Abbreviations

AUB	American University of Beirut
BB	Blackboard
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
E-Commerce	Electronic Commerce
E-Learning	Electronic Learning
E-Training	Electronic Training
ELC	National Centre of E-learning & Distance Learning
FUN	France Université Numérique
HE	Higher Education
IT	Information Technology
KAU	King Abdul Aziz University
KAUST	King Abdullah University for Science & Technology
LMS	Learning Management System
MOOCs	Massive Open Online Courses
OER	Open Educational Resources
OOC	Open Online Course
PLE	Personal Learning Environment
PLN	Personal Learning Network
SA	Saudi Arabia
SL	Second Life
TEL	Technology Enhanced Learning
UAE	United Arab Emirates
UK	United Kingdom
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNE	University of New England
VLE	Virtual Learning Environment
VW	Virtual World
3D	Three-Dimension

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Chapter 1

Introduction

1.1 Aim

This study sets out to determine the requirements of evaluation and development of a socio-interactive communication environment by adopting Avatar technology for the purpose of alleviating issues of gender-segregated society in online learning in Higher Education HE and MOOCs platforms in Saudi Arabia SA.

1.2 Objectives

The research objectives of the work are:

- 1- Identification and classification of common issues in gender-segregated education where females teach online courses in Saudi Arabian Higher Education.
- 2- Understanding to the perceptions of female lecturers with regard to the issues they encounter in online teaching and learning.
- 3- Evaluating the impact of the Avatar technology in terms of support female tutors and encouraging interaction with male learners in online courses and MOOCs.

1.3 Motivation

It has been realised that due to cultural, social and religious reasons in Saudi Arabia, teaching and learning opportunities for females are limited because of gender-based segregation. Males and females cannot meet or communicate freely anywhere they want in higher education institutions (Tubaishat et al., 2006).

As an example, a pilot MOOC platform has been launched in Saudi Arabia under the Ministry of Labor especially designed for women, aiding towards the elimination of cultural and social issues. MOOCs can enable freedom of expression for women so they can communicate in a real-world setting (mixed-gender classes), meeting and interacting with others.

In this research study, the researcher rationale is to evaluate and develop an interactive communication environment by designing and adopting an Avatar tool, to examine to what extent this could alleviate female tutors' cultural issues in online learning teaching within MOOCs in Saudi Arabia HE.

1.3.1 Adopting Avatar in MOOCs (SWOT Analysis)

The Avatar technology might become an attractive method in teaching; however, results need to have good standards for teachers and learners (Oestreicher et al., 2010). In Saudi Arabia, one can come across certain limitations in online teaching. For instance, not all students' locations can provide good internet connections to allow quick interactions. Other limitations include language barriers and the issue of gender-segregation, where the majority of female academics are unwilling to physically appear in online courses (Adham et al., 2016).

The study aims to develop a socio-interactive communication environment by adopting the Avatar tool to represent female tutors by enhancing their presence, as well as to encourage interaction with both male and female learners, as there are often limitations and cultural issues of gender-segregation society in Saudi Arabia online learning and MOOCs. For example, Rwaq statistics (2016) showed that during 2015-2016, a total number of 125 courses there were only 25 females teaching 20% and 100 courses taught by males.

1. INTRODUCTION

The following Table 1.1 is a SWOT analysis of Avatar adoption in online learning and MOOCs in Saudi Arabia:

Table 1.1 Avatar SWOT Analysis

<u>Strengths</u>	<u>Weaknesses</u>
<ul style="list-style-type: none">1- Interactive videos2- Freedom of expression to females3- Better communication with males4- Enhance teachers' motivation and students' engagement5- Wider cognitive presence	<ul style="list-style-type: none">1- Technical problems2- Academic skills3- Not effective with educational experience4- Administrative challenges5- Not common in SA as education tool
<u>Opportunities</u>	<u>Threats</u>
<ul style="list-style-type: none">1- New trends which makes online learning easier and enjoyable2- Dissolve cultural boundaries3- Better social interaction4- Lowering social anxiety for female tutors5- Decrease gender challenges in SA6- Having more students and more money as a business	<ul style="list-style-type: none">1- Students might become uncomfortable dealing with Avatars2- Willingness of female academics to be an avatar or even to use it3- Lack of incentive for the students4- Lack of IT management or support5- Cost of money & time for applying Avatar6- Not useful learning tool

1.4 Research Questions

To achieve the aims and objectives of this research, the research questions are as follows:

- 1- What is the impact of gender-segregation on female lecturers practicing online teaching within MOOCs in Saudi Arabian Higher Education?
- 2- a) How do female lecturers cope with the issues in online learning in Higher Education?

b) Why would a female lecturer choose Avatar technology in online teaching?

- 3- a) To what extent the role of an Avatar can enhance teachers' motivation and learners' engagement in online learning and MOOCs in SA?
- b) Can use of Avatars in online courses impact on/address female cultural issues in SA?

1.5 Defining E-Learning

Masie said in late 1997, "Online learning is the use of network technology to design, deliver, select, administer, and extend learning". In 1999, Cisco said, "E-learning is internet-enabled learning. Components can include content delivery in multiple formats, management of the learning experience, and a networked community of learners, content developers and experts." (Cross, 2004)

To begin with, e-learning has a wide range of terminology and technology. Nevertheless, it should be concerned with the studies, which are related to education over the web. For instance, e-learning is considered to cover virtual classrooms that some studies might call distance learning, which is defined later in this chapter.

There are many definitions of electronic learning that individually focus on different emphases, which can range between a focus on technology, communication, or content. For example, Kaplan (2002), develops an online e-learning glossary, which provides this definition: "E-learning covers a wide set of applications and processes, such as web-based learning, computer-based learning, virtual classrooms and digital collaboration, It includes the delivery of content via internet, intranet/extranet (LAN/WAN), audio- and videotape, satellite broadcast, interactive TV, and CD-ROM" (Paulsen, 2002). According to Brannon-Wranosky (2006), e-learning is defined as a:

"Web-based instruction that often provides a way to bridge the gap between the changing generations of students and the increased need for higher education in the global market."

Overall, e-learning can be broadly defined as encompassing learning on the internet, together with the use of computer technology and virtual classrooms. Moreover, it can be described as a modern approach for delivering a well-designed learning background by using many different digital resources of technologies along with associative learning materials. These can be accomplished through several asynchronous communication methods, for example, e-mail, posting questions on the discussion board, or submitting assignments; and synchronous communication, such as telephone and live chats (Mupinga et al., 2006).

1.6 The History of Distance Learning and E-Learning

Though regarded as a recent innovative technology, the first implementation of distance learning can be traced back to the early 1840's when Sir Isaac Pitman designed the postal correspondence courses in Shorthand (Holmberg, 1995). However, the first use of the computer to teach technically was in the late 1950's through teamwork between Stanford University and IBM. In the 1990's new technology was added by developing the World Wide Web. This technology would rapidly heighten the effectiveness of distance learning through use of the computer. Moreover, "Internet, e-mail, news groups and other collaboration media all showed that e-learning need not be the lonely, slow-paced effort of postal correspondence courses from 160 years earlier." (Horton, 2001, p. 4)

1.6.1 Distance Learning in Early Muslim History

Education is the first mission of Muslims, male or female. Knowledge of God is connected with the method of learning. It was compulsory upon the Muslim community from the beginning to obligate the words of God and the teachings of Prophet Muhammad to learn reading and writing. The transference was part of Muhammad's

mission over 23 years of his prophet-hood. Furthermore, Muhammad's own words were also recorded in 'hadith'; a hadith states that Prophet Muhammad advised his followers', family and friends to think independently about matters of everyday life. He asked his followers to spread his words around the world. This could be considered as a decent example of distance education in the Arabic Islands more than 1000 years ago (Douglass and Shaikh, 2004).

1.7 Advantages and Challenges of E-Learning vs. Traditional Learning

E-learning has become an alternative to the traditional classroom learning around the world, which helps many people to move toward a vision of ultimate and very demanding method of learning (Zhang et al., 2004).

Many studies have shown that students benefit from e-learning. Some of the advantages are that it provides time and location flexibility; cost savings for educational institutions; adopts self-directed and self-paced learning; creates a collaborative learning environment by linking each student with experts and other students; allows unlimited access to learning resources and materials; and it allows information to be updated in a short time and in an affordable way (Piccoli et al., 2001, Zhang et al., 2006, Li et al., 2014).

Moreover, e-learning aims to offer a configurable structure that joins learning materials, services and tools to create a single product to deliver educational content and material quickly and efficiently which makes students more engaged and active when compared to the traditional classroom (Ong et al., 2004).

1. INTRODUCTION

Howland and Moore (2002), suggest that online courses are flexible for learners who like feedback as well as those who do not. Regular quizzes can provide feedback to learners on small assignments, and can include peer assessment.

On the other hand, e-learning has some drawbacks compared with traditional classroom e.g. the limited internet coverage, poor design of e-learning courseware, and video presentation might not be feasible for learners at home due to the poor internet connection (Musbahtiti et al., 2013). Some other drawbacks include; poor security and quality consideration in e-learning is very important which it can affect the quality of the content and increase the possibility of copyright infringements (Nayak and Suesaowaluk, 2007).

Musbahtiti also states that e-learning in Islamic countries is struggling to meet the educational target, due to many factors: the lack of policies in organisations and the lack of interaction between students and teacher. It is difficult for Muslim academic organisations to achieve objectives of education in current e-learning systems which suggests a lack of e-learning technology as the cause of the difficulty “[t]here is need for tools, applications and further research for a comprehensive e-learning system.” (Musbahtiti et al., 2013)

On the other hand, e-learning systems can offer teaching and learning opportunities. For instance, learn from information, a concept which is known as "learning styles". Some are visual learners and others are verbal learners (Mayer and Massa, 2003). Visual learning style to process the information to learners through sight e.g. reading, taking notes and watching videos, whereas the Auditory learning style is to process the information to learners through sound e.g. listening, communication, narration and music (Ross and Schulz, 1999).

Moreover, learning styles can be considered as one of the most important factors influencing e-learning and individual academic skills (Ford and Chen, 2000, Kolb and Kolb, 2005). For example, video-clips and online course animations as a type of the visual learning style can help to clarify more easily the concepts in the textbook as well as enhance the visual learning experience (Ross and Schulz, 1999).

On the other hand, Al-Wabil et al. (2010), describes in his study how learning styles relate to visual attention in e-learning environments in order to explore how this can be used to inform the design of adaptable and personalised e-learning systems. The study examines student behaviour in e-learning systems with eye tracking research methods, and combining the eye movement data with the traditional valuation of e-learning materials, to understand the usability of interactive systems and measure the student's experience interaction. The result was that a highly visual learner revealed increased visual attention on multimedia elements; in contrast, highly verbal learners showed increased attention on textual content. Al-Wabil's study, supported the validity of learning styles in that learners' visual examination patterns varied according to students' scores on the visual and verbal scales of the index of learning styles.

Overall, understanding styles can improve the planning, producing, and implementing of educational experiences, to enhance students on-line educational environment. Also, by considering the differences among these learning styles, students can optimise their interaction with the content and gaining of knowledge (Federico, 2000).

1.8 Online Education in the 21st Century

Online courses consist of online elements that facilitate the three critical student interactions: with content, teacher and other students. According to Allen and Seaman (2003), in United States more than 80% of public institutions are offering at least one

online course. Manochehr (2006), states that “E-learning represents a new and significant communication style that influences both teachers and learners rather than a new pure technology.” The significance of e-learning to most current corporate learning is shown in a study by Looney (2005), “[t]he education system nowadays is changing very quickly around the world for instance, the way of designing, funding, managing and delivering. All of these changes are in the internet time and it is already in progress. This is the new education economy – the global education economy.”

1.8.1 Personal Learning Environment

Personal Learning Environment (PLE) is considered as a new approach of using technologies for learning. PLE is comprised of a variety of different tools and is based primarily on social software e.g. Web 2.0 that allow the internet to be used for creating and sharing information and knowledge (Attwell, 2007). Moreover, learners can develop and control their own online learning environment. They are no longer locked in to a specific course to gain a qualification but can present their learning independently and they are able to reach their desired learning outcomes. Also, learners can select subjects from the PLE for presentation for qualification purposes (Attwell, 2007, Dabbagh and Kitsantas, 2012).

In addition, with the concept of Personal Learning Networks (PLNs), learners can get involved in large learning networks, taking advantage of the knowledge and experiences of other learners around the world. PLNs contain of a collection of web resources that are accessible via the internet, when learners want to learn something, and this allows them to be part of a global discussion about issues of interest which lead to active and social learning (Bauer, 2010).

1.8.2 Factors Influence Interaction in Online Learning

Alzahrani et al. (2012), argue that social interaction is a significant aspect of learning; people learn from other available online resources within their learning environment, not only learning from books. Most treatments of the concept of interaction in distance education have been based on three types of interaction: learner-content, learner-instructor, and learner-learner (Moore, 1989 as cited by Hillman et al., 1994). According to Frederickson et al. (2000), the interaction with online teachers has the most significant benefits in online courses, e.g. students with the highest levels of interaction with the teacher have the highest levels of learning as well. Providing sufficient opportunity for teacher-to-student and student-to-student interactions in online courses is suggested by many authors (Howland and Moore, 2002, Mupinga et al., 2006, Sher, 2009).

Further, Vrasidas et al. (1999), argue that the factors that could influence interaction in online learning are social presence, structure, feedback, learner control and dialogue (discussion board) which can be described as teacher-to-student interaction. Also, these factors consist of three major components; power, support and independence (Garrison and Baynton, 1987). According to Moore (1993), teacher-to-student interaction by teleconference is more dialogic and less structured compared with broadcast, recorded or correspondence media. At the end of this subsection, given it highlights the benefits of social learning and interaction with the instructor, and that the next section is about Saudi Arabia specifically, is it worth raising the question about the potential impact that segregation has on online learning?

1.9 E-Learning in the Kingdom of Saudi Arabia

Within the last few years, e-learning has started in Saudi Arabia in order to address some obstacles, which delayed the traditional way of education. Although, there is no obvious history or starting point of e-learning in SA, the Saudi Arabian educational system is motivated by the e-learning prospects around the world.

The electronic education system in the kingdom of Saudi Arabia is still in its infancy. Many universities are now starting to shift from traditional learning to the online learning system. However; there are only a few which have actually implemented this system (AbdulGhafour, 2008). In 2007, the Ministry of Higher Education in Saudi Arabia established the National Centre of E-learning and Distance Learning (ELC) in order to organise the e-learning materials to encourage the universities to adopt this system (Ministry of Higher Education, 2010).

Accordingly, some academics in universities have already agreed to provide e-learning and have also started to do intensive training to follow the e-learning technology (Al-Khalifa, 2010). According to the Ministry of Higher Education Report (2010), there was a major transformation of traditional education in most universities of the Kingdom of Saudi Arabia. By the end of 2011, the majority of Saudi universities used blended approaches of e-learning and distance learning.

Moreover, the enrolment of female students in higher education level institutions was more than the male students by almost 11%. Saudi Arabia is a big country with issues of accessibility, mainly for women who have no chance to enrol in a traditional university or cannot travel to the main cities where the universities are located. For that, the solution to this problem is to be found in distance learning. Overall, Al-Shehri (2010), considers that “[t]he fast pace of development in e-learning in Saudi Arabia is inspiring, considering the kingdom's relative youth in learning and education.”

1.9.1 E-Learning Culture Perspectives in the Arabic-speaking World

Morse (2003b), clarifies that the cultural background influenced how learners organise the advantages and disadvantages of their online study. In the Arabic speaking countries; the culture perspective of online learning in higher education plays an important role in society. In online education, the society's geographical locations could make the social and cultural factors become more significant. According to Akinyemi (2003), “[t]he Arab world countries have some rich cultures and religious beliefs, which may be violated seriously in the light of the current trends in virtual learning”. Furthermore, Akinyemi states that teacher-to-student interaction is considered to be the basis of online learning. This interaction is unidentified and has no restrictions in race, colour, sex, religion standards in the online learning environment. However, a cultural struggle might arise as the interaction between male and female learners could not be controlled without difficulty (Akinyemi, 2003, Al-Hunaiyyan et al., 2008).

1.10 Distance Education

Distance education arose because of the need to provide access to learners who are not able to participate in face-to-face classrooms. Distance education involves courses that allow learners and tutors to communicate through the learning process and to develop interaction between them with many approaches (Keegan, 1996). According to a report by the Council for Higher Education Accreditation in 1998, distance learning is categorised by some key factors. Among the most important are that: the learning process contains activities where the learners are at a distance from the creator of the learning materials, and a mixture of media including television, video tapes, audio tapes, video and audio conferencing, computer software, internet, e-mail, and printers might be used (Phipps and Merisotis, 1999).

One clear illustration of distance learning is the Open University in the UK, that explain such learning: “[w]hen you study on your own, either at home or wherever suits you, the Open University’s unique, world-leading style of distance learning is called supported open learning” (OpenUniversity, 2014). The openness is highlighted by the autonomy the course provides to the students. This can be evidenced by the choice of when to access course materials. The course assessments are completed with full support and advice from the tutor, followed by feedback on performance online. Another good benefit is the opportunity to engage with other students within informal study groups. In general, most of the courses have tutorials and they are optional. However, the tutorials provide an excellent means to consult tutors and receive invaluable feedback on assignments (Tresman, 2002). E-learning can be used both as a tool for supporting classroom education, as well as a technology for distance education delivery (Beldarrain, 2006).

1.10.1 Open Educational Resource

Open Educational Resources (OERs) are defined as; “[t]he open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes” (UNESCO, 2002). Moreover, “Open Online Courses (OOC) may be considered a special type of OER, which solves the problem of the lack of interaction that is typical of most OER initiatives” (Fini, 2009). Fini emphasises the importance of the learning network in an open online course as:

“The real potential of an OOC is to be found in the emergence of learning networks among participants in a many-to-many relationship, rather than the traditional one-to-many model of interactions between a teacher and his or her students.”

1.11 Structure of the Thesis

Chapter one presents an overview of the study, aims, research objectives, motivations, and research questions. It also reviews an Introduction of e-learning and distance learning, advantages and challenges of e-learning versus traditional learning and e-learning in Saudi Arabia. Finally, it introduces the outline of the thesis.

Chapter two reviews the literature relevant to the research topic. It starts by introducing a more precise term for MOOCs. It discusses the concept of MOOCs, including different types of MOOCs (cMOOCs and xMOOCs). The chapter moves on to discuss the background of gender-segregation in Saudi Arabia, female-segregated education in online learning HE. Next, the educational technologies, virtual worlds, 2D animation and Avatar technology are presented. It ends with the relevant pedagogical approaches to guide the research study.

Chapter three describes the research methodology, philosophical paradigms, research approaches, research design, methods and techniques employed to investigate the research question. It also discusses the data collection, the field work including the case studies and data analysis, ethical considerations and the validity and reliability of study.

Chapter four reports on the results and findings of this thesis, firstly the initial study and then the Case Study 1 in-depth semi-structured interviews and themes that emerge from participants are presented. the results of the analysis and highlights the key findings of Case Study 2 and Case Study 3.

Chapter five indicates how the data (case studies) were interpreted and discusses the investigation corresponding to the work of other scholars.

Chapter six summarises the significant research findings, including whether it has answered the research questions, the limitations of the study, contribution to knowledge and presents recommendations as well as suggestions for future research work.

This thesis is organised as shown in the following Figure 1.1:

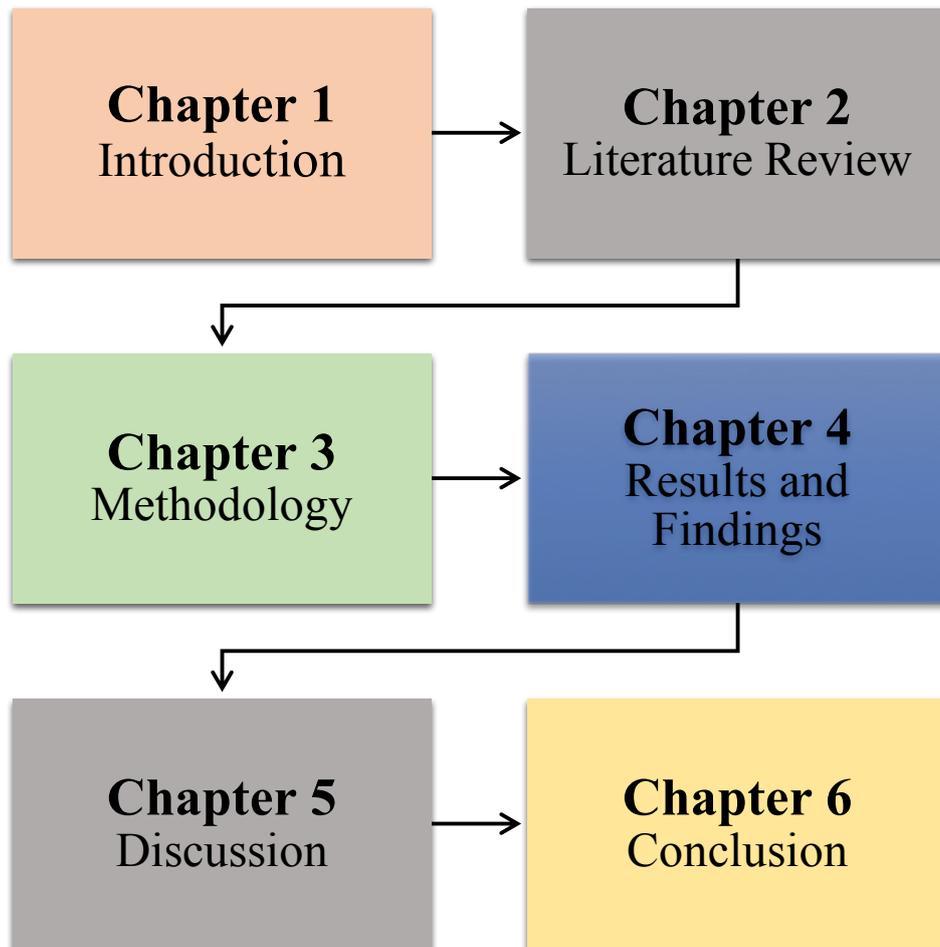


Figure 1.1 Thesis Structure

Chapter 2

Literature Review

2.1 Introduction

Massive Open Online Courses (MOOCs) in the Arab World are still in their infancy. Many Arab countries are now starting to launch their MOOC platforms; however, there are only a few who have actually implemented such systems. This chapter will explore the rise of MOOCs around the world and their impact on the Arab World. It will give a true picture of the development of the first MOOC platforms in the Arab World. Then, it will analyse in detail the concept, definitions, background, and types of MOOCs (xMOOCs and cMOOCs), as well as the main MOOCs platform in the Western and Arab worlds, and a timeline of the development of MOOCs. It will then observe the status of MOOCs in the developed world, opportunities in the Middle East, and the influence of Western MOOCs on the Arab world, from many perspectives, e.g. educational, religious, cultural and social. The chapter moves on to discuss the background of gender-segregation in Saudi Arabia, female-segregated in online learning higher education. Next, the educational technologies, virtual worlds, 2D animation and the Avatar tool are presented. It ends with the relevant pedagogical approaches to guide the research study.

2.2 MOOCs as a Method of Distance Education

In highlighting how successful the internet has been in education, John Chambers, CEO of Cisco Systems 2000, states “[t]he next big killer application for the internet is going to be education. Education over the internet is going to be so big, it is going to make email usage look like a rounding error.” (Alexander, 2001)

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Online learning is becoming one of the most significant technological developments as we move further into the 21st century. As part of these developments, a number of innovations that were once simply ideas are now becoming a reality. One of these is the concept of the MOOC. MOOCs build on the dynamic engagement of hundreds to thousands of students who self-organise their involvement according to learning skills, objectives, previous knowledge, and their shared interests (McAuley et al., 2010).

Within the last few years, online learning has started to take root in the Middle East as a way of addressing some obstacles, which have delayed traditional forms of education. The education systems in this zone have been motivated by online learning prospects around the world.

Since 2008, MOOCs have been run by some of the top universities in North America (Liyanagunawardena et al., 2013b). However, the success of MOOCs remains questioned by the educational technology community due to the challenges of data collection, analysis, and identity resolution (Absar et al., 2016).

In 2012, MOOCs had a major revolution in the Western world and in 2013, MOOCs started to appear in a few countries in the Middle East. They are continuing to progress into a more widespread form of educational technology (Subbian, 2013).

However, to what extent can this work and what are the motives for applying this new technology to the Arab world? This chapter will critically review available literature concerning the status of MOOCs in the Arab world, which consists of the 21 Arabic-speaking countries from North Africa to the Arabian Gulf, where the Arabic is first language. The target countries are located in the eastern part of the Middle East, which includes the Kingdom of Saudi Arabia, Egypt, Jordan, Lebanon, and Palestine. These were in fact the first countries to launch MOOC platforms in the Middle East back in 2013.

First, some of the most important and widely used definitions of MOOCs, the different types of MOOCs will be presented, and second the main MOOC platforms in both the Western and the Arab worlds. Finally, the influence of MOOCs from the Western world on the Arab world will be analysed.

2.2.1 Defining the Concept of MOOCs

MOOCs have three important attributes. Firstly, they are ‘massive’, which refers to the number of students and activities on such courses. Secondly, they are ‘open’ because the software is open-source; the sources of information are open; registration is open to anyone, and, the curriculum assessment processes and students are generally open to a range of different learning environments. Finally, they are online courses that anyone can access if they have an internet connection, through which they can easily download the course material if required (Masters, 2011). MOOCs are a recent development in the field of online learning as a method of distance education, and an advancement of the kind of open education ideals proposed by OER (McAuley et al., 2010).

It is difficult to find a specific definition for a MOOC. One common definition adopted in this research is the “[i]ntegration of the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a collection of freely accessible online resources.” (McAuley et al., 2010)

Moreover, MOOCs as online courses have been described as free courses, offered to a large number of learners at once, and conducted via video lectures and online assignments and exams (O'Prey, 2013). Another definition of a MOOC is an “Online course which can be attended by a large number of participants, has a defined duration (4-10 weeks) and follows certain pedagogy”. For example, in every first week, the learner will spend it understanding the content of the course and the end of each week is

usually for submission of assignments or assessments. In addition, learners will need to dedicate 2 to 6 hours/week on average, depending on their interest or skill level, in order to complete the course successfully (Taneja and Goel, 2014).

In one report, The European Commission defines a MOOC as:

“An online course is open to anyone without restrictions (free of charge and without a limit to attendance), usually structured around a set of learning goals in an area of study, which often runs over a specific period of time (with a beginning and end date) on an online platform which allows interactive possibilities (between peers or between students and instructors) that facilitate the creation of a learning community. As it is the case for any online course, it provides some course materials and (self) assessment tools for independent studying.” (EuropeanCommission, 2014)

2.3 Background to the Massive Open Online Course

Massive Open Online Courses ‘MOOCs’ generated an important revolution in online education by presenting web-based courses free to anyone, anywhere with access to an internet connection. In 2012, MOOCs gained substantial attention from media, students, teachers, and industrialists. They are continuing to progress into a more widespread educational technology (Subbian, 2013).

Gaebel indicated that MOOCs actually did not appear in 2012, but that they were emerging successfully since their establishment in 2008 by Siemens and Downes, with the purpose of improving the learning experience, not least to deliver more learning opportunities (Gaebel, 2014).

In 2008, MOOCs were named and defined because of a new initiative by the leaders George Siemens and Stephen Downes. ‘Connectivism & Connective Knowledge’ was their first course clearly designed according to the principles of Connectivism. Because of its size, it was termed a massive open online course and approximately 2200

participants enrolled (Downes, 2008). In 2009, a MOOC was developed by Sebastian Thrun Stanford University 'Introduction to Artificial Intelligence', there were more than 120,000 participants around the world, however, this course did not have the same objective as the MOOC developed by Siemens and Downes (Sangrà et al., 2015).

MOOCs may possibly start a new generation in distance education. Clearly, they endorse a new model of distance learning. The University of Edinburgh's report in 2013, identified that the recent explosion in university courses that were created by MOOCs offer some turning points in distance education (Davis et al., 2013).

Despite the rapid growth of MOOCs, there are early indicators that this 'boom' is slowing down because there are some questions that have not yet been answered. For instance, how should a university participate in a MOOC initiative? What kind of organisation, student and academic support is needed? How should assessment be organised? How to assure quality? (Rajabi and Virkus, 2013).

Overall, Downes believes that there are some criticisms, such as the idea that MOOCs can replace tutors with technology, and the social and personal aspects of learning could be lost. However, it is essential for MOOC learners to be self-motivated and academically ready (Downes, 2013).

2.3.1 Types of MOOCs (cMOOCs and xMOOCs)

According to Siemens (2012), there are two types of online courses sharing the 'MOOC' name, and offered new terms to differentiate them: cMOOCs and xMOOCs. Connectivist MOOCs (cMOOCs), for instance Peer 2 Peer University, are based on the interaction with objects created by the students in the context of teaching communities.

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In 2008, Siemens and Downes developed cMOOCs, which are the first type that focused on knowledge creation and have a different educational philosophy from xMOOCs. The cMOOC model highlights creation, creativity and social networking learning (Siemens and Baker, 2012), with a focus on knowledge creation and generation (Gaebel, 2014). The xMOOCs such as edX, Coursera and Udacity contain a guided structure of content delivery and traditional interaction of the users. The xMOOCs are the new type of MOOCs that transfer a traditional university learning model into an online learning space. The xMOOC model highlights traditional learning approaches through video presentations, short quizzes and testing with a focus on knowledge duplication (Gaebel, 2014).

In an interview with Downes in October 2013, he states that “[t]he xMOOC is centralised and the cMOOC is distributed. xMOOC has a core content that everyone follows, while the cMOOC has a wide ranging network of content which people browse through and sample according to their own interests” (Downes, 2013).

On the other hand, cMOOC has a limited curriculum and set of tasks for their students to accomplish, however, structure and outlines of topics are usually present, but the class activities are not pre-set (Saadatmand and Kumpulainen, 2014). xMOOCs have obvious problem for using dated pedagogics based on the transmission of content the (knowledge transmission model) (Larry, 2012).

Overall, a report by Bayne and Ross (2014), argue that MOOCs have adopted multiple pedagogic forms and intentions as a socio-material where MOOC pedagogy in terms of the troubling cMOOC and xMOOC binary is no longer representative or useful.

2.3.2 Advantages and Challenges of MOOCs

There are several advantages of the MOOC, for example, the huge educational resource that are available free to everyone to learn and access anytime; which would lead to the integral openness and user-friendliness of the platform. MOOCs also provide a good opportunity to students without the need to access traditional education (Hoy, 2014).

On the other hand, Hoy (2014), clarifies some disadvantages for MOOCs e.g. a very few of students who register for a MOOC are completing it. Many students did not start the course after registering. In addition, when students do complete their work, there is no guarantee that they have successfully learned and understood the materials. Moreover, MOOCs come in for great challenges because of the high dropout rates amongst participants with only a small number finished the course. In MOOCs review of the literature by Liyanagunawardena et al. (2013b), found that it have an average completion rate of less than 10%. A related problem that some MOOCs participants are taking the course without the direct presence of a classroom full of students could be also one of the significant limitations of MOOCs flexibility (Eisenberg and Fischer, 2014).

2.3.3 The Impact of MOOCs in Higher Education

Reporters to questioned Dan Greenstein, Director of postsecondary education at the Bill and Melinda Gates Foundation and a major funder of the MOOC experiment, whether there is a clear strategy motivating MOOCs in higher education. Greenstein states that without a doubt that MOOCs could help to solve many problems e.g. deliver education to more people more cheaply (Kendrick and Gashurov, 2013).

New approaches for higher education establishments have generated important interest from governments, institutions and commercial organisations. The recent value offers

for institutions to participate in MOOCs are recognised as “[e]ducation access, experimentation and brand extension” (Epelboin, 2013). The MOOC phenomenon is therefore in progress and, it could change teaching approaches in higher education. However, it will not necessarily threaten traditional methods of teaching. Moreover, MOOCs could be a useful solution for the shortage of university places, especially in the developing world (McAuley et al., 2010).

On the other hand, it has been argued that MOOCs will not provide the opportunity for students to gain world-class educational experience, although many of the courses are offered by prestigious universities, e.g. Harvard and Stanford. However, participant statistics from several MOOC platforms indicate that the large majority of students on these courses already have university degrees (Yuan et al., 2013).

2.3.4 MOOCs in Europe

A systematic study of the literature from 2008-2012 showed that a large majority of MOOC participants are from North America and Europe (Liyanagunawardena et al., 2013b). In fact, MOOCs seem to be spread all over Europe, most often in the highest turning. For instance, OPenupEd provides a portal pointing to various academic MOOCs for higher education. The University of Amsterdam offers its MOOC with Sakai OAE, while Leiden has launched with Coursera and, Delft chose edX. In Germany, 10 MOOCs have been built up e.g. Iversity and Coursera for TU Munich. Spain’s MOOCs have joined under the umbrella of (Miriada) with the support of some private companies involved with Spanish speaking South America (Epelboin, 2013). Likewise, in Denmark, eight universities are developing MOOCs and, the University of Copenhagen negotiating with Coursera. In Italy, Sapienza has joined Coursera and, in the UK, there is FutureLearn. Last but not least, in France, the Ministry of Higher

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Education launched the 2013 France Université Numérique (FUN) (Brahimi and Sarirete, 2015).

Only the UK has announced a national consortium, using the technology to make university courses open and flexible, in order to attract more students, both nationally and internationally. The choice in the other European countries will be between US and regional or national consortia. This will depend on national culture and the HE concerned, because the main universities associations have not yet defined their policy and, it seems that a European consortium will not be here any time soon (Epelboin, 2013).

2.3.5 Timeline of MOOCs Developments

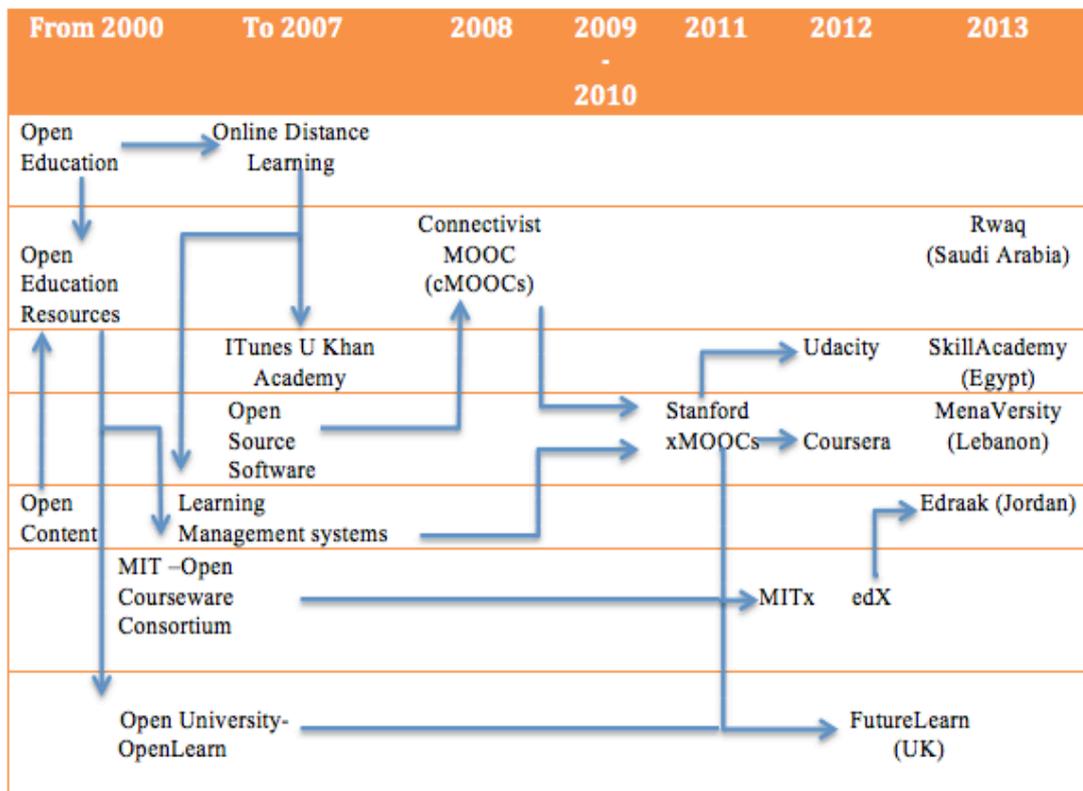


Figure 2.1 Timeline of MOOCs developments. (adapted from O'Prey, 2013) MOOC, Higher Education Digital Moments).

The above Figure 2.1 illustrates the rapid development in MOOCs since 2008. In 2011, Stanford's Professor Siemens established potential xMOOCs courses at a low cost. In 2012, as independent, for profit technology initiatives Udacity, Coursera, MITx, EdX and FutureLearn were launched (O'Prey, 2013).

In addition, in 2013, some platforms in the Arab world were established, such as Edraak, Rwaq, MenaVersity and SkillAcademy, which were added to figure 2.1 by the researcher.

2.4 MOOCs Platforms in the Western World

This central idea of providing a knowledge platform to anyone, anytime, and anywhere, makes MOOCs a powerful learning technology (Subbian, 2013).

The following Table 2.1 shows differences and similarities between some of the most active companies and universities' MOOCs platforms around the world:

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Table 2.1 MOOC platforms around the world

Platforms	Differences	Similarities
EdX	<p>Governed by Harvard University and MIT.</p> <p>Open platform seeks to enable open access to quality education.</p> <p>EdX is a combination of MITx and HarvardX courses.</p>	<p>Not for-profit.</p> <p>Established in 2012.</p> <p>Smart phone App.</p>
Udacity	<p>Cofounded by a Stanford professor, who started to offer information science courses online.</p> <p>Does not have a university partner.</p>	<p>A for-profit company.</p> <p>Established in 2012.</p> <p>Smart phone App.</p>
Coursera	<p>A social entrepreneurship company, that partner with the top universities in the world.</p> <p>It was established by two computer science professors from Stanford University– Daphne Koller and Andrew NG</p>	<p>A for-profit company.</p> <p>Established in 2012.</p> <p>Smart phone App.</p>
FutureLearn	<p>Includes four non-university partners: The British Museum, the British Council, the British Library and the National Film and Television School.</p> <p>Courses from leading UK Universities and some are outside the UK e.g. University of Cape Town.</p>	<p>A company financed and owned by The Open University, UK.</p> <p>Established in late 2012.</p>
Iversity	<p>European-based online education platform. By co-founders Jonas Liepmann and Hannes Klöpper.</p> <p>Iversity is the only MOOC platform offering courses with ECTS-integration.</p>	<p>Established in October 2013.</p>

2.5 MOOCs Platforms in the Arab World

In an effort to deliver world-class and quality education in the Arab world to millions of Arabic-speaking students, academics, and employers around the globe, a couple of not-for-profit Arab platforms (MOOCs) have been launched in 2013 (Sawahel, 2014). The following Table 2.2 shows the differences and similarities between most of the known MOOCs platforms in the Arab world:

Table 2.2 MOOC platforms in the Arab world

Platforms	Differences	Similarities
Rwaq (Saudi Arabia)	The first MOOC portal for the Arab world. Build an online courseware for the Middle East. Established by two Saudi businessmen Fouad Al-Farhan and Sami Al-Hussayen.	Offered at no cost. Launched in 2013. Arabic language.
Edraak (Jordan)	Spearheaded by leaders of the country of Jordan Queen Rania. Powered by open source platform edX, the Cambridge-based collaborative education by Harvard University and MIT.	Offered at no cost. Launched in 2013. Arabic translations of selected courses.
MenaVersity (Lebanon)	Gathered experts in the creative community to offer original courses on a range of topics social media, marketing to Lebanese cooking. Open to Arab world including North Africa.	Offered at no cost. Launched in 2013. Arabic Language.
SkillAcademy (Egypt)	SkillAcademy (formerly Eduudle) offers over 10,000 online courses. Offers skill-camps built for specific skillsets.	Offered at no cost. Launched in 2013. English Language.

2.6 The Status of MOOCs in the Arab World

As 2013 saw EdX, Coursera, and Udacity grow in importance, 2014 has been the year of the MOOC in the Middle East (Adham and Lundqvist, 2015).

2.6.1 The Impact of MOOCs from the Perspective of Developing Countries

The overload of sources, educational knowledge and economic, social and cultural aspects of MOOCs might be considered a huge challenge for learners from developing countries, including the Arabic-speaking countries; for instance, it could be very difficult for learners to participate in MOOC platforms because of a poor internet connection, especially in small towns and rural areas in the region.

Furthermore, access to new technology in education requires good computer skills, which are still in their infancy in some developing countries. The majority of MOOC content is also in English and that could limit access for learners from such countries, as a lower percentage of the population will have experienced the English language to the level needed to take an online course on a MOOC. Most students in developing countries mainly use their local language and only a small proportion of the population is multilingual (Liyanagunawardena et al., 2013a).

On the other hand, Brahimi and Sarirete (2015), argue that in the Arab world MOOCs have the potential to be part of a positive influence on the traditional higher education system. However, it is too soon to say if MOOCs represent a substitute for traditional courses.

2.6.2 Opportunities in the Middle East

Bearing in mind the significant language barrier, with no Arab university ranked amongst the top universities globally and employers complaining about a major skills gap, Dakkak, manager of Edraak, states that “MOOCs have the potential to be a reasonable solution that could bring a better quality in higher education to many of the Arabic learners around the world.” (Dakkak, 2013)

Moreover, Anant Agarwal, chief executive of edX, explained in an interview with The National, that there are many participants from the Arab world taking courses on edX and so, there is a high awareness that the materials needs to be translated and courses should be offered in Arabic language (Everington, 2013).

According to Deloitte’s technology, media and telecommunications (TMT) annual prediction report for the Middle-Eastern region, awareness of MOOCs has increased and Arabic MOOCs are expected to gain power in 2014. MOOC platforms like Edraak, Rwaq and MenaVersity have had a warm reception from the population (Paul et al., 2014).

On the other hand, MOOCs as a new technology could help students with free online courses related to their subjects, in order to reduce the amount of money spent on private tutoring services, which is a common issue for families in Saudi Arabia, UAE and Egypt. In general, MOOCs would be a transformative change to current education and higher education institutions (Brahimi and Sarirete, 2015).

No consortium for Arabic platforms exists, like FutureLearn or Coursera. However, Mr Al-Farhan declares that, “Rwaq are currently in talks with five universities interested in

licensing the Rwaq platforms to launch their own online education initiatives.” (Omran, 2013)

2.6.2.1 Rwaq MOOCs Platform (Saudi Arabia)

Arabic is one of the top six languages of the United Nations and is the mother tongue of more than 350 million people. “It is the 7th most used language on the internet after English, Chinese, Spanish, Japanese, Portuguese and German.” (Sawahel, 2014)

To serve this large Arab speaking community, Rwaq was launched in September 2013 as the first Arabic MOOC platform. It offers free academic courses on social media, art, psychology, medicine, engineering and religion in an attractive and simple interface. Rwaq means ‘gallery’ in Arabic, so the name is a nod to the galleries of the most prominent mosques in the Muslim world, where learners used to gather in circles around instructors to study different sciences (Curley, 2013).

Moreover, Rwaq co-founder Al-Farhan states that, MOOCs could improve education systems in the Arab world and set a new bar for skills training programmes. Due to the low quality of training in Saudi Arabia, many employees embark on MOOCs for a certificate. Therefore, Rwaq is trying to introduce high quality academic content from qualified professors and professionals with practical experience. “Rwaq is on its way to becoming a regional hub for e-learning in the Middle East.” (Curley, 2013)

However, Rwaq has also been criticised for its low completion rates, and most providers acknowledge that fewer than 10% of students finish the course. Rwaq’s founders are inspired by MOOC developments. However they are not involved in it as a business model, but are rather “[t]rying to find the correct business model which will

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work in the Arab world by assisting others to create their own initiatives.” (Curley, 2013)

According to Brahim and Sarirete (2015), the total number of courses may be counted by looking at MOOC providers' websites and observing a list of the courses. As a result, there is a positive trend towards Rwaq, with 34 free courses (3.4%), which exceeds the number offered by Iversity (3.1%) and approached the number offered by FUN (3.8%).

In December 2014, Rwaq presented a new platform for the healthcare sector, called 'Junnah'. This offers online scientific training programmes on how to avoid or deal with common diseases in the Arab world. It automatically observes the activities of users through smart devices which could allow experiences and inspiration to be exchanged (Ayad, 2015 -a). At the beginning of 2015, Rwaq launched another MOOC platform called 'Maharah'. It focuses on skills training, project management, network management, and operating systems etc. with the aim of creating a community of educators in the Arab world (Ayad, 2015 -b).

2.6.2.2 Edraak MOOCs Platform (Jordan)

Downes states that MOOCs will play a significant role in the future; “MOOCs are being presented by various providers and have become a global phenomenon, with the launch of Britain's FutureLearn and the Arabic MOOCs (Edraak) coming online” (Downes, 2013). The rising phenomenon of MOOCs is no longer limited to the English language. EdX has partnered with The Queen Rania Foundation for Education and Development in Jordan and is offering Arabic language MOOCs, to serve a large number of Arabic-speaking students. Edraak was officially launched on 19th May 2014 as a MOOC platform.

Samir Abdel-Aal, Professor of Genetics and Molecular Biology at the National Research Centre in Cairo, told the University World News that Edraak will take out the language barrier and, improve higher education access by encouraging online learning and decreasing the knowledge gap between the Arab world and developed countries (Sawahel, 2014). In addition, Edraak's manager declared that Edraak presented a number of English language MOOCs for non-Arabic speaking learners, thus allowing Arabic professors to describe their personal experience of Edraak platforms to the Western world (Pirkle, 2014).

On the other hand, some challenges have also been presented by Edraak; for example, there have been technological issues for some of the registered participants as regards their Internet connection, in that there was insufficient bandwidth to download and stream MOOC lectures. In response to this issue, the Edraak team is trying to communicate with community-based technical centres, where learners can access the Internet on the correct bandwidth free of charge. Another challenge concerns raising greater awareness of what MOOCs are and, how they are used, creating a sustainability model so that Edraak can remain effective (Pirkle, 2014).

2.6.2.3 Mena Versity (Lebanon)

In November 2013, Hassan Kanj, a computer science specialist from Lebanon, together with a colleague, Firas Wazneh, created the MOOC platform MenaVersity, which offers open online courses in Arabic. Kanj explained that MenaVersity targets the Middle East and North Africa and is similar to many other MOOC programmes around the world, offering original courses in subjects such as social media, marketing and famous Lebanese cuisine. It also provides private tutoring and counselling sessions,

linking users with professionals. The content offered appeals mainly to the 16 to 40 age group (Topalian, 2013).

2.6.2.4 SkillAcademy (Egypt)

Paul Lee, global TMT leader at Deloitte, stated that SkillAcademy is one of the most interesting MOOC platforms in the region. It is an advanced level and is based in Egypt. It combines all that is available around the world in the domain of online learning and has more than eight million users (Hamid, 2014). SkillAcademy was launched in 2013, and one of its co-founders Bassem Fayek, explained to 'Scoop Empire' in March 2014, that SkillAcademy runs free online courses through which you can learn anywhere and, at any time from the world's top universities, e.g. Stanford, Harvard, edX, MITx, etc. in English, with no translation and students can receive a certificate on completion of the course and its assignments. In addition, they are provided with a verification code so their certificate can be authenticated for their employer (Muscara, 2014).

In addition, SkillAcademy courses are bundled into 'skill-camps', which are a combination of courses focused on a specific skill-set needed in the job market, in order to develop very high impact training programmes to progress participant's careers. They also, cater for those who want to change their career and are looking for relevant coursework to help them acquire new skills. Overall, SkillAcademy faces some challenges with participants, as self-education requires a great deal of self-discipline, without which students may easily be led to drop out from the course (Muscara, 2014).

Dina Kiwan, Associate Professor of Sociology at the American University of Beirut (AUB) and an expert on citizenship studies states, "[t]here is an urgent need for the Arab region to develop its capacities for learners' needs and open the routes to higher

education and vocational training by developing an accessible flexible system and approach for lifelong learning” (AUB, 2014). As awareness of MOOCs is raised in the region, there will be a greater demand for more local versions.

The following section outlines the new MOOC platforms launched between 2014-2016, some of which are still being piloted:

2.6.2.5 The Ministry of Labor (Doroob) in SA

In September 2014, the Ministry of Labor in Saudi Arabia, in cooperation with edX, announced the launch of an open-platform MOOC aimed at bridging the gap between education and employment in Saudi Arabia and throughout the Arab world known as 'Doroob'. The courses are expected to begin with a pilot programme targeting Saudi women, people with disabilities and those from rural communities, helping them to acquire the necessary skills to secure a job. Moreover, it will offer courses from edX university lecturers, translated into Arabic, and original courses developed from scratch in Arabic. In 2015, the platform was launched by offering training skills programme to help to reduce the unemployment rate in Saudi Arabia.

Maha Taibah, Advisor to the Ministry of Labor on Human Capital Development, explained to the Saudi Gazette (Ba-Isa, 2015), that in Saudi Arabia the private sector is growing quickly and employees need to upgrade their skills to meet rising demands. Moreover, women and the younger generations need to have access to high quality career training in areas such as IT, healthcare, retail and manufacturing. The initiative is to produce more job opportunities and economic authorisation throughout the Arab world, as well as in Saudi Arabia.

2.6.2.6 Zadi MOOC in SA

Zadi platform was launched in 2015, with the aim to spread educational and Islamic ‘Shari’a’ knowledge in an interactive educational way with the latest modern technology, which facilitates access to reliable information for any age, any education level, at anytime, anywhere and without cost (Zadi, 2015).

2.6.2.7 An-Najah National University MOOC in Palestine

In October 2014, Professor Maher Natsheh, Acting President of An-Najah National University in Palestine, in a press conference, announced the launch of the first free English-language MOOC in the zone, entitled ‘Discover Palestine’, presenting Palestine’s history, archaeology and culture to people around the world. The course addresses the international public and draws attention to the Palestinian cause. Moreover, the course was designed by the E-Learning Centre, with the contribution of specialists from the University. Around 100 people have participated in the pilot phase from various countries around the world, e.g. France, Spain, America, Malaysia, and India (An-Najah, 2014).

2.6.2.8 American University of Beirut MOOC

In the autumn semester of 2014, AUB launched a MOOC created by some AUB faculty members, with the goal of providing the best solution for those seeking educational opportunities, who live in regions where there is political instability and for those experiencing socio-economic difficulties (AUB, 2014).

Zane Sinno, coordinator for the Communications Skills programme in the AUB English Department declares, “I am expecting anywhere between 2,000 to 3,000 registered students when the course starts on 8th October, 2014” (AUB, 2014).

A pilot MOOC course was previously offered in the summer of 2014 by AUB and in agreement with the Edraak MOOC platform, which allowed AUB to provide the instructors and design the course, with Edraak providing the appropriate MOOC platform. Throughout the upcoming autumn course, AUB will be able to evaluate the experience and decide whether to expand the programme and include courses from other faculties (AUB, 2014).

2.6.3 The Influence of MOOCs from the Western World on the Arab World

The year 2015, MOOCs gain power across the Arab World according, to Deloitte's (TMT) predictions for the region. As stated earlier, the most widely accessed MOOCs in the Middle Eastern region are: Rwaq (Saudi Arabia), Edraak (Jordan), MenaVersity (Lebanon), SkillAcademy (Egypt), Dorooob (Saudi Arabia), Zadi (Saudi Arabia), An-Najah National University (Palestine), and American University of Beirut (AUB) (Lebanon). In fact, there are several reasons why these Arab countries have launched their own platforms and these will be examined below.

2.6.3.1 Inspiration

The inspiration for MOOCs in the Arabic region mainly came from some of the top universities in the Western world, e.g. Harvard, MIT, Stanford, etc. and the aim was to bring a higher quality of education to Arabic learners, especially to the high number of learners amongst the Arabic population who participate in these MOOC platforms.

Edraak, the Ministry of Labor and SkillAcademy are some of the Arabic MOOCs motivated by international models. They have displayed entrepreneurship, and the edX MOOC platforms offer a means of delivering high quality online education as well as reducing the digital and, general knowledge gap, and language barrier between the Arab

world and developed countries. On the other hand, the 'Rwaq' Saudi platform was inspired by the MOOC movement, but not devoted to its business model. The Rwaq team have stated that they will try to find the right business model for the Arab world, in order to build a star platform to offer the region fully native content from local professors and a fully Arabic MOOC platform (Curley, 2013).

2.6.3.2 The Need of MOOC in the Arab world

There are many reasons why MOOCs are needed in the Arab World; the growing population, the education system with overcrowded classrooms, expensive private universities, the lack of resources for meaningful development, a shortage of teaching staff, and people in remote areas who cannot travel to university daily in some of the developed countries (see Table 2.3).

2.6.3.3 Language

Most of the platforms found above are targeted at the Arabic language population and some are completely in Arabic, like Rwaq and MenaVersity. Edraak have both edX English courses translated into Arabic, and some local professors presenting Arabic courses in English to deliver their experience to the non-Arab audience. Similarly, the Ministry of Labor's MOOC is translated into Arabic from edX.

Alternatively, SkillAcademy, AUB and An-Najah present in English, but have plans to translate all their MOOCs into Arabic. Moreover, we can see that the cultural aspect is clear in An-Najah's MOOC, 'Discover Palestine' as they have tried to deliver a message to the Western population by presenting in English (see Table 2.3).

2.6.3.4 The Quality of Education

There are three types of courses: academic, non-academic and skills training courses. Edraak and Rwaq, for example, run all three types of course mentioned above.

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However, AUB and An-Najah are piloting MOOCs under educational institutions and produce only one type of course. SkillAcademy targets companies and employees who cannot find a job in Egypt, due to their lack of skills and, so SkillAcademy produce skills training courses.

The Ministry of Labor has a similar aim but the focus is more on women and disabled people. However, MenaVersity is not an educational platform, but is limited to certain topics; for example, Lebanese cooking. MenaVersity also run courses for recent graduates seeking to enter the job market. However, Western MOOCs may be perceived to be of better quality, because most of the courses are delivered from prestigious universities around the world (see Table 2.3).

2.6.3.5 Gender-Segregation

Due to cultural, social and religious reasons in some Arab countries, learning opportunities for females are limited because of gender-segregation. Males and females cannot meet or communicate freely anywhere and anytime they want (Tubaishat et al., 2006).

Saudi Arabia is one such, conservative country that strictly enforces gender-segregation on education system and so, 'Doroob' a pilot MOOC platform has been launched under the Ministry of Labor, especially for women to help to decrease the cultural and social limitations and, that the social aspect should not be neglected. MOOCs can enable freedom of expression for women so they can communicate in a real-world setting (mixed-gender classes) meeting and interacting with other peers or learners.

2.6.3.6 Credentials

Most MOOCs are free of charge and some offer certificates after completing courses, except MenaVersity which does not offer certificates to learners, as it is not a university website. Udacity and some other MOOCs charge a fee for the certificate.

2.6.3.7 Accessibility

The instructional design of most Arabic MOOCs is simple, making them easy to access. It is easy to register with the respective websites and the material is presented in a simple format. Rwaq is the only platform that has launched a smartphone application which has a similar design to their website.

In addition, MenaVersity is planning to launch smartphones applications. In contrast, most of the Western MOOCs already have live smart-phone applications, e.g. edX, Coursera, Udacity and Khan Academy.

The following Table 2.3 shows the 7 themes of MOOCs in the Arab World, in relation to their main aspects:

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Table 2.3 The themes of MOOCs in the Arab World

The Themes	Arabic MOOCs	Western MOOCs	Aspects
Inspiration	SkillAcademy Edraak Ministry of Labor	EdX Harvard MITx Stanford	Social Cultural
The Need for MOOCs	Expensive universities The education system Lack of resources Teaching staff shortage Difficulties in transportation	EdX Harvard MITx Stanford	Economic Political Cultural
Language	Arabic: Rwaq, MenaVersity English: Skill Academy, AUB An-Najah University English & Arabic: Edrakk, Ministry of Labor	EdX	Social Political Cultural
Quality of Education	Academic: Edraak, Rwaq, AUB, An-Najah Non-Academic: Edraak, Rwaq, MenaVersity Skills Training: Edraak, Rwaq Skill Academy, Ministry of Labor	EdX Coursera FutureLearn Udacity MITx Khan Academy	Social Cultural
Gender- Segregation	Ministry of Labor	-	Social Cultural Religious
Credentials	Certificate: Most platforms No Certificate: MenaVersity	Most platforms Udacity charges for certificates	Social aspect
Accessibility	Usability & Design: Most platforms Smartphone apps: Rwaq	Smartphone apps edX Coursera Udacity Khan Academy	Social aspect

This section has shown the inspiration of MOOCs from the West on the Arab world. MOOCs are disruptive innovations, and have generated great impact on higher education worldwide. They are delivered via online environments, which are free of charge and open to all learners. The influence of Western MOOCs on the Arab world is found in many important aspects: cultural, social, political and economic aspects.

In addition, several issues have been highlighted regarding the status of MOOCs in the Arab World. For instance, the majority of these Arabic MOOCs are launched under private companies, which is likely to limit the courses in terms of quality and content. Another issue to be considered is the low rate of participations due to the lack of awareness in the Arab world of what MOOCs really are.

Sharif Mussab, suggests that further work is needed to guide professors and leaders in higher education institutions throughout the Arab world, so that they will be more aware of the benefits of online learning and MOOCs, also there should be a phased plan for introducing MOOCs to some select classes in universities in Arabic-speaking countries (Sharif, 2013). At the end of this subsection, given it highlights the influence of MOOCs in the Arab world, and that the next section is about female-segregated education and online learning in SA higher education specifically.

2.7 Background of Female-Segregated Education in Saudi Arabia

Education was the first segregated sector and has remained until now. Females education in Saudi Arabia had a difficult start from the very beginning due to some religious and culture beliefs which prevented the government from opening schools for girls in certain areas of the country (Al-Washmi, 2009, Shiraz, 2016).

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Nonetheless, in the 1960s, females' education in the Kingdom of Saudi Arabia first began with fifteen establishments, and has increased rapidly to 155 in the 1970s. According to UNESCO statistics, "[t]he total number of girls in primary schools in 1970 was 246,559 and the number grew to 649,509 students in 1989" (Al Mohsen, 2002).

The first women's college was established in 1970 in Riyadh, opening only with Arts and Education departments. In the 1980s another ten institutions were founded, such as King Saud University that offered courses for females such as Public administration, Medicine, Dentistry, and Nursing. Also, King Abdul-Aziz University, accepted women to study Economics in 1967; started with a small number of students (68 males and 30 female students,). In 2002, King Khalid University admitted women to Computer sciences. Moreover, in the beginning of the 20th century, number of private universities opened for girls with a new department like Law, Engineering and Graphic design. On the other hand, in all these universities women had attended segregated campuses (Hamdan, 2005).

According to the Ministry of Economy and Planning (2014) 9th Development Plan; females comprised 50% of the students at the primary school level and 53% of the students in secondary schools. Women constituted 62% of the overall population at Saudi Arabian universities. Although, there are more female than male students; there is still a lack of female instructors in SA higher education (Alhareth et al., 2015).

2.7.1 Gender-Segregation of Online Learning in HE

The recent situation in the Middle East presents some challenges regarding the impact of e-learning on social and cultural factors in higher education, and that would restrict the progress of education. Gender for instance, has been found in some studies to be a

very influential factor in terms of using e-learning; indeed, gender plays a significant role in how students engage with online courses. Moreover, males and females could possibly react in a different way to the material, methods presented, participation, and interaction with the tutor (Gulati, 2008).

2.7.2 Gender-Segregation in Saudi Arabia

The Kingdom of Saudi Arabia is considered to be the keeper of the Islamic religion and one of the most conservative Muslim countries in the world, especially in regard to the status of women (Baki, 2004). Education in Saudi Arabia is segregated at all levels except for kindergartens, each institution has facilities for segregated education where women are allowed to study, but the subjects in their programmes are more limited than those committed to men (Hamdan, 2014, Le Renard, 2008).

Moreover, Saudi Arabia is facing the challenge of achieving international credits and competitive borders in higher education, while maintaining the traditional cultural standards. The Saudi Arabian society is unlikely to support gender-desegregation due to its religious and cultural restrictions (Onsman, 2011). Although, the Saudi Arabian higher education system offers females education from primary to post-graduate level, the limitations in mobility generate a significant obstacle for them to access higher education institutions freely; for example, in order to attend a class on campus or a public segregated library, females need to hire a driver or ask a close male relative to drive them to and from the institution (Baki, 2004).

On the other hand, in 2009, the Ministry of Education approved the first mixed-gender private university King Abdullah University for Science and Technology (KAUST), to maintain the international ranking and elevate the international credits of Saudi Arabian HE. In KAUST, women are allowed to study together with men, and they can drive

only on campus (Onsman, 2011). In 2010, the first exclusive university for female students Princess Nora University opened in Riyadh, Saudi Arabia. Although, the opening of new institutions only for female students and staff facilitates women's access to HE, it continues to reinforce gender-segregation (Onsman, 2011). Overall, according to the Saudi Arabian Ministry of Higher Education report (2015): in the first quarter of 2015, the total number of Saudi Arabian students enrolled in Saudi universities was 669,271, from which 248,343 were male and 420,928 were female (Hamdan, 2014).

2.7.2.1 Gender Segregation of Online Learning in Saudi Arabia

Saudi Arabian universities have attempted to facilitate women's online learning access to higher education since the 90's by using online delivery methods. They use learning management systems, such as Blackboard, WebCT, and Tandarus. An example is the video conferencing at King Saud University where female students are allowed to attend a male class, however, they are not allowed to meet face-to-face or have any discussion with male students. This method of learning has not been very successful due to the lack of group discussion and female participation. Furthermore, female lecturers are not allowed to teach male students (Baki, 2004).

The Ministry of Higher Education developed procedures for female's education based on Islamic and social standards. In 2006, the Ministry offered a distance education programme at universities named 'ENTSAB' that used broadcasting technology to allow remote access to bachelor and master's degrees (Alhareth et al., 2015). King Abdul-Aziz University in Jeddah was the first university to offer online Bachelor's degree programmes, and in 2007, Imam Mohammed Bin Saud University offered the first distance learning programmes with instructions entirely online (Alebaikan and Troudi,

2010). By 2013, most of the Saudi universities included online or blended learning components in their programmes. More than 20,000 students are enrolled in online BA or MA programmes in those universities (Hamdan, 2014).

2.7.2.2 Cultural Implications of Online Learning in Saudi Arabia

Learning culture can be defined as, “[t]he ways in which students perceive their materials, their class discussions whether in-person or virtual, their teachers/professors as knowledge providers or facilitators, and the meaning and purpose of education” (Hamdan, 2014). Hamdan also states, “[t]he online education and culture have a reciprocal and correlative relationship”.

Regardless of the development in literature about the online learning and distance education, there was a slight highlighting on the ways online learning and the wide expansion of online communication have influenced the learning culture around the world, and the Arab world in particular, one example is Saudi Arabia.

Moreover, in Saudi universities the adaptation of online education methods in the university culture; is considered a big issue in the development of e-learning system (Graham et al., 2005). According to Alebaikan and Troudi (2010), state that “[t]hese issues are related to a measure of: extension of comfort levels using technology in online learning; the level of students’ self-discipline, university and academics support and finally the students’ social and cultural beliefs”.

Tubaishat et al. (2006), state that “[c]ommunication between genders is affected by cultural, social and religious norms”. Samovar et al. (2015, p. 339), argues that there is a strong relationship between culture and learning, and by how students choose to learn,

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which shows the need to reduce the impact of social and religious beliefs towards the ability of female to learn.

In Saudi Arabia, the obligatory gender-segregation by religious, social and cultural traditions has heavily impacted on the achievement of women in the higher education institutions, and online learning might be good idea to remove such barriers (Baki, 2004). E-learning will allow females to learn the same practical skills as males. Also, females could get the opportunity to continue their education from their homes, in e-learning learners could improve flexibility in accessing course and lectures from any part of the country. The adoption of e-learning might be a step towards eliminate the gender-segregation challenges (Alhareth et al., 2015).

Overall, it appears to have only few literatures related to the relationship of educational technologies with the social norms and gender issues in SA higher education. A study by Al-Jarf (2007), experiments a female academic who teach an online course to female students shared with a male academic and his male students and both were from different cities in SA. It involved e-communication across gender not only between the male and female students, but also between male and female teachers. This experiment proved to be a total failure; with weak engagement and interaction. The female participants showed some privacy concerns e.g. anonymising their e-mail address and registering under a male name.

At the end of this subsection, given it highlights the gender-segregation of online learning in Saudi Arabia where no studies found about gender issues and female teachers in SA MOOCs, and that the next section is about educational technology, Virtual Learning Environment, Virtual Worlds, 2D animation and the uses of Avatar in education.

2.8 Educational Technologies: Virtual Learning Environment

A Virtual Learning Environment (VLE) can be considered as one of the key methods of producing e-learning platforms. It allows students to interact with the course structure, access and use of learning resources, which can deliver an enjoyable platform for learning and teaching (Annetta and Holmes, 2006). Furthermore, VLE motivate students, as they can be challenging and enjoyable, enhancing imaginary and social perception. They frequently influence students who do not do well in the traditional way of learning (Dede, 2004).

A Learning Management System (LMS) is a software tool that combines computer and communication functionally. It is an online method of learning, content provision and educational process management through an integrated web-based learning environment which is very similar to the Virtual Learning Environment (Adzharuddin and Ling, 2013).

2.9 Virtual World

A Virtual World (VW) is a computer-based environment. It is a platform that reproduces an online 3D environment in which users can appear in the form of personalised Avatars and interact with each other as they would in real life (Hew and Cheung, 2010).

Virtual Reality (VR) is a computer technology that can be used to create three-dimensional 3D world and can allow users to explore the environment and feel that they are inside that world. This concept is used in VWs, that allow users to be present in an environment as an 'Avatar' (Dickey, 2005). VWs could enhance learners engagement by

providing opportunities for content creation, decision making, problem solving, and reflection (Dickey, 2005).

Moreover, Virtual Social World which is also known as Second Life (SL); where users can speak to other Avatars and walk in 3D virtual environment. Also, It allow users to design clothing to Avatar or add furniture items as in real life (Kaplan and Haenlein, 2010).

2.10 Avatars Technology

The need of a worldwide learning experience and the learners' interface together might help to discover some upcoming directions by using widespread internet software such as Second Life, a popular multi-user virtual environment developed by Linden Labs, (Christensen et al., 2008).

2.10.1 The Background of Avatar

In the 1990s Avatars technology was first introduced, however, there were several technical difficulties, for example, the slow phases for interaction (Oestreicher et al., 2010).

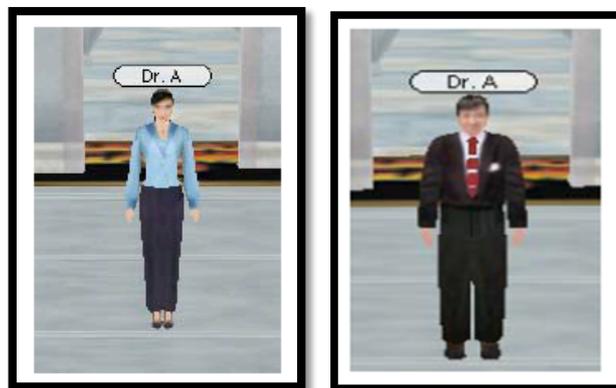


Figure 2.2 Example of female and male Avatars

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According to Fabri et al. (2007), the term 'Avatar' “[d]erived from Sanskrit, encapsulating the notion of God’s incarnation on earth”.

As González et al. (2013), define ‘Avatar’ as:

“[t]he digital representation of the individuals within the virtual world, it has an ability to perform actions and to simulate human-to-human interactions to increase engagement and hence learning.”

Moreover, the Avatar as a virtual person inside the platform assists the user to move around, change places, travel from one zone to another, and can load information on the computer (Panayiotopoulos et al., 1999).

2.10.2 Avatar Identity, Gender and Age

The Avatar is very unique, easy to recognise and its usage is now common in applications, chatting, gaming and education. For example, in social media users tend to choose an Avatar to represent them instead of using text only. Moreover, in e-commerce, Avatar usage for the purpose of potential customer-interaction is also increasing (Fabri et al., 2007).

Furthermore, Nowak and Rauh (2005), state that the digital-age users prefer to choose gender-compatible Avatars. The identity factors, e.g. gender and age, have an effect on the use of internet and perceptions of Avatars. It is possible that an Avatar can be viewed as a strong social indication affecting perceptions of computer users, motivating them to recognise interfaces as more social.

According to Blinka (2015), adolescents are more likely than adults to identify themselves with their Avatars and to develop emotional attachments toward them. Moreover, there is a relationship between the development of identity and virtual self-representation in adolescence e.g. in video games (Klimmt et al., 2010, Milani et al.,

2014). A study by Villani et al. (2016), show that the creation of a digital Avatar changes with age and is partially associated with adolescents' perceptions in terms of body and self-esteem. The creation of Avatars occurs differently for boys, who enhance their Avatars with many features, than for girls, who prefer to detail their Avatars to enrich them with more clothing (Villani et al., 2016).

Kang and Yang (2006), argue that people in cyberspace used Avatars to build their own identities and express who they are. Avatars have special characteristics of self-identity and self-disclosure. First, self-identity is the distinctive characteristic of oneself that is formed by social interaction, and developed by time and place, however, it is difficult to make a quick and histrionic change in one's physical appearance. Second, it is the process of telling another person about oneself, by sharing personal and private thoughts and feelings which is known as self-disclosure.

Overall, in VWs, Avatars can be seen as opportunities to reflect the user's self-concept appropriately; if an individual identifies that an Avatar's physical appearance (face and body) look like his/her real physical appearance (Suh et al., 2011). Similarly, Cover (2012), observed that social networking profiles (that include Avatars) are tools to develop identity as a narrative in line with cultural demands.

2.10.3 Avatars in Video Games

Games are not new to education. Gaming and educational technology have the potential to impression today's digital age students, if compiled in an attractive way (McClarty et al., 2012). Besides, Avatars technology in gaming can produce a perceptive residue where players imagine that they are in a real environment. Avatar applies one of the highest powerful forces in the people mentality and social interaction (Moshell et al., 2002).

2.10.4 Avatar Technology in Education

Foundational research demonstrates how elements of the Virtual World's environment such as Avatars in Second Life can be used in education, and potentially increase social presence (Jamaludin et al., 2007). The use of VLEs and 3D technology has been successfully implemented in HE; in 2007, about 100 higher education institutions were registered with SL marking the use of these environment by educational institutions for teaching and learning (Childs, 2007). SL as a social networking space is conducive to alleviate some of the distance education barriers in generating a sense of community. Nevertheless, it is still considered a new approach of teaching and learning in the universities (Christensen et al., 2008, Ritzema and Harris, 2008).

On the other hand, Barnatt (2009), focus on the impact of the internet on HE organisations, which shows that perhaps an inclusive range of new applications and educational tools are in use. Oestreicher et al. (2010), explains that there is a need to consider the potential interface for the Avatar technology; put differently, the possibility of whether the usage of Avatars will enhance the teaching and learning experience needs to be explored (McGreal and Elliott, 2008).

A study by Peterson (2006), conducted for students in Japan (English-as-a foreign language). Most students (15 of 24) made use of communication features of their Avatars and use emotional responses with other peers as an entertainment. Also, some of the students clarified that using Avatars was an enjoyable experience and wanted to participate in future Avatar-based VWs, which resulted that the use of Avatars contributed to the creation of an interaction within a virtual world environment.

A UK study by Bailey and Moar (2001), showed that Avatars are very successful as tools to enable interaction between children in primary schools. All the children were

interested in creating their own Avatars, and wanted to make their Avatars look like themselves.

2.10.4.1 Avatar Technology in Teaching

In a 2009 interview, Dyson states that “[t]he Avatar technology may present lectures and seminars to real lecture presented in a lecture theatre” (Oestreicher et al., 2010). Many well-known universities around the world, such as Harvard, Stanford and the Open University are using SL as a motivating part of their learning and teaching systems. They have established virtual campuses to help learners study, attend classes, and work together. Moreover, instructors adopting SL found it to be a useful professional development tool (Oestreicher et al., 2010).

Furthermore, benefits deriving from the application of SL Avatars in teaching include offering opportunities for social interaction and community development, dissolving social restrictions, reducing social anxiety, and enhancing learners’ motivation (Hamalainen, 2008). Dr. Steve Hornik at the University of Florida uses SL to teach Accounting to almost 800 students. Data was collected from surveys taken in his classes in Autumn 2009. His reported results seemed to point out a positive student experience, approximately 40.7% of the students (agreed or strongly agreed) that SL helped them realise the essential of financial accounting.

Hornik (2010), identifies that “[t]he use of SL can also offer the ability to unlock creative problem-solving skills, and enhance collaborative learning.” Another example would be that of a Medical School University using signs and speech with Avatars in order to experience the interaction between patients and doctors, result with a positive impact on the learners, they found it a great tool for teaching (Johnsen et al., 2005).

The following Figure 2.3 shows the Avatar technology uses and its impact on education (teachers and learners):

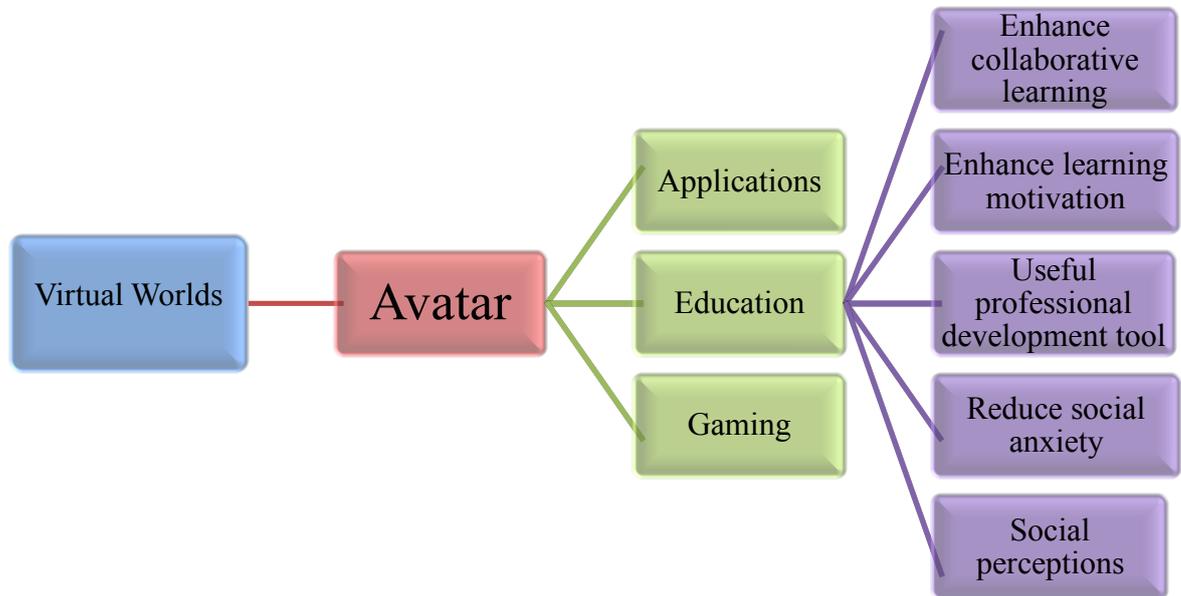


Figure 2.3 The Avatar technology uses

2.10.5 Machinima

In 2001, the Machinima invention was developed in the gaming industry, and was introduced in films festivals, were created by recording and editing Avatars in real time (Middleton and Mather, 2008). Machinima has been described as “[a]nimated filmmaking within a real-time virtual 3D environment delivered as digital video” (Swanson, 2007). Filimon (2009), defines Machinima as “[c]omputer-animated films that combine machine, animation and cinema, filmed in a virtual world to be distributed online”. Donovan (2015), states that Machinima is an alternative to DVD, offers acknowledged advantages. According to Savin-Baden (2008), “[t]he use of Machinima in training programs overall rationale focused on the benefits for the executive instructor, as the skills teaching in a virtual environment gives many advantages.”

Moreover, the Machinima recording includes screenshots; with the subsequent video material edited using software and sound effects can be useful. At the end films are extracted to a digital file. Furthermore, Machinima production simply requires a few people to control the Avatars, record, edit and upload the video; it is usually the same one or two people (Call, 2005). Machinima in VLE can make the film more attractive to learners with restricted access to costs, humans, settings and time efficient to the unreachability of educational video creations (Bardzell et al., 2006). According to the Academy of Machinima Arts and Sciences (2005), indicates that “Machinima production is cost-effective and offers people a huge amount of creative tools.”

In education for many years, Machinima in the VLE has been used by HE organisations to explain ideas, and to produce learning and teaching materials that were more attractive and interesting to their students (Middleton and Mather, 2008). As an example of Machinima in higher education, in 2012, Machinima were developed in a Pharmacy course for bachelor students to teach models that were challenging to reproduce in real-life teaching situations. Another example of Machinima usage in 2013, is the UNE Business School, for the teaching of perceptions that were hard to understand by traditional classes and textbooks (Gregory et al., 2013).

2.10.6 2D Animated Avatar Videos

2D animation creates movements in two-dimensional artistic space. It started to use a computerised animation in the 1960s (Parent, 2012). In 2D animation users can design characters, backgrounds and storyboards in 2D environment. Also, it has many applications such as; computer animation, flash animation and PowerPoint animation. As an example of animated video-clip software: Go-animate, Plotagon and Crazytalk etc. In addition, the use of these animated video-clips could help to achieve desired

learning outcomes and enhance instructional effectiveness. The creation of animated video-clips offers students opportunities to engage with specific content in a dynamic way (Gurvitch and Lund, 2014). In this research study, the 'Go-animate' software was used, which is a cloud-based 2D animated video-clips to design and develop an Avatar character to represent a female teacher to solve a complex problem in diverse settings.

2.11 Pedagogical Approaches

"Pedagogy before technology" is a known phrase to highlight the importance of pedagogy. Some educational institutions are placing emphasis on obtaining and applying technology without any consideration of the pedagogy support e.g. 'constructivist pedagogy' could employ deep learning while involve skills training; and to provide meaning to the entire process, it should provide engagement with a social setting- Vygotsky (1978) social interactionist theory of learning (Beetham and Sharpe, 2013, pp. 21-22).

E-learning have different pedagogical approaches, which can be characterised as: Associative (learning as activity through structured task), Cognitive (learning through understanding), and Situative and (learning as social practice) (Conole, 2010, Mayes and De Freitas, 2004, Conole et al., 2004).

In each perspective, many of different approaches emphasis different things. For instance, the 'Situative approach' emphasis social constructivism and collaborative learning. Some situative characteristic that it takes social interaction into account and learning as a social participation within a socio-cultural context. Also, e-learning application emphasis on social learning, communication and collaboration (Conole, 2010).

Furthermore, Conole (2015), states that there are different pedagogical approaches that were adopted in different MOOCs, where some emphasise individual learning through interactive with materials, what others focusing on social learning. A brief description of each learning theory is presented below, with a specific examination of the approaches selected for the present study.

2.11.1 Constructivism

'Piaget's theory of constructivism', the formalisation of constructivist learning theory is related to the ideas of Jean Piaget (Piaget, 1967). Constructivism appeared in the 1980s in Europe and America. As a critical theory, it has been mostly presented in many subject areas, especially the impact of education is said to be subject to the traditional education and learning theory of a revolution (Mingfei and Jie, 2010). Constructivism argues that interactive activities in which learners play active roles can engage and motivate learning more effectively than activities where learners are passive. Individuals are assumed to learn better when they discover things by themselves and when they control the pace of learning (Leidner and Jarvenpaa, 1995). Therefore, it is natural to expect that self-directed, interactive learning would improve learning outcomes (Zhang et al., 2006). Constructivists view learning as a formation of abstract concepts in the mind to represent reality. They assumed that learning occurs when learners construct internal representations for their unique version of knowledge (Tsay et al., 2000). Critics of constructivism argued that greater understanding of factual and procedural material results when learners are forced to discover the knowledge themselves than when they are merely told (Leidner and Jarvenpaa, 1995).

2.11.2 Social Constructivism

Researchers develop an e-learning process based social constructivism environment for problems solving and observed effects on the experimental group. The social e-learning process experimented in present research is based on the design of Vygotsky's social development interaction theory (Vygotsky, 1978) for problem solving and facilitation of online learning and teaching.

According to Mingfei and Jie (2010), social constructivism is considered as a significant theoretical branch of constructivism that has been gradually designed and then developed to social constructivism learning theory, which is strongly influenced by Vygotsky's research (Vygotsky, 1978). Social constructivism theory suggested that the construction of social knowledge first occurs in a social context, to be thereafter adjusted to the purpose of the individual. It is a dynamic learning process where learners should learn to discover principles, concepts and facts for themselves. Some scholars agree with the social constructivism learning theory and considered learning as set in involved social context (Kim, 2001). In addition, Barhoumi (2013), states that "[t]he design of the instructions established by online social constructivism online courses in SA is considered to be a new instructional technology to be incorporated in higher education institutions."

2.11.3 Collaborative Learning

Collaborative learning is a model of learning through joined activities in learner groups for the creation collaborating and sharing of knowledge through synchronous or asynchronous communication, with help from online course material and instructors (Brindley et al., 2009). The collaborative learning is based on the design of instruction suggested by Jonassen (1991) and theory suggested by Vygotsky (1978) motivates the

improvement of knowledge construction by learners through discussion, social interaction, clarification of ideas, and evaluation of other learners' ideas. Bryant (2015), states that:

“[f]or MOOCs to function as the bridge between open content and collaborative learning, there is a need to include opportunities for social interaction and collaboration, which have consistently proven to be beneficial to learners.”

2.11.4 Pedagogies Related to This Study

In this research, the case studies have been structured upon consideration of two main pedagogical approaches: first, the didactic and behaviourist (Case Study 2); second, the dialogic learning (Case Study 3), to provide a new and rich perspective on technology enhanced learning that stressed the development of learners' skills.

In Case Study 2, the pedagogy is didactic and behaviourist in approach. According to Pollard (2002), the didactic approach is when the tutor spreads information to the class with the goal that student retain the learning. The behaviourist approach identifies the teacher as the ‘expert’ in the classroom where he/she is required to present opportunities for students in the classroom to experience wide-ranging learning environments (McAlister, 2009).

In Case Study 3, the pedagogy is dialogic in approach. The dialogic learning and teaching is based on dialogue, discussion and opinion between the students and the teacher on various perspectives when action and learning is allowed (Flecha, 2000, p. 61). Dialogic learning can lead to social and culture transformation through dialogue. It could involve question and answer between the teacher and their students which can increase self-confidence and reduce social anxiety (Mercer and Howe, 2012).

This study will explore the challenges of the social learning aspects of the Rwaq platform which could offer in the future opportunities for group-based dialogic learning, and an invaluable feature of any learning environment. With the aim to enable the use of these pedagogical approaches, the researcher will develop the Avatar tool on a MOOC platform, as a technology that allows female tutors and learners to interact socially.

2.12 Summary of Literature Review

The aim of this chapter was to provide a literature review of three different concepts: first, MOOCs as the phenomenon of interest in this research study, second gender-segregation and female cultural and social boundaries as the focus of the investigation from the perspective of online learning. Finally, the adoption of the Avatar technology as a represented to the female tutors in MOOCs in SA. The definition of MOOCs and their types was presented, advantages and disadvantages were also discussed. MOOCs in the western world and its influence on the Arab world. Then, background of female-segregated education in Saudi Arabia online learning in HE and the cultural implications of online learning in SA. The literature review also covered the virtual world, 2D animation and Avatar tool alongside its background and advantages in education. The literature review found a lack of studies focusing on female tutors' perspectives in online learning and MOOCs teaching, although female tutors in online learning are stated as one of the important theme in e-learning in SA higher education. Therefore, a study to investigate to what extent the cultural and social challenges of female tutors' can be alleviated by the Avatar technology with current developments in MOOCs. The following chapter will explain the adopted research methods and design to this study and why these methods were chosen.

Chapter 3

Research Methodology

3.1 Introduction

The available literature considering some of the background on female education in Saudi Arabia was reviewed in this study, as well as the most important aspects of MOOCs, comprising a new education system around the world, specifically the Arab world. Some of the literature on Avatar technology was also reviewed. This part of the thesis consists of a simple process, whereby research questions can be answered using the methods adopted and the research objectives successfully achieved.

According to Kumar (2005), the research methodology should clarify where and how the research data are to be collected, as well as outlining the sampling strategy. Furthermore, the research methodology represents the process of discussing, analysing and evaluating all the information gathered in a study (Goddard and Melville, 2004). It is also suggested that it can aid the research process, where problems are to be solved using the respective methods. Another purpose of the research methodology is to promise positive results, as it organises the research and ensures proper implementation (Silverman, 2016). Overall, the research methodology aims to identify the data sources, outline the sampling strategy, and ensure accurate and timely results.

This chapter begins with a discussion of the relevant philosophical paradigms, before presenting the research design for the current study, which involves a mixed-method approach. Also presented are the methodology and rationale for selecting a case study approach. Next, the process of collecting the respective data is discussed and finally, the access procedure and ethical considerations observed are outlined.

This chapter concludes with a detailed description of how the collected data were analysed in this research, in order to try and understand the impact of implementing Avatars, as well as the perceptions of learners and teachers. This was intended to help dissolve the cultural and social boundaries in Saudi society, especially where female tutors are concerned.

3.2 Philosophical Paradigms

There are three components that should be considered when selecting a suitable research approach: the philosophical paradigm, the research design and the research methods (Creswell, 2013a, pp. 16-18). To clarify further, paradigms are:

“Models or frameworks that are derived from a worldview or belief system about the nature of knowledge and existence. Paradigms are shared by a scientific community and guide how a community of researchers act with regard to inquiry.” (Savin-Baden and Major, 2013)

However, Lopez and Willis (2004), argue that there tends to be a lack of clarity in the foundations and expectations of the philosophical paradigm used in research studies. This makes it difficult for the reader to ascertain how the knowledge is measured and consolidated. It is also stated by the above authors that the consideration of philosophical paradigms before implementing research methods could help justify the research findings, structure and purpose.

In brief, a philosophical paradigm will consist of the following components: ontology, epistemology and methodology (Crotty, 1998). Firstly, ontology is concerned with the nature and form of reality, namely ‘What is’, the issue of existence, or ‘What is knowledge?’ (Guba and Lincoln, 1994). Here, the researcher should consider perceptions of how things really are and how they actually operate. However,

qualitative and quantitative research exists in two different ontological paradigms. Secondly, epistemology, according to Morrison et al. (2007), is concerned with how forms of knowledge can be accessed, created and communicated; for example, in response to the question: ‘How do we know this?’ Moreover, Guba and Lincoln (1994), state that epistemology refers to the nature of the relationship between asking the question, knowing the answer and knowing what can be known.

Finally, the research methodology, according to Blaikie (2007), is concerned with how the researcher will measure the acknowledged reality and formulate the theory under investigation, while also establishing a suitable research plan (pp. 12-16). Aside from the above, Guba and Lincoln (1994), claim that a research methodology consists of asking the question: ‘How can the enquirer go about finding out whatever they believe can be known?’ (p. 113). Scotland (2012), adds that these philosophical paradigms can involve either quantitative or qualitative data and in an overview, Lincoln et al. (2011), identify the four most common research paradigms: positivist, interpretivist, critical and pragmatic. A brief description of each paradigm is presented below, with a specific examination of the paradigm selected for the present study.

3.2.1 The Positivist Paradigm

Within the positivist paradigm, it is assumed that reality is a given and that it is objectively measurable using traditional scientific methods and through appropriately rigorous enquiry (Bryman, 2012). According to Henning et al. (2004), positivism is concerned with uncovering the truth and presenting it by empirical means. It therefore relates to the need to find causes for effects or outcomes, such as social phenomena. It is commonly used in research to test theories or hypotheses, especially where very large sample sizes are involved (Creswell and Garrett, 2008).

The positivist approach usually involves a quantitative methodology and statistical analysis. It begins with a theory, proceeds by collecting data, and then produces and evaluates the resulting findings, which will either support or disapprove the selected theory. It may then involve revision of the theory and further testing (Creswell, 2013a, pp. 22-24). However, to an extent, a positivist paradigm will limit the researcher's potential for incorporating personal values or interests during the observation (Goldbart and Hustler, 2005).

3.2.2 The Interpretivist Paradigm

The interpretivist paradigm is strongly influenced by anthropology, which aims to understand the historical and cultural aspects surrounding the participants concerned and the subjective meaning of social action (Creswell, 2013a, Bryman et al., 2008). The epistemology of this interpretivist paradigm assumes that knowledge of reality is socially constructed, rather than objectively determined (inter-subjective knowledge construction) (Lincoln et al., 2011). It emphasises the construction of meaning by the individual, whereby there is no objective reality, since “[p]eople create and associate their own subjective and intersubjective meanings as they interact with the world around them” (Orlikowski and Baroudi, 1991). Applied to educational research, the interpretivist paradigm enables researchers to build a rich understanding of the real life experiences of teachers and students and of the cultures that form in the classroom, at school and in the communities in which they serve (Taylor and Medina, 2013).

Creswell (2013b) states that interpretive approaches commonly depend on qualitative methods and are generally associated with qualitative inquiry and analysis; for example, observational methods, descriptions, interviews and focus groups, which are all subjective. Unlike the positivist paradigm, interpretive research does not conclude by

“[p]roving or disproving a theory, testing hypotheses or predefining a dependent or independent variable” (Walsham, 1995). On the other hand, the interpretive paradigm has attracted criticism for the small study samples usually involved, which can limit the generalisability of the findings. Nevertheless, with an interpretivist approach, the findings can be used to inform other settings, with the aim of understanding a phenomenon, without necessarily generalising the data (Orlikowski and Baroudi, 1991).

3.2.3 The Critical Paradigm

When using a critical paradigm to gain knowledge, researchers focus on rejecting injustices, such as differences, oppositions, contradictions and conflicts in modern society. This is also known as the ‘transformative paradigm’ (Creswell, 2013b). Moreover, Kincheloe (2011), argues that the critical paradigm enables “the researcher to practise deep democracy that includes classifying and socially transforming social policies, beliefs, structures and practices”. In so doing, a qualitative, quantitative or mixed-method research design can be applied, although this has generally been associated with qualitative studies. In addition, a critical paradigm will mean investigating issues of power, control and ideology, in order to guide people’s understanding of the social world.

As mentioned above, a significant purpose of the critical paradigm is to alleviate and bring to light social injustice (Hesse-Biber, 2010). However, despite its emphasis on political consequences, the critical paradigm is itself criticised for its apparent lack of validity (Kincheloe et al., 2011).

3.2.4 The Pragmatic Paradigm

The pragmatic paradigm is concerned with the consequences, rather than the causes or conditions of a phenomenon. Aside from this, the pragmatic view of knowledge,

concepts and values is shaped by human actions and social practices (Creswell, 2013b). According to Patton (2002), the pragmatic paradigm adopts a practical approach to problems and the main principal of pragmatism is action and change, as well as individual solutions. The pragmatic approach is in fact considered to be a new guiding paradigm in social science research (Morgan, 2007). Besides, the pragmatic paradigm is open to multiple approaches to understanding a research problem, thus affording researchers flexibility and adaptability in their methodological choice (Patton, 2002).

As a result, pragmatism is generally considered as the philosophical paradigm underpinning mixed-method research, which can encompass various points of view. Therefore pragmatists are free to use both qualitative and quantitative methods and data collection techniques to answer a research question (Creswell, 2013a, pp. 28-29).

On the other hand, pragmatism has certain weaknesses, due to this very openness and the broad and diverse range of approaches it permits. However, pragmatist researchers argue in favour of limiting the approaches available. In addition, pragmatism is more likely to promote incremental, than fundamental, structural or revolutionary change in society (Johnson and Onwuegbuzie, 2004).

3.2.5 The Paradigm Adopted in this Research Study

The present research employs a pragmatic paradigm as its philosophical assumption; with an emphasis on the socially constructed nature of reality. Here, online learning environments are potentially created through a relationship between the researcher and what is being studied, and participants can describe their individual experiences in an online learning process within MOOCs. The pragmatic paradigm adopts a practical approach to real world problems, suggests solutions to such problems, and uses all

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available techniques to investigate them, rather than making assumptions about the nature of knowledge.

As a result of the above, the online teaching process experienced by female tutors in the light of Saudi Arabia's cultural challenges can be observed and investigated here; endeavouring to understand and collect data on learners' experiences, through the use of mixed methods research and techniques. These include student observation, individual interviews, a focus group and questionnaires in the socio-cultural context of the respective online learning. This pragmatic paradigm has enabled the current study objectives to be met by qualitative and quantitative means, applied in conjunction with each other, so that one clarifies the other and provides clear justification for the reader (Creswell and Clark, 2007).

Positivism, therefore, was seen as irrelevant for the present study, because it fails to take into account human interaction and the co-constructive nature of data collection from human subjects. Similarly, the interpretive paradigm was avoided, because of its use of small study samples. Meanwhile, a critical approach was rejected due to its lack of validity and solving a problem. The following Table 3.1 presents some of the strengths and weaknesses of each of the philosophical paradigms mentioned in this chapter.

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Table 3.1 The strengths and weaknesses of various philosophical paradigms used in research

Philosophical paradigm	Pragmatic	Positivist	Interpretivist	Critical
Research approaches	Qualitative and quantitative approaches	Quantitative approaches	Qualitative approaches	Qualitative and quantitative approaches
Strengths	Concerns consequences rather than causes or conditions	Tests theories or hypotheses, especially where very large sample sizes are involved	Knowledge of reality is socially construed, rather than objectively determined	Freeing from and describing social injustice
Weaknesses	Promote incremental change, rather than more fundamental, structural, or revolutionary change in society	Potential for the researcher to avoid the interference of personal values or interests during observation	Small study samples involved, which could limit the generalisability of findings	Possessing a lack of validity

3.3 Research Approach

According to Babbie and Benaquisto (2009), “[t]he deductive approach begins with an expected pattern that is tested against observations, whereas an inductive approach begins with observations and seeks to find a pattern within them.” (p. 38)

3.3.1 Inductive and Deductive Approaches

The inductive approach is also known as ‘inductive reasoning’ which does not deal with hypotheses in any way, although it can involve “[t]he search for pattern from observation and the development of explanations and theories for those patterns through a series of hypotheses” (Bernard, 2011, p. 7). In addition, the inductive approach is referred to as a ‘bottom-up’ approach: “[t]he researcher uses observations to describe a picture of the phenomenon that is being studied” (Lodico et al., 2010, p. 10). Conversely, the deductive approach may be defined as: “Reasoning from the general to

the particular”, where the research moves from the general to the specific; for example, from an existing theory to a hypothesis. Moreover, the research strategy adopted will then test this hypothesis, or add to or contradict the theory. Generally speaking, some researchers adopt both inductive and deductive approaches in studies (Creswell and Clark, 2007, Pellissier, 2008).

In the present study, an inductive approach was used, with the aim of extracting meanings from the collected data. This was in order to identify patterns and relationships, interpreted at different times and in different places by different people. Moreover, an inductive approach is usually focused on exploring a new phenomenon, based on learning through experience, but with the application of existing theory to develop the research question being addressed (Gray, 2013, pp. 14-15).

3.4 Research Design

Creswell (2013b), states that there are three types of approach to designing a research study: qualitative, quantitative and mixed method. Research studies can therefore be categorised as quantitative or qualitative and very often, both approaches are adopted. These are associated with specific data collection methods, such as observations, interviews or surveys. The decision over which method to use is subject to the researcher’s discretion and judgement (Seale et al., 2004).

3.4.1 The Qualitative Approach

Lincoln and Guba (1985), argue that qualitative research is generally used to explore and understand a phenomenon and this is also referred to as ‘the naturalistic approach’. It involves the researcher studying data in natural settings and attempting to understand phenomena from the point of view of the respective participants, such as taking into account how others perceive the world (Willig, 2001, Denzin and Lincoln, 2013).

Moreover, qualitative research is a broad approach to gaining an understanding of social phenomena. Marshall and Rossman (2011), claim that it explores the complexity of social interaction in daily life and is thus highly suitable for studies requiring a deep understanding of the participants' actual experiences and hidden beliefs. As well as for eliciting their silenced voices (Creswell and Clark, 2007). In addition, qualitative research can assist in understanding participants' difficult circumstances, including culture and other phenomena, instead of merely testing hypotheses or identifying cause and effect relationships (Savin-Baden and Major, 2013).

Finally, Creswell (2013b), states that a qualitative research approach can be used to gather diverse knowledge and review strategies. Qualitative data collection therefore includes observation and participant observation (fieldwork), interviews, focus groups, and the analysis of documents and reports (Patton, 2005).

3.4.2 The Quantitative Approach

Johnson and Christensen (2014), indicate that quantitative research is a scientific, empirical and traditional approach, used to understand a phenomenon by studying the relationship between variables (p. 33). It also tends to be used in the physical sciences, originating from scientific processes. Meanwhile, it is a formal, systematic and objective process, in which phenomena are clarified and measured using descriptive figures and numerical data to generate findings. These are then tested and the cause and effect relationships examined (Creswell, 2013b).

In light of the above, the quantitative approach uses more objective measures than the qualitative approach (Golafshani, 2003). Denscombe (2014), argues that a researcher using a quantitative approach will maintain an independent view of the facts and apply methods that do not require any direct contact with the participants; for example,

questionnaires or surveys (pp. 166-167). This avoidance of direct interaction with respondents when collecting data can help reduce the risk of bias, thus ensuring objectivity (Johnson and Christensen, 2014).

3.4.3 Mixed-Method Approach

According to Creswell and Clark (2007), a mixed-method approach may be defined as:

“A methodology which involves the philosophical assumptions that guide the direction of the data collection and analysis and the mixture of qualitative and quantitative approaches in many phases in the research process.”

Morse (2003a), also defines mixed-method research as: “Incorporating various qualitative and quantitative strategies within a single project that may have either a qualitative or quantitative theoretical drive.”

The mixed-method approach has been widely applied in many fields, including education and social sciences (Johnson and Onwuegbuzie, 2004). The use of a mixed-method approach within a single study has in fact been supported by many researchers, seeking to triangulate quantitative data with qualitative data. It is reported by Tashakkori and Teddlie (2010), that “[t]he use of such an approach enhances the validity of the results of the study, providing better data collection instruments and an increased understanding of the research results.” Moreover, Davis (2007), declares that “[t]he two approaches are different in their style, language and objectives, however, both of them depend on the skills, training and the experience of the researcher, each of them has its strengths and weaknesses” (p. 9). This approach can enable the researcher to present data from two different studies, using one to clarify the other, while also providing clear justification for the reader (Creswell and Clark, 2007).

3.4.4 Current Research Approach

In the present research, a mixed-method approach was adopted; focused on collecting, analysing and combining both quantitative and qualitative data in a series of studies to provide appropriate answers to the research questions, while at the same time drawing on the strengths and minimising the weaknesses of the research. In addition, these mixed methods were used to clarify differences and similarities, and to triangulate the data as a means of understanding and achieving the study objectives. It was deemed important to understand that qualitative and quantitative approaches could be used in conjunction with each other (Sandelowski, 2000, Creswell, 2013b, Morse, 2003a). As a result, both structured and unstructured questions were included, with the logic of induction and deduction being applied during the interviews and in the e-questionnaires.

Further to the above, 'triangulation' is a term referring to the use of more than one approach to answering a research question, which can then enhance confidence in the results. It is one of several rationales for mixed-method research (Johnson et al., 2007). Triangulating data from qualitative and quantitative approaches can help increase understanding, overcome bias and verify the complete of indications, thus increasing the validity and reliability of the study findings (Golafshani, 2003) (see Section 3.9).

3.5 Research Methods

3.5.1 Ethnographic Research

Ethnography is an extensive empirical research methodology, consisting of a qualitative method; for example, interviews, participation and observation. It has become increasingly widespread in social research, because we live in an observation-oriented society (Gobo, 2008). According to Creswell (2013a), ethnography studies “[t]he

meanings of social interactions, values, behaviours, language and perceptions which occur among members of an entire culture-sharing group.” (p. 90)

Furthermore, at the heart of ethnographic research is fieldwork, which usually involves observational methods to enable an in-depth understanding of cultural practices to emerge (Creswell, 2013a). Ethnography is also based on the theory that the researcher’s engagement in a social situation will bring about the required understanding. The purpose of ethnographic research is primarily to recognise and understand changes in organisational culture and social groups, as well as what new technology can bring them. It can also outline the advantages and disadvantages of such change (Fetterman, 2010, Creswell, 2013a).

3.5.2 Action Research

The term ‘action research’ has frequently been used to describe research initiated by educational experts, such as classroom research and educational action research (Hopkins, 1985, Elliot, 1991). Moreover, action research also includes the setting of the problem and not just problem-solving. It is motivated by an attempt to understand how to change the world, by identifying problems, developing technical solutions, and implementing these, thus contributing to the relevant research (Baskerville, 1999).

3.5.3 Ethnographic-action Research

This research study combines ethnographic research with action research, which can yield certain tools and research techniques. The ethnographic-action researcher needs to collect data from different sources, such as observations, interviews, focus groups and documents; for example, observation notes or reports to support their observations (Tacchi et al., 2003). Ethnographic-action researchers can also analyse these collected

data by triangulating different sources to develop a new system design. Recently, technology researchers have started to use the ethnographic research method to examine the implementation of technologies within social systems, thus informing the design of technology (Miles and Huberman, 1994, Hartmann et al., 2009). In this thesis, the focus of the ethnographic-action research is to try and understand how the participants act, think and feel during their daily study. This understanding can then be used to introduce a new system (Avatar technology) into Saudi society, in respect of gender-segregation issues.

3.5.3.1 Auto-ethnographic Research

Hayano (1979), coined the term ‘auto-ethnography’ to describe ethnographic research carried out on research participants and observed from an insider’s perspective. Auto-ethnographic methods can include discussion, note-taking and the identification of categories and themes (narratives), which involve both the perspective of the insider participating in the research and the viewpoint of the researcher from the outside (Ellis, 1998). Moreover, according to Ellis et al. (2011), the auto-ethnographic research approach “[d]escribes and analyses (*graphy*) personal experiences (*auto*) in order to understand cultural experience (*ethno*).” In addition, Auto-ethnography is a qualitative research method where researchers can use a highly-personalised style in their writing and draw upon their experience to enhance their understanding of a social phenomenon (Wall, 2006). In auto-ethnography, “[s]elf-narratives have a variety of forms for example, academics’ logical efforts to analyse their own profiles as resources for revealing large social or cultural phenomena.” (Butz and Besio, 2009)

3.5.4 Case Study

The research method adopted in this thesis is the case study. Here, this involved the collection and analysis of both quantitative and qualitative data (Yin, 2014), and it was selected on the basis of the study aims, namely to clarify and analyse both the qualitative perceptions of the learners' and female teachers' issues in the MOOC online learning environment, and the quantitative data drawn from multiple case studies examining their satisfaction and impressions, concerning the factors affecting their participation.

Data collected using case study methods may include observing aspects of people's behaviour or a setting (Gillham, 2000). Hartley et al. (1994), also explain that “[c]ase studies are tailor-made for exploring new processes or behaviours or ones which are little understood.” Meanwhile Yin (2003), defines a case study as “[a]n empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.” In this regard, Yin (2014), also states that there are three main motives for selecting this approach: ‘How’ or ‘Why’ research questions, the researcher’s inability to manipulate relevant behaviours, and contemporary as opposed to historical phenomena forming the subject of the study. In addition, Yin (2009), states that case studies are suitable for exploring a phenomenon, where the behavioural events cannot be controlled.

On the other hand, case studies have been criticised for their lack of scientific rigour. Yin (2014), adds that this is because there is a lack of existing methodological texts to guide the researcher. However, according to Crowe et al. (2011), there are some ways

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of helping to overcome this issue, such as triangulation, validation and ensuring transparency in the research process.

In the research fields of education and social sciences, three types of case study are possible: exploratory, explanatory and descriptive (Yin, 2003). First, an exploratory study analyses an actual phenomenon, in order to gain some understanding of its nature and accompanying problems. Second, an explanatory study investigates further hypotheses in the context of the phenomenon, as applicable. Finally, a descriptive case study explores a phenomenon, so that it is described for the reader. In this thesis, an exploratory case study approach was adopted and this is widely used in educational research. Here, it focuses on the adoption of an Avatar tool in a MOOC. The case study was thought to be helpful for exploring the use of an Avatar tool by female tutors in their teaching or online learning, in order to alleviate gender-segregation issues in Saudi higher education. In the following Figure 3.1, Stake (1995) suggests and summarises specific techniques for successfully organising and conducting case studies:

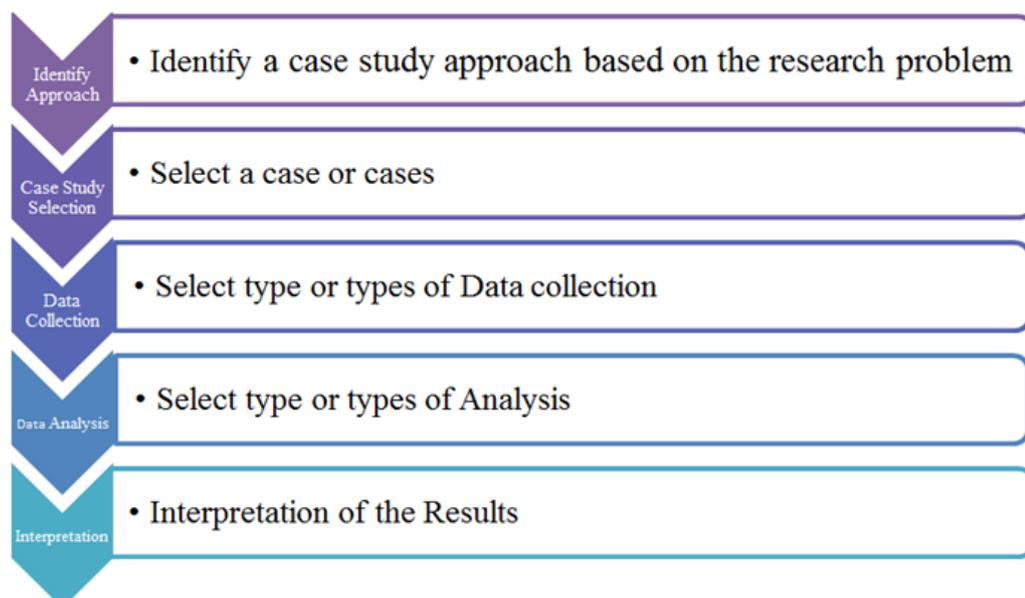


Figure 3.1 Techniques for Case Study

In the present research, the above steps are applied in an exploration of three case studies. The first of these consists of semi-structured interviews with female academics teaching courses on the Saudi Rwaq learning platform. In the second, the participants are observed on an English language course using Avatar technology in online videos at KAAU – this was chosen to investigate students’ perceptions and the teacher’s experience of using an Avatar. In the third case study, a Meta-MOOC course was developed on the Rwaq platform, using the Avatar tool to explore its impact on the socio-cultural issues potentially faced by students and teachers in Saudi Arabia’s gender-segregated society.

3.5.4.1 Multiple Case Studies

According to Creswell (2013a) a case study is:

“A qualitative approach in which the investigator explores a bounded system (case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information for example, observations, interviews, audio-visual material, and documents and reports, and reports a case description and case-based themes.” (p. 97)

According to Patton (2002), case study research methods can be applied to single or multiple cases. Multiple case studies can be used to identify the similarities and differences between cases, with the possibility of generalising the findings. On the other hand, Yin (2014), states that a “[c]ase study could be able to assist in developing and generalising theories rather than concluding possibilities by adopting multiple cases for a case study research.” Moreover, multiple case studies must be selected in order to replicate a design, not as sampling logic. Therefore, every case must be carefully selected in terms of how the researcher will predict the findings. If these findings are

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similar and repeated between cases, the overall results can lead to greater generalisability.

The decision over whether to use single or multiple case studies should be made in relation to the amount of information available on the phenomenon, the type of research question, availability of the cases, and accessibility of resources (Zainal, 2007, Yin, 2014). In the present case, the researcher decided to conduct multiple case studies, with the aim of achieving more significant results and generating an overall understanding that is appropriate for each of the cases in the research, while the cases might differ in their detail (Yin, 2014).

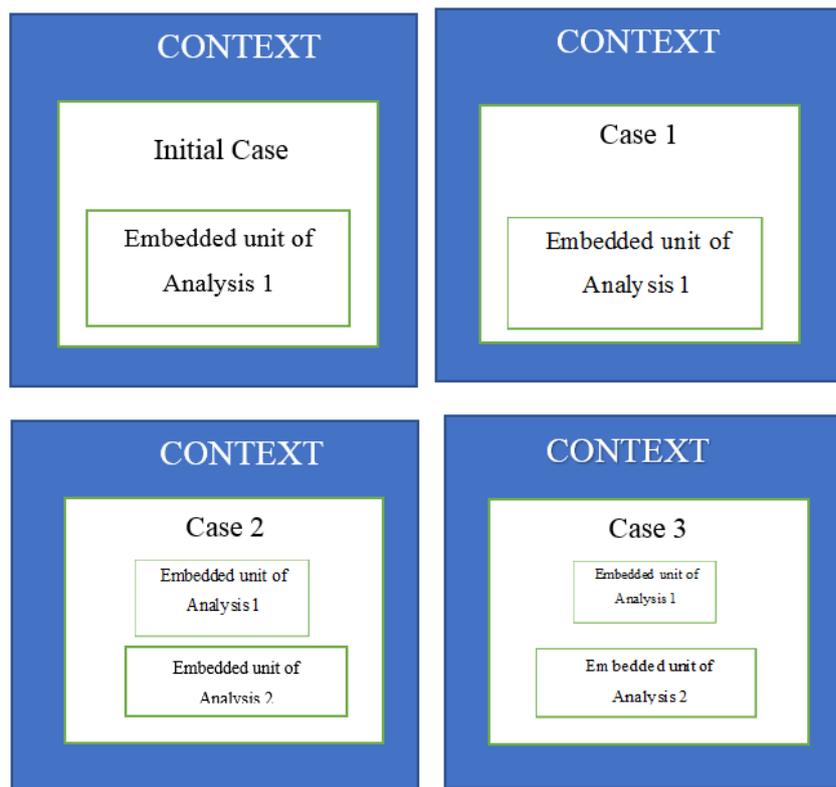


Figure 3.2 Multiple case studies (embedded design) (adapted from Yin, 2014)

Data Collection

As mentioned before, this thesis presents both quantitative and qualitative methods of data collection and analysis. There is in fact many techniques that can be applied to collect data; for example, questionnaires, observations, interviews, focus groups and reviews of the relevant literature, or reviews of the evaluated results of other studies.

3.5.5 Sampling and Recruitment

The participants in the present study varied, but could be divided into three main categories, relative to each case study. In the Initial Study, a random sample of 15 participants were involved from Saudi Arabia and some Saudi students in the UK. A random sample the participants' characteristics should be known and that helps in gaining a representative sample. In the first case, four female academics were sampled, who had previous teaching experience on the Rwaq platform. In the second case, the sample population comprised undergraduates studying online at KAAU, or else undergraduates at KAAU with experience of online learning. A target response of 17-20 out of a total of 25 students receiving the pre- and post-questionnaire responses was achieved, with eight students participating in the focus group, and an interview with the course leader.

The third and main case study involved the Rwaq participants, who held different levels of educational qualification, were of different age groups, and came from different Arab countries. These totalled 5580 in the first run, with a total of 830 participants completing the end-of-course survey. Correspondingly, a total of 1665 participants were involved in the second run, with 430 participants completing the end-of-course survey in that cycle.

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The following Table 3.2 shows the sample involved in the case studies:

Table 3.2 The case studies sample

Case Study	Sample involved	Method used
<i>Initial Study</i>	15 participants: 7 students, 4 teachers, and 4 administrators	Semi-structured interviews
<i>Case Study 1</i>	4 Female academics	Semi-structured interviews
<i>Case Study 2</i>	25 undergraduate students The teacher	Observation Pre- and post-questionnaire Focus group Semi-structured interview
<i>Case Study 3</i>	Rwaq first run (5580) Rwaq second run (1665)	Participant observer End-of course survey

3.5.6 Semi-structured Interviews

Jacob and Furgerson (2012), state that the construction and development of interview questions should be aimed at answering the respective research questions. In addition, interview questions should be able to extract responses from participants and must be carefully worded, so as to avoid 'leading' the interviewees in their responses. Therefore, interview questions are commonly open-ended, neutral, singular and clear (Patton, 2002). On the other hand, Boyce and Neale (2006), argue that interviews have certain limitations, in that the interviewees may be unwilling to share everything the researcher hopes to explore, while findings cannot be generalised if the sample is not random, or if only a small number of interviews are conducted.

In the current research, five semi-structured interviews were conducted with female academic instructors (Case Studies 1 and 2). This type of interview incorporates features of both structured and unstructured interviews and includes closed and open

questions. As a result, the advantages of each type of interview were acquired. Semi-structured interviews are considered suitable, because they enable flexibility and openness to the participants' answers and it allows the researcher to ask additional questions in response to participants' reactions. (DiCicco-Bloom and Crabtree, 2006).

The participants were interviewed individually, face-to-face or by telephone. All the interviews were audio recorded and the recordings were then transcribed verbatim and kept confidential. Interviews are recorded to provide rich descriptions and capture the actual quotes, in order to support data analysis (Patton, 2002). In the initial study (explorative) involving 15 participants. In the first case study, four semi-structured interviews were completed, in order to gather the teachers' views and perceptions of their MOOC teaching experience. The (25) interview questions moved gradually from general to the specific, and questions focused on five concepts, centred upon the following areas: the MOOC course target group; social interaction with participants; women's decisions to show their faces; knowledge of Avatar technology, and the impact of Avatars on teachers and students.

Similarly, the interview with the teacher in Case Study 2 included (23) questions focused on social interaction; physical appearance; motivation to develop a 2D Avatar; gender-segregation, and the impact of adopting MOOC platforms in SA higher education.

3.5.7 Observation

In recent years, the field of education has seen an increase in the number of qualitative studies involving the collection of data from participant observation (Kawulich, 2005). Marshall and Rossman (2011), define observation as: “[t]he systematic description of events, behaviours, and artifacts in the social setting chosen for study” (p. 139).

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Methods of observation can be useful to researchers in many ways; for example, they can provide methods of identifying participants' emotional expression, interaction and communication with peers, as well as noting the amount of time spent on various activities (Kawulich, 2005).

Furthermore, Spradley (2016, pp. 73-75), points to the existence of three types of observation: descriptive, focused and selective. Descriptive observation consists of the researcher observing anything and everything, based on the premise of knowing nothing beforehand. The drawback of this is that a great deal of irrelevant detail could be gathered. In focused observation, however, the emphasis is on observation supported by interviews, where the participants' perceptions guide the researcher's decisions about what to observe. Finally, in selective observation, considered to be the most systematic, the researcher focuses on diverse types of activity, identifying the differences between them (Angrosino and Mays de Pérez, 2000).

In the present research, specifically in Case Study 2, the field observation was conducted by observing students' behaviour and their responses in class, as well as to the online videos produced using Avatar technology. The researcher observed a course in the English Department at KAAU in Jeddah, Saudi Arabia over a period of four weeks, from (3-10-2015 to 29-10-2015), while taking field notes in class for three lectures a week on Sundays, Tuesdays and Thursdays, and weekly from the Avatar video forum on the University's Blackboard BB facility. This was aimed at investigating the students' expectations of the Avatar videos, as opposed to a traditional classroom, in terms of communication and interaction with each other and the teacher, and the description of the setting.

The researcher used descriptive notes on the classroom observation to add further context, together with explanations of the setting observed, in order to discover the students' behavioural engagement with the learning environment and to ascertain whether e-learning leads to more active learning than is generated in a traditional classroom (Li et al., 2014). Moreover, the level of satisfaction with the 2D animated Avatar videos was noted.

3.5.8 Focus Group

Kitzinger (1995) states:

“Focus groups are particularly suited to the study of attitudes and experiences, while surveys repeatedly identify gaps between knowledge and behaviour, only qualitative methods, such as focus groups, can actually fill these gaps and explain why these occur.”

Focus groups are most suitable for exploratory research (Vaughn et al., 1996). They consist of semi-formal or informally structured discussions led by the researcher, which then becomes less structured discussions. Moreover, in a focus group, the researcher is required to collect data from a series of incidents, based on the participants' shared experiences of topics of interest, whereby the interaction between them is determined (Kitzinger, 1995, Gibbs, 1997).

Zeller (1986), further adds that a “[f]ocus group has the potential for providing a methodology of exploration which allows participants to express their concerns within a context that is useful to the scientific community.”

In general a focus group approach is used in combination with other methods found in the literature, Morgan (1996) acknowledges that questionnaires can point to differences in knowledge and behaviour, but nevertheless claims that focus groups can go some

way towards explaining it. Focus groups therefore offer a means of enhancing meaning and illuminating the context, comparing favourably with identical surveys. This is achieved through the collaboration between participants in a social gathering, if their social and cultural identity is robust (Gibbs, 1997, Rodriguez et al., 2011).

In the present study, in order to complement the survey data, a focus group was therefore conducted, since it is a common method of evaluating questionnaires (Presser et al., 2004). DeVellis (2012), declares that “[w]hen a construct cannot be measured directly, then a questionnaire that contains scale items that represent the desired construct can be a useful means of measure.” The purpose of this evaluation is to check that all the survey questions were easy for the participants to understand and answer. Moreover, another purpose of the focus group was to obtain a range of opinions from the participants about specific issues, especially noting their emotional reactions and behaviour. Case Study 2 was consequently conducted using open-ended questions amongst the most participating eight students on the same course and watching Avatar videos on the University’s Blackboard. The focus group was about (11) questions, it was recorded and then transcribed by myself, (the researcher).

3.5.9 Questionnaires

A survey can be defined as “A systematic method for collecting information from (a sample of) individuals for the purposes of describing the attributes of the larger population of which the entities are members.” It also refers to the collection of further data on characteristics, views and perceptions, which are not easy to obtain using other techniques (Salant et al., 1994, Groves, 2004). In addition, a questionnaire is the most commonly used descriptive method in educational research (Siniscalco and Auriat, 2005).

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In a survey, the data can be qualitative in nature (collected using open-ended questions), or gathered through personal interviews with participants, where they are required to respond to questions in more detail, or to add any other non-specific information, if desired. Open-ended questions therefore do not specify limited answers and do not include tick box methods, but rather provide space for longer written answers (Smyth et al., 2009). In contrast, quantitative methods (such as closed-ended questionnaires) may include multiple-choice questions to generate statistics. These are considered to be good measures for collecting information from large numbers of participants and they are simple and quick to complete, easy to compare with other research and provide clear information, which is relatively easy to analyse (Groves, 2004, Glasow, 2005).

According to Babbie (1990), surveys can fall into either one of two categories: cross-sectional and longitudinal. The former is used to collect information on a population at a single point in time, while the latter are used to collect data over a longer period.

However, there are advantages as well as disadvantages to using survey methods. The advantages are that they are inexpensive and can be completed from remote locations, such as via e-mail or over the telephone. Moreover, the samples used can be very large, which renders the results statistically significant. In addition, many questions can be asked about a specific topic, introducing considerable flexibility to the data analysis. The disadvantage is that the researcher cannot be sure whether all the elected participants will reply. Moreover, it can be hard for some participants to provide accurate information, or remember information about survey questions. Aside from this, participants may not always be obliging when an understanding of the historical context of the phenomena is required (Wright, 2005).

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In the current research, the questionnaires were developed and validated prior to the quantitative data collection. As stated earlier, questionnaires represent one of the most useful methods of gathering people's views and perceptions. In this instance, the Avatar technology presented included two applications: the KAAU BB (Case Study 2) and the Rwaq MOOC (Case Study 3) and so two different e-questionnaires were designed to evaluate the course: one was exclusively aimed at female participants at KAAU, and the other was designed for both male and female participants on the Rwaq MOOC. Pre- and post-questionnaires were correspondingly produced for Case Study 2 (in English) (Appendices 1 and 2) and an end-of-course questionnaire was created for Case Study 3 (in Arabic) (Appendix 3). The pre- and post-questionnaires were non-identical, but some questions were common to both. The links for the questionnaires were sent out either to the participants' University postal address, or via email to each individual participant on the course. These questionnaires consisted of three sections, with a total of 17-18 questions and an estimated completion time of 20 minutes. The participants were consequently questioned on three main types of data: demographic data, their experience of online courses, and their views of the Avatar tools used on online courses, as well as their corresponding interaction with their teacher and peers. It was decided that a follow-up e-mail or reminder should also be sent, to help increase the response rate. Meanwhile, the end-of-course survey comprised three sections, with a total of 21 questions and an estimated completion time of 15 minutes. It sought three main types of data: demographic data, the students' views and perceptions of their experience of the Rwaq MOOC and its effect on their studies and lifestyle, and the level of the students' satisfaction with the Avatar tool.

The components of the questionnaire were developed to answer the research questions and meet the study objectives. They focused on extracting the participants' perceptions of the Avatar course, so that new knowledge could be gained, in order to establish more effective measures for influencing the implementation of Avatars on MOOCs. Moreover, the participants' questionnaires constituted an important method of evaluating the role of the system in supporting the students' interaction with a female tutor, thus mitigating the issue of women refusing to reveal their faces in the respective study context – as this was something the instructors in the present study reported having faced (in the Initial Study).

3.5.9.1 *Electronic Surveys*

Electronic surveys/e-questionnaires are commonly used as survey methods, due to the expansion of the internet and the widespread use of emails for communication (Wright, 2005). E-questionnaires can be distributed in many different ways; for example, they can be posted as forms on the Internet, such as via the 'Survey Monkey' site or as 'Google Forms' (Galliher et al., 2008). Alternatively, the form can be sent to targeted participants by email, or distributed through public computers, such as in libraries or universities. In the present research, an electronic survey was created using 'Google Forms', which is a free website for online surveys and questionnaires. This facilitates the collection and analysis of data. It was decided to use e-questionnaires, because they are cost-effective and enable the rapid collection of information, thus permitting the participants to give their opinions, without any bias (Stopher, 2012).

Göb et al. (2007), describe e-questionnaires in some detail and the e-questionnaire adapted for this current study similarly consisted of multiple-choice questions, using a five-point Likert-scale, as follows:

- a) Strongly disagree, Disagree, Neutral, Agree, and Strongly agree.
- b) Very dissatisfied, Dissatisfied, Neutral, Satisfied and Very Satisfied.
- c) Not at all, Not very, Average, Quite and Very.

Likert scales are one of the most commonly used methodologies in social science research and they are widely applied when measuring attitudes within a population sample (Göb et al., 2007, Carifio and Perla, 2008).

3.5.10 Initial Study (Explorative)

Due to a lack of studies on the online learning barriers faced by female students and teachers in Saudi Arabia, an Initial Study (interviews) was conducted at the beginning of this research project, running from November to December 2014 and involving 15 Saudi students, teachers and administrators of both genders and aged over 18 years. These were not participants in the main study. Some were in collaboration with KKAU in Saudi Arabia, while others were randomly chosen (by myself, the researcher) (see Appendix 4). The objective here was to build up some knowledge of their opinions of online learning and their awareness of MOOC platforms in distance learning around the world, as well as in Saudi Arabia. This would serve as background to the main study. Data were subsequently collected through semi-structured interviews and subjected to theoretical thematic analysis. The participants indicated the extent of their satisfaction or dissatisfaction with the existing online learning system used at their universities. They also gave responses related to the issues faced by female teachers and students in distance learning, in order to generate the initial research questions for this thesis.

Moreover, before starting to conduct the three Case Studies, a one-question (Yes/No) survey was distributed to female academics at KAAU, Saudi Arabia, as a cornerstone for this study. This was aimed at determining the decision of the majority of female

lecturers over revealing or covering their faces, especially in reference to teaching an open online course, such as a MOOC on the Rwaq platform. Correspondingly, the survey question consisted of: ‘Do you accept to show your face when teaching a massive open online course (MOOC) on the Rwaq platform?’ The question was in Arabic, in order to obtain the maximum number of responses possible.

3.5.11 Case Study 1

In contrast to the above, semi-structured interviews aimed at answering the first research question were conducted with four female academics teaching an online course on the Rwaq MOOC platform. Two were selected, who had no issues with exposing their faces. A further two interviewees were chosen, reluctant to reveal their faces on the course (using only their voices and text in a PowerPoint Presentation). These interviews were conducted face-to-face and via telephone. Permission to record the interviews was requested for better data analysis and it was clarified to the interviewees that the material would be kept confidential and used solely for the purposes of this study. Data from the interviews were then transferred from the recording device to the research documentation (in Microsoft Office Word) and saved in a password-protected computer at the University, thus preserving confidentiality. Furthermore, in order to identify the challenges and barriers existing in gender-segregated online higher education system, the participants were asked questions related to their MOOC teaching experience on Rwaq and their opinions of socio-cultural standards. Moreover, they were interviewed about the effectiveness of Avatar technology as a new tool supporting female lecturers who preferred not to show their faces on online courses (see Appendix 5). The results will be compared with those from the interview with the lecturer teaching the Avatar course in Case Study 2, in order to identify the advantages and

disadvantages of the system from the point of view of the instructor, as well as gathering their comments and recommendations. The qualitative approach in this case study helped verify the validity and reliability of the data. However, there was the risk that the result would not be typical of the total population represented by the sample (Bryman, 2004).

3.5.12 Case Study 2

A mixed-method approach was applied here; in order to answer the second research question relating to an English Literature course entitled 'Fiction LANE 342'. This course observation ran over a period of one month, from (1-10-2015 to 30-10-2015) amongst female undergraduates at KAAU, Saudi Arabia. First, the quantitative approach involved surveys to be conducted amongst the above-mentioned students, both before and after the course. This was to obtain their views of the course and the Avatar videos, in order to assess the impact of these on their studies and learning style, as well as to explore whether the participants favoured a traditional classroom, or the online Avatar class. In this way, it was hoped that the issues faced by the students in this regard could be identified. The questionnaires correspondingly consisted of three pages, including a cover page with the following information:

- 1- The research subject and purpose
- 2- Instructions
- 3- The participants' rights
- 4- Information about the researcher

Secondly, in the qualitative approach, an observation method was adopted, which involved taking notes in class and conducting semi-structured interviews with the lecturer, Dr. Norah Al-Malki, an Assistant Professor in the Department of European

Languages at KAAU (see Appendix 6). The course integrated three weekly lectures and short videos using 2D animated Avatar technology created with ‘Go animate’ software. At the end of each week, this material was uploaded onto the University’s Blackboard forum. Regarding the Avatar videos, the students were required to complete a task and then provide feedback and comments on their peers’ answers. The researcher compared the students’ behaviour and responses in class, with their reaction to the online videos using the Avatar tool. Moreover, in order to evaluate the pre- and post- course surveys and observation, a focus group was conducted face-to-face at the end of the observation period among eight students, who had frequently and actively participated in the classroom and online Avatar discussion forums (see Appendix 7).

3.5.13 Case Study 3

In this case study, a Meta-MOOC implementing the Avatar tool was run on the Rwaq platform. This was developed over a four-week period using ‘Go-animate’ software, with the aim of discovering the experience of one female lecturer regarding the use of Avatar technology as a new teaching method on a MOOC, whereby my own subjective online teaching experience (as a participant observer) would be reported (auto-ethnography), which is considered important to triangulate the findings with the participant feedback (qualitative) and the end- of course questionnaire (quantitative).

A further reason for measuring the extent of the socio-cultural issues arising from online gender-segregated learning in Saudi Arabia was that it would contribute to the data collected from the participants regarding their perceptions and feedback. At the end of the course, an e-questionnaire created using ‘Google Forms’ was sent out by the instructor (myself, as the researcher) to the male and female participants. The results were then compared after completing the analysis of Case Study 2, in order to address

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the third research question. The purpose of this e-questionnaire was to enhance communication and participation on the online course, thus exploring students' views of the Avatar tool. It was also used to measure the level of satisfaction with the social interaction experienced between the instructor and the other participants. It was also aimed at evaluating the validity and usability of such a system; for example, its ease of use, how well it ran, ease of navigation, and the clarity of the videos, sound, etc. Overall, the data collection for Case Studies 1 and 2 was completed by November 2015. Meanwhile, the Rwaq study (Case Study 3) proceeded from May to October 2016. The following Table 3.3 presents the timelines for conducting the three case studies.

Table 3.3 Timeline for the three case studies

<i>Case Study 1</i>	<p><u>Qualitative Data:</u></p> <p>a) Interviews (semi-structured) with academics</p>	6 Weeks
<i>Case Study 2</i>	<p><u>Qualitative Data:</u></p> <p>a) Classroom observation</p> <p>b) Interview (semi-structured) with the lecturer</p> <p>c) Focus group</p> <p><u>Quantitative Data:</u></p> <p>a) Conducting the students pre- and post-course e-surveys (using a Likert scale)</p>	<p>4 Weeks</p> <p>1 Day</p> <p>1 Day</p> <p>4 Weeks</p>
<i>Case Study 3</i>	<p><u>Qualitative Data:</u></p> <p>a) Participant observer</p> <p>b) Participants feedback and comments</p> <p><u>Quantitative Data:</u></p> <p>a) Developing the Avatar tool</p> <p>b) Running the meta-MOOC on Rwaq</p> <p>c) Conducting the students' end-of-course survey (using a Likert scale)</p>	<p>4 Weeks</p> <p>4 Weeks</p> <p>8 Weeks</p> <p>8 Weeks</p> <p>4 Weeks</p>

3.5.13.1 Design the Avatar Tool

As regards to the Avatar's appearance and movements, the design of this Avatar was basically for the Rwaq Meta-MOOC (Case Study 3), whereby 'Go-animate' software was used. As mentioned earlier, 'Go-animate' is a cloud-based 2D animated video-clips where users can design characters, backgrounds and storyboards in 2D environment. In this study, designing and developing an Avatar character was aimed to represent a female teacher to solve a complex problem in diverse settings e.g. physical appearance and gender-segregation. The Go-animate application includes animation features that can be used by a lay person with minimal previous knowledge. The Avatar can reflect the person's role in the online space e.g. profession, skills and ability etc. (Boberg et al., 2008). The use of 2D animated video-clips can help to achieve desired online learning outcomes and enhance instructional effectiveness. Also, it can offer students opportunities to engage with specific content in a dynamic way.

In the Rwaq case study, certain prominent characteristics were important to consider before designing the Avatar. First, it was decided to use a female Avatar, because the teacher wanted to create a figure that would resemble herself (the researcher). The Avatar was also depicted wearing formal clothing, with a head scarf which is a typical of a Saudi female tutor. In addition, the background and theme was kept very simple, with very few items visible. Moreover, 'Go-animate' provides templates that are easy to use, though it could help duplicate a range of different actions, such as taking, walking, sitting down, or moving hands. Furthermore, the Avatar's facial expressions can also be easily modified. Finally, the researcher's voice was recorded for each of the videos, before they were saved and uploaded onto the Rwaq platform.

The following Figure 3.3 shows an example of different Avatars custom design by the Go-animate.

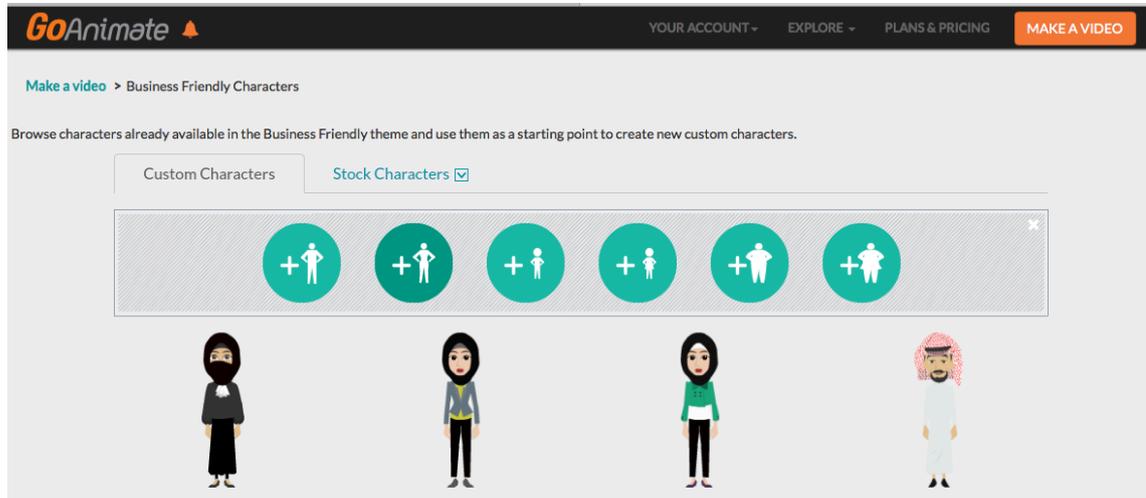


Figure 3.3 Designs example of the Avatar character

3.6 Achieving Access Procedure

In the fieldwork, it was important to obtain formal permission to approach the participants. For this reason, it was compulsory to gain the consent of the instructors and other staff, as well as of the participants themselves, with regard to the distribution of the questionnaires and to maximise the level of return. This step actually began at the University of Reading in the UK, where an official letter was signed by the PhD supervisor and sent to the Saudi Cultural Bureau in London. This approval was required for carrying out the study and collecting data in Saudi Arabia. Based on the letter from Reading University, the request for approval to conduct this study was sent to the Ministry of Education in Riyadh, Saudi Arabia. The letter clarified the title of the study and its research questions and objectives, as well as the proposed timeline. Finally, a letter was sent to KAAU asking for permission and cooperation in conducting the study and to facilitate the planned tasks. The Deanship of Higher Education at the University subsequently approved the letter and the data were collected over a period of one month

from (30-9-2015 to 30-10-2015), for the first and second case studies. After completing the field work, a confirmation letter was sent to the Saudi Cultural Bureau (see Appendix 8). Conversely, Case Study 3 was conditional on achieving access via email communications with the Rwaq administration team and Mr. Fouad Al-Farhan the co-founder of Rwaq.

3.6.1 Ethical Approval

As this current research involved human participants, it was necessary to request ethical approval before carrying out the data collection. The requirement for ethical approval is aimed at protecting the rights of human subjects when participating in research conducted by institutions. Ethical approval for research is usually guided by three principles: respect for vulnerable individuals, privacy, and honesty (Marshall and Rossman, 2011, p. 46).

After all stages of designing the interviews, focus group questions and questionnaires, and once this content had been confirmed, the data collection process could start. The official communication required for obtaining permission and ethical approval from the University of Reading to conduct the study had already been executed (see Appendix 9). Obtaining the necessary permission and consent is a very important part of conducting research and comprises a vital component of research ethics involving humans (Israel and Hay, 2006, pp. 2-4)– as implied above. The present study was subsequently scheduled for the month of September (the first semester of the 2015-2016 year) at KAAU in Jeddah, Saudi Arabia. It was to be conducted under the direct supervision and support of the Head of Development in the Deanship of E-learning & Distance Education at KAAU. The reason for choosing this university is its geographical location, that is located in a city that is not very conservative in rules and

regulation as well as society is more open culture. In Case Studies 1 and 2, the sample were only female because the education system in Saudi Arabia is gender-segregated so, it is difficult to access a male campus rather than a female campus.

3.6.2 Consent

All the participants received an information sheet inviting them to take part in the interview and giving them full details of the study (see Appendix 10). This was accompanied by a consent form (see Appendix 11). As proof that the participants had understood what the research involved, their signature was required, thus confirming their willingness to participate. Moreover, they were invited to share any concerns they had, with a reminder that they had the right to withdraw and feel free about raising any issues related to the interview.

3.7 Data Analysis

As mentioned earlier, the data analysis for this research consisted of both quantitative and qualitative methods, since the data collection technique employed semi-structured interviews, observation notes, a focus group and questionnaires.

3.7.1 Data Analysis for the Initial Study and Case Study 1

A qualitative approach was adopted when analysing the semi-structured interviews in the Initial Study and Case Study 1. There are several approaches inherent in qualitative analysis, such as narrative, ethnographic, discourse analysis, phenomenological and theoretical thematic analysis (Kawulich, 2004, Savin-Baden and Major, 2013).

In the Initial Study and Case Study 1, the researcher applied a six-phase thematic analysis approach, as described by Braun and Clarke (2006), following their protocol for analysing interview data (see Figure 3.4 below).

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Phase	Description of the process
1. Familiarising yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking in the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells; generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Figure 3.4 Six-Phases of Thematic Analysis (Braun and Clarke, 2006)

The reason for this was due to the high degree of flexibility afforded by thematic analysis, as it permits analysis in relation to set themes. This is in contrast to an inductive approach, which rather seeks to discover new patterns in data (Braun and Clarke, 2006). However, Boyatzis (1998), explains that thematic analysis can be used as an inductive or deductive approach, which makes it relatively flexible compared to other qualitative methodologies. Furthermore, in the Initial Study, the data were analysed using interview transcripts along with the thematic analysis framework. The researcher analysed these themes drawn from the responses provided by the teachers, students and administrative staff, in order to generate the initial research questions for this thesis.

Conversely, in Case Study 1, the academics' interview data were analysed. This was with a view to enhancing the online learning, by addressing the challenges presented by the MOOC and endeavouring to comprehend its strengths and weaknesses from the instructor's point of view. The data gathered during this study should therefore provide useful information for measuring the impact of adopting an Avatar tool in a MOOC, as well as evaluating the possibility of resolving gender issues in Saudi higher education.

3.7.2 Data Analysis for Case Study 2

In the second case study, the data analysis involved mixed methods. The collected data included pre- and post-course questionnaires, observation notes, a semi-structured interview with the teacher, and the focus group involving the participants. The responses to the pre- and post-course questionnaires (quantitative data) were in Arabic and the findings were then translated into English and analysed using descriptive data analysis (Microsoft Office Excel), which supports different chart formats, such as graphs, pie charts and numerical tables. These can be easier to read; meaning that the data were also described using numbers and percentages, as well as graphics, to provide an accessible overview and add depth to the questionnaires. The questionnaires were also complemented by two separate sources of qualitative data collected from the focus group and the semi-structured interview. The benefits of this triangulating effect have already been discussed earlier in this chapter.

Aside from the above, the observation notes, interview and qualitative focus group data were analysed, with the interview being transcribed in English. The teacher was asked about her experience of teaching students using the Avatar tool and the collected data were subjected to theoretical thematic analysis, as suggested by (Braun and Clarke, 2006).

In the focus group, however, the data were collected from the students who had contributed most in class and in the online forum (2D Avatar animated videos). The interview was recorded and transcribed by myself (the researcher) and subjected to thematic analysis, as suggested by Bogdan and Biklen (1998), and according to their protocol for analysing and coding focus group data. NVivo 11, a Computer-Assisted Qualitative Data Analysis Software (CAQDAS) was subsequently used to assist with the analysis of these data, as well as with understanding the conceptual relationships, counting key words, defining the coding categories, and directly linking the initial themes to these codes (Berkowitz, 1997).

3.7.3 Data Analysis for Case Study 3

The data analysis for this research study consisted of mixed methods, since the study is comprised of three different parts: the researcher's online teaching experience, the participants' perceptions and feedback (qualitative), and the end-of-course survey (quantitative). The first part of the study included an analysis of the qualitative data, derived from the teacher's subjective online experience, adopting a phenomenological approach to analysis, in order to discover how an individual makes sense of a particular phenomenon (Savin-Baden and Major, 2013).

This is generally centred on the teachers lived experience, out of which a story is developed to provide a general description of the experience. Important elements are thereby incorporated, such as social interaction (teacher-to-student and student-to-student), feedback, assessment, challenges and what most learners expect from their teacher. The second part of the study involved the participants' perceptions and feedback, whereby theoretical thematic analysis was considered, this being a "[s]ystematic approach to identify, analyse and report patterns within data and

interpreting it by seeking commonalities, relationships or explanatory principles” (Braun and Clarke, 2006, p. 84). It is commonly used in many fields, including case study research. The data were consequently coded into categories according to the meaning of the information gathered from the participants’ feedback and comments, thus dissolving the cultural and social boundaries in Saudi society, especially where female tutors are concerned.

The final part of the study consisted of an analysis of quantitative data drawn from the end-of-course survey. An e-questionnaire was selected for this purpose, because it offers a means of collecting information within a short space of time. It also enabled the participants to give their opinions without any bias (Stopher, 2012). The questionnaire was designed using the online ‘Google Forms’ software for designing questionnaires and surveys, with a link being distributed to the e-mail address of each Rwaq participant through a disclaimer on the platform. This helped the researcher to collect and analyse the data more easily and efficiently. It also permitted the validity and usability of such a system to be evaluated in terms of, for example, ease of use, navigation, and the visual and acoustic clarity of the videos. The quantitative data obtained were subsequently analysed using descriptive statistics and figures to add depth to the questionnaire as well as triangulate the data with the participants’ perceptions and feedback.

3.7.3.1 Coding Process

According to Saldaña (2015, p. 3), a code is: “[a] word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data”. Moreover, codes are a technique for reducing the volume of data. Boyatzis (1998), declares coding to be a “[s]ystematic process that

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identifies the features of the data semantic or latent content”. When the researcher selects an important segment from a line, phrase or paragraph in a transcript of collected data, codes can then be created (Saldaña, 2015). Furthermore, coding is a process of assigning labels to data that capture the meaning of each segment in sections of these data (Savin-Baden and Major, 2013).

In the present study, the coding process was developed using transcripts with selected sections of data highlighted and then coded with labels. Each transcript was coded using terms to indicate the respective meaning. Some areas of relevant text were also selected and extracted, so that they could be placed under a meaningful code label in the appropriate category. The following Figure 3.5 shows the coding process, which proved useful for generating themes from the codes, as defined by (Saldaña, 2015, p. 13):

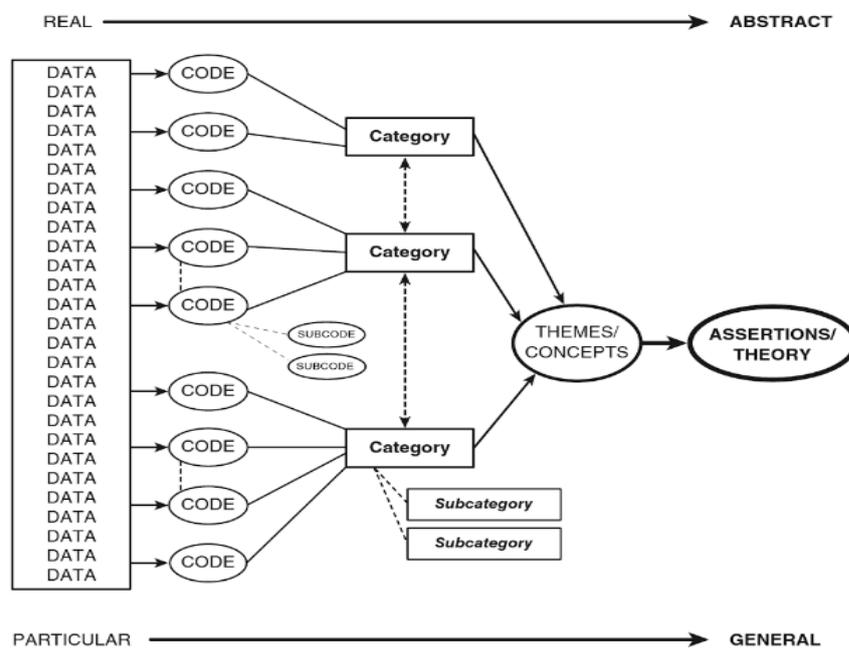


Figure 3.5 A streamlined codes-to-theory model for qualitative inquiry Source: (Saldaña, 2015)

3.7.3.2 *Software Analysis Tool*

A software analysis tool was used in the current study to assist in analysing the qualitative data interviews, focus group and participants' comments, due to the large amount of data collected. NVivo version 11 (CAQDAS) was therefore provided by the University of Reading for this purpose. For the data analysis, the coding process using NVivo was carried out in the participants' mother tongue (Arabic), with the aim of retaining the original meaning of participants' comments. Later, when presenting the findings, the researcher translated quotations from the transcripts into English myself and these translations were then double-checked by a PhD student at Reading University. This coding process enabled me to understand the conceptual relationships in the data in greater detail. It also helped me count key words and identify coding categories, in order to generate the themes connecting these codes.

3.8 Thematic Map

The following Figure 3.6 are the initial themes derived from the semi-structured interviews, focus group, and feedback from the Rwaq participants in case studies data. These themes are then analysed in relation to the responses from the teachers and students. To examine the impact of gender-segregation on female lectures and whether the role of Avatar can enhance teachers' motivation and learners' engagement. In addition, to ensure that these generated themes are related to the research questions, it was necessary to ensure that they did not overlap. It is also very important for them to be internally coherent (Clarke and Braun, 2014).

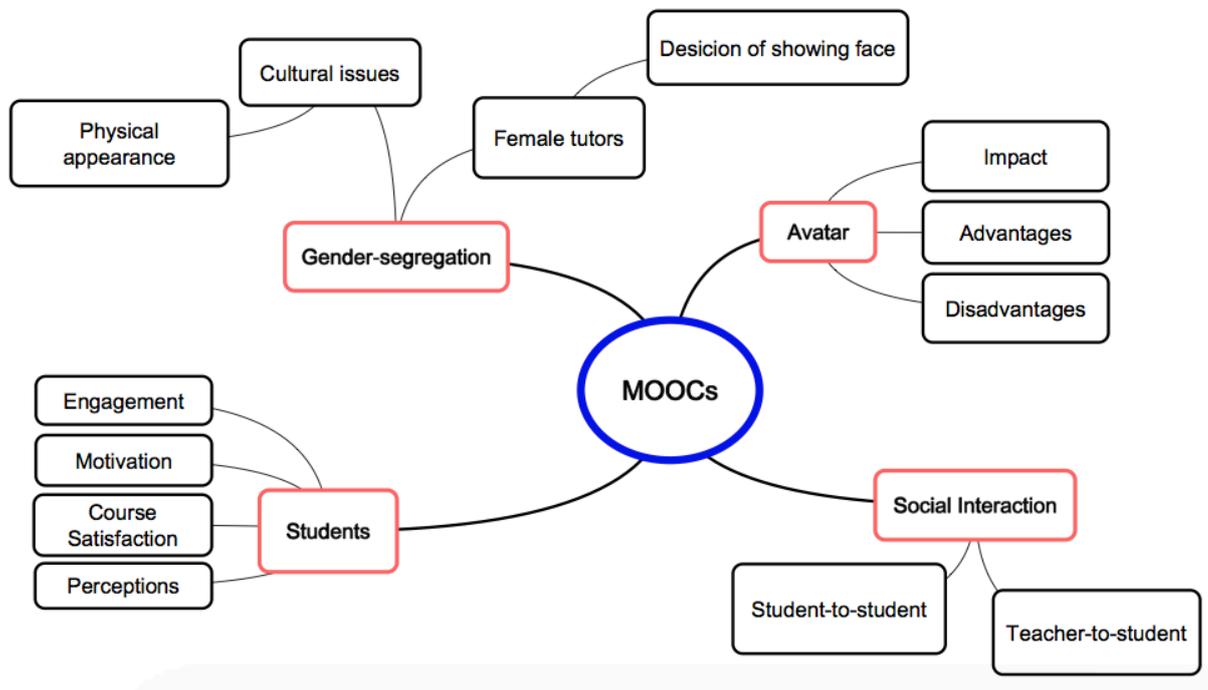


Figure 3.6 Initial thematic map for the case studies

3.9 Validity and Reliability

“The use of reliability and validity are common in quantitative research and now it is reconsidered in the qualitative research paradigm” (Golafshani, 2003). According to Brewer (2000), validity and reliability are traditional criteria for evaluating ethnographic research. To elaborate on this, ‘validity’ refers to the technique of measuring the extent to which the data collected precisely characterise the event under investigation. It involves certifying the usability, accuracy and consistency of research findings and verifying that a study is being conducted using an appropriate method, while at the same time ensuring the validity and reliability of all its phases. For instance, it could mean verifying that an item or scale measures or describes what it is supposed to measure (Maxwell, 1992, Cohen et al., 2013).

There were in fact two types of validity taken into account in the present study, internal and external. Internal validity in a case study refers to the reliability or accuracy of the

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results (the relationships between independent variables), while external validity indicates the generalisability of the results (the context outside the experimental setting) (Yin, 1994, Onwuegbuzie, 2000, Godwin et al., 2003).

In the present case, all qualitative and quantitative data collection was subjected to the selected validity checks and triangulated, with respondent-explanation and description-validation (Janesick, 1998, Golafshani, 2003).

Triangulation is a technique applied to improve the precision of phenomenological research (Fielding and Schreier, 2001, Hussein, 2015). It was ensured in the present study that all the data and interpretations were verified as representative of the case studies, with actual measures of triangulation being developed at each stage of the study using a variety of methods.

Triangulating via qualitative and quantitative approaches can help increase understanding, overcome bias and verify the completeness of indications, in order to enhance the validity and reliability of study findings (Golafshani, 2003).

Moreover, by using a mixed-method approach, a researcher can assess and enhance the validity and reliability of findings and where these methods are linked at the data collection stage; for example, asking similar questions in both the quantitative and qualitative studies to generate similar responses, will enable issues of validity and reliability to be addressed regarding the research findings, by determining the extent to which the participants' responses appear to general agree with the same major points (Golafshani, 2003).

In the first Case Study, a qualitative approach (semi-structured interviews) was used to verify the validity and reliability of the data. However, this result might not be typical of the total population represented by the sample (Bryman, 2004). Focus groups have also often been used to complement survey data and are a common method of

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evaluating questionnaires (Presser et al., 2004). In the second Case Study, the validity of the focus group could be considered very high, as the participants' responses to the themes consisted of numerous comments and extensive debate within the group; comparing data gathered via the pre- and post-questionnaires.

The analysis of qualitative data is considered to be the key to strengthening validity and reliability, beginning with the coding of data. The collected data is organised into categories and themes for the purpose of interpretation and to retain the original meaning of the participants' comments, so that the conceptual relationships within the data can be understood in greater detail.

In the third Case Study (referring to internal validity), the Rwaq course was run twice and the quantitative data obtained were subsequently analysed using descriptive statistics and figures to add depth to the end-of-course questionnaire. These data were then triangulated with the qualitative information derived from the participants' perceptions and feedback. With regard to external validity, the participants on the MOOC came from different Arab countries and so it was expected that any cultural, infrastructural or institutional bias could be compensated for, thereby potentially increasing the generalisability of the findings.

On the other hand, the 'reliability' of research concerns the extent to which the findings are consistent over time, accurately represent the case study, and can be reproduced under similar conditions using a similar methodology (Golafshani, 2003).

Silverman et al. (2001), describe how reliability can be addressed in relation to each type of data collection. 'Inter-rater' reliability thus refers to the degree of consistency exhibited by the raters when evaluating the same phenomenon. In interviews, the above author suggests checks on coding and the pre-testing of the interview schedule, as well

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as training interviewers and using fixed-choice responses. In (Cases Studies 1, 2 and 3) the researcher revisited the data many times connecting on (themes), and the supervision team were engaged in thematic analysis (double-check).

Similarly, ‘test-retest’ reliability refers to the consistency of a measure used at different times where participants' response with the same major points. In a questionnaire, it is important that five-point Likert scale measures (Strongly disagree, Disagree, Neutral, Agree and Strongly agree) are tested for their test-retest reliability, in order to check their internal consistency and evaluate their replicability in the analysis of data, by investigating any errors in the reliability of a test undertaken in the first instance (Silverman et al., 2001, Gliem and Gliem, 2003, Golafshani, 2003).

Likert scales are one of the most commonly used methodologies in social science research and are widely applied to measure attitudes within a population sample (Göb et al., 2007, Carifio and Perla, 2008).

According to Yin (2014) “[t]he general way of approaching the reliability problem is to make as many steps as possible as operational as possible and to conduct research as if someone were always looking over your shoulder.” (p. 45)

3.10 Summary

This chapter has described in detail the overall research design and methodology used in this study. Moreover, all methods of data collection applied have been presented and clarified, pointing out their advantages and challenges. Subsequently, these methods of data collection were described as a semi-structured interview, observation, focus group and questionnaires. Furthermore, qualitative, quantitative and mixed-method approaches have been introduced, with a mixed-method approach being adopted in the present case. This enabled a broader understanding of the advantages and downfalls of online learning and MOOCs in Saudi higher education, as well as investigating the implementation of the 2D animated Avatar videos and describing their design in details. This design was then evaluated and analysed. The findings and their interpretation from the Initial Study, followed by three Case Studies will now be explicated and discussed in detail in the following chapter.

Chapter 4

Results and Findings

4.1 Introduction

This chapter presents and examines the findings of the Initial Study and three main Case Studies in response to the research questions. First, it looks at the existing level of knowledge concerning MOOCs in Saudi Arabia; second, it explores the impact of gender-segregation on female lecturers teaching online via MOOCs, and third, it considers whether female teachers can use a 2D Avatar tool in their teaching, given the cultural challenges facing women in the respective context. Ultimately, the question arises of whether the use of an Avatar in MOOCs in Saudi Arabia can impact on/address issues of gender-segregation in the respective context.

The collected data have subsequently been suitably arranged and categorised, in order to identify potential themes and analyse them appropriately. All in all, the data were collected and transcribed without any issues. Some of the interviews needed translation, which I carried out myself, while my husband, a PhD student in Pharmacy at Reading University, double-checked my translations.

4.2 Initial Study (explorative)

After obtaining ethical approval from the University of Reading in October 2014, the interviews with Saudi students, teachers and administrators currently studying in the UK and Saudi Arabia commenced in November, in order to ascertain the level of knowledge and perceptions of teachers and students with regard to MOOCs.

The data collected from (15) semi-structured interviews with male and female participants were subjected to theoretical thematic analysis, as described by Braun and

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Clarke (2006), according to their protocol for analysing interview data. The reason for adopting theoretical thematic analysis was based on its high level of flexibility for the present study. Moreover, it is a more inductive means of analysis relative to set themes, which can reveal new patterns in data (Braun and Clarke, 2006).

The researcher then analysed these themes in relation to the responses given by the teachers, students and administrators, who comprised seven students, four teachers and four administrators. Each interviewee was given a code, i.e. S1, S2, etc. for the students; T1, T2, etc. for the teachers and A1, A2, etc. for the administrators. The following Table 4.1 presents the initial research questions, as well as the themes and sub-themes aligned with these questions.

Table 4.1 Thematic analysis (Initial Case Study)

Themes	Sub-themes	Research Questions
1-Knowledge of MOOCs	Language used in the MOOCs	1- What are the teachers' and students' perceptions of applying MOOCs in Saudi Arabia?
2-Motivation and social interaction involved in the use of MOOCs	Subjects potentially studied or taught in MOOCs	2-What are the teachers' and students' motives for using MOOCs in higher education in Saudi Arabia?
3-Design and usability of MOOCs	-	3- What do you think about MOOCs design?
4-Effectiveness and development of self-efficacy as a result of using MOOCs	Teachers' professional skills	4-What are the teachers' and students' attitudes towards the application of MOOCs in higher education in Saudi Arabia?
5-Barriers to the use of MOOCs	Women being willing or unwilling to show their faces in MOOCs videos	5-What are the main challenges facing MOOCs platforms in Saudi Arabia?
6- Positive and negative aspects of using MOOCs in higher education	Recommended implementation in Saudi universities	6-What are the advantages and disadvantages of applying MOOCs in Saudi universities?

4.2.1 Theme 1: Knowledge of MOOCs

The first theme relates to the existing level of knowledge of MOOCs, whereby each interviewee was asked if they had ever heard of MOOCs before: ‘Did you know about MOOCs before? If yes, what platform were you enrolled on?’

T1 responded:

“Yes, definitely, yes. I was enrolled on many courses in Coursera and edX.”

In addition, T2, T3 and T4 also confirmed previous knowledge of MOOCs, but stated that they had not yet participated in any of the courses. Similarly, S1, S2, S3, S5, S6 and A3 were familiar with the term, but had yet to take a MOOCs course. However, A1, A2 and A4 not only had substantial knowledge of MOOCs, they had also enrolled on some platforms. S7 was the only student interviewed who had previously enrolled on a course on Coursera. Finally, S4 did not know what the acronym 'MOOC' meant.

T1, T3, T4, A1 and A4 all had a good level of knowledge of MOOCs websites and had previously enrolled on some courses on Rwaq. Similar perceptions were shared by T2, who had heard of the site, but had not yet visited it. On the other hand, S3, S5, S6 and S7 had visited the Rwaq website and were interested in enrolling on such courses. Alternatively, S1 was not interested in taking any Rwaq courses, while S2 and S4 knew nothing about them. Meanwhile, A2 knew about Rwaq, but had not enrolled on any of its courses and similarly, A3 had downloaded the Rwaq app onto her smartphone and had an idea of the Principles of Economics course, taught by Dr. Samih Al-Otawi, but had yet to actually participate in it.

Sub-theme: Language used in MOOCs

S1, S6, A2, T1, T2, and T4 stated a preference for MOOCs courses taught in English. There were several reasons for this, such as the fact that their undergraduate and

postgraduate studies were in English and so it was easier for them to take an online course in English. Another reason stipulated by T3 was that:

“It will reach a bigger audience,”

while T1 also pointed out that:

“English is the language that I am using in my teaching; maybe I will need Arabic only for e-training.”

However, S2, S3, S4, S7 and A4 were all of the opinion that both languages should be used for MOOCs, depending on the topic involved. Conversely, S5, A1, A3 favoured Arabic, as it was their first language.

4.2.2 Theme 2: Motivation and Social Interaction Relating to the Use of MOOCs

The question linked with this theme was: 'Would you prefer to participate and communicate with other students, for example by writing comments, asking questions or exchanging experiences?' S1, S2, S4, S5, S6, S7, A3 and A4 had positive perceptions of the social interaction involved in using MOOCs, stating that they provided an effective means of communication and of increasing their personal learning network, exchanging experiences and gaining a wider perspective on their subjects.

Similarly, S3 pointed out:

“It is very important, so that all of us can receive the benefits at the same time.”

On the other hand, A1 disagreed and commented that she did not enjoy participating in this kind of social interaction. A2 partially agreed with A1, explaining that she enjoyed the social interaction on MOOCs:

“Sometimes, but not all the time.”

On the other hand, T1 was asked a different question, namely: 'Who do you think take MOOCs courses: students, teachers or employees?' T1 consequently replied:

“All of them, if they are motivated enough; if the topics, the course presentation, even the usability of the interface itself, if all the elements are taken into consideration, the students will be motivated... the teachers will be motivated, the staff and the admin.”

T4 agreed with T1 on this point, but T3 added:

“For my business field, I think that most of the learners will be employees, trying to get academic certificates and credits.”

Sub-theme: Subjects Potentially Studied and Taught on MOOCS

The above question concerned the preferred subjects for online study: ‘What subject are you interested in studying online? Education, language, technology, art, business, law or medicine?’ All the interviewees declared an interest in subjects related to their field of study and professional areas. T1 and T4 explained this as follows:

“I will take a course which is related to my field.”

Some of the students (S1, S2, S3 and S5) began to answer this, stating:

“I think we will be interested in our area of study.”

T1 was found to be currently working on an online Literature course, with plans to release it for students’ use on iTunes. Meanwhile, T2 proved to be interested in teaching the subject of distance learning itself. However, T3 did not have any plans to teach, because his university did not have a distance-learning deanship, although he stated his:

“plan to join Rwaq soon.”

4.2.3 Theme 3: The Design and Usability of MOOCS

This question concerned the design and accessibility of Rwaq platforms: “What do you think about their design? Is it simple or difficult to access information?” Most of the answers to this question were positive, namely that Rwaq platforms were easy to use

and registration on them was straightforward. T3 liked the design and found it well-organised. Similarly, S3 liked the design of the materials and topics, highlighting that:

“You can find most of the topics that anyone needs.”

S5, S6, S7, A3 and A4 gave short answers, indicating that the platforms were simple and easy to use, but in contrast, T1 commented that she did not like the instructional design, because it was too basic. She elaborated on this, explaining:

“The layout and usability are still in their earliest stage,”

while S1 indicated:

“It was simply designed but I didn’t really grasp it.”

A1 also commented that the site needed some improvement, while A4 added:

“I hope it will have more courses.”

T2, T4 and A2 did not visit the website and so they made no comments about its design.

4.2.4 Theme 4: Effectiveness and Development of Self-Efficacy Using MOOCS

The following question was put to the students and administrators: 'What do you think you get out of an online course? A) Do you prefer a certificate or qualifications? or B) Do you prefer undertaking assignments or quizzes?'

S1’s response to this was:

“I am interested in enhancing my personal knowledge, not just obtaining a certificate; it would just be for my own knowledge. I think it is better to take part in a quiz to evaluate myself.”

S5 agreed with S1 that taking an online course was not just important for gaining a certificate, while S2, S3, S4, S5, S7, A2 and A3 were of the opinion that despite the importance of gaining personal knowledge, they still wished to obtain a certificate as a record of their achievement and to add to their CV. Conversely, S3, S4 and S6 claimed

that they would only do assignments and quizzes if there was free time. A1 and A4 added:

"An online course would improve my current job situation and keep me updated, while a certificate is only important on a course if it will add something to my CV."

Sub-theme: Teachers' Professional Skills

T1 had learned how to manage large classes and she explained:

"With MOOCs, as a teacher, I learn how to manage large classes."

Meanwhile, T2 declared:

"They improve the class teacher's skills, if used besides traditional ways of teaching."

T4 agreed that MOOCs would improve her teaching skills, but T3 disagreed with this, commenting:

"It is more difficult than conducting the lecture live."

4.2.5 Theme 5: Barriers to the Use of MOOCS

One question concerned the preferred language for studying online, related to perceptions of the English language skills required by Saudi learners for taking a MOOC. S2, S3, T2, T3 and T4 believed that the majority of Saudi learners had a moderate level of English language competence and were familiar with the terminology in their field of study. On the other hand, A2 and A3 believed otherwise, stating that the majority of the Saudi population did not have a good level of English, with S6 specifying:

"Still [only a] small number of people have a good level of English."

S1, S4, S5, S7, A4 and T1 also commented that learners could face some language difficulties and that this needed to be addressed; as such difficulties, would probably contribute to high dropout rates. Similarly, A1 added:

“Most of them are afraid to take a course in English and this is one reason for Rwaq's success, in that it presents subjects in Arabic.”

Sub-theme: Women Showing Their Faces in MOOC videos

One question was exclusively put to the female teachers: “Do you accept to show your face in videos?” T1 replied:

“Definitely not, I use animation 'go animate' software to add story-telling elements and 'Camtasia' to produce videos which are interactive. I like animation, because Avatars are used and nowadays, this is the trend.”

T4 agreed with T1 that she did not want to show her face, whereas T2 brought up the point:

“Well, I am not sure, but I should at least show my photo to the students so they can get to know me, I think eye contact is important.”

4.2.6 Theme 6: The Positive and Negative Aspects of MOOCS in Higher Education

The question related to this theme was designed to ascertain whether the interviewees believed that MOOCs would have a positive impact on education in Saudi Arabia. S1, S3, S4, S5, S7, A1, A3, T1, T2, T3 and T4 all agreed that MOOCs could have a positive impact on Saudi higher education, with S1 emphasising:

“Only if it is very well implemented, because it will add to people's knowledge. MOOCs will help them access knowledge easily from home and for free.”

A4 added, with the proviso:

“If they were advertised well, because many people still don’t know about MOOCs, and they need to gain access to the Internet. If they have good access, MOOCs will help a lot.”

On the other hand, S2 and A2 disagreed and commented:

“The Saudi people prefer on-campus education.”

Sub-theme: Recommending Implementation in Saudi Universities

Most of the interviewees’ responses strongly recommended implementing MOOCs in higher education. S1 pointed out:

“It will be very helpful, especially in my major subject (Business). Taking extra courses in difficult subjects could support our studies as basic knowledge.”

S2 added a further reason in favour of MOOCs:

“To support learning needs and motivate learners.”

However, A2 pointed out that:

“Those delivering MOOCs need to be trained first and understand the difference between an online course and a MOOC.”

4.2.6.1 One-question Survey

Before starting the case studies, the researcher decided to conduct a one-question survey with a ‘yes/no’ response amongst a number of female academics at King Abdul-Aziz University (KAAU) in Jeddah, Saudi Arabia.

This was in order to discover their overall view of teaching MOOCs, with special reference to their willingness or reluctance to cover their faces. The results revealed that out of a total of 67 responses, the majority (80%) stated that they would refuse to teach

a MOOC revealing their physical appearance (with their face uncovered), while only 20% accepted that they would do so (Figure 4.1, below).

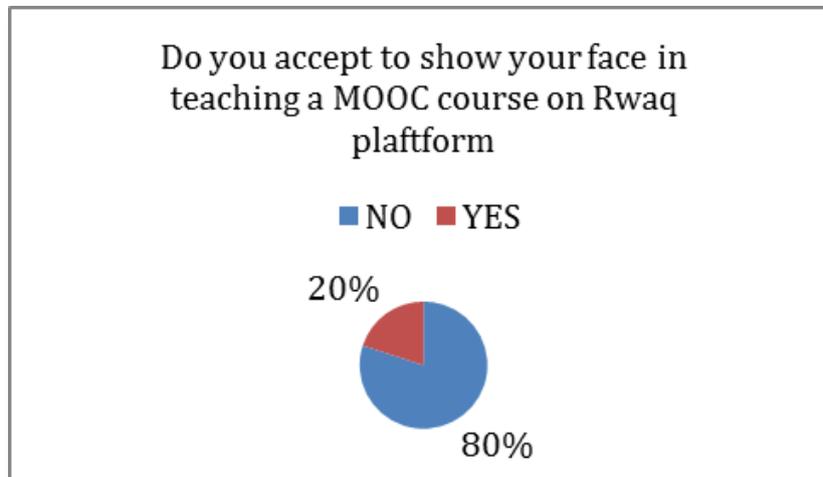


Figure 4.1 One-question Survey

4.3 Case Study 1

The present study was conducted in Saudi Arabia, using semi-structured interviews with Saudi female academics, who had previous experience of teaching on the 'Rwaq' MOOC platform. Overall, four female teachers were selected and given codes, i.e. Teacher One = T1, Teacher Two = T2, etc. T1 and T2 were interviewed face to face, while T3 and T4 were interviewed over the phone (see Appendix 12).

As mentioned earlier in Chapter 3 (Methodology), the data were audio-recorded and then transcribed by the researcher prior to thematic analysis, according to the protocol designed by Braun and Clarke (2006) for analysing interview data. In the following Table 4.2 the researcher analyses these themes in relation to the responses provided by the teachers:

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Table 4.2 Teachers' codes and educational and teaching background

Teachers' Codes	Would Reveal Physical Appearance	Degree of Education	Previous Online Teaching Experience
T1	Yes	BA English Language (Saudi Arabia)	YouTube channel
T2	No	PhD in Operational Research (UK)	KAAU blackboard, 'Centra'
T3	Yes	PhD in Art, Design and Architecture (UK)	N/A
T4	No	BSc Information Science (Saudi Arabia)	Online course at 'Rwifd Academy'

Table 4.3 Thematic analysis (Case Study 1)

Themes	Theme Description	Sub-themes	Interview Quotes
1- MOOC course target group	Referring to the target group of Rwaq course participants	-	<i>"It is general information for the public"</i>
2- Social interaction with participants	This refers to social interaction among learners	-	<i>"I think social media networks have eliminated the gap that we used to have. There is no problem anymore"</i>
3- A woman's decision to show her face	This refers to the decision of female teachers to show their faces in the videos	-	<i>"It was not a decision; it just came naturally... it's what I am used to doing in my daily life"</i>
4- Knowledge of Avatar technology	This refers to the teachers' previous knowledge of using an Avatar in education	Acceptance of the Avatar concept amongst the Rwaq students	<i>"I have little information about it and yes my son did something like that"</i>
5- Impact of Avatar on the teachers	This refers to the teachers' perception of Avatars being used in online education	Impact of Avatars on students	<i>"Yes, it will provide benefits for both" "I think it will be a good idea to test this and do a survey for the students"</i>

4.3.1 Theme 1: MOOC Course Target Group

The first theme was drawn from the responses concerning the question to identify the Rwaq course target group. T1 declared:

“It was for beginner level students.”

Meanwhile, T2 remarked that:

“It was general, for the public.”

and T3 and T4 were also agreed that:

“It was general information.”

4.3.2 Theme 2: Social Interaction amongst the Participants

This theme referred to social interaction among the learners, with T1 declaring that:

“It was great, because I appeared in my videos.”

Similarly, T3 stated:

“I think that social media have eliminated the gap that we used to have.”

Moreover, T4 explained that high numbers of participants had joined the course, emphasising that:

“It was a very high number.”

However, T2 stated:

“During lectures, there was no interaction at all, but of course they can leave comments and I can reply later on.”

4.3.3 Theme 3: Decision Made by Female Teachers Not to Show Their Face

This theme referred to the decision made by some female teachers not to show their face on an online course. T1 hereby declared:

“It was not a decision; it just came naturally, as that is what I am used to doing in my daily life.”

T3 came to a similar conclusion:

“It was not a problem; I will not lie and wear something I do not wear in my daily life.”

On the other hand, T2 stated that her decision against appearing in person in the videos was not based on cultural or religious reasons, but rather:

“I decided not to show myself in the videos, because it was more convenient for me to record; I don’t have to watch my body language. If I only use my voice, it gives me a lot of freedom.”

However, T4 declared that:

“It is a cultural issue in Saudi society and my strict family do not accept me appearing with my face uncovered on an online course.”

4.3.4 Theme 4: Knowledge of Avatar technology

This theme referred to the teachers’ previous knowledge of using Avatars in education.

T1 and T4 had never heard of Avatar technology before, whereas T2 claimed:

“I have a little information about it.”

Similarly, T3 declared:

“Yes, but I did not use it before.”

Sub-theme: Acceptance of the Avatar Concept amongst Rwaq Students

This sub-theme referred to the Rwaq students’ acceptance of the Avatar concept, whereby T1 declared:

“It would be like a barrier instead of feeling comfortable about contact with a human being.”

However, T2 had a different view and thought that:

“It should be tested first on students.”

Meanwhile, T4 said:

“Sure, the students will like the idea and welcome it.”

Moreover, T3 pointed out that:

“Rwaq students are keen to learn and will accept anything new, especially in the Arab world; we don’t have this kind of good education.”

4.3.5 Theme 5: Impact of the Avatar on the Teachers

T1 did not believe she would be interested in trying out the Avatar technology, whereas

T2 stated:

“Using the Avatar will enable me to imitate my expressions word by word and that will be great!”

Furthermore, T4 thought:

“It is a very interesting idea for female teachers to solve the issue of showing themselves on online videos.”

T3 had a similar point of view, adding:

“I think it will help a lot of female teachers, especially from the cultural point of view and females who cannot show their faces, etc. Also, people who have problems like social phobia, or who cannot face the camera.”

Sub-theme: Impact of the Avatar on the Students

T1 stated:

“Maybe they will find it interesting or they will find it difficult to communicate with a machine (Avatar).”

However, T3 declared:

“It will help them a lot to receive knowledge, even without seeing the real person.”

Similarly, T4 was of the opinion that:

“They will be more drawn to the course, rather than just listening to the voice of the teacher.”

4.4 Case Study 2

The second case study was completed over a period of one month (from 1-10-2015 to 30-10-2015). The tutor was Dr. Norah, Assistant Professor of English at KAAU, SA. The approach adopted was blended learning, with three lectures a week, using online Avatar recorded videos streaming into the Blackboard. The teacher posted one video each week and asked her students to comment and collaborate on answering some questions about it in the BB forum.

This case study included a mixed-method approach to answering the second research question. Firstly, a quantitative research design was applied in the pre- and post-course surveys (descriptive analysis). Secondly, a qualitative research design in the form of a field observation was implemented by observing students' behaviour and their responses in class and to the online Avatar videos, followed by a semi-structured interview with the teacher. Moreover, in order to evaluate the pre- and post-surveys and the observation, a focus group was conducted at the end of the observation period, with the inclusion of students who had frequently participated in the classroom activities and online Avatar discussion forums.

4.4.1 Descriptive Analysis

The pre- and post-course surveys were completed by 17 out of the 25 students who had participated in the Avatar videos; with 17 questions in each survey (Appendices 5 and 6 contain some sample questions). However, the pre- and post-course surveys were not identical, even though they contained some of the same questions. Most of the descriptive data analysis is presented below.

4.4.2 The Pre- Course Survey:

Demographic data were only recorded in the pre-course survey. All 17 participants were female, because the course was run exclusively in a Saudi women's university.

Figure 4.2 (below) illustrates that 56% of the students were at level 7-8 (fourth year of a bachelor's degree) and 44% of the students were at level 5-6 (third year of a first degree). In addition, the majority of the students possessed an 'Intermediate' level of knowledge regarding internet and technology, followed by 18% at 'Beginner' level and only 12% at 'Advanced' level.

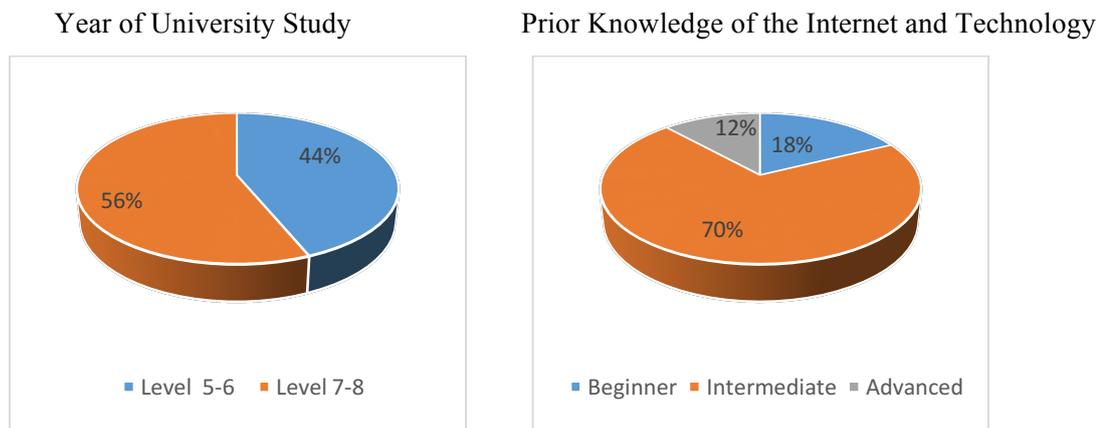


Figure 4.2 Demographic data

In Question 5 of the pre-course survey, the students were asked: 'What is your most preferred learning style?' Responses to this included: 'On-line courses', 'The traditional classroom' and 'Don't know'. 35% declared a preference for 'On-line courses', 59% favoured the 'Traditional classroom', and only 6% selected 'Don't know' (see Figure 4.3, below).

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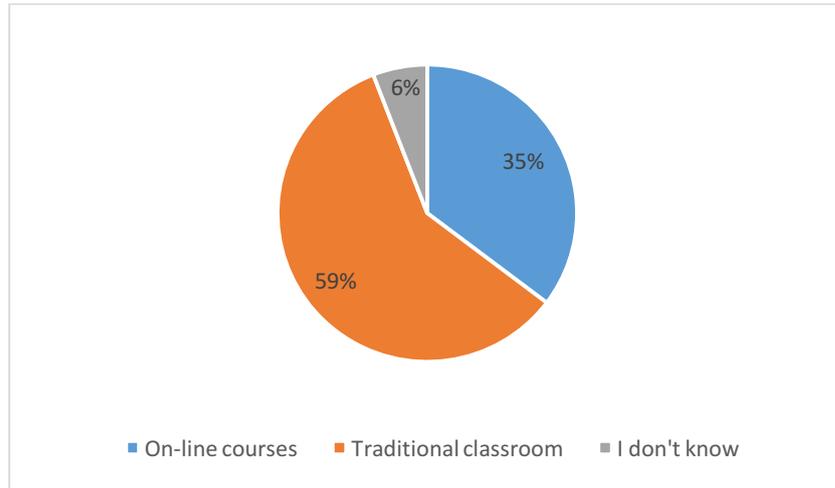


Figure 4.3 Learning style

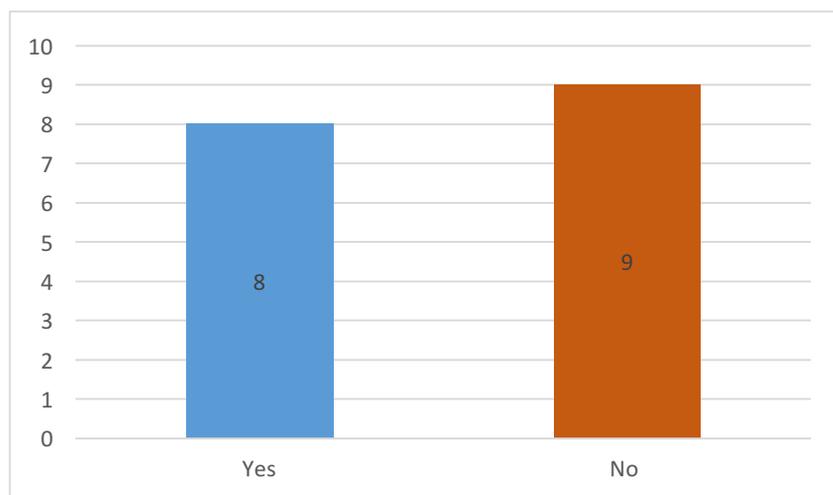


Figure 4.4 Previous knowledge of Avatar courses

Question 9 of the pre-course survey referred to knowledge and experience of using an Avatar: ‘Have you ever participated in an Avatar course before?’ Over half the responses were negative (53%), with slightly fewer than half the respondents indicating ‘Yes’ (47%) (see Figure 4.4, above).

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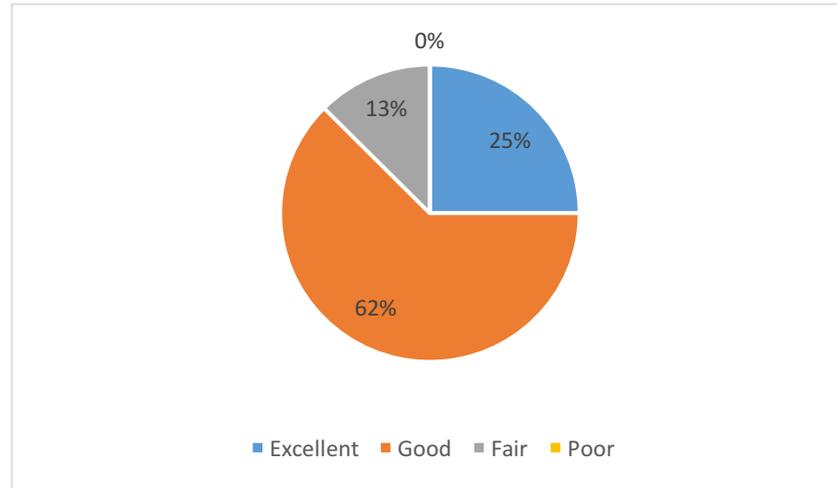


Figure 4.5 Previous Avatar course experience

In response to Question 10: 'How would you evaluate your experience of the previous Avatar course?' only eight of the participants indicated 'Yes', while 25% described it as an 'Excellent' experience and 62% declared it to be 'Good'. Meanwhile, only 13% decided that it was 'Fair' (see Figure 4.5 , above).

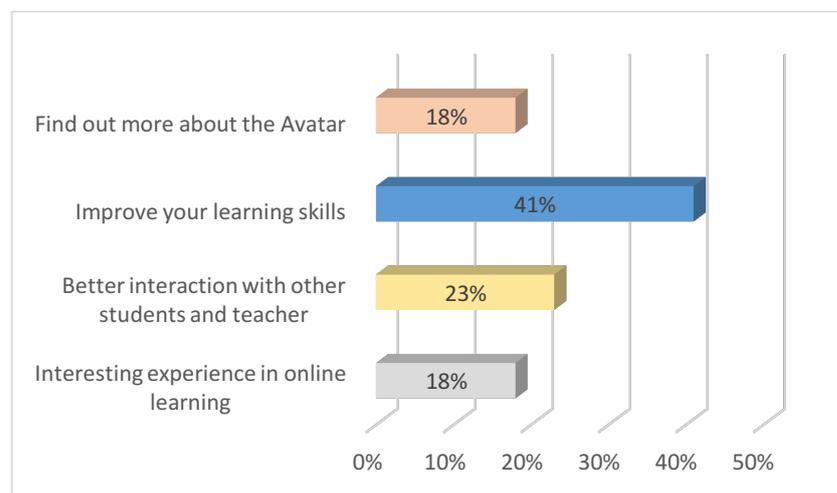


Figure 4.6 Learning expectations of the Avatar course

For Question 12: 'What do you perceive that you will get out of completing the Avatar course?' which was also included in the post-course survey, the results were compared (see Figure 4.13, below). It was apparent that the students sought to achieve different

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things on the course, with 41% declaring that they wanted to ‘improve their learning skills’, while 23% sought ‘Better interaction with other students and teachers’. On the other hand, 18% found it to be an ‘Interesting experience in online learning’ and wanted to ‘Find out more about the Avatar tool’ (see Figure 4.6, above).

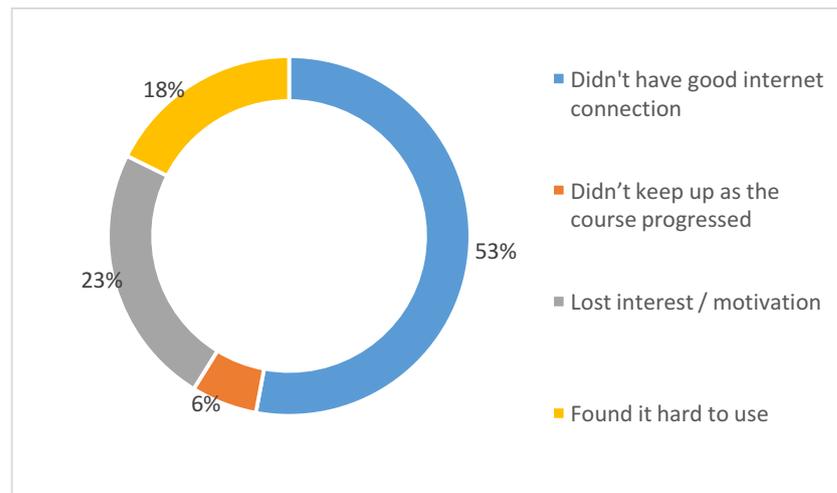


Figure 4.7 Withdrawal from the Avatar course

Question 13 related to the reasons given by participants for potentially withdrawing from the Avatar course: ‘What do you think can stop you taking part in some classes of the Avatar course?’ Over half stated that a ‘Poor internet connection’ at home would prevent them from continuing their participation on an online course. Approximately 23% thought that they might ‘Lose interest and motivation’, whereas 18% believed that they might ‘Find it hard to use’. However, only 6% were afraid that they would not be able to ‘Keep up with the course progress’ (see Figure 4.7, above).

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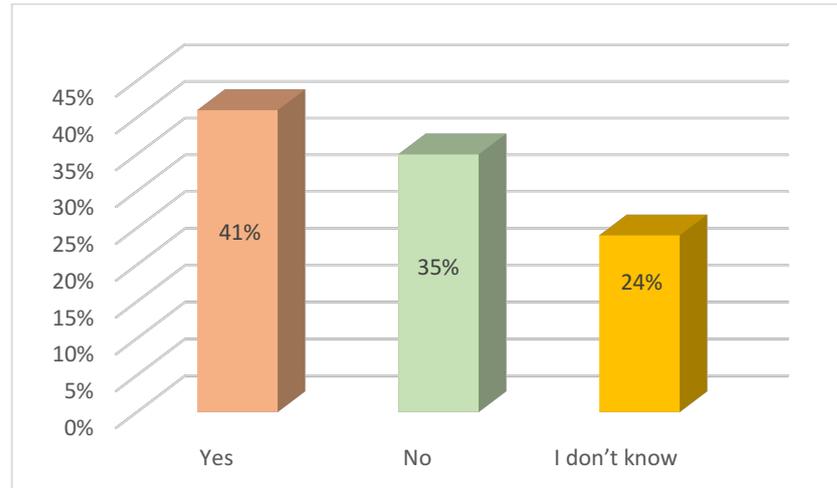


Figure 4.8 Interaction with students

Question 14 addressed the issue of interacting with other students, with the enquiry: 'Do you think you will have better communication with your colleagues (students) than you would in a normal classroom?' Around 41% of the participants 'Agreed' that they would be able to interact better with other students, while 35% 'Disagreed' and 24% were undecided 'Don't know' (see Figure 4.8, above).

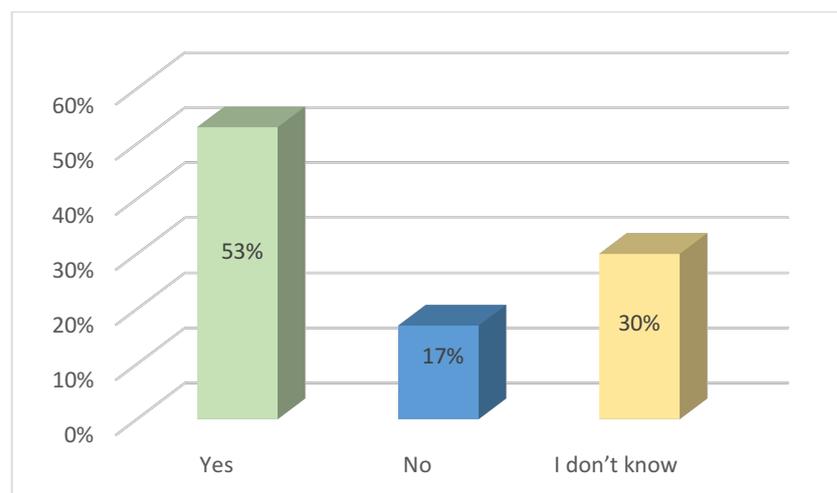


Figure 4.9 Interaction with the teacher

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Question 15 investigated the issue of interacting with the teacher: ‘Do you think you will interact better with your teacher than you would in a normal classroom?’ Whereby more than half (53%) of the students indicated ‘Yes’, 17 % indicated ‘No’ and 30% stated: ‘Don’t know’ (see Figure 4.9, above).

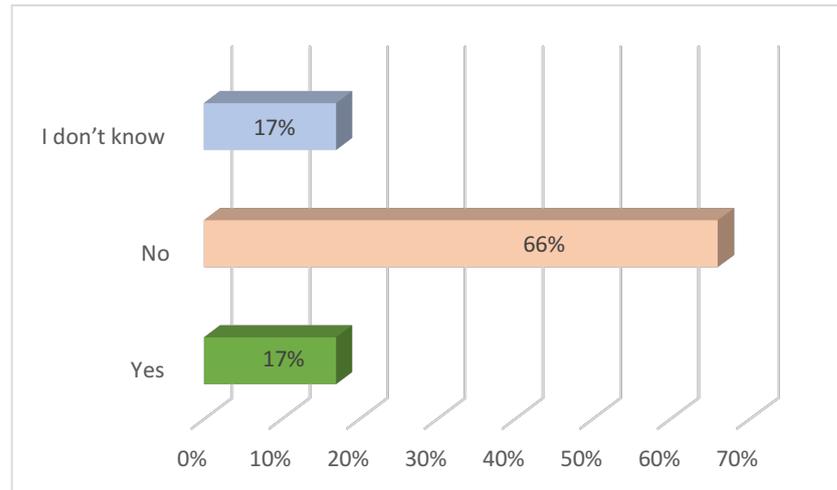


Figure 4.10 Resemblance of the Avatar character to a real teacher

Question 16 sought to discover whether the respondents thought the Avatar would look like a real teacher: ‘Do you think that the Avatar character will resemble a real person (teacher)?’ At 66%, the majority of the students answered ‘Yes’, 17% indicated ‘No’ and 17% stated: ‘Don’t know’ (see Figure 4.10, above).

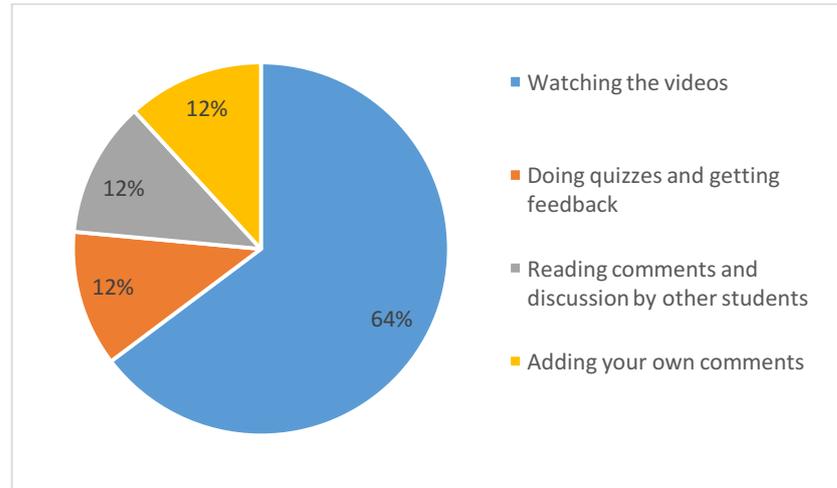


Figure 4.11 On-line learning methods

With regard to on-line learning methods, Question 17 enquired of the participants, ‘How would you prefer to learn on an on-line course?’ The majority of the students (64%) preferred to ‘Watch videos on an online course’, while around 12% preferred ‘reading comments and discussion amongst other students’, ‘Adding their own comments’ and ‘Doing quizzes and getting feedback’, respectively (see Figure 4.11, above).

4.4.3 The Post- Course Survey:

Question 2 of the post-course survey: ‘How satisfied or dissatisfied were you with the course that implemented an Avatar tool?’ found that 65% of the students were ‘Satisfied’ with the experience, while only 6% were ‘Very dissatisfied’ and around 25% were ‘Neutral’ (see Table 4.4, below).

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Table 4.4 Experience of the Avatar course

Overall Satisfaction with the Avatar Experience	Frequency	%
Very Dissatisfied	1	6%
Dissatisfied	0	-
Neither Satisfied nor Dissatisfied	4	23%
Satisfied	11	65%
Very Satisfied	1	6%
Total Responses	17	

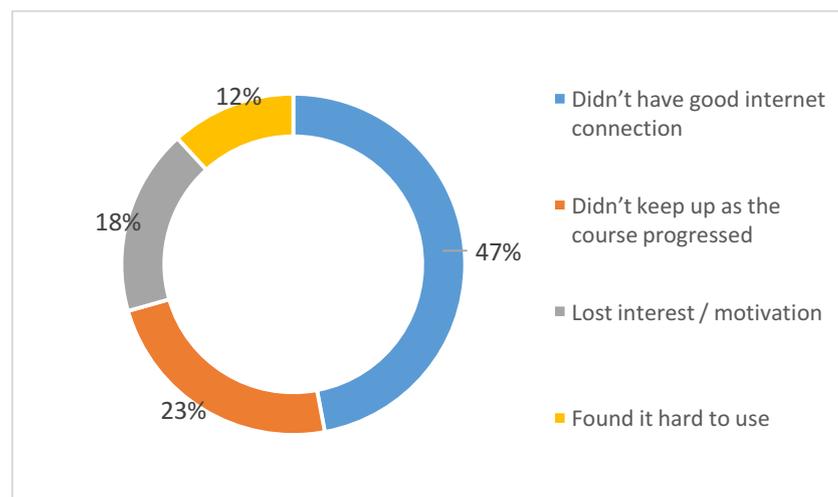


Figure 4.12 Withdrawal from the Avatar course

Question 4 of the post-survey aimed to discover the reasons, if any, why the participants thought they might stop taking part in the Avatar course: ‘Why would you stop taking part in any of the classes on the Avatar course?’ There were different opinions given in this regard, with 47% (a decrease from the pre-course result) citing the absence of a ‘Good Internet connection’, while ‘Lost motivation’ was suggested by 18% of the respondents (another decrease). Moreover, 12% (a further decrease) believed that that they would withdraw from the course if they ‘Found it hard to use’. However, the number of respondents citing difficulty with ‘The course progress’ as a reason for withdrawal had increased to 23% (see Figure 4.12, above).

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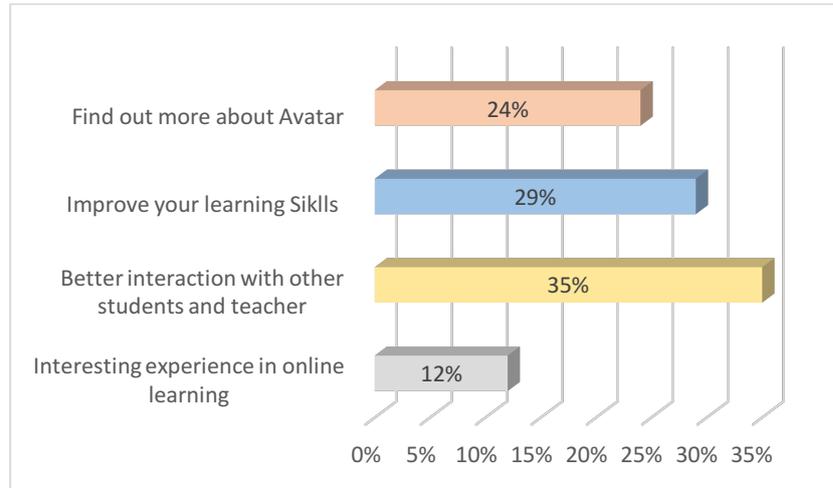


Figure 4.13 Learning expectations of the Avatar course

Question 5 enquired about the participants' beliefs concerning what they had gained from the Avatar course: 'What do you think you got out of completing this Avatar course?' The responses to this varied from 'Improved learning skills', which had decreased to 29%; an 'Interesting experience', which had decreased to 12%; 'Interaction with other students and the teacher', which had increased to 35%, and 'Found out more about Avatar', which had increased to 24% (see Figure 4.13, above).

Meanwhile, Question 6 sought information on interaction with the teacher: 'How satisfied were you with the online interaction you achieved with the teacher on this Avatar course?' whereby almost 70% of the respondents declared that they were 'Satisfied', only 6% were 'Dissatisfied' and 18% were 'Neutral' (see Table 4.5, below).

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Table 4.5 Interaction with the teacher

Overall Satisfaction Concerning Interaction with the Teacher	Frequency	%
Very Dissatisfied	1	6%
Dissatisfied	1	6%
Neither Satisfied or Dissatisfied	3	18%
Satisfied	12	70%
Very Satisfied	0	-
Total Responses	17	

On the other hand, Question 7 sought information on interaction with other students: ‘How satisfied or dissatisfied were you with the amount of online interaction you achieved with other students on this Avatar course?’ where just over half the respondents (53%) declared they were ‘Satisfied’, while only 12% were ‘Dissatisfied’ and 35% proved to be ‘Neutral’ (see Table 4.6, below).

Table 4.6 Interaction with other students

Overall Satisfaction with Other Students	Frequency	%
Very Dissatisfied	0	-
Dissatisfied	2	12%
Neither Satisfied nor Dissatisfied	6	35%
Satisfied	9	53%
Very Satisfied	0	-
Total Responses	17	

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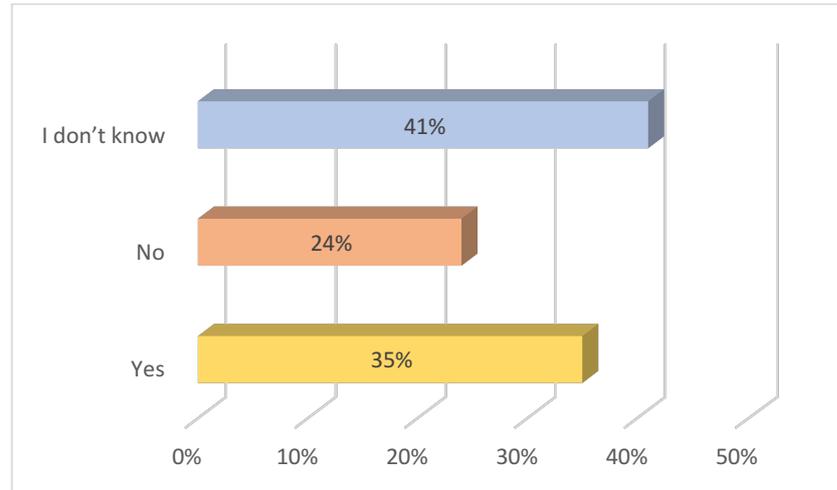


Figure 4.14 Resemblance of the Avatar character to a real teacher

Concerning whether the Avatar character looked like a real teacher, Question 8: 'Does the Avatar character resemble an actual person (the teacher)?' 41% of the respondents declared: 'Don't know' on completion of the course, while around 35% agreed that it did (indicating 'Yes'), and 24% stated that they did not think it did look like the actual teacher 'No' (see Figure 4.14, above).

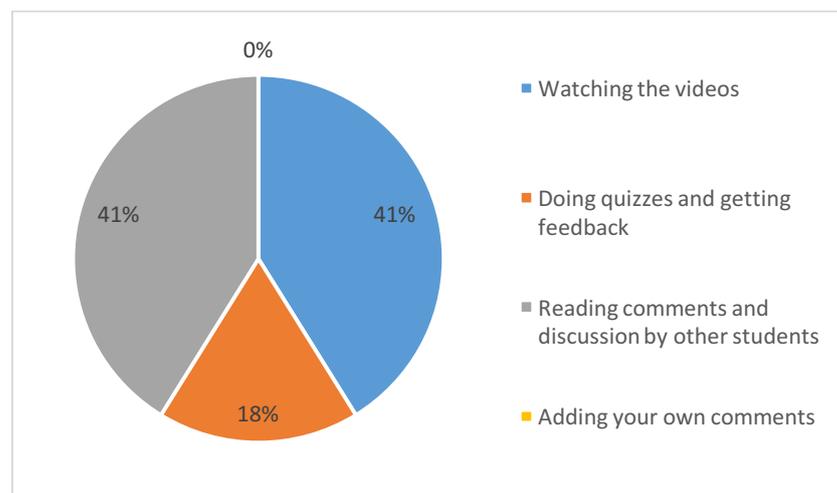


Figure 4.15 On-line learning methods

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For opinions on the online learning methods used, Question 12: ‘What aspect of the learning did you enjoy most on this online Avatar course?’ generated a 41% response to ‘Watching videos’, which had decreased from the pre-course results and a 41% response to ‘Reading comments and discussion amongst other students’, which was an increase from the pre-course results. Meanwhile, just 17% stated a preference for ‘Doing the quizzes and feedback’, whereas none of the participants favoured ‘Adding their own comments’ (see Figure 4.15, above).

However, overall satisfaction with the Avatar’s ability to engage the learner was only addressed in Question 14 of the post-course survey: ‘Please rate how engaging you found the Avatar course?’ with nearly half the participants finding this level of engagement to be ‘Average’, compared with around less than a quarter indicating it as ‘Quite’ engaging and 18% declaring it to be ‘Very engaging’ (see Table 4.7, below).

Table 4.7 Opinions of how engaging the Avatar was

How Engaging Was the Avatar?	Frequency	%
Not at all	0	-
Not very	3	18%
Average	7	41%
Quite	4	23%
Very	3	18%
Total Responses	17	

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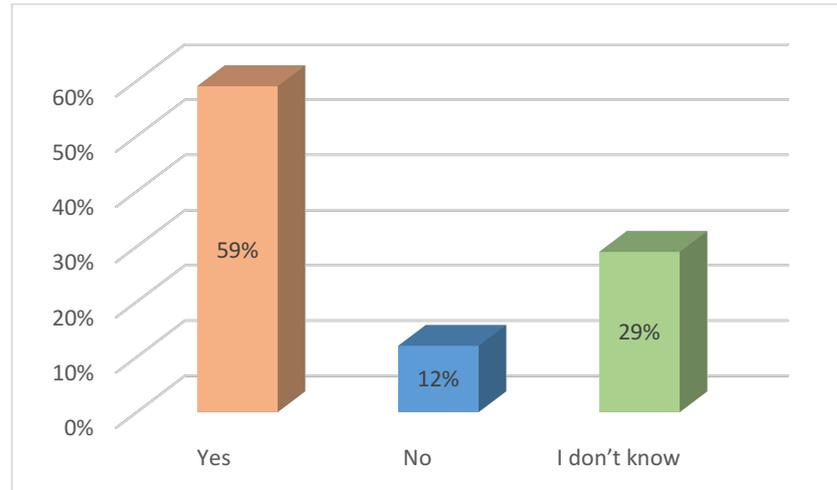


Figure 4.16 Likelihood of taking a course using an Avatar in future

To Question 17: ‘Are you likely to take another course using an Avatar tool in future?’ over half the respondents indicated ‘Yes’, whereas 12% declared ‘No’ and almost one third reporting: ‘I don’t know’ (see Figure 4.16, above).

4.4.4 Consolidation of the Results of the Pre- and Post-Course Surveys

The following Table 4.8 presents a comparison between the findings of the pre- and post- surveys:

Table 4.8 Comparison between the results of the pre- and post-course surveys

Category	Pre-course	Post-course
1-Knowledge and experience of using an Avatar	Q9+Q10: 53% of the students were taking a course using an Avatar course for the first time, while 47% had experienced a similar course before. 25% had found their previous Avatar experience to be ‘Excellent’, compared to 62%, who had found it ‘Good’ and 13% was ‘Fair’.	Q2: 65% of the students were ‘Satisfied’ with their experience of the current Avatar course, while only 6% were ‘Very dissatisfied’ and around a quarter were ‘Neutral’.

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<p>2- Learning expectations of the Avatar course</p>	<p>Q12: Just under half the students wished to improve their learning skills on the Avatar course (41%), while 18% thought it would be an interesting experience and a similar percentage wished to find out more about Avatars. Meanwhile around 23% believed that they would achieve better interaction with their peers and with the teacher.</p>	<p>Q5: The students who had completed the Avatar course gave different answers from the respondents in the pre-course survey, with statements on ‘improved learning skills’ decreasing to 29% and on finding it to be an interesting experience, to 12%. However, declarations of interaction with peers and the teacher had increased to 35% and of having discovered more about Avatars, to 24%.</p>
<p>3-Reasons for withdrawing from an Avatar course</p>	<p>Q13: Over half the students (53%) believed that a poor Internet connection would stop them from participating in some of the classes on an Avatar course, with around 23% stating that a loss of motivation would discourage them from participation. Around 18% believed that they might find it hard to use an Avatar, while only 6% feared being unable to keep up with the progress of the course.</p>	<p>Q4: Opinions after course completion appeared to differ from those gathered in the pre-course survey, with a decrease to 47% in the respondents citing the lack of a good internet connection as a potential reason for withdrawing from the Avatar course. Meanwhile a decrease to 18% was also indicated for a loss of motivation and 12% claimed they would discontinue if they found the Avatar hard to use. However, the number of citing difficulty with keeping up with the progress of the course had increased to 23%.</p>

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<p>4- Interaction with other students</p>	<p>Q14: Around 41% of the students thought that they would achieve better interaction with other students than they would in a normal classroom, while 35% did not and 24% ‘Didn’t know’.</p>	<p>Q7: Just over half the students (53%) were ‘Satisfied’ with the online interaction they had achieved with their peers, while only 12% were ‘Dissatisfied’ and 35% were ‘Neutral’.</p>
<p>5- Interaction with the teacher</p>	<p>Q15: Just over half (53%) of the students thought that they would achieve better interaction with their teacher than they would in a normal classroom, while 17% anticipated otherwise and 30% ‘Didn’t know’.</p>	<p>Q6: Almost 70% were ‘Satisfied’ with the online interaction achieved with the teacher and only 6% were ‘Dissatisfied’, while 18% were ‘Neutral’.</p>
<p>6- The resemblance of the Avatar character to an actual teacher</p>	<p>Q16: The majority of the students (66%) did not think that the Avatar would look like an actual teacher, while 17% stated otherwise and 17% indicated that they ‘Didn’t know’.</p>	<p>Q8: The number of respondents indicating that they did not think the Avatar looked like a real teacher had decreased to 24%; while 35% believed that it did and 41% were undecided.</p>
<p>7- Online learning methods</p>	<p>Q17: The majority of the students (64%) stated a preference for watching videos on the online course, while around 12% favoured reading other students’ comments and discussion. 12% also respectively indicated adding their own comments, doing quizzes and receiving feedback as their favourite aspects.</p>	<p>Q12: The percentage of students stating that they preferred watching videos had decreased to around 41%. Meanwhile, preferences for reading comments and discussion with other students had increased to 41%. Only 17% favoured quizzes and feedback and no one expressed a preference for adding their own comments.</p>

4.5 Observation Notes

The title of the course was Fiction LANE 342. The observation period was from 3-10-2015 to 29-10-2015, consisting of three lectures per week on Sundays, Tuesdays and Thursdays, with a weekly Avatar video forum on University BB (see Appendix 13).

In week 1: The students were listening most of the time, but there was very little participation. The lecturer was trying to get the students to interact by asking them the meanings of some words. Only two or three students appeared to feel comfortable about interrupting for clarification, or sharing their understanding of the concepts presented, however, most appeared to be shy and did not participate. On the other hand, relating to the first Avatar video, 13 students commented on and discussed the task, and the teacher replied to some of these posts. The students and the teacher were interacting with each other and commenting on each other's posts. The researcher had the impression that the students felt more comfortable about writing in the discussion forum than they did about participating in a traditional classroom. In week 2: the lecturer used a variety of instructional strategies to accommodate different levels of ability and different learning styles. Most of the students failed to participate in the class and so the lecturer had to try and get them to interact and participate. Nevertheless, 14 students commented on the second Avatar video and the teacher replied to some these comments. The students were enjoying the task and it can be seen from their discussion and interaction with each other on the forum. In the third week: 20 out of 23 students attended the class, and the lecturer continued by trying to get the students to interact by asking them to explain the meanings of certain words. In this lecture, there was increased participation, with six students actively contributing to the class but there was no group discussion in the class at all. In the final week 4: 19 out of 23 students

attended the class. It was an exam revision week, and there was no Avatar video on BB forum. The focus group was conducted at the end of the fourth week.

4.6 Semi-structured Interview with the Teacher

Dr. Norah was interviewed for the second time on 22-10-2015 at her office in KAAU. The interview was conducted in English. After completing the course observation, I asked the teacher questions about her experience of teaching students using Avatar technology (see Appendix 14). At the beginning of the interview, she stated that she had been teaching online courses for five years, with the aim of encouraging interactivity. Moreover, she added that preparing traditional course content takes longer than designing an online course, which takes 14 weeks to prepare. The data collected were then subjected to the thematic analysis, as suggested by (Braun and Clarke, 2006). These themes were analysed by the researcher in relation to the responses given by the teacher (see Table 4.9, below):

Table 4.9 Thematic Analysis of Interview with the Teacher

Themes	Theme description	Sub-themes	Excerpts from the Interview
1-Social interaction	This refers to students' interaction with other students and their teacher	-	<i>"If it was applied to a specific group of students, the outcome varied"</i>
2-Physical appearance	This refers to the decision to show one's face in the videos	-	<i>"Definitely not, regardless of everything, it's some kind of principle"</i>
3-Motivation to develop an Avatar	This refers to the reason behind implementing an Avatar in teaching	Production of recordings	<i>"They were complaining about the online course; they felt bored, because the teacher was not following up with them"</i>
4-Gender segregation	This refers to cultural and social	Acceptance of female	<i>"With digital native students at university level, maybe they</i>

	issues in Saudi society	teachers in Saudi society	<i>will enrol and enjoy such a course, but for people like 30 or 40 years old, I think they will not be interested</i>
5-MOOC platforms in Saudi universities	This refers to implementing MOOCs in Saudi universities	Impact on higher education	<i>“Here in King Abdul-Aziz University there is a complete plan and two complete courses are ready to be presented as MOOCs worldwide”</i>

4.6.1 Theme 1: Social Interaction

The first theme that emerged was social interaction among the students. The teacher was asked whether online teaching could promote social interaction among learners. She replied:

“If it was applied to a specific group of students, the outcome varied, e.g. the students liked to post independently from each other, although they were collaborating and interacting in one specific forum.”

4.6.2 Theme 2: Physical Appearance

This theme relates to the decision to show one’s face in the videos. Dr. Norah was asked if she accepted to show her face in online videos, based on cultural or religious issues in Saudi Arabia. She replied:

“Definitely not, regardless of everything, it’s some kind of principle, but I can find other alternatives and this is what I am working on.”

4.6.3 Theme 3: Motivation to Develop an Avatar

One of the alternatives to actually appearing in person in videos, as mentioned by Dr. Norah in response to the previous question, is to adopt Avatar technology. The motive behind this was based on the students expressed need, as she pointed out:

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“They were complaining about the online course; they felt bored, because the teacher was not following up with them.”

She added:

“I am not sure if this will be successful, but I am trying my best to come up with different solutions.”

She was still evaluating the experience of the Avatar to examine the students' responses and level of acceptance. She stated that:

“Students are responding to the requirements presented via the videos, so it is concept plus activity.”

Moreover, the teacher was asked, ‘If the Avatar resembles her physical appearance’.

She replied:

“No, but I am trying to play with that; for example, I have tried to make her look fat; I don’t want the students to think that I am trying to create someone, who is different from me, which is some kind of psychological problem.”

Sub-theme: Production of Recordings

Dr. Norah was asked ‘whether the Avatar technology supports the production of recordings (long videos)’. She responded:

“Regarding the creation of content, Micro learning contains very short doses of content, 3-5 minutes maximum, and the idea is very simple.”

She added that it also supports the production of longer videos, but

“It depends on the machine you are working with, because it could be hooked up for 3-4 hours. I used to record the videos via (Machinima).”

Dr. Norah was then asked ‘whether she created these videos by herself’. She replied:

“Yes, it is very easy; I use the Camtasia recording application.”

4.6.4 Theme 4: Gender-Segregation

The following question regarded cultural and social issues in Saudi Arabia: ‘To what extent do you think replacing a real person with an Avatar will be of benefit to the students?’ Dr. Norah replied:

“In these Avatar videos, it can be seen that the majority of students respond positively, which is a good indication.”

Moreover, she pointed out:

“Whatever tool you use, you have to consider the pedagogical objectives; students are captivated by visual representations and representing something like this might attract their attention to listen to the material and enjoy it.”

She added:

“I wanted to create an enjoyable learning experience for the students.”

Sub-theme: Acceptance of Female Teachers in Saudi Society

Furthermore, Dr. Norah was asked: ‘As Saudi Arabia is a gender-segregated society, to what extent do you think it is accepted that a female teacher teaches on a MOOC using an Avatar instead of appearing in person?’ She answered:

“With digital native students at university level, maybe they will enrol on and enjoy such a course, but for people like 30 or 40 years old, I think they will not be interested in a course with an Avatar being used, simply because it is not part of Saudi culture; we are not drawn to animation and so they would want to have a teacher in front of them.”

4.6.5 Theme 5: MOOCs Platforms in Saudi Universities

My last question concerned the implementation of MOOC platforms in Saudi universities. Dr. Norah stated:

“Here in King Abdul-Aziz University, there is a complete plan and two complete courses are ready to be presented as a MOOC worldwide. They believe that we have to go to Coursera and EdX to be published there and I supported that 100%.”

Sub-theme: Impact on Higher Education

The question here was about whether as an academic, she had any future plans to teach a MOOC using an Avatar, to which Dr. Norah replied:

“Yes, but I have chosen platforms. However, to publish something on a platform which does not belong to your country is a bit confusing to some people and we are restricted to some extent, academically speaking, I don’t want to do anything to affect my academic status here in the University.”

4.7 Focus Group

The focus group data were collected from the most active participants in the classroom and on the online forum (relating to the Avatar videos). The focus group took place on 22-10-2015 and was conducted in English amongst eight students. The data were recorded and transcribed by the researcher, before being subjected to thematic analysis, as suggested by (Bogdan and Biklen, 1998) and according to their protocol for analysing focus group data and coding.

NVivo 11, a (CAQDAS) was then used to assist with analysing the qualitative data (from the focus group); a method selected by the researcher for this study. Moreover, in order to try and understand the conceptual relationships, key words were counted and code categories were derived from the data, with the initial themes being connected with these codes (Berkowitz, 1997). The focus group is used to triangulate data with the pre- and post- questionnaires.

4.7.1 Developing Codes and Categories

Coding is a process of transferring labels to components of data that capture the meaning of each section of those data (Savin-Baden and Major, 2013). The process was carried out on transcripts exported into NVivo software, with selected sections of highlighted data and coded labels. This codifying process is outlined by Saldana (2015) and it is considered useful for generating themes from codes. I coded each transcript with words or sentences that revealed meaning and selections were correspondingly made. Segments were identified and extracted, as well as meaningfully labelled with a code using NVivo software. The following Table 4.10 is an example of the initial codes derived from an analysis of the data generated by the focus group.

Table 4.10 Initial codes generated for the focus group

Categories	Code Label	Quotes from the Interviewees
Reasons for taking the course	Grades task experience	<i>"It is part of the course and each video is graded"</i>
Positive things about the course	Opportunity repeat the video watch anytime - anywhere	<i>"I can watch the videos anytime when we are free and anywhere"</i>
Negative things about the course	Technical issues video backgrounds Internet connection voice	<i>"The sound and voice were not clear"</i>
Appearing in person	Agree – disagree don't care no difference not important	<i>"Yes, it looks similar to Dr. Norah and most of us could recognise that"</i> <i>"I think it does not make any difference"</i>
Social interaction	Interactive connected communicative engaged	<i>"I think I feel more interactive with my colleagues [sic]"</i> <i>"I feel more engaged than in the class"</i>

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Suggestions for course improvement	Voice design length of videos	<i>"I found the Avatar idea very interesting, but the length of the video should be extended"</i>
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The following Table 4.11 presents the themes and sub-themes for the focus group:

Table 4.11 Thematic analysis of the focus group

Themes	Theme Description	Sub-themes	Excerpts from the Focus Group
1-Students' motivation	This refers to the students' decision to take the course using an Avatar	-	<i>"We have to do the task and get the two marks"</i>
2- Advantages of the Avatar course	This refers to the things the students liked about the course	-	<i>"It gives us the opportunity to write our opinion" "I can repeat the videos many times and understand the topic"</i>
3- Disadvantages of the Avatar course	This refers to the things that the students did not like about the course	-	<i>"The background to the Avatar kept changing in the videos and I found that a bit distracting" "The Internet connection is very weak"</i>
4-Physical appearance	This refers to the level of similarity between the Avatar and the real teacher	Gender of the Avatars	<i>"I am a visual person; I like to watch the teacher in the videos while I am learning" "I think sometimes you just need to listen to the lecture carefully without seeing the lecturer's face"</i>

5-Social interaction	This refers to students' interaction with their peers and the teacher	Students' behaviour	<i>"I felt more connected to the teacher"</i> <i>"I think I feel more interactive with my colleagues"</i>
6- Improvement to the course presentation	This refers to suggestions for improving the Avatar videos	Technical issues	<i>"The voice should be clearer"</i> <i>"The videos are too short; I think they need to be a bit longer. Overall, I enjoyed the videos"</i>

4.7.2 Theme 1: Students' Motivation

The first theme referred to the students' decision to take the Avatar course and so the students participating in the focus group were asked why they had decided to take part in the Avatar forums on the course. One of the students pointed out:

"It is part of the course and each video is graded, so we have to do the task and get the two marks."

Another student stated:

"It is a new experience."

4.7.3 Theme 2: Advantages of the Avatar Course

The question here was: 'What was the thing you liked best about the Avatar videos?' Most of the students agreed that it had given them a good opportunity to write their opinions and some of the students referred to this as follows:

"It gives us the opportunity to write our opinion."

Other students also commented, saying:

"I can repeat the videos many times and understand the topic."

"I can watch the videos anytime when we are free and anywhere."

Moreover, one student stated that she could read her friends' comments and discuss the topic with them online.

4.7.4 Theme 3: Disadvantages of the Avatar course

The question here was: 'What was the thing you liked least about the Avatar videos?' Some of the students mentioned technical issues, such as the quality of the voice and recording:

"The sound and voice were not clear."

"I have to stay alone in a separate room and wear my headphones to listen carefully to the voice."

Regarding the quality of the backgrounds in the videos, one of the students stated:

"The background to the Avatar kept changing in the videos and I found that a bit distracting."

One student also gave the reason why she would withdraw from participation, in terms of watching the video, namely a poor Internet connection:

"The Internet connection is very weak."

4.7.5 Theme 4: Physical Appearance

The students were asked 'whether the Avatar resembled the actual teacher and how important it was for them to see the teacher's face on an online course'. Different students replied:

"Yes, it looks similar to Dr. Norah and most of us could recognise that."

"I am a visual person; I like to watch the teacher in the videos while I am learning."

On the other hand, some of the students disagreed:

"I think sometimes you just need to listen to the lecture carefully without seeing the lecturer's face."

“I really don’t care, because in these videos, as I said, the voice was not clear, so I don’t care much about watching and looking at the character.”

Sub-theme: Gender of the Avatars

The students were asked: ‘If the Avatar was male, do you think you would be more comfortable communicating with an actual person, whether male or female?’ The students responded:

“I think it does not make any difference.”

“I have studied with a male teacher before and I don’t think it is really important if [the teacher] is male or female.”

4.7.6 Theme 5: Social Interaction

Some of the students had positive perceptions of the social interaction achieved on the Avatar course and forums and thought it was a good way of communicating, whereby they were free to read their peers’ posts and comments. They therefore felt more interactive and connected to their peers and the teacher:

“I think I feel more interactive with my colleagues.”

“I felt more connected to the teacher.”

Sub-theme: Students’ Behaviour

The students were asked if they thought that watching the Avatar videos had led them or could lead them to change any of their behaviour or practices. Most agreed that it had caused them to exchange experiences with each other and concentrate more on the class:

“I can communicate more with my friends.”

“I think it makes me concentrate more on the class.”

“I felt more engaged than in the classroom.”

“I felt more confident in class about expressing my ideas and opinions.”

4.7.7 Theme 6: Improvement to the Course Presentation

The final question put to the students was: ‘Do you have any ideas or suggestions for improving the Avatar videos and presentation?’ As a result, there were a number of suggestions and responses, including:

“I think the design should be more attractive and related more to the lecture.”

“Overall, I enjoyed the videos.”

Sub-theme: Technical Issues

Two of the students mentioned certain technical issues, such as:

“The videos were too short; I think they need to be a bit longer.”

“I found the Avatar idea very interesting, but the length of the video should be extended.”

4.8 Case Study 3

The third case study consists of a Meta-MOOC, namely: ‘**How to Design Your Own MOOC**’ (<https://www.rwaq.org/courses/elearning>). This course was run twice: the first time from 8-8-2016 to 8-9-2016 and the second, from 1-10-2016 to 31-10-2016 on the Rwaq platform.

4.8.1 Rwaq Case Study (First Run)

4.8.1.1 *The Participants*

The sample for this study was drawn from a Rwaq course and included 5580 participants, fairly distributed by gender (48% female vs. 52% male), resulting from the end-of-course survey.

The participants originated from different Arabic-speaking countries, held different levels of educational qualification and varied in terms of age (see Table 4.12, below).

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Table 4.12 Participants' ages and levels of educational qualification

Degree	Total	Age range	No. of Participants
PhD	436	Under 20	0
		20-29	4
		30-39	207
		40-49	171
		Over 50	54
Master's degree	2349	Under 20	4
		20-29	931
		30-39	948
		40-49	344
		Over 50	122
Bachelor's degree	1914	Under 20	78
		20-29	864
		30-39	724
		40-49	198
		Over 50	50
Secondary Education	881	Under 20	174
		20-29	376
		30-39	104
		40-49	201
		Over 50	26

4.8.1.2 The Setting

The setting for this study was the Meta-MOOC, 'How to Design Your Own MOOC' on the Rwaq platform, implementing Avatar technology. This was developed over a four-week period from 8th August to 8th September, 2016, using 'Go-animate' software, instead of videos of the presenter (see Section 3.5.13.1). The content and materials were then developed within two months and translated from English into Arabic, following Rwaq's language procedure. The Avatar and corresponding videos were consequently created, with added recordings of the present teacher/researcher's own voice.

On 15th May, 2016 an online application was submitted to Rwaq, specifying the MOOC title and outline. It was accepted with a request for a short introductory video of around 2-3 minutes' duration. Here, the teacher was able to introduce herself, briefly describe the course and indicate the target audience. This 'promo-video' was published on 24th May, 2016 to initiate its publication. It was also shared on social media networks,

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namely Twitter and Facebook - using the teacher's private accounts - as well as being disseminated via WhatsApp chat groups on mobile devices.

On 8th August, 2016, the first MOOC was launched on the Rwaq platform. This comprised four recorded lectures divided into 14 short videos, published on a weekly basis and accessed via the YouTube Rwaq channel: https://www.youtube.com/watch?v=-AVJh36L_N8. The end-of-course survey was published in the third week. Finally, at the end of the course, a test was administered, with a pass mark of 60%, whereby successful candidates received a certificate of completion from Rwaq.

The following (Table 4.13, below) presents the four-week of Rwaq course outline.

Table 4.13 The Rwaq course outline

Course Outline	‘How to Design Your Own MOOC’
Week 1)	Introduction to Massive Open Online Courses (MOOCs)
	What is a MOOC?
	The history and background to MOOCs
	How to create content for a MOOC
Week 2)	Create a preview page
	Summary of the course and instructor profile
	Introduction video and welcome email
	How to participate in the open platforms as a teacher
Week 3)	Creating assessments (multiple choice & quizzes)
	How to create the visual content of the course
	How to create an interactive video
	Styles for your visual content
Week 4)	How to create a video using an Avatar
	Online learning for Saudi females in higher education
	Women’s opportunities for online teaching and their impact on Saudi culture
	The role of Arabic women in online learning and MOOCs
	Interviews with female lecturers concerning their teaching experience on Rwaq (as part of the study)



Figure 4.17 Screen shot of the Rwaq course video (Promo)

4.8.1.3 *The Results*

The relevant statistics from my first Rwaq course are presented below:

- (30%) completed the course, which represent 1669 out of a total of 5580 participants.
- (24.6%) successfully completed the final test, which represent 1376 out of a total of 5580 participants.
- (14.8%) completed the end-of-course survey, which represent 830 out of a total of 5580 participants.

4.8.1.4 *The Researcher's Subjective Online Teaching Experience*

As a teacher and researcher, when decided to teach a MOOC, I realised that it was necessary to create a quality course for students. The researcher also wanted to share the ideas underpinning this current PhD research, in order to gather perceptions and suggestions that could be helpful and inspiring to other female teachers in future. Therefore, the researcher estimated how long it would take to prepare an online course.

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It ultimately took two months to develop all the course materials, create the Avatar videos, and design the final test and survey.

When the first lecture was published on the Rwaq platform on 8th August, 2016, a high number of comments were received from the participants, posted under each video. This gave rise to some important questions. As a result, the teacher (researcher) usually spent around three hours a day following participants' discussions on the message, wall and discussion boards, as well as regularly checking my own email inbox. In this way, the teacher attempted to respond to the participants' questions and comments as promptly as she could, because it is very important for them to know that the teacher was consistently available to help them whenever required. As a result, an interactive online environment was created, where I believe the participants felt free to participate in discussions by responding to the comments posted. This was intended to make them more comfortable about responding to each other on the discussion board.

In addition to the above, the teacher tried to keep everything simple, including the course content, while also avoiding long videos, or long and complex questions in the final test. This was intended to help achieve the learning goals. For example, the participants were sent a welcome letter before the commencement of the course and the syllabus was posted in advance; thus, giving the participants an opportunity to familiarise themselves with the course as a whole, as well as to reflect on whether it would meet their needs. Moreover, some of the participants were highly motivated and had an intrinsic desire to use the course material in their learning. Therefore, students wanted to practise applying what they had learnt and enjoyed the process (intrinsic motivation). However, others may only have been seeking to complete the course as a means of obtaining the certificate (extrinsic motivation). Aside from the above, this course was highly feedback-oriented in the research study, with the participants being

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made aware from the very beginning that they were welcome to share their views of the course.

The online teaching experience provided me as a teacher with many benefits, that had a window on most of the participants' discussion. Consequently, the teacher was able to note and correct any misinformation, while also easily identifying those participants who required additional help. In addition, a great deal was learned from the participants about MOOCs, new platforms, and updated animation tools and software. Furthermore, the primary goal was for the participants to be able to access and learn from material within a socio-interactive environment. The significance of this was heightened by the cultural and social boundaries imposed on female teachers in Saudi Arabia.

Most of the participants proved to be greatly interested in the Avatar videos and this was observed in their comments, which will be considered in more detail in the section, 'Participants' Perceptions and Feedback' (see Section 4.8.1.5 below). The online teaching experience, with the new phenomenon of an Avatar tool being used to create videos, combined with recordings of the teacher's own voice, was thus explored from a female perspective. In this regard, both positive and negative aspects of online courses were encountered. Some of the advantages of teaching via a Meta-MOOC, using an Avatar, as opposed to actually appearing in person in the videos, consisted of enhanced engagement in interactive education. Here, an appropriate Avatar character was created to closely resemble myself as a female teacher. The aim was to be able to interact with the students and provide a memorable experience that would increase their confidence, increase their satisfaction and reduce social boundaries.

Conversely, one of the disadvantages of this new technology was the length of time and amount of effort required to create an Avatar in the first place; as well as learning how to navigate and communicate using the relevant software. It subsequently took around

two to three months to develop 15 videos. Amongst other factors, the teacher felt more comfortable explaining things in writing, as opposed to verbally. Sometimes, the teacher also needed to find the necessary resources to answer the participants' questions. Another finding derived from teaching this course was that the participants were sometimes very interactive, but without much control. This interaction took place in multiple directions.

4.8.1.5 The Participants' Perceptions and Feedback

The data collected related to the participants' feedback on the course content, material, Avatar tool, teacher-to-student, and student-to-student interaction. Moreover, it pointed to ways in which these perceptions could impact the participants' actions, approaches and learning within the online educational environment. Besides, collecting and analysing participants' feedback in the form of comments on course content is essential for the ongoing enhancement of course quality (Leckey and Neill, 2001).

4.8.1.6 Thematic Analysis

The data collected were subsequently subjected to a six-phase thematic analysis method, as described by Braun and Clarke (2006), following their protocol for analysing qualitative data. NVivo 11 software was then used to analyse the data, in order to try and understand the conceptual relationships, count key words and derive coding categories. Themes were subsequently generated to connect these codes.

Overall, around 1075 comments and quotes made by participants were gathered: 550 by females and 525 by males. Most of these were then coded in NVivo.

Table 4.14 presents the initial codes drawn from an analysis of the data based on the participants' comments.

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Table 4.14 Initial codes generated for participants' comments

Categories	Codes label	Extracts from Participants' Comments
Positives and negatives of the course overall	Course design videos Avatar tool	<i>"I liked the presentation: very attractive and beautiful"</i>
Positives and negatives of the content and materials	Course content organisation of the course types of material	<i>"Wonderful and detailed explanation of the background to MOOCs"</i>
Satisfaction and challenges of the platform	Technical issues teacher platform thanks	<i>"You motivated me a lot to design and teach my educational materials as a MOOC". "Thank you very much Dr. Rania"</i>
General and software questions	Requests enquiries final exam certificate	<i>"What is the software you used in the video?" "What date is the exam?"</i>
Social interaction	Teacher-to-student Student-to-student	<i>"I hope that your research results contribute to the promotion of Arab women, in sharing what you have learned and knowledge through distance education"</i>

The researcher analysed these themes in relation to the participants' feedback and comments under each video of the MOOC course. What resulted were five main themes and some sub- themes, which are presented in Table 4.15, below.

Table 4.15 Thematic analysis (NB. These quotes were translated from Arabic into English by the researcher)

Themes	Theme description	Sub-themes	Excerpts from Participants' Comments
1- Students' perceptions	This refers to participants' perception of the Avatar tool	Adopting Avatar technology	<i>"It looks like it's a clear and interesting course from the beginning"</i> <i>"The Avatar is moving very quickly"</i>

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2-Students' impressions	This refers to participants' overall impressions about the course	-	<i>"One of the beautiful things on this course is the short duration of the videos and the organisation of information in an interesting way"</i>
3-Students' satisfaction with the course	This refers to participants' satisfaction with the teacher and the course	Students' satisfaction of the teacher	<i>"Very interesting and important topic in today's world, which depends on electronic platforms in everything"</i> <i>"I cannot download the attachments"</i>
4-Questions and enquiries about assessments	This refers to participants' questions and enquiries about the course e.g. exam date	-	<i>"I hope to continue to provide a series of courses on the subject, taking into account the practical side"</i> <i>"How can we receive the certificate?"</i>
5-Social interaction	This refers to participants' interaction with their peers and the teacher	-	<i>"The most fantastic subjects, infused with passion for one's work and scientific development"</i> <i>"I am very happy to have participated in this course and admire the style and teacher's method of explanation"</i>

4.8.1.7 Theme 1: Students' Perceptions

The first theme referred to the students' perceptions, which were revealed to the teacher in some of the participants' video comments about their perceptions of the course design, Avatar tool and video presentation (Positive - Neutral - Negative). Overall, most of the perceptions and feedback were 'Positive', with very few 'Negative' and a small percentage of 'Neutral' comments. One of the participants stated:

"I liked the presentation: very attractive, short and beautiful."

(عجبي العرض محتوى جذاب و قصير وممتع)

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while another commented:

“It looks like it's a clear and interesting course from the beginning.”

(واضح انه كورس خفيف وجميل من أوله).

Sub-theme: Adopting Avatar Technology

However, one of the participants had a negative perception of the Avatar tool, stating:

“The Avatar is moving very quickly.”

(الافاتار جدا سريعة حركته)

while the majority liked the new technology and the way it was presented; for example, one student wrote:

“The way of the video designed is simple and creative.”

(طريقة تصميم الفيديو بسيطة و إبداعية).

4.8.1.8 Theme 2: Students' Impressions

Table 4.16 Number of participants' comments coded using NVivo

Students' impressions	Positive	Neutral	Negative
Male	83	32	8
Female	109	18	5

The above theme refers to the participants' impressions of the overall course, including its content and organisation (Positive - Neutral - Negative), as alluded to above in Table 4.16. The majority of the comments were positive; one of the students found the content to be:

“Wonderful and detailed explanation of the background to MOOCs.”

(شرح رائع ومفصل لتاريخ الموكس)

Similarly, another student stated:

“The presentation is very clear and organised, we are waiting for the rest of the classes.”

(العرض ومنظم جدا وواضح محدد في انتظار بقية المحاضرات).

However, one of the students declared:

“I heard a lot of the word (3D) and I don't understand the meaning.”

(كنت أسمع كثيرا عن كلمة (ثلاثية الأبعاد) ولا أفهمها).

4.8.1.9 Theme 3: Students' Satisfaction with the Course

The third theme referred to the students' level of satisfaction with the course, including their satisfaction with the types of material used, whether the information was helpful, technical issues, the teacher's motivation, the platform and the appreciative comments. Most of the students were entirely satisfied with the course and the supporting material and this was evident from their grateful and appreciative comments.

One of the students stated:

“Very interesting and important topic in today's world, which depends on electronic platforms in everything.”

(موضوع شيق ومهم في عالمنا اليوم الذي يعتمد على المنصات الالكترونية في كل شيء)

Nevertheless, some of the participants were dissatisfied with some of the technical issues arising, such as in the weekly attachments:

“I cannot download the attachments.”

(لا أستطيع تحميل المرفقات)

Sub-theme: Students' Satisfaction with Their Teacher

In addition to the above, one female student declared to her teacher:

“You motivated me a lot to design and teach my educational materials as a MOOC.”

(لقد حفزني كثيرا لتصميم وتدريس المواد التعليمية لطالباتي عبر المنصات التعليمية المفتوحة)

4.8.1.10 Theme 4: Questions and Enquiries about Assessments

The fourth theme referred to the participants' questions and participation, including requests, course enquiries, and questions about the final test and certificate. One of the students requested a practical component to the course and some students strongly agreed with that:

“I hope to continue to provide a series of courses in the subject, taking into account the practical side.”

(أتمنى الاستمرارية في تقديم مواد عن هذا الموضوع والاحذ في الاعتبار الجانب التطبيقي)

Furthermore, many asked about the software used to design the Avatar videos:

“What is the software you used in the video?”

(ما هو البرنامج المستخدم في عمل هذه الفيديوهات)

4.8.1.11 Theme 5: Social Interaction

The final and most important theme to emerge was social interaction, which is divided into two types: teacher-to-student (discussion) and student-to-student (passive learning through others and interaction with other students via comments). The teacher-to-student interaction was very clear from the comments; for example:

“I hope that your research results contribute to the promotion of Arab women, in sharing what you have learned and knowledge through distance education.”

(اتمنى أن تساهم نتائج بحثك في تشجيع النساء العربيات في تقديم ما لديهن من علم

ومعرفة من خلال التعليم عن بعد)

Moreover, another student commented:

“I need your email to contact you about some questions, if you have time to answer me.”

(احتاج الى ايميلك للتواصل معك عندي بعض الأسئلة إذا كان لديك وقت للإجابة علي)

Another participant said:

“I am very happy to join this course and impressed with Dr. Raniah’s explanation and the students’ interaction.”

(انا جدا سعيدة بانضمامي لهذا المقرر ومعجبه ب شرح د رانيا وتفاعل الطلاب)

4.8.1.12 Other Tools for Social Interaction

In addition, three social interaction tools are available on the Rwaq platform. These encourage communication, provide an opportunity for students to express their appreciation (‘like’ tools) and enable the sharing of website links, comments, questions and responses to questions.

The following are the three main sub-system functionalities:

1-The Wall tool (negotiation page): The capacity to publish and share knowledge in posts, where students can write comments on each other’s ‘statuses’.

2-The Messaging tool: Participants can send private messages to the teacher, which can in turn facilitate and enhance teacher-to-student communication.

3-The Q&A tool: The facility to ask and answer questions in discussions between participants on the learning topics. Moreover, there was a lecture report, which was only available to the teacher (myself). This provided relevant statistics, such as the number of students viewing the video, the number of topics completed by the students – as opposed to the number of topics covered by the course overall - and the number of comments posted. Moreover, these data were compared with the results of the end-of-course survey, so as to achieve a satisfactory level of reliability.

4.8.2 The End- of Course Survey

A quantitative research design was adopted, namely a survey approach. This electronic end-of-course survey was administered exclusively to the students registered on the Rwaq course. The teacher used a ‘Google Forms’ e-questionnaire to gather the participants’ views on their experience of the course and their perceptions of its effect on their studies and lifestyle, while at the same time exploring their level of satisfaction. The questionnaire designed consisted of multiple choice questions using a five-point Likert scale:

- a) Strongly disagree, Disagree, Neutral, Agree and Strongly agree.
- b) Very dissatisfied, Dissatisfied, Neutral, Satisfied and Very satisfied.

Questionnaire surveys are an ideal method of collecting information from a large number of participants, giving insights into the structure of the sample, as well as gathering data on their characteristics, views and level of satisfaction. It is not easy to achieve this using other techniques (Salant et al., 1994). Despite all these advantages, the approach is not without its limitations; for instance, it may not deliver optimal results, if an understanding of historical context is required. Moreover, the interaction between the students and their teacher will have a major impact on the learners’ satisfaction and the challenges they perceive as inhibiting them. This is because the clarity of the content and its organisation are also considered as keys to successful learning. In fact, Fekula (2010) states that the teacher’s role is very important for ensuring student satisfaction.

This end-of-course survey investigated students’ satisfaction with the course and the Avatar experience on the Rwaq platform, as well as the factors affecting this satisfaction, such as course design and content; motivation; teaching quality; learning style; perceived satisfaction with online learning; student-to-teacher and student-to-

student interaction, and familiarity with technology. The e-questionnaire responses were in Arabic, with the findings being translated into English and then analysed using descriptive analysis. Microsoft Excel was selected, as it supports various chart formats, such as pie charts and numerical tables, which are easier to read. Moreover, all the data were given as percentages. The following are some of the findings derived, together with an analysis of the electronic end-of-course survey, consisting of 830 responses.

4.8.3 Descriptive Analysis

4.8.3.1 Knowledge of MOOCs

When the participants were asked about their knowledge of MOOCs, 42% replied that they were ‘already registered on a MOOC platform’. 20% stated that ‘they have heard of them before’, but only 5% claimed to be ‘MOOC experts’ (Figure 4.18, below).

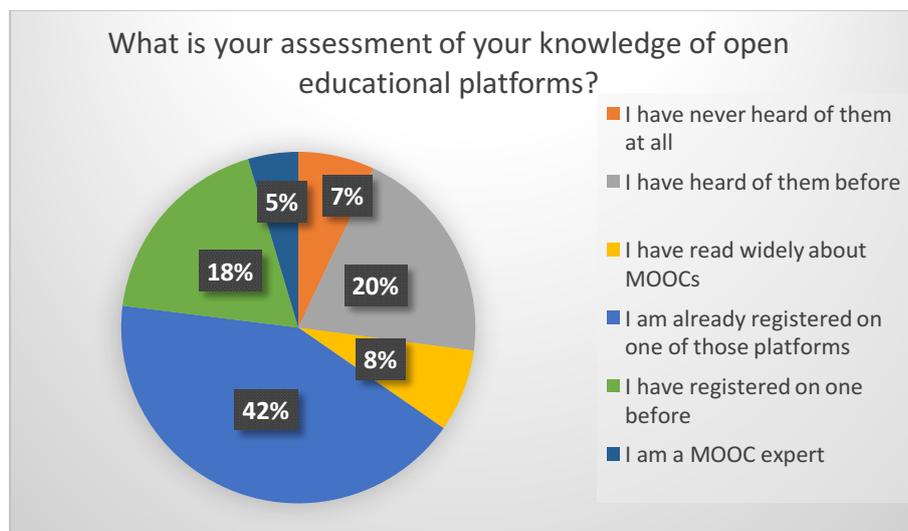


Figure 4.18 Percentages for student responses concerning open educational platforms

4.8.3.2 Satisfaction with the Experience of the Course Implementing the Avatar

The question: ‘How satisfying was your experience with this course implementing an Avatar tool instead of the video of the presenter herself?’ revealed that nearly half the students were ‘Satisfied’ with the Avatar character in the videos and 43% were ‘Very

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satisfied’ (see Table 4.17, below). In contrast, just 9% were ‘Neutral’ and only 1% were ‘Dissatisfied’.

Table 4.17 Percentages of student responses concerning implementation of the Avatar tool

Overall Satisfaction with The Experience of Using the Avatar Tool	Frequency	%
Very Dissatisfied	3	-
Dissatisfied	6	1%
Neutral	74	9%
Satisfied	389	47%
Very Satisfied	358	43%
Total responses	830	

4.8.3.3 Course Learning Outcomes

For the question about what the students had gained by completing the course, most of the respondents thought they had “Learned how to design a MOOC”. Around 18% found ‘The online learning experience interesting’ and similarly, 18% declared their ‘Learning skills have improved’. Only 8% stated that they sought ‘Improved interaction with their teacher and peers’ (see Figure 4.19, below).

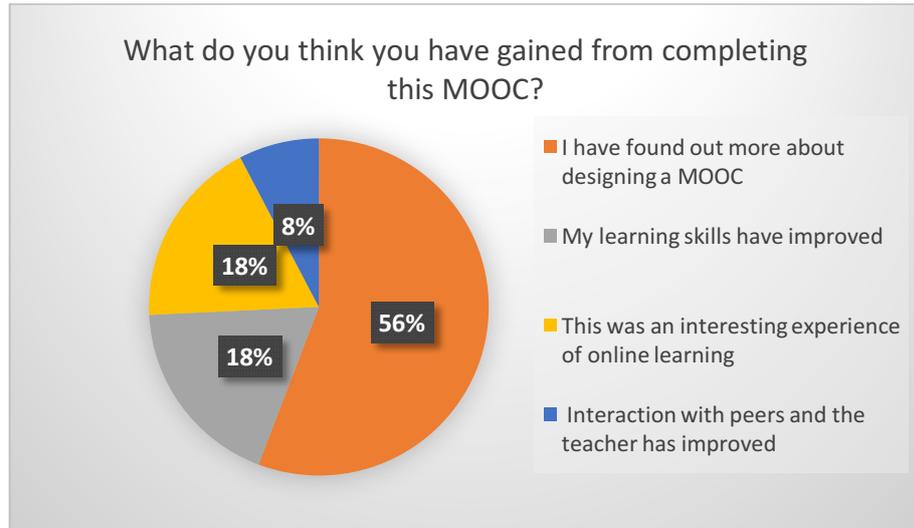


Figure 4.19 Percentages for student responses concerning the MOOC learning outcomes

4.8.3.4 MOOCs platforms provide methods of learning based on social constructivism

When the participants were asked if they agreed or disagreed that MOOC platforms provide modern learning options based on social constructivism, more than half ‘Agreed’ that they did and 22% ‘Strongly agreed’. In contrast, just 19% were ‘Neutral’ on this point and only 2% ‘Disagreed’.

Table 4.18 Percentages for student responses concerning the application of social constructivism in MOOCs

Overall Satisfaction with Methods of Learning Based on Social Constructivism	Frequency	%
Strongly Disagree	5	1%
Disagree	20	2%
Neutral	157	19%
Agree	467	56%
Strongly Agree	181	22%
Total responses	830	

4.8.3.5 Satisfaction with Teacher-to-Student Interaction via Avatar technology

The question: ‘How satisfied or dissatisfied are you with the interaction you achieved with the teacher using the Avatar instead of the video of the presenter herself?’ revealed that almost half the students were ‘Satisfied’ and more than one third were ‘Very satisfied’ (see Table 4.19, below). In contrast, just 13% were ‘Neutral’ and only 3% were ‘Dissatisfied’.

Table 4.19 Percentages for student responses concerning interaction with the teacher

Overall Satisfaction with Teacher-to-Student Interaction	Frequency	%
Very Dissatisfied	0	-
Dissatisfied	24	3%
Neutral	111	13%
Satisfied	406	49%
Very Satisfied	289	35%
Total responses	830	

4.8.3.6 *The clarity presentation of the course topics and content*

The question: ‘To what extent do you agree or disagree that the presentation of the course topics and content was clear?’ showed that more than half the participants ‘Agreed’ and around 40% ‘Strongly agreed’ that the presentation of the course topics and content was clear (see Figure 4.20, below). In contrast, only 7% were ‘Neutral’ and 2% ‘Disagreed’.

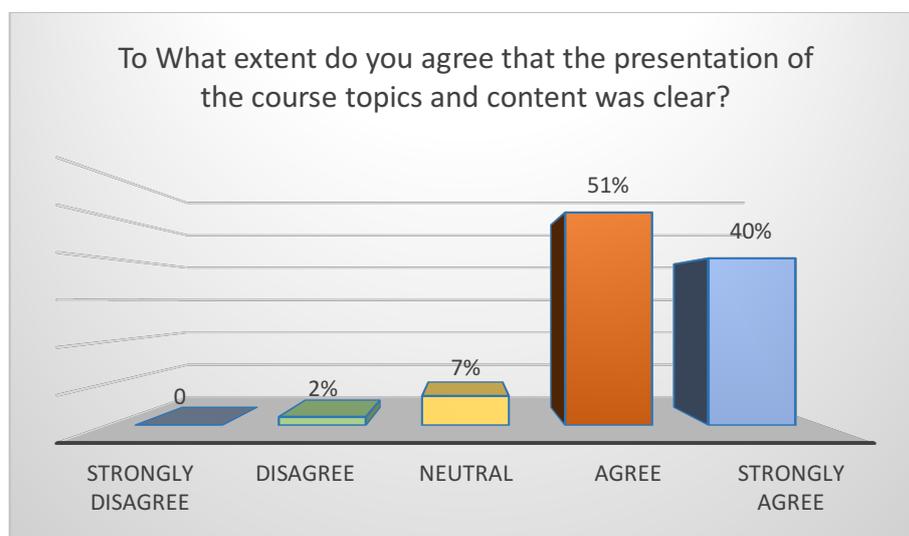


Figure 4.20 Percentages of student responses concerning the clarity of the course content

4.8.3.7 *Learning Style*

It can be seen from Figure 4.21 that the majority of the students preferred ‘Watching the course videos’, while around 13% were more ‘Interested in reading the comments made by their peers’. However, only 3% preferred ‘Posting their own comments on the wall’.

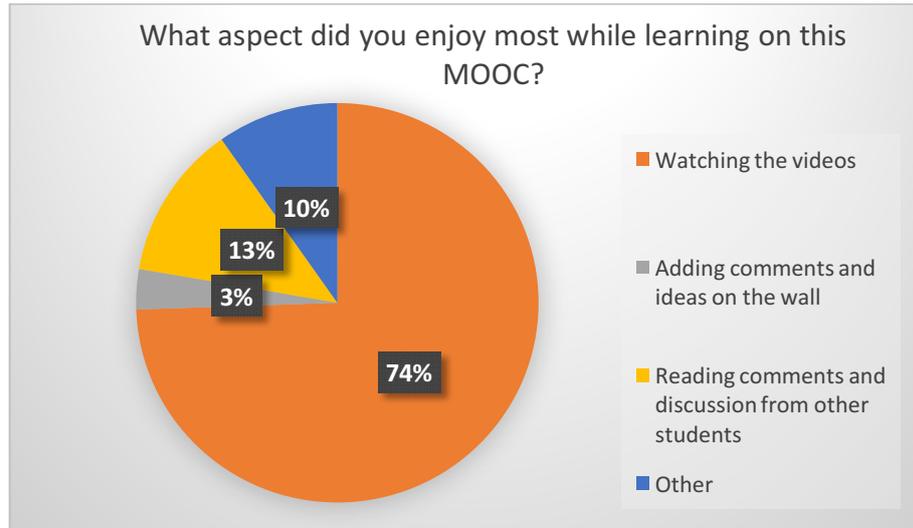


Figure 4.21 Percentages of student responses concerning their preferred learning styles

4.8.3.8 Visual attraction of using Avatars in MOOC videos

The question: 'How visually attractive did you find the MOOC course using Avatars?' found that half of the participants thought it was 'Quite' attractive. Around 36% found the Avatar character 'Very attractive' and around 10% declared that it was 'Average'. Only 3% stated that it was 'Not very attractive' and 1% claimed that it was 'Not at all' appealing (see Figure 4.22, below).

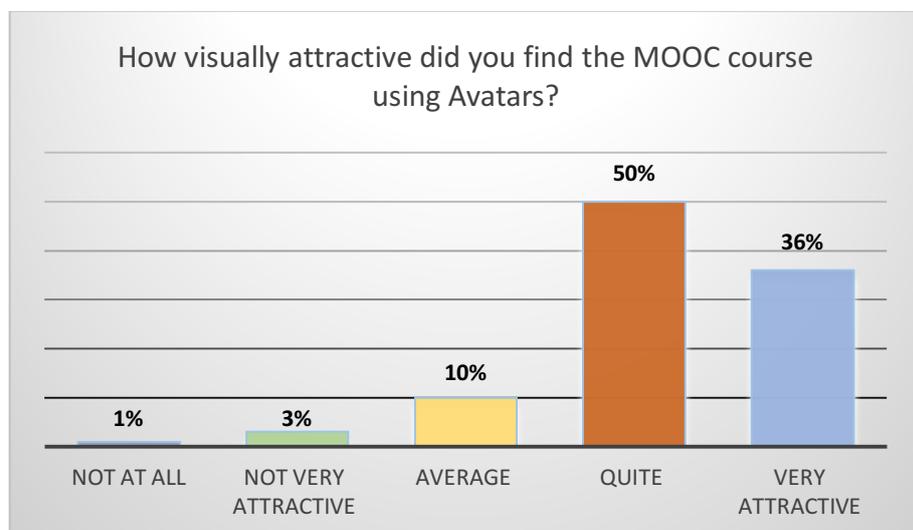


Figure 4.22 Percentages of student responses concerning the visual appeal of the Avatar

4.8.3.9 *The Appearance of the Lecturer in the Video-recordings*

This last question concerned the appearance of the actual lecturer in the MOOC material, whereby half the participants stated a ‘Preference for Avatar technology’, rather than a video of the actual teacher; while approximately one third of the participants appeared to favour ‘A video of the teacher herself’, compared to the 19% who declared that they would rather see a ‘PowerPoint Presentation, with just a voiceover from the teacher’.



Figure 4.23 Percentages of student responses concerning the appearance of the actual lecturer in the videos

4.8.4 **Rwaq Case Study (Second Run)**

4.8.4.1 *The Participants*

The sample for this study was drawn from the Rwaq course (second run) and included 1655 participants, fairly distributed by gender (50% female vs. 50% male) from the end-of-course survey findings. As shown in Table 4.20 (below), the participants originated from different Arabic-speaking countries, held different levels of educational qualification and varied in age.

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Table 4.20 Participants' ages and levels of educational qualification

Degree	Total	Age range	No. of Participants
PhD	42	Under 20	0
		20-29	1
		30-39	27
		40-49	12
		Over 50	2
Master's degree	529	Under 20	0
		20-29	149
		30-39	253
		40-49	115
		Over 50	12
Bachelor degree	983	Under 20	44
		20-29	370
		30-39	469
		40-49	45
		Over 50	55
Secondary Education	101	Under 20	14
		20-29	39
		30-39	43
		40-49	4
		Over 50	1



Figure 4.24 Screenshot of the Rwaq course video (second lecture)

4.8.4.2 *The Setting*

I realised that it was necessary to resolve the technical issue (concerning the final exam) in the first instance. Therefore, as the teacher, I decided to re-teach the course and more importantly, to measure the validity and reliability of the data collection process for this research. The teacher also wanted to gather additional perceptions and suggestions from participants that could be helpful to other female teachers in future.

A technical problem occurred as regards the deadline for submitting the final exam in the first run, where the teacher failed to manage the system's clock correctly. The deadline for the exam was intended to be midnight on 8th September, but the actual cut-off was at 00:00 midnight on 7th September, just at the beginning of the day. This error disappointed some of the participants, because they missed the exam, so it was decided to extend the deadline for 24 hours. However, the participants then could not receive their certificates because of a system error.

Furthermore, the Rwaq administration team suggested that the only solution was to re-run the course, which could be a good experience for both the teacher and some new participants. This was developed over a four-week period from 1st October to 31st October, 2016. The same video content was copied and pasted from the first course.

4.8.4.3 *The Results*

The relevant statistics from the second run of the Rwaq course are presented below:

- (28%) completed the course, which represents 466 out of a total of 1655 participants.
- (31.4%) successfully completed the final test, which represents 521 out of 1655 participants.
- (26%) completed the end-of-course survey, which represents 430 out of 1655 participants.

4.8.4.4 The Researcher's Subjective Online Teaching Experience

When the first lecture was published on the Rwaq platform on 1st October, fewer comments were received from the participants, compared to the first run of the course back in August, where the total number was 1655 participants. As a result, I spent around one hour a day following the participants' discussions on the wall and discussion boards, as well as regularly checking my own email inbox.

In addition to the above, I again tried to keep everything simple; including the course content, but the questions in the final test differed from those in the previous course. Overall, I was more relaxed and confident the second time round and enjoyed the course, as did the participants. However, once again, some requested a practical session for the Meta-MOOC, which I shall consider for the next course.

4.8.4.5 The Participants' Perceptions and Feedback

The data collected related to the participants' feedback on the course content, material, Avatar tool, teacher-to-student and student-to-student interaction. Moreover, these data pointed to ways in which these perceptions could impact the students' actions, approaches and learning within the online educational environment.

4.8.4.6 Thematic Analysis

The data collected were subsequently subjected to a six-phase thematic analysis method, as described by (Braun and Clarke, 2006), following their protocol for analysing qualitative data. NVivo 11 software was used to analyse the data, in order to try and understand the conceptual relationships; counting key words and allocating coding categories, in order to generate the themes connecting the above-mentioned codes.

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The following Table 4.21 illuminates the initial codes derived from an analysis of the participants' comments.

Table 4.21 Initial codes generated for the participants' comments

Categories	Codes label	Participants comments quotes
Positives and negatives of the course overall	Course design videos Avatar tool	<i>"I love the presentation of the content; it is very simple and easy to follow"</i>
Positives and negatives of the course content and materials	Course content organisation of the course types of material	<i>"The method of explanation is very well organised, simple and brief"</i>
satisfaction with and challenges of the platforms	Technical issues teacher platform thanks	<i>"You gave us useful tips as students for creating our first MOOC"</i> <i>"A great effort Rania, Thank you so much"</i>
General and software-related questions	Requests enquiries final exam certificate	<i>"What time will the course be available?"</i> <i>"Is the certificate recognised nationally and internationally?"</i>
Social interaction	Teacher-to-student Student-to-student	<i>"Great! you are very creative with the choice of this course"</i> <i>"You encouraged me to apply this technology with my school pupils, they will enjoy it!"</i>

The researcher analysed these themes in relation to the participants' feedback and comments under each video of the MOOC course. The results comprised five main themes and several sub-themes, which are presented in (see Table 4.22, below).

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Table 4.22 Thematic analysis (NB. These quotes were translated from Arabic into English by the researcher)

Themes	Theme description	Sub-themes	Excerpts from Participants' Comments
1- Students' perceptions	This refers to participants' perception of the Avatar tool	Adopting Avatar technology	<i>"The design of the course is easy to understand and clear; I like it"</i> <i>"The Avatar character moves too fast; I cannot concentrate"</i>
2-Students' impressions	This refers to participants' overall impressions of the course	-	<i>"It is very useful and valuable information, thank you"</i>
3-Students' satisfaction with the course	This refers to participants' satisfaction with the teacher and the course	Students' satisfaction of the teacher	<i>"This course helped me in preparing a seminar through a social media application"</i> <i>"I cannot open the survey link"</i>
4- Questions and enquiries about assessment	This refers to participants' questions and course enquiries e.g. about the exam date	-	<i>"Can you please tell what software you used in this course?!"</i> <i>"How many hours will appear on the certificate?"</i>
5-Social interaction	This refers to participants' interaction with others and teacher	-	<i>"I am an educational technology student; this course is very important to me because I am requested to create a MOOC"</i> <i>"I think one of the disadvantages of MOOC platforms is the lack of interaction between the teacher and students "</i>

4.8.4.7 Theme 1: Students' Perceptions

The first theme represents the students' perceptions, revealed to the teacher by some of their video comments, such as their perceptions of the course design, Avatar tool and video presentation (Positive - Neutral - Negative). Overall, most of the perceptions and feedback were positive, with only a small [percentage of negative and neutral comments.

One of the participants pointed out about the course design:

“The Design of the course is easy and clear; I like it.”

(تصميم المقرر سهل وواضح و اعجبني)

and another declared:

“I love the presentation of the content; it is very simple and easy to follow.”

(بسيط جدا وسهل متابعته حبيت عرض المحتوى)

Sub-theme: Adopting Avatar Technology

However, one of the participants had a negative perception of the Avatar tool and stated:

“The Avatar character moves too fast; I cannot concentrate.”

(الافاتار سريع جدا لا استطيع التركيز)

while the majority liked the new technology and the way it was presented; for example, one female student commented:

“The way the Avatar video was presented was very wonderful.”

(طريقة عرض الافاتار في الفيديو رائع جدا)

4.8.4.8 Theme 2: Students' Impressions

Table 4.23 Number of participants' comments coded using NVivo

Students impressions	Positive	Neutral	Negative
Male	31	3	3
Female	21	3	3

This theme referred to the participants' overall impressions of the course, including the content and course organisation (Positive - Neutral - Negative), as alluded to in Table 4.23 (above). The majority of the comments were 'Positive', with one of the students stating about the content:

"It is very useful and valuable information."

(معلومات مفيدة وقيمة جدا)

Similarly, another student made a statement about the course organisation:

"The method of explanation is very well organised, simple and brief."

(طريقة الشرح جدا منظمة ومختصرة بسيطة)

However, another student declared:

"I am newly registered on the course, but I cannot access the content."

(التحقت جديد بالدورة ولم استطيع فتح المحتوى)

4.8.4.9 Theme 3: Students' Satisfaction with the Course

The third theme referred to the students' level of satisfaction with the course, including with the types of material used, whether or not the information was helpful, technical issues, the teacher's motivation, the platform and the appreciative comments. Most of the students were 'Fairly satisfied' with the course and the supported material and this was evident from their grateful and appreciative comments. One of the students stated:

“This course helped me in preparing a seminar through a social media application.”

(المادة التعليمية افادتني كثيرا في اعداد أمسية مقامة عن طريق برامج التواصل الاجتماعي)

Nevertheless, some of the participants were ‘Dissatisfied’ with certain technical issues; for example, the end-of-course survey link:

“I cannot open the survey link.”

(لا استطيع فتح رابط الاستبيان)

Sub-theme: Students’ Satisfaction with the Teacher

Moreover, one the students pointed out to the teacher:

“You gave us a useful point as students to create our first MOOC.”

(لقد اعطينتنا نقاط مفيدة كطلاب لتصميم اول مادة لتعليمية في المنصات المفتوحة)

4.8.4.10 Theme 4: Questions and Enquiries about Assessments

The fourth theme referred to the participants’ questions and participation, including requests, course enquiries, and questions about the weekly test, final exam and certificate. One of the student’s questions concerned the process of subscribing to a MOOC as an instructor:

“What is the procedure for registering on a MOOC platform to teach a course; are there any terms or obligations, or it is open to anyone?”

(ماهي الالية التي يتم بها الالتحاق بمنصة تعليمية وتقديم مادة علمية هل هناك شروط وضوابط ام المجال مفتوح للجميع؟)

Furthermore, many of the students asked about the software used to create the Avatar tool:

“What is the software you used to create these Avatar character?”

(ما هو البرنامج المستخدم في عمل الشخصيات الكرتونية؟)

Another student asked about the certificate:

“Is the certificate recognised nationally and internationally?”

(هل هذه الشهادات معترف بها محليا ودوليا؟)

4.8.4.11 Theme 5: Social Interaction

The final and most important theme referred to social interaction and it was divided into two types: teacher-to-student (discussion) and student-to-student (passive learning through others and interaction with other students via comments). The existence of teacher-student interaction was very clear from the comments in this instance; for example:

“You encouraged me to apply this technology to my school students, they will enjoy it.”

(لقد شجعتني لتقديم هذه التكنولوجيا لطلابي في المدرسة سيستمعون بها)

In addition, one male student commented:

“I am an educational technology student; this course is very important to me because I am requested to create a MOOC.”

(انا أحد طلبة تكنولوجيا تعليم ومحتوى المقرر مهم جدا لأنني مطالب بإنشاء منصة تعليمية)

However, another (male) participant had a negative view of this, stating:

“I think one of the disadvantages of MOOC platforms is the lack of interaction between the teacher and students, to acknowledge the individual characteristics of each student.”

(اعتقد ان من بين القصور في المنصات عدم وجود التفاعل بين المعلم والطالب لمعرفة الخصائص الفردية للطلاب)

4.8.4.12 Other Social Interaction Tools

In addition to the above, there are three tools for social interaction available on the Rwaq platform to encourage communication, provide an opportunity for students to express their appreciation (‘Like’ tools), and to enable the sharing of website links,

comments, questions and responses to questions. The three main sub-system functionalities are as follows:

1-The Wall tool (negotiation page): Publishing and sharing knowledge in posts, where students can write comments on each other's 'statuses'.

2-The Messaging tool: Participants sending private messages to the teacher, which can facilitate and enhance teacher-to-student communication.

3-The Q&A tool: Asking and answering questions in discussions between participants about the learning topics.

Furthermore, there was a lecture report, only available to the teacher (the researcher). This provided relevant statistics, such as the number of students viewing the video, the number of topics completed by the students – as opposed to the number of topics covered by the course overall - and the number of comments posted.

4.8.5 The End- of Course Survey

A quantitative research design was adopted, consisting of an electronic end-of-course survey. This was administered to Rwaq participants registering on the second run of the course. The teacher used the previous 'Google Forms' e-questionnaire to gather the participants' views of the course and their perceptions of its effect on their studies and lifestyle, as well as exploring their level of satisfaction.

The e-questionnaire responses were then descriptively analysed using Microsoft Excel, which supports various chart formats; for example, pie charts and numerical tables to facilitate comprehension. Moreover, all the data were given as percentages. The following are some of the findings derived and an analysis of the online end-of-course survey, with a total of 430 responses. However, one new question was added at the beginning of the e-survey, as outlined below.

4.8.6 Descriptive Analysis

4.8.6.1 Responses to the Question: Did you register for the course, ‘How to Design Your Own MOOC’ in its first run from 8th Aug. to 8th Sept. 2016?

It can be seen from Figure 4.25 (below) that the majority of the participants registered for the first time on the first run of the Rwaq Avatar course, compared to the 38% registering for the first time on the second run of the course.

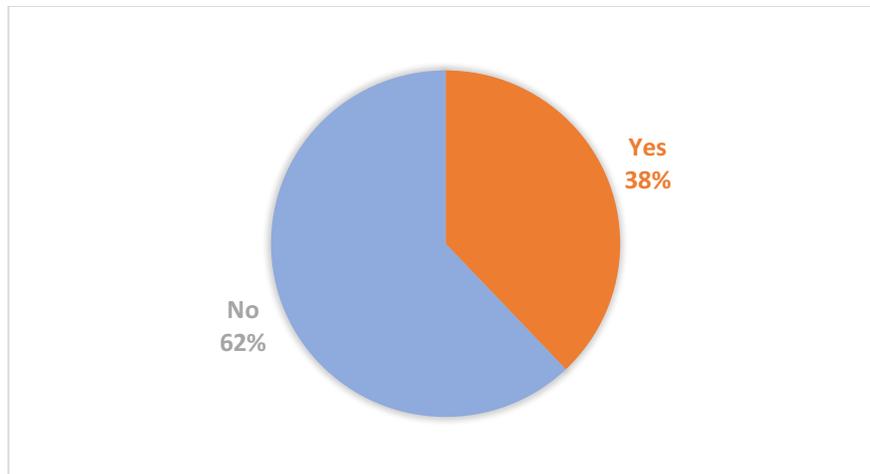


Figure 4.25 Percentages of participants join the course on its first run

4.8.6.2 Knowledge of MOOCs

The participants were asked about their knowledge of open educational platforms: ‘What is your assessment of your knowledge of open educational platforms?’ 40% replied that they were ‘Already registered on a MOOC platform’, while 20% stated: they “[had] heard of them before”, but only 4% claimed to be ‘MOOC experts’ (see Figure 4.26, below).

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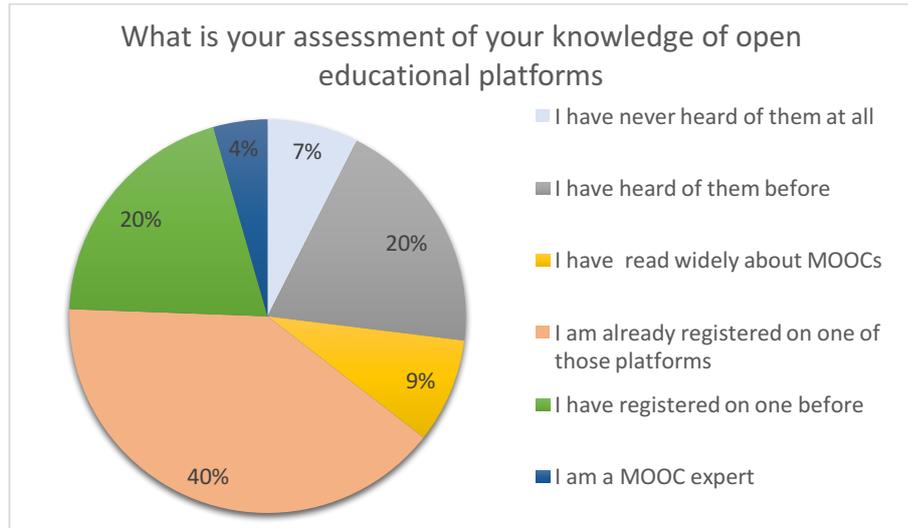


Figure 4.26 Percentages of student responses concerning open educational platforms

4.8.6.3 Satisfaction with the experience of the course implanting the Avatar tool

The question: ‘How satisfied or dissatisfied were you with the course implementing an Avatar tool, instead of a video of the presenter herself?’ It is clear from Table 4.24 (below) that just under half the students were ‘Satisfied’ with the Avatar character in the videos and similarly, 43% were ‘Very satisfied’. In contrast, just 10% were ‘Neutral’ and only 1.5% were ‘Dissatisfied’.

Table 4.24 Percentages of student responses concerning the use of the Avatar tool

Overall satisfaction with experience with Avatar tool	Frequency	%
Very Dissatisfied	3	0.5%
Dissatisfied	7	1.5%
Neutral	42	10%
Satisfied	194	45%
Very Satisfied	184	43%
Total responses	430	

4.8.6.4 *The Course Learning Outcomes*

In response to the question: ‘What do you think you have gained from completing this MOOC?’ the majority of the respondents thought that they ‘Learned how to design a MOOC’. Around 23% found ‘The online learning experience interesting’ and similarly, 20% declared that ‘Learning skills [had] improved’. Only 9% stated that they sought ‘Improved interaction with their teacher and peers’ (see Figure 4.27, below).

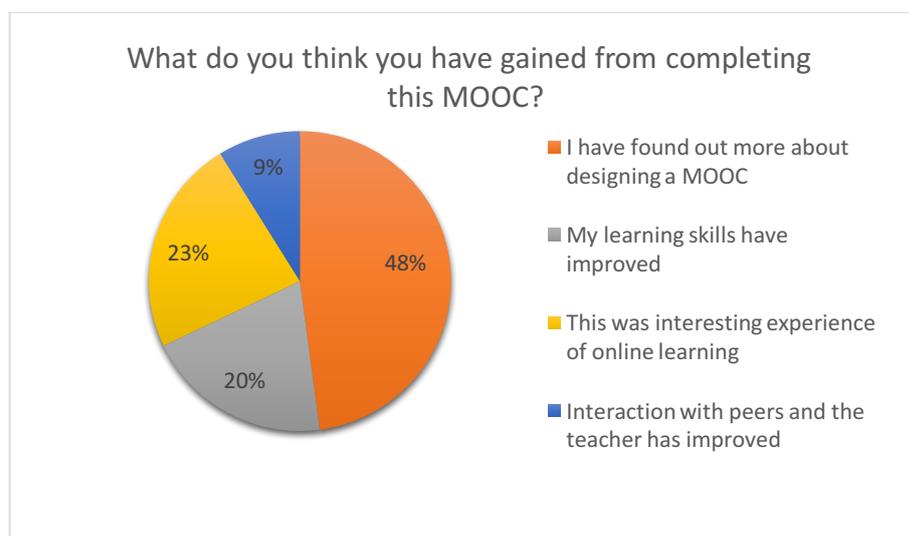


Figure 4.27 Percentages of student responses concerning the MOOC learning outcomes

4.8.6.5 *MOOC Platforms Provide Learning Methods Based on Social Constructivism*

Where the participants were asked if they agreed or disagreed that MOOC platforms enabled the application of modern methods of learning, based on social constructivism, it is clear from Table 4.25 that over half ‘Agreed’ with the learning methods related to MOOC theory and around 22% ‘Strongly agreed’. In contrast, just 19% were ‘Neutral’ and only 2% ‘Disagreed’.

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Table 4.25 Percentages of student responses concerning social constructivism and MOOCs

Overall satisfaction with methods of learning based on social constructivism	Frequency	%
Strongly Disagree	6	1%
Disagree	8	2%
Neutral	83	19%
Agree	239	56%
Strongly Agree	94	22%
Total responses	430	

4.8.6.6 Satisfaction with Teacher-to- Student Interaction via Avatar Technology

The question: ‘How satisfied or dissatisfied were you with the interaction you achieved with the teacher using the Avatar instead of the video of the presenter herself?’ It is clear from Table 4.26 that almost half the students were ‘Satisfied’ with the level of interaction achieved with their teacher using the Avatar tool and more than a third were ‘Very satisfied’. In contrast, just 17% were ‘Neutral’ and only 3% were ‘Dissatisfied’.

Table 4.26 Percentages of student responses concerning interaction with the teacher

Overall satisfaction with teacher interaction	Frequency	%
Very Dissatisfied	2	1%
Dissatisfied	14	3%
Neutral	75	17%
Satisfied	198	46%
Very Satisfied	141	33%
Total responses	430	

4.8.6.7 *The clarity of Presentation of the Course Topics and Content*

The question: ‘To what extent do you agree or disagree that the presentation of the course topics and content was clear?’ Figure 4.28 showed that over half the participants ‘Agreed’ that the content and topics were clearly presented, while 38% ‘Strongly agreed’. In contrast, only 6% were ‘Neutral’ and 2% ‘Disagreed’.

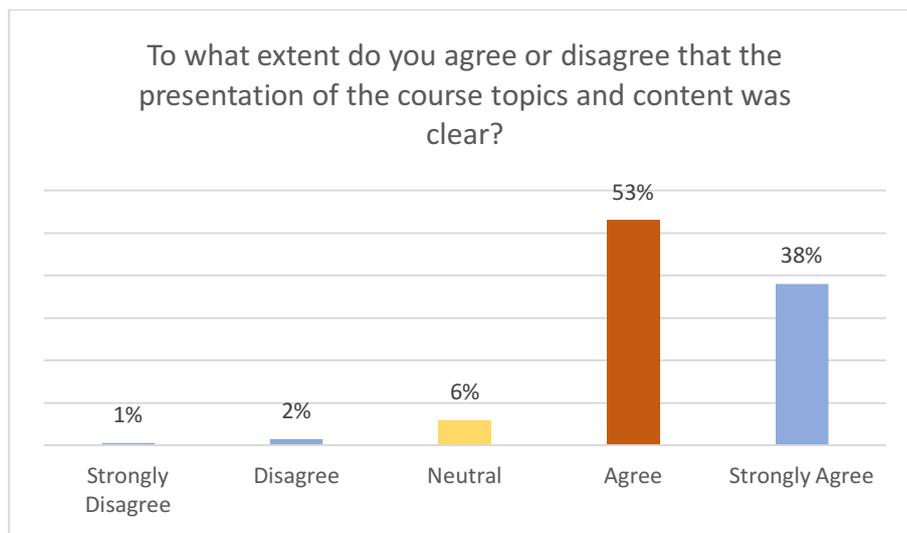


Figure 4.28 Percentage of student responses concerning the clarity of the course content

4.8.6.8 *Learning Style*

It can be seen from the Figure 4.29 (below) that the majority of the students preferred ‘Watching the course videos’ (80%), while 9% were more interested in ‘Reading the comments made by their peers’. However, only 4% preferred ‘Posting their own comments on the wall’.

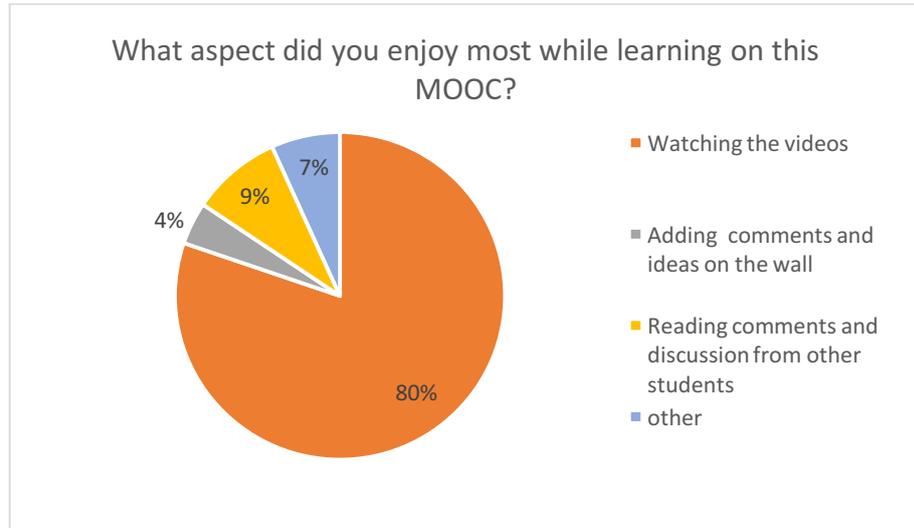


Figure 4.29 Percentages of student responses concerning preferred learning styles

4.8.6.9 Visual attraction of using Avatars in MOOC videos

The question: ‘How visually attractive did you find the MOOC course that used Avatars?’ revealed that half of the participants found it ‘Quite’ attractive, while 34% found the Avatar character ‘Very attractive’ and 12% declared it to be of ‘Average’ appeal. However, only 3% stated that it was ‘Not very attractive’.

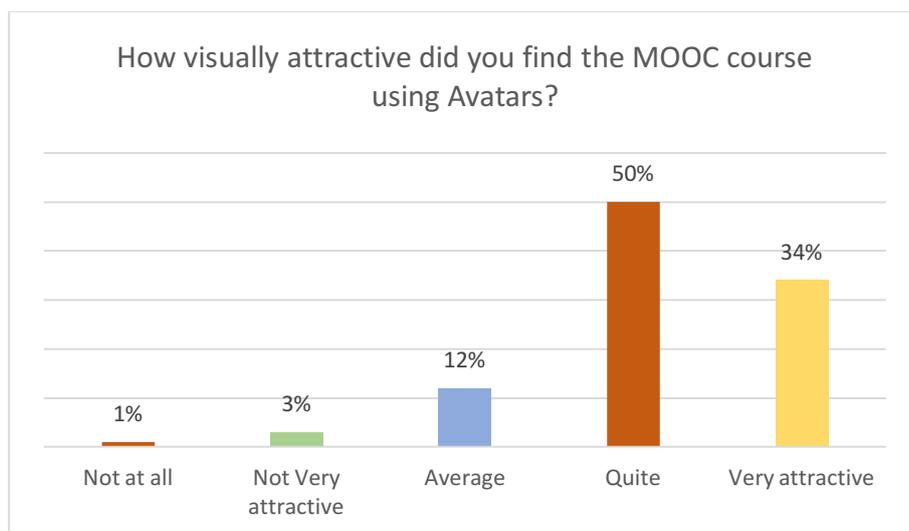


Figure 4.30 Percentages of student responses concerning the visual appeal of the Avatar

4.8.6.10 *The Lecturer's Appearance in the Video-recordings*

This last question concerned the appearance of the actual teacher in the MOOC material, whereby half the participants stated a 'Preference for Avatar technology', rather than a video of the actual teacher; while approximately one third of the participants appeared to favour a 'Video of the teacher herself', compared to the 20% declaring that they would rather see a 'PowerPoint Presentation, with just a voiceover from the teacher.'

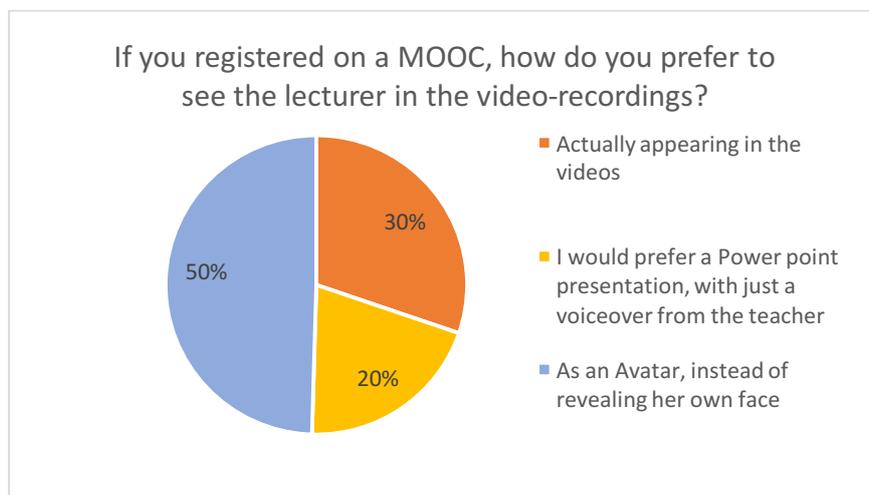


Figure 4.31 Percentages of student responses regarding the appearance of the actual lecturer in the videos

4.9 Summary of Findings

This chapter has analysed the main findings of the Initial Study and three main Case Studies, including the level of knowledge that already exists in Saudi Arabia concerning MOOCs; the impact of gender-segregation on female lecturers practicing online teaching via MOOCs; the female teaching experience implementing an Avatar tool at KAAU; the use of Avatar technology on a Rwaq platform, and the impact of gender-segregation issues and social interaction. The findings of these collected data have been suitably arranged and categorised in a descriptive analysis, endeavouring to identify themes and analyse them appropriately. The overall analysis of the collected data will be discussed in the following chapter, in relation to the research questions and objectives.

Chapter 5

Discussion

This chapter discusses the findings from the data collected in the case studies, corresponding to the work of other scholars. It has been recognised that there is a lack of research concerning the use of Avatars in MOOCs. As stated in Chapter 1 (Introduction), this study is designed to develop a 2D animated Avatar to represent a female tutor on a Meta-MOOC, with the aim of addressing the issues arising within a gender-segregated society, namely the context of online learning within MOOCs in Saudi Arabia. Therefore, three main Case Studies are undertaken to explore experiences of MOOCs in Saudi higher education, in order to develop a socio-interactive environment to foster communication and engagement amongst learners and teachers.

For this to be achieved, a mixed-method approach was adopted, with qualitative research methods being applied in the Initial Study. In Case Study 1, semi-structured interviews were conducted to explore the key aspects of MOOCs in Saudi Arabia, by endeavouring to understand the experience of female teachers when teaching students from both genders. This was then followed by Case Study 2, undertaken at KAAU and applying both qualitative and quantitative research methods. The results and outcomes of the remarks made by the students and the teacher were then used to develop the Avatar tool, tested in Case Study 3.

5.1 Initial Study

The purpose of this section is to briefly discuss the main findings of the Initial Study. The data were collected in semi-structured interviews, with a random sample of 15 respondents (teachers, students and administrators), so as to discover their level of knowledge of MOOCs, and their perceptions of implementing MOOCs in Saudi higher education. This generated the initial research questions for this thesis.

Due to the dearth of studies on the barriers to online learning faced by female students and lecturers in Saudi Arabia, this Initial Study was conducted at the very beginning of the present research project. Its purpose was to build up some background on the participants' opinions of online learning, as well as their level of knowledge of MOOCs platforms as a new distance learning method, both around the world and in Saudi Arabia in particular.

The findings show the extent of the participants' satisfaction and dissatisfaction; evident from their reactions to the existing online learning systems used at their universities, the current barriers faced by female teachers and students in distance-learning in Saudi higher education, and the impact of implementing MOOCs in Saudi universities. These are categorised in the following sections.

5.1.1 Knowledge of MOOCs

The interviews revealed that the respondents had a good level of knowledge of MOOCs, with some already being enrolled on platforms. However, the majority had not yet done so and some even declared that they were not interested in undertaking such courses. The interviews were conducted at the end of 2014, but according to the literature, MOOCs only appeared in the Arab world in 2013. This is probably why this new educational technology is unfamiliar in Saudi Arabia (Subbian, 2013).

5.1.2 Motivations and Social Interaction

The interviews also explored motives for registering on MOOCs and what subjects the participants were interested in studying or teaching via this medium. The results showed that MOOCs offer a good means of communication, many benefits and an experience of exchange. They could thus help solve many of the problems e.g. deliver education to more people more cheaply which is reported in the literature (McAuley et al., 2010, Kendrick and Gashurov, 2013).

Furthermore, most of the students interviewed agreed that MOOCs could help them interact socially with peers and teachers, as well as increasing their personal learning network (Bauer, 2010). However, three of the 15 participants disagreed with this. Similar studies have also reported both the advantages and challenges of MOOCs for example, (Hoy, 2014, Eisenberg and Fischer, 2014, Liyanagunawardena et al., 2013b). In general, North (2014) stated that MOOCs cannot really be considered revolutionary, although neither should they be ignored, for the simple reason that they promote the sharing of information worldwide. They have in fact created many opportunities for teaching and learning across a variety of disciplines.

5.1.3 The Design and Usability of MOOCs

As Rwaq was the first MOOC platform in Saudi Arabia, the interviewees who had already registered on Rwaq in the past were asked about the design and usability of the platform. The majority declared that it was easy to use and the design and content were well organised. However, other participants did not like the design and said it was very basic, with just a few courses available. This is also mentioned in the literature, with reference to low completion rates on Rwaq (Curley, 2013).

5.1.4 Barriers of Using MOOCs

In Saudi Arabia, certain limitations may be encountered in online learning; for instance, not all students have access to a good internet connection where they live, which prevents fast interaction. Another limitation faced is language, given that the main language used in online learning is English and so first-language Arabic speakers may consider this to be a main barrier preventing them from registering on a MOOC. Moreover, a further limitation presented in the context is a lack of motivation to learn, which may result in a lack of confidence, a lack of social interaction, and a lack of opportunity to exchange ideas with learners of the opposite sex. This is reported in the literature by (Baki, 2004, Musbahtiti et al., 2013).

Another barrier identified was cultural and usually based on gender segregation in education, whereby the majority of the female participants (teachers) refused to show their faces on online courses. The findings from the one-question survey revealed that 80% of female academics in Saudi Arabia refuse to show their face on MOOCs. In the researcher opinion, this is a high percentage and it is what encouraged me to develop an Avatar as a substitute. Finally, one of the interviewees had used a 2D Avatar character instead of appearing in person by uploading short-videos into the KAAU blackboard system, which also inspired me to adopt and test this Avatar on a MOOC.

5.1.5 Impact on Saudi Universities

It can be seen from the results that most of the participants agreed that MOOCs could have a positive impact on education in Saudi Arabia and that they were an excellent way of developing systems in Saudi higher education. On the other hand, several participants disagreed and stated that some people would still prefer to study on campus. Nevertheless, MOOCs were still strongly recommended for use in Saudi universities. Some of the advantages of e-learning as opposed to the traditional

classroom is creating a collaborative learning environment by linking each student with experts and other students; allows unlimited access to learning resources and materials; and it allows information to be updated in a short time and in an affordable way which have already been reported in the literature (Baki, 2004, Graham et al., 2005, Alebaikan and Troudi, 2010).

5.2 Case study 1

The first case study comprised of semi-structured interviews with four female Saudi academics, teaching on an online course on Rwaq MOOC platform. The aim of these interviews was to identify the challenges and barriers to gender-segregated online learning in Saudi. The participants were asked questions about their teaching experience on Rwaq and for their opinions about cultural and social standards. In addition, they were questioned about the effectiveness of implementing Avatar technology as a tool to support female lecturers, who preferred not to appear in person in online courses on MOOCs. The interviews helped to gain in-depth data about female teachers' experience to explore how the gender issue shape female experiences in higher education which answers research question one. The main themes are analysed and discussed below.

5.2.1 Social Interaction with Other Learners

The results from the interviews showed that the rate of subscription to the course was high and there was good interaction between the learners and their teacher and peers. However, some teachers declared that there was no interaction at all.

Middle Eastern society in general has strict rules for interaction and communication with women. With all these restrictions, technology could help overcome such cultural limitations, barriers and challenges by providing alternative means of interaction, communication and collaboration, without trying to dramatically alter the respected

traditional socio-cultural norms reported in the literature (Alebaikan and Troudi, 2010, Hamdan, 2014).

5.2.2 Decision over Whether to Show Face as a Female Teacher

To explore this theme, the researcher selected two women, who were prepared to appear in person (with their faces uncovered) and who had no problem with exposing their features. Another two women were chosen, who were reluctant to show their true physical appearance (only using their voices and text in a PowerPoint Presentation).

According to Onsmann (2011), traditional cultural standards and religious restrictions have prevented Saudi Arabia from acquiring international accreditation or a competitive edge in higher education, since Saudi society is unlikely to support gender integration. Instead, one of the most promising advantages of online learning is the ease with which the socio-cultural restrictions imposed by conservative societies on individuals, especially on female students and teachers, can still be accommodated (Baki, 2004, Alebaikan and Troudi, 2010, Hamdan, 2014).

5.2.3 Knowledge of Avatar Technology in Online Learning

The findings reveal that two out of the four interviewees had heard about using Avatar technology in education, but had not yet applied it themselves. Accordingly, the idea of implementing an Avatar tool on a MOOC and the level of its acceptance by the learners still appeared to be a barrier, with some stating that they would not feel comfortable and would prefer a human being. Others suggested that the tool should first be tested. However, one of the teachers liked the idea and agreed that students would welcome it. In my opinion, Rwaq students are keen to learn and are ready to accept any new ideas in online learning, which is further reported in the literature (Curley, 2013).

5.2.4 Impact of Using an Avatar on Students and Teachers

Some of the interviewees considered that teaching an online course on Rwaq was a good experience and an opportunity to teach both male and female students on the same course. They believed that an Avatar could have a significant impact on students, if used effectively and in a beneficial way. However, some of the teachers did not like the idea of using an Avatar on a MOOC and thought it generated extra work and cost. In the researcher view, the idea of adopting an Avatar tool on a MOOC course should be tested to identify students' and teachers' perceptions. It represents an excellent teaching tool, as mentioned in the literature (Johnsen et al., 2005). Overall, the interviews conducted in the present study indicated an increasing awareness of the need to develop teachers' online roles. This involves looking beyond cultural restrictions to gain a sense of what will promote effective online interaction between learners (Hamalainen, 2008). The qualitative data from the interview findings and the results of the literature review were subsequently triangulated to satisfy the objectives of this research study. Here, the impact of common issues in gender-segregated education was identified and its various aspects classified, in relation to female teachers delivering online courses on MOOCs in Saudi higher education.

5.3 Case study 2

This case study included a mixed-method approach to answering the second research question. First, a quantitative research design was adopted. This consisted of a pre-course and post-course surveys conducted amongst female English literature undergraduates at KAAU. Second, a qualitative research design was completed over the period of one month. Daily notes were taken in response to observations of students' behaviour, their contributions in class, and their comments on the online videos using

2D Avatar character. At the end of the course, a semi-structured interview was carried out with the lecturer, conducted in her department office. Moreover, in order to complement and evaluate the pre- and post-course surveys, a focus group was organised at the end of this period amongst eight students, who had regularly participated in the online Avatar video forums.

5.3.1 Pre- and Post- Course Survey

The pre- and post-course surveys were completed by 17 out of the 25 students who actively participated in class. There were 17 non-identical questions in both surveys, but some of the questions appeared in each. At the beginning, the researcher faced some difficulties in motivating the students to fill out the questionnaire, but the teacher suggested linking the survey to exam marks, in order to push the students to participate. As a result, their engagement appeared to improve.

The reason behind the questionnaire was to gather the students' views of their experience of the course, both before and after participating in the Avatar videos, as well as measuring the effects of these on their studies and learning style. Another aim of the survey was to explore whether the students preferred the traditional classroom or the online Avatar class. The results of the pre-course survey showed that the majority of the students had an 'intermediate' level of internet and technology knowledge. Similarly, more than half preferred the traditional classroom over an online learning approach. The advantages and disadvantages of e-learning versus traditional learning have been reported in similar studies (Zhang et al., 2004, Zhang et al., 2006, Nayak and Suesaowaluk, 2007).

The pre- and post-course surveys were provided with considerable insights and the researcher evaluated each category of the Avatar course. These are discussed on the basis of the corresponding findings, as outlined below.

5.3.1.1 Prior Knowledge and Experience of Avatars

The data analysis presented in Table 4.8 revealed that the students who had previous experience of an Avatar course and the students using an Avatar for the first time on a course did not demonstrate any significant differences in their levels of satisfaction with this technology. In fact, the majority found it to be a good experience and were satisfied.

5.3.1.2 Learning Expectations of the Avatar Course

This category relates to the students' learning expectations before completing the course, which indicated a significant decrease on completion of the course. For instance, 'Improving their learning skills' and 'Interesting experience' elicited a decrease from 41% to 29% and 18% to 12%, respectively. However, 'Better interaction with the other students and teacher' invoked a 12% higher response. From these findings, the researcher could see that the Avatar tool may also increase student-to-student and teacher-to-student social interaction.

5.3.1.3 Reasons for Discontinuing Participation in the Avatar Course

The third category relates to the potential reasons for students discontinuing their participation in an Avatar course. The results illustrated in Table 4.8 show that the main barrier for students was a 'Poor internet connection'. In fact, nearly half the students, both before and after watching the online Avatar videos, did not appear to have a good internet connection and this was mentioned earlier as a barrier by some of the interviewees in the Initial Study.

As already indicated in previous studies by (Baki, 2004, Musbahtiti et al., 2013). The second reason cited for ending participation was ‘Loss of motivation’, which actually decreased after the course by 5%. On the other hand, the reason, ‘Cannot keep up with the course progress’ showed a significant increase from 6% to 23%, which was found surprising and so the researcher decided to ask the students about this (the disadvantages of the course) in the focus group.

5.3.1.4 Interaction with Peers and Teachers

Comparing a traditional classroom with the online Avatar course, the present findings reveal no significant difference between the students’ expectations of interaction with their peers and the teacher, before or after the course, as almost half the students declared that that they were ‘Satisfied’ with the peer interaction, with only 12% claiming to be ‘Dissatisfied’, which decreased by 23% after completing the course. On the contrary, in the student-to-teacher interaction, there was a significant increase from 53% to 70%, with regard to online interaction with the teacher after completing the course. A similar previous study has suggested that using an Avatar in e-commerce can increase social interaction (Fabri et al., 2007).

5.3.1.5 The Appearance of an Avatar as Opposed to Real Teacher

The appearance and gender of the Avatar were two of the factors impacting on the users and this strongly supports what has already been mentioned in the literature (Nowak and Rauh, 2005). The findings from the pre-course survey showed that 66% did not think that the Avatar would look like a real teacher. However, this percentage decreased significantly after completion of the course, down to 24%. In the pre-course survey, the number of students who agreed increased by 18%. The Avatar can be a strong social indication affecting perception of learners and motivate them.

5.3.1.6 *Online Learning Methods*

The findings compared in Table 4.8 consist of the average data on students' preferences for watching the Avatar videos, followed by their interest in reading comments and discussion with peers. Meanwhile, a very low percentage stated that they most enjoyed contributing their own comments. The findings from previous studies show other learning styles (visual and verbal), which are also reported in the literature (Howland and Moore, 2002, Mupinga et al., 2006). The learning style is an important factor that could influence e-learning and individual academic skills, video-clips and online course animations as a type of the visual learning style can help to clarify more easily the concepts in the textbook and enhance the visual learning experience (Ross and Schulz, 1999, Kolb and Kolb, 2005).

5.3.2 Observation Notes

During Case Study 2, the researcher observed a course in the English Department at KAAU for a one month duration; taking field notes on three classroom lectures and on a weekly online 2D Avatar video forum on the University's BB. This was aimed at investigating the students' expectations of the Avatar videos, as opposed to a traditional classroom. It included notes on the students' behaviour, communication and interaction with each other and the teacher, as well as a description of the setting. Moreover, descriptive notes were made about the classroom observations, in order to add further context and explanation of the setting observed. These descriptive findings indicate good attendance by the students in both the classroom and on the online Avatar forum. However, teacher-to-student and student-to-student interaction and participation were greater on the Avatar video forum. This raised a question to be asked to the students in the focus group.

Aside from the above, the students appeared to feel more comfortable about expressing their ideas and opinions on the online discussion board, compared to the classroom. This confirms other studies, where it was found that behavioural engagement in any learning environment has its own characteristics, but students' engagement in e-learning is greater than in a traditional classroom (Li et al., 2014).

Overall, the researcher thinks that adding the Avatar video forum provided the students with an enjoyable experience and this could affect the students even more, if the teacher added extra Avatar videos during the semester.

5.3.3 Interview with the Teacher

This interview was conducted to illustrate the teacher's experience of the Avatar video forum. Some particularly strong themes appear in the findings from the teacher's interview, with regard to social interaction and her motivation for developing an Avatar. She had found that students were complaining about how boring their online course was, as they could not see their teacher's face; therefore, they did not follow the course. My personal belief is that the students were failing to interact with their teacher. Many similar studies on teacher-to-student interaction have been reported in the literature (Fredericksen et al., 2000, Howland and Moore, 2002, Mupinga et al., 2006, Sher, 2009).

The teacher therefore decided to develop an Avatar tool aimed at greater interactivity and to make the course more enjoyable for her students. She declared that the students had collaborated and interacted in one specific forum, stating;

“It is concept plus activity.”

Moreover, she developed the Avatar as an alternative to appearing in person on the online course and this was a principle for her, rather than a cultural issue. In addition,

she tried to make the Avatar resemble her, as a kind of psychological criterion. The importance of the identity of the Avatar has previously been reported in the literature (Kang and Yang, 2006, Suh et al., 2011).

Furthermore, the teacher offered some tips to consider when creating an Avatar. First, the pedagogical objectives must be met; then second, the materials must be appealing. Finally, an attempt must be made to create an enjoyable experience for the students. Overall, she stated:

“Most students responded positively to the Avatar videos.”

Similar studies have shown that the use of Avatars in education could be a useful tool for professional development (Dede, 2004, Oestreicher et al., 2010).

Another significant theme to emerge relates to gender segregation and the acceptance of female teachers using an Avatar character to teach online in Saudi society. The findings show that this could be a cultural issue, depending on the age group, e.g. university level students might be interested in the idea, because it involves digital media. However, the age group 30-40 are more likely to be traditional and less interested in subscribing to such courses, simply because they prefer to have a teacher in front of them.

5.3.4 Focus Group

The focus group evaluation, as mentioned before, was aimed at checking that all the survey questions were easy to understand and answer for the participants. Another purpose of organising a focus group was to gather a range of opinions from the participants on a variety of issues, as well as determining their emotional reactions and behaviour. The findings essentially reveal their perceptions of the Avatar videos, their

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corresponding advantages and disadvantages, and their interactivity. Also made were some suggestions for improving the presentation of the Avatar.

However, most of the students declared that they had registered on the course, because:

“[It] is a new experience.”

and

“Each video was graded by 2 marks as a part of the course.”

The main themes derived from the focus group are discussed below.

The findings clarify what the students were asked about in the survey, namely their learning expectations of the course and any reasons that they thought might prevent them from participation. First, as regards learning expectations, 41% of the respondents expected to improve their learning skills. The focus group supported this with similar results, as the students stated that it gave them an opportunity to write their opinions, understand the topic, read other students' comments, and discuss topics with them online. Second, with regard to the survey question on reasons for ceasing to participate on the course, over half the students indicated; 'Poor internet connection'. This was also supported by the focus group, by addressing more technical issues; for example, the voice and video background, together with a poor internet connection. These are also mentioned in the findings of the Initial Study and a similar study in the literature (Baki, 2004).

In the post-course survey, the results showed that a third of the students agreed that the Avatar looked similar to the actual teacher, whereas 41% were 'Undecided' about this and about a quarter of the participants thought that the Avatar did not resemble her much. The focus group basically justified this on the basis of the voice being unclear. As a result, they had not been motivated to watch the video carefully and examine the

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character. On the other hand, one student confirmed that the Avatar resembled Dr. Norah, stating:

“I am a visual person; I like to watch the video while I am learning.”

Another student added:

“Most of us could recognise that similarity.”

Similar studies relating to the appearance of the Avatar are reported in the literature (Klimmt et al., 2010, Villani et al., 2016). Furthermore, one (female) student thought that the Avatar's gender was relatively unimportant and that she could be equally comfortable with a male teacher; it would not affect her communication, but this finding contradicts a previous study by (Nowak and Rauh, 2005). In the post-course survey, the teacher-to-student and student-to-student interaction on the Avatar course was explored and it was revealed that the majority of the participants were satisfied. This was further clarified by the focus group, where other students declared that it offered a good means of communication, whereby they felt more interactive with their peers than they did in a normal classroom. They also claimed that they felt more connected to the teacher. Furthermore, by watching the video and completing the posted task, the students tried to concentrate more in class and felt more engaged. In addition, they were more confident about expressing their ideas. These findings corroborate previous studies mentioned in the literature (Fredericksen et al., 2000, Li et al., 2014). Overall, the students made some suggestions regarding the improvement of the video presentation, such as relating the design more closely to the concepts in the lecture.

In addition, the videos length were described as very short and should therefore be extended, which contradicts a study by Guo et al. (2014) stated that learners'

engagement increased with shorter online videos than long videos, also the learners participate differently with tutorial and course videos. Aside from this, the presenter's voice was very quiet and participant suggested to be more loud and clear with regard to the presentation of the videos, however, the majority of the students expressed satisfaction and enjoyment.

In brief, Case Study 2 revealed several meaningful findings. Moreover, the research methodology was clearly identified throughout, in an application of mixed data collection methods. The researcher believed that research question 2 at the beginning of this study was effectively addressed and resolved by gaining an understanding of the female lecturer's experience and her students' perceptions of the issues encountered in online teaching and learning, as well as of the lecturer' rationale for selecting Avatar technology in online teaching. The results of this case study were then used to develop a Meta-MOOC implementing a 2D Avatar tool in (Case Study 3), as well as considering the students' suggestions for improvement of the Avatar videos.

5.4 Case study 3

The third main case study presented in this thesis and as described in Chapter 3 was the Rwaq case study. This section considers the case study's main findings, especially the characteristics of the qualitative data collection, in order to try and fathom the social phenomena, participants' perceptions and the female teacher's experience. Meanwhile, the quantitative data (end-of-course survey) were associated with the relationship between the effectiveness of the course and the learners' satisfaction. This was designed to capture the experience of teaching on a MOOC, where a female teacher uses an Avatar tool, instead of appearing in person in video material. The participants' responses were therefore interpreted according to the context being investigated (Savin-

Baden and Major, 2013). As a result, the findings indicate that the social presence of the student and teacher promotes shared control over online learning within MOOCs.

The Meta-MOOC, 'How to design your own MOOC' was run twice; the first run was from 8-8-2016 to 8-9-2016 and the second run, from 1-10-2016 to 31-10-2016. The following is a discussion of the findings from both courses, thus addressing their similarities and differences.

5.4.1 The Researcher's Subjective Online Teaching Experience

The researcher was surprised by the high rate of registration on the Rwaq course, with 5580 participants in the first run and 1655 in the second, as well as by the high volume of comments and feedback from the participants in both runs. The teacher (researcher) felt highly interactive with the participants, when responding to their comments and answering their questions. The researcher thinks that the more the teacher interacts, the more the students feel engaged and start to reply to each other. Researchers generally have an opportunity to gather feedback from participants at the end of an online course, but from my teaching experience on this MOOC, the researcher strongly believe that feedback should be encouraged and reviewed throughout a course.

The participants were highly motivated, and engaged especially by the Avatar videos, which they considered to be a new and interesting medium of presentation. The teacher also felt comfortable responding to male participants, because they could not see my actual face (a cultural issue), although the researcher had created an Avatar character which closely resembled her as a female teacher. The researcher was consequently able to interact with the participants with more confidence. Similar studies focusing on the gender and characteristics of Avatars are reported in the literature (Nowak and Rauh, 2005, Kang and Yang, 2006, Cover, 2012).

Furthermore, as an advantage of the Avatar MOOC, the teacher was able to correct any misinformation, and could easily identify those participants who needed help. In the researcher opinion, this was an advantage, as the researcher believe that a teacher's presence and support is the key to successful online learning. One study by Fekula (2010), also argued that the teacher's role is very important for ensuring students' satisfaction.

Nevertheless, the teacher (researcher) faced some limitations and difficulties during the process of preparation. As mentioned earlier, it took two months to develop all the Avatar course materials, and design the videos and survey. It was therefore more time-consuming to prepare than a traditional classroom course. In addition, throughout the course, there were other content-related and technical issues; for example, a technical problem occurred regarding the deadline of the final exam in the first run of the course. Furthermore, some of the participants requested a practical dimension to the course, rather than mere information and concepts related to MOOCs, which should be considered for future research.

5.4.2 The Participants' Perceptions and Feedback

The findings revealed in the participants' perceptions and feedback are mainly positive, with only a few negative responses with reference to the content and organisation of the course, such as the Avatar tool, video presentation, course materials, assessment, overall satisfaction, and interaction. The teacher was in fact surprised at the number of positive responses, having expected more critical comments. In my opinion, the reasons for these positive responses are based on the need for more female instructors on MOOCs, as well as a desire for more motivational learning approaches.

5.4.2.1 *Students' Perceptions*

The first category in the context of this study relates to the participants' perceptions, which were mainly positive regarding the course design and content. These were coded and measured using NVivo software (Positive - Neutral - Negative). Similarly, most of the participants declared that they enjoyed the simple and clear way the Avatar course was presented. One of the male students commented on the course design being easy to use and clear, stating that he liked it. Moreover, an organisation's culture can be suggested as influencing participants' views on female teachers, which may be observed from their comments:

“The Avatar is considered as one of the available options for delivering an electronic lecture at the discretion of the female lecturer concerned.”

However, there were also a few negative comments, with some of the participants commenting that the Avatar was moving too fast and that they could not concentrate. This was mentioned on both courses, but by different as far as I got participants.

5.4.2.2 *Students' Impressions*

According to the findings from NVivo, the female participants made more positive comments than the male participants in the first run, but this ratio was reversed in the second run. It is probable that the female participants especially enjoyed the prospect of having a female teacher represented by an Avatar. Furthermore, some Avatars are generated to influence participants' perceptions and the first impression expressed in the feedback was “*inspiration*”, whereby one of the female participants stated that she would like to:

“Teach a MOOC using an attractive Avatar tool; thank you for inspiring me.”

On the other hand, some of the participants thought that the course was at too high a level for them and they frequently asked the meanings of technical terms. Moreover, some could not access the content in the second run. Therefore, the teacher responded promptly and tried to address these issues as soon as possible.

5.4.2.3 *Students' Satisfaction with the Course*

The majority of the participants appeared to be fairly satisfied with the course and the presentation of the teacher in both runs. They seemed to identify my motives, as the teacher, and this was evident from their extracted video comments and peer-discussions; for instance, the sharing of knowledge and ideas; obtaining updates on new topics and technology, and comments on finding the Avatar presenter interesting. Moreover, they highlighted this as a successful solution for online students:

" I will use the Avatar in my future educational videos, because I think that the students will like the idea."

The benefits of adopting Avatars in education have previously been reported in the literature (Oestreicher et al., 2010, Hornik and Thornburg, 2010). In addition, the participants commented that they had obtained some useful ideas for creating their first MOOC. Aside from this, most of the participants' comments did not point to any problems with the internet connection, or in uploading the videos. In my opinion, this is probably due to the high quality of the Rwaq platform server, together with the fact that the participants were not only accessing the website from within Saudi Arabia, but lived in different Arab countries. Furthermore, the internet services in Saudi Arabia are improving, with telecommunications companies now providing very high speed Internet. However, some of the participants were dissatisfied as a result of certain technical issues, such as their inability to download the attachments, with others being

unable to access the end-of-course survey link. The teacher therefore asked them to provide their e-mail addresses, so that the survey link could be sent to them individually.

5.4.2.4 Enquiries and Questions about Assessments

This category presents some good examples of teacher-to-student interaction, where the teacher answered the participants' questions and responded to their comments and enquiries. As already mentioned in the literature, these factors influence interaction in online learning (Vrasidas and McIsaac, 1999, Fredericksen et al., 2000).

The findings also show that the most common question in both runs concerned the software that the teacher used to design these Avatar videos. Another question raised related to the nature of the assessment, with some of the participants seeking weekly tests, instead of just one final test. The researcher explained that this was impossible within the time constraints of the course. Likewise, some students enquired about introducing a practical component of the course, but this was difficult, due to the time restriction. Therefore, the researcher believed that this was something to consider when designing the next course.

5.4.2.5 Social Interaction

The most important theme identified, however, was the enhancement of social interaction; in turn, likely to lead to greater effectiveness, efficiency, satisfaction and engagement amongst the participants. Firstly, the teacher-to-student interaction was apparent in the discussion, e-mails, Q&A sessions and the 'Wall' page, for example:

“You encouraged me to apply this technology to my school students.”

Secondly, student-to-student interaction was revealed in the participants' comments on the videos and on the wall page. Overall, the interaction between the students and their teacher had a major impact on the learners' satisfaction and the challenges they

perceived as reducing them. Similar studies have pointed to the impact of interaction between students and teachers (Fredericksen et al., 2000, Howland and Moore, 2002, Mupinga et al., 2006, Sher, 2009). The teacher-to-student interaction e.g. providing feedback can include the learner to interact with tutor by asking more questions.

5.4.3 The End-of-Course Survey

The end-of-course survey investigated the students' satisfaction with the course and their experience of the Avatar on the Rwaq platform. Also investigated were the factors affecting this satisfaction, such as course design and content; motivation; teaching quality; learning style; perceptions of online learning; teacher-to-student and student-to-student interaction, and familiarity with technology. The survey results and the participants' perceptions showed that most of the participants were 'Satisfied' with the social interaction they had achieved with the teacher using an Avatar character. The following are some of the findings from the discussion comparing the electronic end-of-course survey with a total of 830 responses (48% female vs. 52% male) in the first run and 430 responses (50% female vs. 50% male) in the second run.

The question on prior knowledge of MOOCs revealed similar results in both runs, whereby most of the participants stated that they were familiar with them and some had already registered on Rwaq or other platforms before. The same question was posed in the Initial Study in 2014, indicating that there was a good level of knowledge of MOOCs, but the majority had never enrolled on one. Moreover, in the first run, nearly half the participants were 'Satisfied' with their experience of the Avatar course and similarly, in the second run only 1% declared themselves to be 'Dissatisfied'.

5.4.3.1 *The Course Learning Outcomes*

For the survey question about what the students had gained by completing the Rwaq course, most of the respondents thought they had is to learn how to design a MOOC. Around a quarter found the online learning experience interesting and their learning skills have improved. Where some participants stated that they improved interaction with their teacher and peers' with just 8% and 9%, respectively in the two runs, which indicates the social function of MOOC platforms. It can therefore be seen that the desire for interaction for the students contradicts the findings from participants' feedback and comments as well as the Q&A page, that showed a high rate of interaction with each other and the teacher. And that also what some studies reported in the literature that the interaction with online teachers has the most significant benefits in online courses, e.g. students with the highest levels of interaction with the teacher have the highest levels of learning as well, and the clarity of the content is also considered as key to successful learning (Garrison and Baynton, 1987, Howland and Moore, 2002, Sher, 2009).

In addition, this contradiction from the researcher's opinion is because that the primary purpose of these learners was to learn about how to design MOOC, while the interaction between their peers and the teacher was only a benefit from joining that online course, and this clearly suggested further research in future.

5.4.3.2 *MOOCs Provide Learning Methods Based on Social Constructivism*

The question relating to this theme aimed to examine the level of participants' agreement with the claim that MOOC platforms provide a modern method of learning based on social constructivism. The findings show that the majority 'Agreed' with this in both runs, while only 2% 'Disagreed'. It may thus be deduced that constructivist theory can enhance interactive online learning, as is also reported in the literature (Zhang et al., 2006, Leidner and Jarvenpaa, 1995, Mingfei and Jie, 2010).

5.4.3.3 Satisfaction with Teacher-to-student Interaction via Avatar Technology

The findings reveal that half the participants were satisfied with the teacher-to-student interaction in both course runs and only 3% were dissatisfied. I believe that engaging in discussion with the participants had generated ideas and shed light on the phenomena under investigation, as mentioned above in the participants' perceptions and feedback. Also, clarified by the participants were their perceptions of the Avatar tool implemented to alleviate the social barriers associated with female teachers on MOOCs. In addition, teacher-to-student interaction in online learning appears to be further influenced by discussion and feedback and this is supported in the literature (Fredericksen et al., 2000, Vrasidas and McIsaac, 1999). These were found to be significant contributors of student learning and satisfaction (Sher, 2009).

5.4.3.4 The Clarity of the Presentation of the Course Topics and Content

The question related to this theme concerned the level of clarity of the course content and topics. The findings in both surveys show that over half the participants 'Agreed' that the topics and course content were very clear, and only 2% 'Disagreed' with this. One study by Ong et al. (2004), argued that effective online educational material can better engage students and encourage them to be more active, compared to learners in a traditional classroom.

5.4.3.5 Learning Style

In both course runs, the findings reveal that the majority of the Rwaq participants preferred to watch the course videos, over reading or posting comments on the wall or discussion board. A similar study in the literature was designed to explore how learning styles relate to the way visual attention is distributed amongst learners in e-learning systems (Ross and Schulz, 1999, Federico, 2000, Kolb and Kolb, 2005).

5.4.3.6 Visual Attraction of Using Avatars in MOOC Videos

The findings from the first and second run reveal that half the participants found the Avatar videos ‘Quite’ visually attractive, whereas over one third found them ‘Very attractive’ and only 3% did not like the way they were presented visually. This finding was corresponding to a study by (Ross and Schulz, 1999) showed that video-clips and online course animations as a type of the visual learning style can help to clarify more easily the concepts in the textbook as well as enhance the visual learning experience. Another study by Al-Wabil et al. (2010) has shown that highly visual learners exhibit increased visual attention in response to multimedia elements.

5.4.3.7 The Appearance of the Lecturer's in the Video-recordings

The findings from both surveys show that around half the students would be interested in registering on another MOOC using an Avatar presenter, rather than the teacher represented in person. Overall, this illustrated the specific cultural context of Arab societies, especially in Saudi Arabia. Moreover, it was reflected in most of the positive comments made by the participants concerning the videos, when their perceptions and feedback were analysed.

Overall, the main findings from Case Study 3 revealed that there are often limitations and issues surrounding online learning via MOOCs in gender-segregated societies, such as in Saudi Arabia. This study has therefore aimed to develop a socio-interactive environment for communication by adopting Avatar technology to represent female lecturers. It has consequently served to enhance their presence, as well as encouraging social interaction between male and female participants. As a result, this case study has examined the impact of a female Avatar applied to a MOOC. The usability and performance of Avatars was consequently concluded from feedback on the content and organisation of the course, as well as on the videos, through formal assessment and

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from a survey. In addition, the research methodology was clearly identified throughout the study, in an application of mixed-data collection methods.

The qualitative data and end-of-course survey findings, alongside a review of the literature were subsequently triangulated to arrive at a final conclusion. This study experiments with a new teaching approach using a MOOC, whereby an Avatar tool is adopted, in order to ascertain its perceived and measured effectiveness and, as highlighted earlier, to reach a systematic conclusion. I therefore believe that the third research question submitted at the beginning of this study has subsequently been effectively addressed and resolved.

In the researcher point of view, one of the most important principles of online learning is that it should be an enjoyable experience. One way this can be achieved is by developing an Avatar that can enhance teachers' motivation and learners' engagement in online learning and MOOCs in Saudi Arabia. After analysing the findings from the present study, the researcher found that most of the students' feedback was in support of the Avatar experience. My position as (participant observer) helped to triangulate data in the study to avoid bias as well as to understand the Saudi females more closely where the similarity in language, gender and culture increased their trust and motivation.

This case study explored the challenges of the social learning aspects regarding gender segregation, and offers in opportunities for group based (collaborative learning), and an invaluable feature of online learning environment. Significant emphasis is placed on the opportunities for learner's motivation and the social interaction between learners and tutors within MOOC (social constructivism), by developing the Avatar tool, as a technology allows female lecturer and learners to interact socially.

All in all, the validity and reliability of the data collection process between the two runs were measured for this study. Additional perceptions and suggestions from participants were then gathered. Finally, the methods applied to the course were valid and reliable.

5.5 Summary

This chapter has discussed the findings from the Initial Study and three Case Studies. The Initial Study findings revealed the learners' prior knowledge of MOOCs, as well as the impact and barriers relating to MOOCs in Saudi higher education, in response to the initial research question generated in this thesis. Case Study 1, concerned the learners' experience of online courses on MOOCs in Saudi higher education, with the intention of developing a socio-interactive environment for communication amongst learners and teachers. It explored the key aspects of MOOCs in Saudi Arabia by endeavouring to understand the experience of female teachers teaching both genders. Case Study 2 then attempted to draw conclusions from the teacher's experience of using Avatar videos on the respective university's BB, with remarks and perceptions from students. These data sets were both ultimately used to develop a Meta-MOOC integrating a 2D Avatar tool (Case Study 3).

The overall results of Case Study 3 reveal that the use of Avatar technology on a MOOC can enhance learners' engagement, increase the participation of female lecturers and resolve any issues that they might face in a gender-segregated society. In conclusion, Avatars may be considered as new tools for online learning platforms, both in Saudi Arabia and worldwide. The next chapter will discuss the conclusions of this research study, as well as its limitations, contribution to knowledge, recommendations and any future work required.

Chapter 6 Conclusion

Social, cultural and values in Arab world countries are usually based on gender-segregation. This factor results in a lack of social interaction, a lack of communication, and a lack of opportunity to meet and exchange ideas with members of the opposite gender. Arab world societies in general have stricter rules of interaction and communication for females.

With all these restrictions, technology could help overcome these cultural limitations, barriers, and challenges by providing alternate means of interaction, communication, and collaboration without dramatically altering the respected and traditional social and cultural norms. One of the most significant advantages of online learning is the ease with which the social and cultural restrictions imposed by conservative societies on individuals. However, in the case of Saudi Arabia, one can come across certain limitations with online learning. For instance, not all students' locations can provide good internet connections to allow quick interactions. Another limitation is the issue of gender-segregation.

In this research, the focus was on the lack of opportunities that female tutors have in teaching or setting up online courses within MOOCs. Findings in this study, indicated that most of the Saudi female academics refused to teach a MOOC course with physical appearance (face uncovered) and only 20% who accepted to do so (Adham et al., 2016). Therefore, adopting the 2D animated Avatar to represent female teachers would help to enhance their presence, and to encourage interaction with both male and female students. In this project, female teachers showed positive attitudes towards teaching on MOOCs in terms of helping them to overcome the lack of interaction and communication as there are often limitations and these issues in Saudi Arabian society.

Moreover, results showed strong significance in participants' perceptions towards the Avatar MOOC course in accordance with their gender: female students were more positive in the implement of a 2D Avatar tool in term of inspiration, increased confidence, enhanced satisfaction and reduced social boundaries. These findings indicated that MOOC environments have a positive effect on offering students a better learning experience. Overall, this gives support to the belief that Avatar teacher could play a positive role in overcoming cultural and social barriers in the Arab world and Saudi Arabia in particular.

This chapter draws conclusions from the study, and presents a summary of the studies conducted. This thesis described the developed design of an Avatar tool to represent a female teacher in MOOCs; with the purpose of alleviating the issues of gender-segregated society in SA. This project undertaken and analysed three main case studies concerning the experience of online courses within MOOCs in Saudi Arabia HE.

The study has examined the female experience and challenges of online teaching, as well as current ways of coping with such issues. It also identified the impact of the Avatar technology for female teaching a MOOC course adopting the mixed-methods research. One of the objectives of the research was to develop a social interaction environment with learners in online learning within MOOCs. The ultimate objective of this study was to examine if this Avatar tool could alleviate issues of gender-segregation for female lecturers in online learning in HE systems.

The literature review chapter provided a review of three different concepts: first, MOOCs as the phenomenon of interest in this research study. Second, gender-segregation and female cultural and social boundaries as the focus of the investigation

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from the perspective of online learners in SA. Finally, adopting the Avatar technology as a represented to the female tutors with relevant pedagogical approaches.

Definitions of MOOCs were presented and its types, advantages and disadvantages were also discussed. MOOCs in the western world and its influence on the Arab world. Then, the background of female-segregated education in Saudi Arabia online learning was discussed. The literature review also covered the Virtual World, 2D animated videos and Avatar tool from the literature were also presented alongside its background in education, and adopting Avatar technology in SA MOOCs. The literature review found lack of studies focusing on female tutors' perspectives of online learning and teaching within MOOCs in SA. Although, female tutor's teaching experience is stated as one of the important themes in e-learning in higher education system in SA. Therefore, a study to investigate to what extent the cultural and social issues of 'female tutors' can be alleviated by an Avatar tool with current developments in MOOCs in Saudi Arabia.

Chapter 3 described in detail the overall the research design and methodology used in this thesis. Also, methods of data collection have been presented then clarified, pointing out the advantages and disadvantages of using these methods. The methods of data collection were described in terms of the nature of the semi-structured interviews, observation, focus group and e-questionnaires.

Further, the research used a mixed-method approach which offered a broader understanding of the advantages and disadvantages of online learning and MOOCs in the Saudi Arabian higher education, and the implementation of the Avatar tool with detailed descriptions of the design, with a thereof evaluation and analysis of this tool.

6. CONCLUSION

In Chapter 4, the main findings were analysed; the Initial Study and the three main case studies, included, the level of knowledge about MOOCs in Saudi Arabia, the impact of gender-segregation on female lectures practicing online teaching in MOOCs, a female teaching experience with implementing the Avatar tool at KAAU, the use of Avatar technology in Rwaq platform and the impact of gender-segregation issues and social interaction. The findings of these collected data have been suitably arranged and categorised in an attempt to identify descriptive analysis, themes and analysing them appropriately.

Moreover, Chapter 5 discussed the findings of the Initial Study and the three Case Studies in relation to the research questions and objectives. The Initial Study findings revealed the learners' MOOCs knowledge, impact and barriers in Saudi Arabian HE, and the initial research questions for this thesis. Also, Case Study 1 is concerned with the experience of online courses within MOOCs in Saudi HE with the intention to develop a socio-interactive communication environment for learners and teachers. It explored the key aspects of MOOCs in SA through understanding the teaching experience of female teaching both genders. Case Study 2 concluded the teacher's experience using Avatar videos on blackboard and the students' remarks and perceptions, both cases were used to develop a Meta-MOOC by adopting the Avatar tool in the Case Study 3.

The overall results from Case Study 3, revealed that the use of the Avatar technology on MOOCs would increase female instructors' participation and resolve the issues that they could face in gender-based segregation society in the Arab world and Saudi Arabia specifically. This chapter concludes with the significant research findings, limitations, contribution to knowledge, recommendations as well as providing suggestions for future research work.

6.1 Significant Research Findings

The purpose of this research study is to answer the following questions:

- 1- What is the impact of gender-segregation on female lecturers practicing online teaching within MOOCs in Saudi Arabian Higher Education?
- 2- a) How do female lecturers cope with the issues in online learning in Higher Education?

b) Why would a female lecturer choose Avatar technology in online teaching?
- 3- a) To what extent the role of an Avatar can enhance teachers' motivation and learners' engagement in online learning and MOOCs in SA?

b) Can use of Avatars in online courses impact on/address female cultural issues in SA?

This study introduced the impact of the use of Avatars in MOOCs to address issues of gender-segregation in SA on female online teaching. As presented in chapter four, the findings are as highlighted below:

- 1- The level of knowledge about MOOCs in SA, and the students and teachers' perceptions regarding MOOCs including; design and usability, advantages and challenges of using MOOC platforms.
- 2- Positive and negative impact of MOOCs in SA Higher Education.
- 3- The majority of Saudi female academics refused to teach a MOOC course with physical appearance (face uncovered) and only 20% accepted doing so.
- 4- The impact of gender-segregation on female teachers practicing online teaching in MOOCs e.g. social interaction with participants.
- 5- The Avatar technology's knowledge and experience for students and teachers in online learning including advantages and disadvantages.

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- 6- The impact of implementing an Avatar tool for female teacher in her MOOC teaching regarding the social and cultural boundaries in SA.
- 7- Students perceptions and impressions about the 2D Avatar course on Rwaq.
- 8- The use of the Avatar technology on MOOCs would increase female tutors' participation and resolve the issues that they could face with gender-segregation society in Saudi Arabia higher education.

Yet, the significance findings of this study have created a huge effort to promote female online learning within MOOCs in Saudi Arabia HE; where previous studies are rare in this area. MOOCs expose new horizons for distance education in a way they can reach students regardless of their geographical presence. This effort is mainly important in the conservative society where this research represents the first of its kind as to investigating the impact of the use of an Avatar tool instead of videos of the female teacher (physical appearance) on MOOCs. An additional significant aspect is that the current study could provide a useful method for academics in both genders at Saudi universities regarding to represent this new method in e-learning with relation to teaching in general and female online teaching in particular.

Moreover, this study is the first to investigate the remarks of the learners' social interactions with the Avatar as a teaching tool in the Arab world context, however, it is important to show the vision of this technology characteristics and study its performance amongst other MOOCs platforms. The results of this study found that female teacher discovered that the use of Avatar technology help in reducing the cultural and social limitations imposed by the conservative Arab and Saudi society.

In addition, by sampling participants from different Arabic countries; it was anticipated that any cultural, infrastructural or institutional bias could be compensated for and the potential for the results to be generalised could be increased. And this was clear from

the participants' comments and feedback in the Rwaq case study. The researcher therefore believes that the research questions of this study have subsequently been effectively addressed and resolved.

Nonetheless, the current study has its own strengths and limitations. As far as the strengths are concerned, in the third case study, the two sample groups have shown considerable consistency as to teaching, course materials, and learners' perceptions. However, some limitations were revealed and will be highlighted as follows:

6.2 Research Limitations

This research study has some limitations. For example, in the first case study: findings were based on the female academics' qualitative data; and it was difficult to gather any quantitative data (questionnaire) from their MOOCs participants because the courses were already completed. This quantitative finding might help knowing the participants' perceptions about female teachers whether they prefer to see their face (physical appearance) or not. Also, in Case Study 2, only observed a single course session and participants were undergraduate students in KAAU; more studies can examine whether the Avatar tool identified effects can be obtained throughout another course and other university which mean that findings could not be generalisable across Saudi Arabian populations. The Avatar could be tested in on male campus, however, it was difficult to access by university rules.

Finally, in Case Study 3: the scope of Meta-MOOC is limited; the success with the Avatar tool might vary by course content, materials and design, where some other MOOC courses could be better than others. Also, the data has been confined to Rwaq participants, therefore, taking this fact into account the findings that have been obtained

so far can hardly be generalised. Yet, these findings support the claim that Avatar tool might help female tutors in overcoming the cultural restrictions.

6.3 Contribution to Knowledge

As discussed earlier in the Chapter 2 (Literature Review), there are few studies analysing the relationship of educational technologies with the social norms and gender issues in SA higher education. Thus, this research study is one of the first to examine the implementation of Avatar tool in MOOCs, especially in Saudi Arabian platform which makes several contributions to knowledge.

For the methodological contribution, the methodology used in this project establishes the applicability of multiple case studies using an ethnographic-action research adopting mixed methods approach. It also validates its suitability to research the experience of female tutors teaching online courses in SA higher education system. The knowledge gained from this study can be used to validate in similar studies and the methods applied can be adopted for related studies.

This research provides a unique contribution by showing that adopting the Avatar technology in MOOCs has established a socio-interactive environment between learners and the teacher for alleviating gender-segregated issues in Saudi Arabian society. It has the applicability in western world.

Another significant contribution of the study is how important social interaction is for MOOC participants in the Arab world, therefore validating Vygotsky's perspective on learning development focused on the importance of social interaction in the teaching with relevant to didactic and behaviourist approach and the dialogic learning.

The research further contributed to the body of knowledge by demonstrating the importance of increasing female instructors' participation and resolve the female

cultural and social issues that they could face with gender-segregation society in Saudi Arabia in distance learning within MOOCs. This research study places important focus on the technological, social, and pedagogical aspects of online learning in an integrated MOOCs environment.

Finally, this study attempts to fill the gap by presenting the Avatar tool that has the potential to increase access female tutors in higher education, with more training and quality materials. A number of contributions have been made by this study in terms of the published papers.

6.4 Recommendations

In the light of the literature review and the research findings, the following recommendations are to be made:

- 1- Saudi universities should incorporate MOOCs in order to enable academics and students to take advantage of this modern technology including the use of the knowledge in their distance education process.
- 2- The role of distance learning deanships in Saudi HE could be more activated to take part in training and empowering their faculty with the tools and necessary skills to join MOOCs. This experience would enable them to develop their courses electronically and will improve their teaching skills, as well as enriching their on-campus classes. It will consume a positive impact to their students and reduce negative impacts as well.
- 3- It is recommended when female tutors agree to join MOOCs; that they should know what this method can offer them in achieving their pedagogical goals or facing cultural challenges e.g. taking advantage of the capabilities of using the technology of MOOCs and what it could offer to their learners' skills.

- 4- In order to maximise the effective use of Avatar in MOOC by female tutors, there should be a clear impact of using this tool in a way that experiences can be shared to encourage interaction between the teacher and her participants from both genders.
- 5- It is recommended to run the MOOC course twice to ensure the validity and reliability of research findings.

6.5 Future Research Work

The study of MOOCs is a new under researched field, as such there is scope for further research. According to the presented research findings; it is apparent that there is a need for further research into the adoption of Avatar technology in MOOCs, from multiple perspectives and approaches. This study offered a preliminary point to start addressing female cultural boundaries in relation to online teaching in SA. However, similar research in other Arabic countries would enable comparative studies in the area with similar research objectives but different methods that would apprise more findings and gather more perceptions.

The following lists possible topics of study that the author believes could build on this research project.

- 1- Research is needed to explore a range of issues of MOOCs in the Arab world and Saudi Arabia in particular. For example, analysing the role MOOCs play in developing countries universities, and the effect of MOOCs on social and cultural challenges need to be addressed in the Arab world to create further studies would be essential to extend this new knowledge.

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- 2- Future work can have more qualitative data (interviews) to study the effect of different perceptions of MOOCs participants on their motivation, interest, attitudes and behaviour to improve their learning skills.
- 3- Future work is recommended to use different Avatar software design to evaluate the impact of the existing tool and to improve the performance of the course to support overall online learning environment.
- 4- Future work could be directed to assessing the current Avatar technology implementation with the view of both male and female tutors understanding to improve the technical and pedagogical issues surrounding MOOCs.
- 5- MOOCs participants were from different geographic regions might present different motivations, and learning forms. However, this research study sample mainly located in SA, which limit the understanding regarding this issue. A more future work could focus to overcome this limitation.
- 6- Further research could be done in exploring the effects of the use of social networks e.g. (Wikis, Facebook, and Blogs etc.) within MOOCs over the increase of participants' performance and benefits as a good mean of collaborative work and achieve their learning outcomes.
- 7- Future work as an action research approach, is to re-run Case Study 3 with more improvement based on the participants feedback e.g. include practical activities.
- 8- Further research could be done by designing a MOOC from the topic in Case Study 2 (blended learning), to compare the findings with a wholly online learning.

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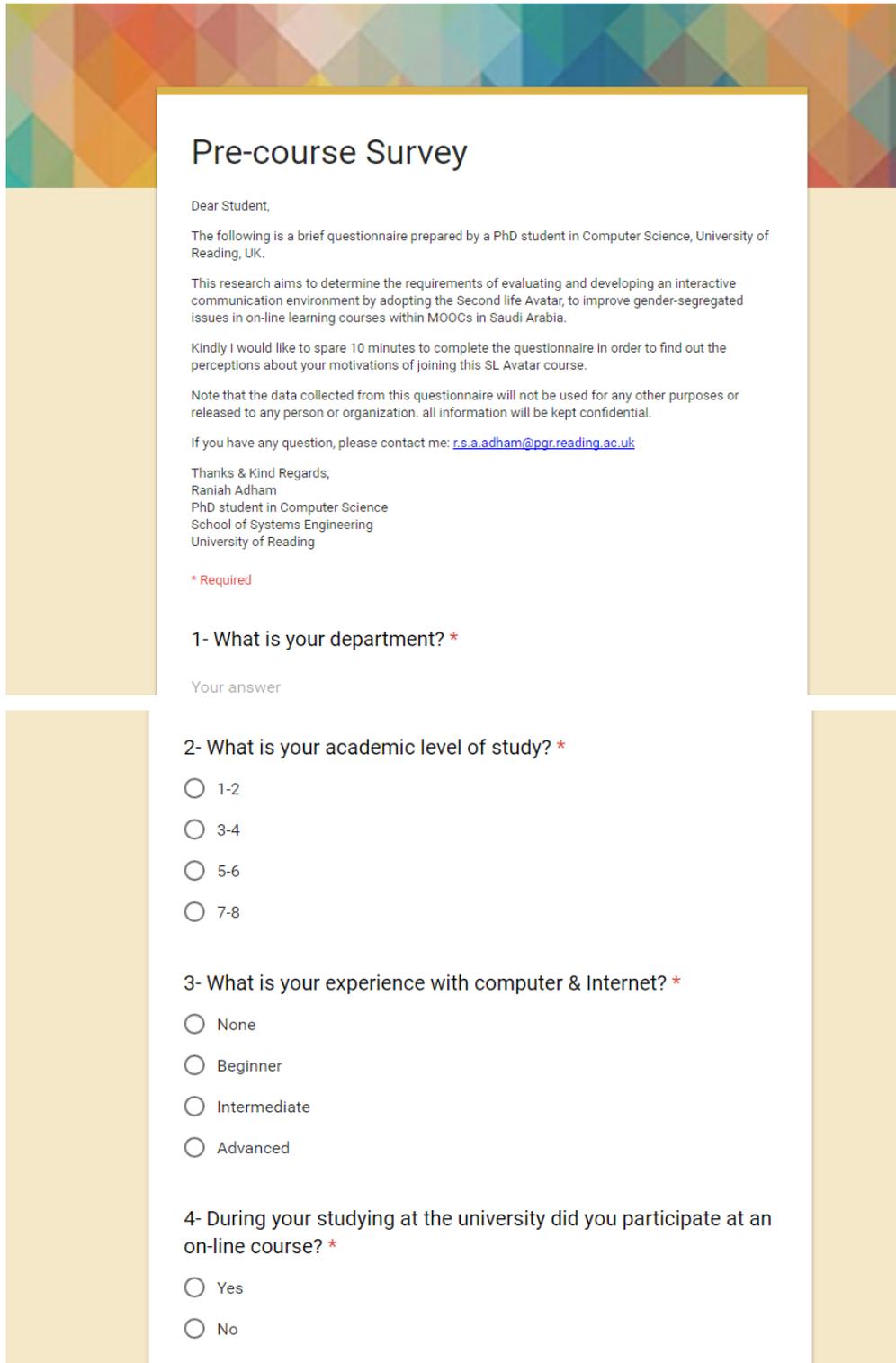
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Appendices

Appendix 1 Pre-Course Survey (Case study 2)



Pre-course Survey

Dear Student,

The following is a brief questionnaire prepared by a PhD student in Computer Science, University of Reading, UK.

This research aims to determine the requirements of evaluating and developing an interactive communication environment by adopting the Second life Avatar, to improve gender-segregated issues in on-line learning courses within MOOCs in Saudi Arabia.

Kindly I would like to spare 10 minutes to complete the questionnaire in order to find out the perceptions about your motivations of joining this SL Avatar course.

Note that the data collected from this questionnaire will not be used for any other purposes or released to any person or organization. all information will be kept confidential.

If you have any question, please contact me: r.s.a.adham@pgr.reading.ac.uk

Thanks & Kind Regards,
Raniah Adham
PhD student in Computer Science
School of Systems Engineering
University of Reading

*** Required**

1- What is your department? *

Your answer

2- What is your academic level of study? *

1-2

3-4

5-6

7-8

3- What is your experience with computer & Internet? *

None

Beginner

Intermediate

Advanced

4- During your studying at the university did you participate at an on-line course? *

Yes

No

5- What learning style do you prefer most the traditional face-to-face learning or the on-line learning? *

- Traditional classroom
- On-line courses
- I don't know

6- Do you have a plan to join an on-line course? *

- Yes
- No
- I don't know

7- Have you used the blackboard system in previous course at university? *

- Yes
- No (Please go to Question 9)

8- How would you evaluate using the blackboard system?

- Excellent
- Good
- Fair
- Poor

9- Did you join an Avatar course before? *

- Yes
- No (Please go to Question 11)

10- How do you evaluate your experience in the previous Avatar course?

- Excellent
- Good
- Fair
- Poor

11- How did you hear about this Avatar course with Dr. Norah Al-Malki? *

- Teacher
- Friend
- University Website
- Other

12- What do you perceive that you will get out after completing the Avatar course? *

- Find out more about Avatar
- Improve your learning skills
- Interesting experience in online learning
- Better interaction with other students and teacher

13- What do you think can stop you taking part in some classes of the Avatar course? *

- Lost interest / motivation
- Didn't keep up as the course progressed
- Found it hard to use

- Didn't have good internet connection

14- Do you think you will have better communication with your colleagues (students) other than the normal classroom? *

- Yes
- No
- I don't know

15- Do you think you will have better interaction with your teacher other than the normal classroom? *

- Yes
- No
- I don't know

16- Do you think that the Avatar character will look similar to the real person(teacher)? *

- Yes
- No
- I don't know

17- How would you prefer to learn on the on-line course? *

- Watching videos
- Adding your own comments
- Reading comments and discussion by other students
- Doing quizzes and getting feedback

18- What is your e-mail address? *

Your answer

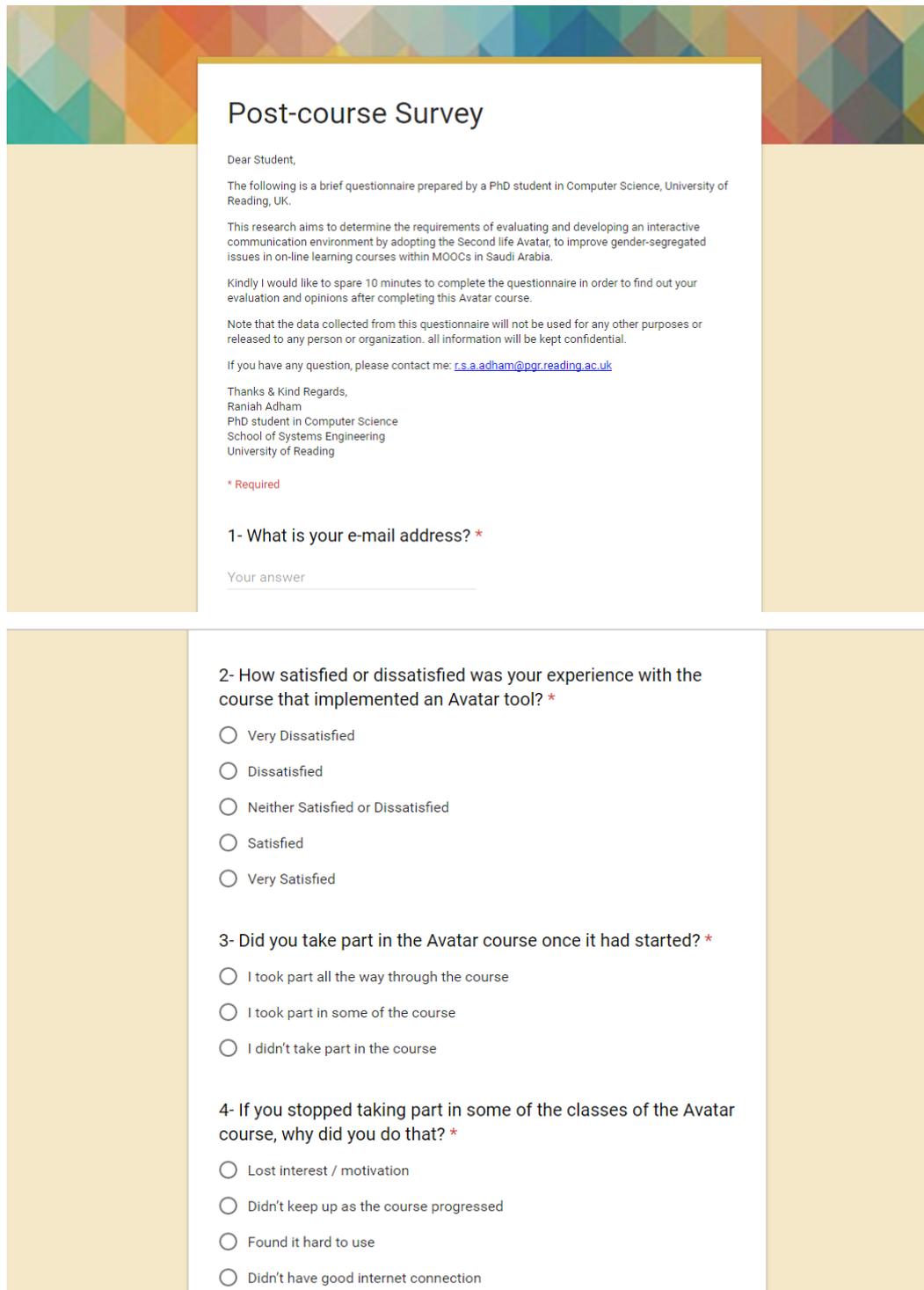
SUBMIT

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Google Forms

Appendix 2 Post-Course Survey (Case study 2)

The image shows a screenshot of a web-based survey form titled "Post-course Survey". The form is set against a background with a colorful geometric pattern at the top and a light beige background for the main content area. The text is centered and includes a greeting, a brief description of the research, a request for participation, and contact information. The survey consists of four questions, each with a red asterisk indicating it is required. Question 1 is a text input field for the respondent's email address. Question 2 is a radio button selection question about satisfaction with the Avatar tool. Question 3 is a radio button selection question about participation in the Avatar course. Question 4 is a radio button selection question about reasons for stopping participation in the Avatar course.

Post-course Survey

Dear Student,

The following is a brief questionnaire prepared by a PhD student in Computer Science, University of Reading, UK.

This research aims to determine the requirements of evaluating and developing an interactive communication environment by adopting the Second life Avatar, to improve gender-segregated issues in on-line learning courses within MOOCs in Saudi Arabia.

Kindly I would like to spare 10 minutes to complete the questionnaire in order to find out your evaluation and opinions after completing this Avatar course.

Note that the data collected from this questionnaire will not be used for any other purposes or released to any person or organization. all information will be kept confidential.

If you have any question, please contact me: rs.a.adham@pgr.reading.ac.uk

Thanks & Kind Regards,
Raniah Adham
PhD student in Computer Science
School of Systems Engineering
University of Reading

*** Required**

1- What is your e-mail address? *

Your answer _____

2- How satisfied or dissatisfied was your experience with the course that implemented an Avatar tool? *

Very Dissatisfied
 Dissatisfied
 Neither Satisfied or Dissatisfied
 Satisfied
 Very Satisfied

3- Did you take part in the Avatar course once it had started? *

I took part all the way through the course
 I took part in some of the course
 I didn't take part in the course

4- If you stopped taking part in some of the classes of the Avatar course, why did you do that? *

Lost interest / motivation
 Didn't keep up as the course progressed
 Found it hard to use
 Didn't have good internet connection

5- What do you think you get out of completing this Avatar course? *

- Find out more about the Avatar
- Improve your learning skills
- Interesting experience in online learning
- Better interaction with students and teacher

6- How satisfied or dissatisfied were you with the online interaction you had with the teacher in this Avatar course? *

- Very Dissatisfied
- Dissatisfied
- Neither Satisfied or Dissatisfied
- Satisfied
- Very Satisfied

7- How satisfied or dissatisfied were you with the amount of Online interaction you had with other students in this Avatar course? *

- Very Dissatisfied
- Dissatisfied

- Neither Satisfied or Dissatisfied
- Satisfied
- Very Satisfied

8- Does the Avatar character looked similar to the real person (teacher)? *

- Yes
- No
- I don't know

9- To what extent do you agree that the presentation of the Avatar course topics and content was clear? *

- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

10- Did the avatar course clearly explain what you were expected to learn from the course (i.e. give learning objectives)? *

- Strongly Disagree

- Disagree
- Undecided
- Agree
- Strongly Agree

11- Please rate, how effective the course was at helping you reach those learning objectives? *

- Very ineffective
- Ineffective
- Neither effective or ineffective
- Effective
- Very effective

12- What learning part did you prefer most on this online Avatar course ? *

- Watching the videos
- Doing quizzes and getting feedback
- Reading comments and discussion by other students
- Adding your own comments

13- To what extent do you agree that the Avatar course was easy to use? *

- Strongly Disagree
- Disagree
- Undecided
- Agree
- Strongly Agree

14- Please rate, how engaging you found the Avatar course? *

- Not at all
- Not very
- Average
- Quite
- Very

15- How visually attractive did you find the Avatar course? *

- Not at all
- Not very
- Average
- Quite

Very

16- Were the sounds in the Avatar course clearly audible? *

Strongly Disagree

Disagree

Undecided

Agree

Strongly Agree

17- Would you like to join another course with an Avatar tool in the future? *

Yes

No

I don't know

SUBMIT

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Appendix 3 The End-of Course Survey (Case Study 3)

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة هائلة الالتحاق

عزيزي الطالب/الطالبة

السلام عليكم ورحمة الله وبركاته
 ما يلي هو استبيان وجيز من قِبل كاتبة دكتوراه في علوم الحاسب الآلي، جامعة رينينج، المملكة المتحدة
 يهدف هذا البحث إلى تحديد متطلبات تقييم وتطوير بيئة الاتصالات التفاعلية من خلال تبني الصور الرمزية الافتراضية لتحسين القضايا التي يجري فيها الفصل بين الحسنيين في
 التعلم. عن بعد والمنصات التعليمية المفتوحة هائلة الالتحاق MOOCs في المملكة العربية السعودية.
 لذلك أود من مساعدتك التكرم بـ 10 دقائق لاستكمال الاستبيان أثناء من أجل معرفة رأيكم وذلك باختيار الخانة التي تدرج عنده في الحيز المخصص لذلك. علماً بأن جمع البيانات
 التي ستلونها بها ستستخدم لأغراض البحث العلمي، وستعامل بسرية تامة.

شكراً لكم مني وفقكم واهتمامكم الثمينين...
 إذا كان لديك أي سؤال أو ملحوظة، يرجى الاتصال بي raniaadham@gmail.com

الباحثة
 رانية أدهم
 طالبة دكتوراه في علوم الحاسب الآلي (تكنولوجيا التعليم)
 جامعة رينينج – بريطانيا

* 1- ماهو البريد الإلكتروني الخاص بك؟

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة ه

QUESTIONS RESPONSES 830

* 3- هل سبق لك دراسة مقرر / مقررات أخرى غير هذا المقرر؟

نعم

لا

* 4- كيف تقييم معرفتك بالمنصات التعليمية المفتوحة؟

لا أعرف عنها على الإطلاق

سمعت عنها

قرأت على نطاق واسع حول MOOCs

أنا من المتخفين بأحد المنصات

سبق والتفت بأحد المنصات

أنا خبير MOOCs

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

٥- * ما مدى رضاك أو عدم رضاك عن تجربتك في دراسة هذا المقرر الإلكتروني باستخدام الصور الرمزية أو الافتار؟

مستاء جدا

مستاء

محايد

راض

راض جدا

٦- * هل أكملت الاطلاع على جميع محتويات هذا المقرر؟

نعم أكملت الاطلاع على جميع المحاضرات

أطلعت على بعض محتويات هذا المقرر

لم اكمل الاطلاع على أي من محتويات هذا المقرر

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

٧- إذا كنت توقفت عن المشاركة في بعض محاضرات هذا المقرر، لماذا فعلت ذلك؟ (اختياري)

فقدت الاهتمام / الحافز للإكمال وشعرت بالملل

لم أستطيع المواكبة مع تقدم سير محاضرات المقرر

وجدت صعوبة في استخدام الموقع

وجدت صعوبة في مستوى المحاضرات

لم يكن لينف اتصال جيد بالإنترنت

سبب آخر

٨- * ما ذا تتوقع أن تحصل بعد الانتهاء من اكمال المادة التعليمية؟

معرفة المزيد عن كيفية تصميم المحاضرات على المنصات التعليمية

تحسين مهارات التعلم

تجربة مثيرة للاهتمام في التعلم عبر الإنترنت

تفاعل أفضل مع الطلاب والمعلمين

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

* ٩- توفر منصات التعلم MOOCs تطبيق أساليب تعلم حديثة تعتمد على البنائية الاجتماعية؟

لا أوافق جدا

لا أوافق

محايد

موافق

موافق جدا

* ١٠- تنمي منصات التعلم MOOCs القدرة لدى الطلبة على التعلم الذاتي؟

لا أوافق جدا

لا أوافق

محايد

موافق

موافق جدا

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

موافق جدا

* ١١- ما مدى رضاك أو عدم رضاك عن تحقق التفاعل مع المحاضر في استخدامه الصور الرمزية أو الافتار بدل من ظهوره الفعلي في المادة؟

مستاء جدا

مستاء

محايد

راض

راض جدا

* ١٢- ما مدى رضاك أو عدم رضاك عن تحقق التفاعل مع الطلاب المشاركين في هذه المادة؟

مستاء جدا

مستاء

محايد

راض

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

* ١٣- إلى أي مدى توافق على أن عرض موضوعات المقرر والمحتوى كان واضحا؟

لاوافق جدا

لاوافق

محايد

موافق

موافق جدا

* ١٤- هل مسار المقرر باستخدام الصورة الرمزية او الافتار للشرح واضح بإيصال ما كان من المتوقع أن تتعلم من هذه الدورة (مثل منح أهداف التعلم)؟

لاوافق جدا

لاوافق

محايد

موافق

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

* ١٥- يرجى تقييم مدى فعالية محتوى المقرر في مساعدتك للوصول إلى تلك الأهداف التعليمية؟

غير فعالة جدا

غير فعال

محايد

فعال

فعالة جدا

* ١٦- ما هو أكثر جزء فضلته خلال دراسة هذا المقرر الإلكتروني؟

مشاهدة مقاطع الفيديو

إضافة التعليقات والتكرار الخاصة بك في لوحة الحائط

قراءة التعليقات والمنقشات من قبل الطلاب الآخرين

أخرى

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

* ١٧- إلى أي مدى توافق ان التعامل مع المقرر الإلكتروني باستخدام الافتار كان سهل الاستخدام؟

لا أوافق جدا

لا أوافق

محايد

موافق

موافق جدا

* ١٨- إلى أي مدى وجدتم استخدام الصور الرمزية أو الافتار جذابا بصريا؟

لا أوافق جدا

لا أوافق

محايد

موافق

موافق جدا

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

موافق جدا

* ١٩- هل كان مستوى الصوت في فيديوهات المادة مسوع بشكل واضح؟

لا أوافق جدا

لا أوافق

محايد

موافق

موافق جدا

* ٢٠- هل ترغب في الانضمام إلى مقرر باستخدام الصور الرمزية الافتار مرة أخرى في المستقبل؟

نعم

لا

لا أعرف

استبيان مقرر كيف تصمم مادة تعليمية في المنصات التعليمية المفتوحة

QUESTIONS RESPONSES 830

محايد

موافق

موافق جدا

* ٢٠ - هل ترغب في الانضمام إلى مقرر باستخدام الصور الرمزية الافتتار مرة أخرى في المستقبل؟

نعم

لا

لا أعرف

* ٢١- إذا أردت الانضمام لمقرر على المنصة كيف تفضل مشاهدة المحاضر في تسجيل مقاطع الفيديو؟

الظهور العلي للمحاضر

شرائح العرض (الباروينت مع الصوت)

استخدام تقنية الافتتار بدل عن ظهور الوجه

Appendix 4 Interview Questions (Initial Study)

A) Interview Questions for Administrators:

1-What is your gender?

2- What is your Age?

3- In which country do you currently live?

4- What is the highest level of school you have completed or the highest degree you have received?

5-Did you know about MOOCs? If yes? What platform you enrolled?

6- What subject are you interested in online course? Education, language, technology, art, business, law or medicine?

7- Do you know about the first Saudi Platform Rwaq? Or Jordan MOOC Edraak?

8- What do you think about its design? Simple, difficult to access information?

9-Did you take any course on Rwaq?

10- Do you complete the course to the end? If yes, do you like the course, do you learn new thing, get what you need? If No, do you plan to start a course soon?

11-Why you choose to study online course?

1- The course will be fun and enjoyable 2- subject relevant to your academic field of study 3- Course is offered by a prestigious university 4-Curious to take an online course 5- to see how course is taught 6-want a credential to enhance your CV/resume 7- to refresh or review knowledge

12-What do you think you will get out of the course? 1- Try out learning online 2- help with your university study 3-learning new things 4- improve your career prospective 5- interact with other people 6- add a fresh perspective for your current work.

13- Would you prefer to participate and communicate with other learners for example writing comments, asking questions and exchange experience?

14- 20- Do you think that this kind of social interaction in MOOCs will enhance your own personal knowledge and your career development?

15- In MOOCs usually at the end of each week or at the end of the course, there will be a short quizzes or assignments would you prefer to take part in?

16- Did you study before any online course on the internet something similar to MOOCs but you have to pay for it?

17-Do you prefer to get certificate or qualification after completing the online course? Why?

18-Do you prefer to take MOOCs because it is geographically isolated from educational institutions?

19-Do you think MOOCs will improve your career skills which will help your job as an Admin?

20- Do you recommend implementing MOOCs platform in your University at your country?

21- Do you prefer the language to be in Arabic or English? Why?

22- Do you think people in Saudi Arabia have a good level of English language to study a course on MOOCs?

23- Do you plan to enrol in MOOCs next year?

24- Do you agree that MOOCs will have a positive impact on Education in Saudi Arabia?

B) Interview Questions for Students:

1-What is your gender?

2- What is your Age?

3- In which country do you currently live?

4- What is the highest level of school you have completed or the highest degree you have received?

5-Did you know about MOOCs? If yes? What platform you enrolled?

6- What subject are you interested in online course? Education, language, technology, art, business, law or medicine?

7- Do you know about the first Saudi Platform Rwaq?

8- What do you think about its design? Simple, difficult to access information?

9-Did you take any course on Rwaq?

10- Do you complete the course to the end? If yes, do you like the course, do you learn new thing, get what you need?

If No, do you plan to start a course soon?

11-Why you choose to study online course?

1- The course will be fun and enjoyable 2- subject relevant to your academic field of study 3- Course is offered by a prestigious university 4-Curious to take an online course 5- to see how course is taught 6-want a credential to enhance your CV/resume 7- to refresh or review knowledge

12-What do you think you will get out of the course? 1- Try out learning online 2- help with your university study 3-learning new things 4- improve your career prospective 5- interact with other people 6- add a fresh perspective for your current work.

13- Would you prefer to participate and communicate with other students for example writing comments, asking questions and exchange experience?

14- 20- Do you think that this kind of social interaction in MOOCs will enhance your own knowledge and increase your personal learning network?

15- In MOOCs usually at the end of each week or at the end of the course, there will be a short quizzes or assignments would you prefer to take part in?

16- Did you study before any online course on the internet something similar to MOOCs but you have to pay for it?

17-Do you prefer to get certificate or qualification after completing the online course? Why?

18-Do you prefer to take MOOCs because it is geographically isolated from educational institutions?

19- Do you recommend implementing MOOCs platform in your University at your country?

20- Do you prefer the language to be in Arabic or English? Why?

21- Do you think people in Saudi Arabia have a good level of English language to study a course on MOOCs?

22- Do you plan to enrol in MOOCs next year?

23- Do you agree that MOOCs will have a positive impact on Education in Saudi Arabia? Why?

C) Interview Questions for Teachers

- 1-What is your gender?
- 2- What is your Age?
- 3- In which country do you currently live?
- 4- What is the highest degree you have received?
- 5- What subjects are you teaching? Education, language, technology, art, business or medicine?
- 6- Did you know about MOOCs? If yes? What platform you enrolled?
- 7- Do you know about the first Saudi Platform Rwaq? or the Jordan MOOC Erdak?
- 8- What do you think about its design? Simple, difficult to access information?
- 9-What course did you study?
- 10- Do you complete the course to the end? If yes, do you like the course, do you learn new thing, get what you need? If No, why you decided to withdraw or stop?
- 11-Did you teach online courses before? If yes? What subject did you teach? If No, do you plan to create your first MOOC?
- 12-Who you think will take MOOCs? Students, Teachers, or Administrators e.g. training purposes?
- 13- Why you are design in it for your students?
- 14- If she is a woman, do you accept to show your face in videos?
- 15-Do you think your level of using computer skills is good enough to start teaching a course in MOOCs?
- 16-Will you have problems with creating videos?
- 17- Do you think MOOCs will improve your class teaches skill which will help in your job as an academic? And improve your career prospects?
- 18-Do you prefer the language to be in Arabic or English?
- 19- Do you think students in Saudi Arabia have a good level of English language to take a course on MOOCs?
- 20- Do you recommend implementing MOOCs platform in your University?
- 21- Do you plan to teach or enrol in any MOOCs next year?
- 22- Do you agree that MOOCs will have a positive impact on Education in Saudi Arabia?

Appendix 5 Interview Questions (Case Study 1)

- 1- What is the highest degree you have received?
- 2- How did you know about Rwaq?
- 3- Did you teach a MOOC course at any platform before Rwaq?
- 4- Why did you do that?
- 5- What subjects are you teaching in Rwaq?
- 6- What do you think about its design is it simple or difficult to navigate, use and communicate with your participants?
- 7- What is your target group in Rwaq course?
- 8- How long did you take preparing on MOOCs compared to the preparation of normal course?
- 9- To what extent do you think this method of teaching promotes social interaction among learners both genders? How would you rate the level of this interaction?
- 10- Regarding your participants, what are the majority females or males?
- 11- Do males' participants communicate freely with you as a female tutor, or you think there are some difficulties?
- 12- As a cultural or religious issue in Saudi, do you decide to show your face in online videos? Why?
- 13- Have you faced any issues for this decision during teaching the online course?
- 14- Have you heard about the Avatar before?
- 15- What do you think the impact of implementing the Avatar in online education is?
- 16- To what extent do you think replacing the real person with the Avatar will give benefits for learners' and female teachers?
- 17- As a gender segregated society in Saudi Arabia, to what extent do you think that the learners accept the idea of Saudi females appearing in a MOOC course using Avatars?
- 18- To what extent do you think this Avatar technology will make the learners keen and enthusiastic to learn in regards to the social and cultural issues?
- 19- Did you create these videos by yourself?

20- Do you think developing the online course has improved your teaching skills and what is their impact on the face-to-face teaching?

21- Would you prefer the language to be in Arabic or English in MOOCs? Why?

22- Do you think people in Saudi Arabia have an appropriate level of English language to study a course on MOOCs?

23- Do you think it should be a MOOCs platform in Saudi universities as a future plan? What impact that will have on education?

24- Did you enjoy teaching on MOOCs?

25- Do you have plans to teach other courses on MOOCs next time? Would you implement the Avatar through your course or no?

Appendix 6 Interview Questions (Case Study 2)

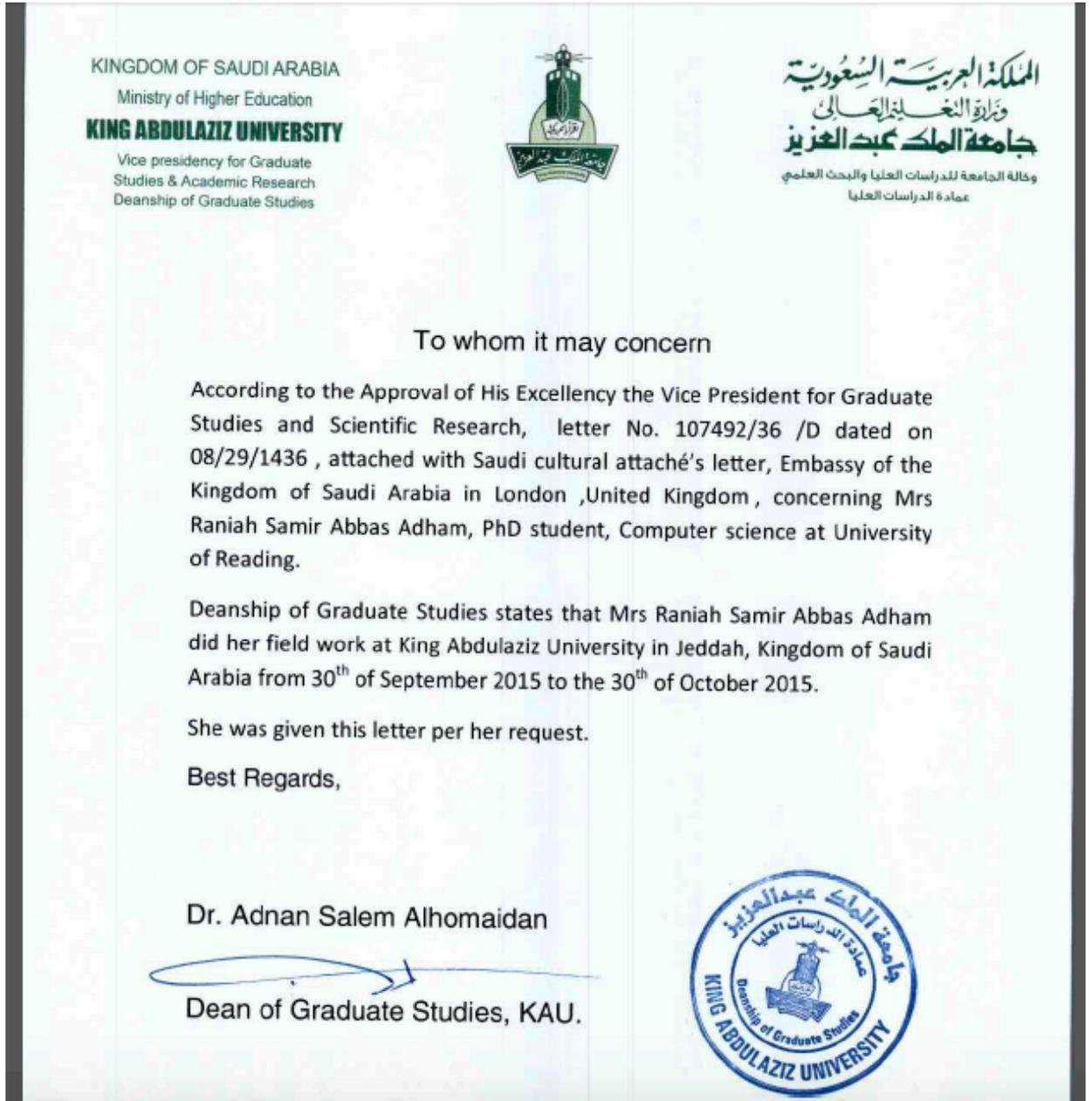
- 1- What is the highest degree you have received?
- 2- Can you tell me about your experience on teaching online courses?
- 3- How long did you take on preparing an online course compared to the preparation of a normal course?
- 4- To what extent do you think this method of online teaching promotes social interaction among learners? How would you rate the level of this interaction?
- 5- As cultural or religious issues in Saudi, do you decide to show your face or not in online videos? Why?
- 6- One of these alternatives I think is the Avatar; you were the first who teach Avatar course for undergraduate in King Abdul-Aziz University, what motivated you to teach using the Avatar?
- 7- Can you tell me about your experience of teaching the SL Avatar course?
- 8- Why and how did you decide to implement this new tool in your teaching?
- 9- Do you feel that the time of teaching on SL fulfils needs that may not be met in normal classroom teaching? (The production of recordings)
- 10- Does second life support the production of longer videos?
- 11- Do you feel that your Avatar in your videos is an accurate representation of your real life physical appearance? Why?
- 12- How much do you care about how your Avatar looks?
- 13- To what extent do you think that your Avatar's appearance should represent some aspects of your identity?
- 14- To what extent do you think replacing the real person with the Avatar will give benefits for the learners?
- 15- Do you expect it will create an enjoyable or boring learning experience to learners?
- 16- To what extent do you feel like you connect and engaged with your students on online Avatar class comparing with teaching in normal classroom?
- 17- As a gender segregated society in Saudi Arabia, to what extent do you think that the learners accept the idea of Saudi females appearing in a MOOC course using Avatars?

- 18- To what extent do you think this Avatar technology will make the learners keen and enthusiastic to learn in regards to these social and cultural issues?
- 19- Did you create these videos by yourself? Did you face any problems with creating these videos?
- 20- Do you think developing the online course has improved your teaching skills and what is their impact on the face-to-face teaching?
- 21- Would you prefer the language to be in Arabic or English? Why?
- 22- Do you think it should be a MOOCs platform in Saudi universities as a future plan? What impacts that will that have on education?
- 23- Do you have plans to teach courses using Avatar through MOOCs?

Appendix 7 Focus Group Questions (Case Study 2)

- 1- What motivates you to join the Second life Avatar forums in the course?
- 2- What key messages do you think the course was trying to get across?
- 3- What was the best thing about the avatar videos?
- 4- What was the worst thing about the avatar videos?
- 5- What do you think can stop you taking part in some classes of the course?
- 6- Does the Avatar look similar to the teacher (Physical appearance)? And how much do you care about how the Avatar looks?
- 7- Is it important for you to see the tutor face on an online course or no? Why?
- 8- If this Avatar was a male, do you think you will be more comfortable to communicate rather than a real male or female teacher?
- 9- Did you feel that you are connected with the teacher and students as in real life?
- 10- Is using the online videos led to/will lead to you changing any of your behaviour and/or practice? If yes, please give examples.
- 11- Do you have any ideas how we could improve the online Avatar videos?

Appendix 8 Letter of Confirmation after Completing the Fieldwork in Saudi Arabia



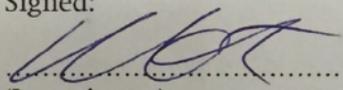
Appendix 9 Ethical Approval

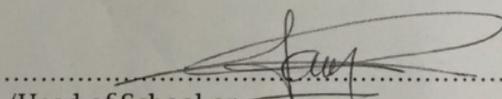
I confirm that to the best of my knowledge I have made known all information relevant to the Research Ethics Committee and I undertake to inform the Committee of any such information which subsequently becomes available whether before or after the research has begun.

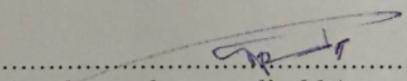
I confirm that I have given due consideration to equality and diversity in the management, design and conduct of the research project.

I confirm that if this project is an interventional study, a list of names and contact details of the subjects in this project will be compiled and that this, together with a copy of the Consent Form, will be retained within the School for a minimum of five years after the date that the project is completed.

Signed:


..... Date: 15-10-2014
(Investigator)


..... Date: 23/10/2014
(Head of School or
authorised Head of Department)


..... Date: 14-10-2014
(Student -where applicable)

Appendix 10 Information Sheet



Researcher: Raniah Samir Adham
Email: r.s.a.adham@pgr.reading.ac.uk
Phone: 0044 7818269520

PhD (Computer Science) Student,
OdinLab (Room 127), School of Systems Engineering,
University of Reading,
Whiteknights, Reading RG6 6AY

Appendix A: INFORMATION SHEET

Dear Participants,

My name is Raniah Adham, PhD Student in Computer Science, School of Systems Engineering, at University of Reading. You are being asked to be interviewed in a research study about The Use of Avatars in Gender Segregated Online Learning within MOOCs in Saudi Arabia. The purpose of this research is to address the learners and teachers motivation in using MOOCs in Higher Education in Saudi Arabia.

The interview will consist of a series of questions regarding your views about the (MOOCs) Massive Open Online Course, which is an example of Distance Education. MOOC is a global reality by offering web-based courses at no cost to virtually anyone with open access via the web.

I would like you to spare no longer than an hour to complete the Interview in order to find out what do you think about On-line learning MOOCs. I hope the information you give will be useful in informing and improving further research about implementing MOOCs in Saudi Arabian Universities.

Your participation is completely voluntary, and you may withdraw from the study at any time without penalty. You may also skip any question during the interview, but continue to participate in the rest of the study.

Note that the data collected from this interview will not be used for any other purposes or released to any person or organization. And your personal information will be kept confidential. Reports of study findings will not include any identifying information.

(The project has been reviewed by the University of Reading Research Ethics Committee and has been given a favourable opinion for Conduct)

If you have any questions please contact me: r.s.a.adham@pgr.reading.ac.uk

Thank you for your help.
Raniah Adham

Appendix 11 Consent Form

ANNEX C

Research Ethics Committee



Consent Form

1. I have read and had explained to me by Raniah Samir Adham.....
the accompanying Information Sheet relating to the project on:

"The Use of Avatars in Gender Segregated Online Learning within MOOCs in Saudi Arabia"
2. I have had explained to me the purposes of the project and what will be required of me, and any questions I have had have been answered to my satisfaction. I agree to the arrangements described in the Information Sheet in so far as they relate to my participation.
3. I understand that participation is entirely voluntary and that I have the right to withdraw from the project any time, and that this will be without detriment.
4. This application has been reviewed by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct.
5. I have received a copy of this Consent Form and of the accompanying Information Sheet.
6. I am at least 18 years old.

Name:

Date of birth:

Signed:

Date:

Appendix 12 Interview Transcript for Female Academic (Case Study 1)

1- What is the highest degree you have received?

PhD in Art design and Architecture

2- How did you know about Rwaq?

Actually, I know Fouad Al-Farhan himself and he did not approach me I approach him, I was like suggesting to give an architecture heritage classes because my speciality is an architect, so I think that Fouad thought it's not going to be easy to do it online. But when I approach him with the idea of Saudi heritage he found it interested and good idea.

3- Did you teach a MOOC course at any platform before Rwaq?

No, but I have done something in my Master's degree similar, we had subject called (Umedia) and they have done a platform to us at university (Glasgow school of art) and they ask us to use it in an educational way, so I was putting a false information with a true links and at the end of the course a girl was saying: (hi all, whatever you read and receive from me it was a false information)

4- Why did you do that?

I was trying to approve that education specifically you cannot take it from online and you cannot trust online education and I took A+ for that.

5- What subjects are you teaching in Rwaq?

The Saudi Heritage

6- What do you think about its design is it simple or difficult to navigate, use and communicate with your participants?

It was very simple, easy and straight to the point.

7- What is your target group in Rwaq course?

Actually for me, it was a basic of knowledge because there was a lot of people from Saudi Arabia and outside Saudi who don't know anything about Saudi architecture or the Saudi heritage, the only idea they have that we live on a tent and we have camels so that why I trying on Rwaq to give a basic knowledge plus a true information, there was a lot of photos and links to movies.

8- How long did you take preparing on MOOCs compared to the preparation of normal course?

It does not take a lot of time, because it I am using the same material with my students at university because I teach the same course (Saudi heritage) and I am referring Rwaq for my students as link to watch the videos.

9- To what extent do you think this method of teaching promotes social interaction among learners both genders? How would you rate the level of this interaction?

I have to problem with that at all, because now we have the social media like twitter and Facebook. If before that maybe, I can tell you there will be a different dealing with males but I think the social media remove the gap that we used to have. There is no problem anymore.

10- Regarding your participants, what is the majority females or males?

There were both, I think there is no majority.

11- Do males' participants communicate freely with you as a female tutor, or you think there are some difficulties?

No, it does not make any difference because at the end of the day there is mouse, keyboard and monitor. It is not like a direct contact, they cannot reach me directly, for example, they can reach me only by messages and whenever you want to reply you can reply and if you don't like the message you can simply ignore it. It is totally up to you!

12- As a cultural or religious issue in Saudi, do you decide to show your face in online videos? Why?

Maybe for me it was not a problem, because I write in Al-Watan newspaper, I have a weekly column with my picture without cover and I am not wearing Hijab or a Veil at

all, so I decided this from the beginning that this is my look that is going to be, I will not lie and wear something I did not wear in my daily life, so I do not to think about it!

13- Have you faced any issues for this decision during teaching the online course?

No, not at all

14- Have you heard about the Second Life Avatar before?

Yes, but I have never used it before.

15- What do you think the impact of implementing the Avatar in online education is?

I think It will help a lot of female teacher especially from cultural side and female who cannot show their face etc., also people who have like social phobia or cannot face the Camera or any different issues.

16- To what extent do you think replacing the real person with the Avatar will give benefits for learners' and female teachers?

It depends actually, because everything has its positive and negative sides, but if you use it in a beneficial way, so you are going to get benefit from that, for example, the reason why I approach Fouad Al-Farhan in Rwaq was because I want to be a trademark as knowledge, so maybe someone else have this idea, but they don't want to be known as a cultural issue in Saudi Arabia. In this case the Avatar will help them a lot to receive knowledge even without seeing the real person.

17- As a gender segregated society in Saudi Arabia, to what extent do you think that the learners accept the idea of Saudi females appearing in a MOOC course using Avatars?

I don't know, I think that Rwaq students are keen to learn, and they will accept anything new especially in the Arab world; we don't have this kind of good online education.

18- To what extent do you think this Avatar technology will make the learners keen and enthusiastic to learn in regards to the social and cultural issues?

I think it will help more the tutor herself, and It will not make quite difference to the learners as I said before.

19- Did you create these videos by yourself?

Yes, I have done it myself.

20- Do you think developing the online course has improved your teaching skills and what is their impact on the face-to-face teaching?

You know what is really funny! It became as a reference in my class at university, for example, instead of sending a PowerPoint slides to my students I just refer them to Rwaq, it helps me a lot! And they were very interested.

21- Would you prefer the language to be in Arabic or English in MOOCs? Why?

I wished it were in English, because in Prince Sultan University we teach most courses in English language. I really had a hard time presenting my ideas in Arabic, so I prefer English.

22- Do you think people in Saudi Arabia have an appropriate level of English language to study a course on MOOCs?

No, that is way I agreed to do it in Arabic at the end. It should be in Arabic it our language, but at the same time on the Saudi heritage all the books are in English not Arabic. So the Arabic was a personal issue.

23- Do you think it should be a MOOCs platform in Saudi universities as future plan? What impact that will have on education?

We have something similar in Prince Sultan University called Moodle, but still the university does not consider it a source of information to their students, so definitely something like Rwaq or MOOCs platform will not be acceptable.

24- Did you enjoy teaching on MOOCs?

Yes, at the beginning it was like a nightmare for me because of the language issue but later I enjoy it.

25- Do you have plans to teach other courses on MOOCs next time? Would you implement the Avatar through your course or no?

I would love to. But I think they should include the English language to reach people all over the world. Regarding the avatar, maybe I will use it but not in my course.

Appendix 13 Observation Notes (Case study 2)

Week 1

Week 1: Sunday Lecture 1 (3-10-2015)

- With a class of 18 students out of 23, the class started at 8:05, with most of the students on time, although several drifted in after the class had begun.
- The classroom environment was stale and boring, lacking any décor that might be stimulating (no fault of the lecturer).
- I introduced myself to the class and briefly explained the purpose of my research.
- After turning on the projector, the lecturer had a short conversation with the students about what they had done during the summer vacations
- The course content consisted of the rise of the novel in the late 18th century (Novels - Exploration).
- The students were listening most of the time, but there was very little participation.
- The lecturer was telling stories and not moving around the class (she was stationary).
- The lecturer was trying to get the students to interact by asking them the meanings of some words.
- The lecturer referred back to one of the student's comments and interacted with her.
- The lecturer was making good eye contact with all the students.

Week 1: Tuesday lecture 2 (5-10-2015)

- 18 students out of 23 attended the class, which started at 8:00, with most of the students on time, while several drifted in after the class had begun.

- The lecture began with a touch of humour on the part of the lecturer to help create a comfortable and caring environment. She seemed genuinely interested in what the students were learning.
- The content of the lecture was 'Romanticism'.
- The lecturer recommended a book for the students to read and present feedback on at the end of the semester. Whoever managed to finish reading the book and deliver feedback would receive a mini-iPad as a prize.
- The lecturer sent a group email to all the students, with a link to the pre-course survey and asked them to complete it, because it was very important to the researcher.

Week 1: Thursday lecture 3 (7-10-2015)

- 20 students out of 23 attended the class, which started at 8:00, with most of the students on time.
- The lecturer spent 10 minutes discussing the recommended book with the students.
- The lecturer tried to get the students to interact and participate by asking how this concept related to the previous session, or simply asking, "What does this mean?"
- Only two or three students appeared to feel comfortable about interrupting for clarification, or sharing their understanding of the concepts presented. However, most appeared to be shy and did not participate.
- The lecturer described the short Avatar video, which would be uploaded onto the Blackboard forum at the end of each week; she explained that the students were required to complete a task and offer their feedback and comments in response to their peers' answers, with two marks being awarded for each contribution.

- On the discussion board, the students were told that they could present and agree on their project idea; document everything about the project and present their product; comment on their motivation for creating the product and state their future expectations of how they could improve it, and post requests for technical help.

Week 1: Avatar video forum:

Task: Watch the video posted here and then comment critically on the topic discussed.

You can respond to your friends' comments, but try to do so politely and respectfully.

You can also use the rating system to rate your friends' posts. Grade: 2 marks.



Screen shot of the Avatar video (week 1)

- 13 students commented on and discussed the task relating to the first video and the teacher replied to some of these posts.
- The students and the teacher were interacting with each other and commenting on each other's posts, being very expressive of their opinions. Some wrote about their experience of the book.
- I had the impression that the students felt more comfortable about writing in the discussion forum than they did about participating in a traditional classroom.

Week 2

Week 2: Sunday Lecture 4 (11-10-2015)

- The class comprised 19 students out of 23 and started at 8:00, with most of the students on time, although several drifted in after the class had begun.
- The lecturer was discussing the students' comments on the task in the Blackboard forum with regard to the short Avatar video.
- The lecturer presented the top three most interesting contributions made by the students.
- The lecturer used a variety of instructional strategies to accommodate different levels of ability and different learning styles.

Week 2: Tuesday lecture 5 (13-10-2015)

- The class consisted of just 13 students out of 23 and started at 8:05.
- Only a few of the participants had submitted the electronic pre-course survey and some said they had forgotten to complete it.
- Most of the students failed to participate in the class and so the lecturer had to try and get them to interact and participate.
- The lecturer set a five-minute exercise for the class to perform and the students discussed this in pairs, before discussing it as a whole class.
- The lecturer set a question for the students to answer by the next lecture: 'How does a child see the world?'
- At the end of the lecture, the lecturer reminded the students to complete the pre-course survey.

Week 2: Thursday lecture 6 (15-10-2015)

- The class consisted of 17 students out of 23 and started at 8:00, with most of the students on time, although several drifted in after it had begun.

- Some of the students had found an answer to the question set by the lecturer in the previous lecture.
- The lecturer mentioned the two-minute Avatar video uploaded onto the Blackboard forum and told the students that they were required to complete this for the following week.
- There were not many completed pre-course surveys collected and so I suggested that the lecturer issue a second reminder to the students, so that responses could be collected more quickly.

Week 2: Avatar video forum:

Task: Watch the video posted here and then comment critically on the topic discussed.

You can respond to your friends' comments, but try to do so politely and respectfully.

You can also use the rating system to rate your friends' posts. Grade: 2 marks.



Screen shot of the Avatar video (week 2)

- 14 students commented on the second video and the teacher replied to some these comments.
- The students were enjoying the task and it can be seen from their discussion and interaction with each other on the forum.

Week 3

Week 3: Sunday Lecture 7 (18-10-2015)

- 20 out of 23 students attended the class, which started at 8:05, with most of the students on time.
- The lecturer started by informing the students of the mid-term exam, which would be held in two weeks' time.
- The lecturer continued by trying to get the students to interact by asking them to explain the meanings of certain words.
- The lecturer made good eye contact with all the students.
- The same three or four students participated every time.
- At the end of the lecture, I asked some of the students about the survey and they said that they would complete it soon.

Week 3: Tuesday lecture 8 (20-10-2015)

- 18 out of 23 students attended the class, which started at 8:05, with most of the students on time, although several drifted in after it had begun.
- In this lecture, there was increased participation, with six students actively contributing to the class.
- Some of the students were concentrating in class and listening to the teacher carefully and quietly.
- The teacher remained seated throughout, because she had an injury causing her some discomfort.

Week 3: Thursday lecture 9 (22-10-2015)

- 16 out of 23 students attended the class, which started at 8:00.
- The lecturer mentioned the two-minute Avatar video uploaded onto the Blackboard forum and the students were told they were required to complete a task for the following week.

- There was no group discussion in the class at all.

Week 3: Avatar video forum:

Task: Watch the video posted here and then comment critically on the topic discussed.

You can respond to your friends' comments, but try to do so politely and respectfully.

You can also use the rating system to rate your friends' posts. Grade: 2 marks.



Screen shot of the Avatar video (week 3)

- 13 students commented on the third video and the teacher replied to most of these comments.
- The students enjoyed the task and this can be seen from their discussion and interaction with each other on the forum.

Week 4

Week 4: Sunday lecture 10 (25-10-2015)

- This was the last week of the observation period, with a class of 20 out of 23 students, starting at 8:00 and with most of the students on time.
- Dr Norah was discussing the task in the Avatar video with the students and she mentioned the top best answers. The class gave their peers a round of applause.
- The lecturer sent e-mails to the students containing the link to the post-course survey.

- The lecturer mentioned that the next lecture would involve revision and that the students could prepare any question they wanted to ask the lecturer in relation to the exam.
- I decided not to attend the next lecture and instead chose some students to participate in the focus group during the last lecture of my observation.

Week 4: Thursday lecture 12 (29-10-2015)

- 19 out of 23 students attended the class, which started at 8:00, with most of the students on time and some drifting in after the class had begun.
- I called eight students over, who had regularly participated and been active in class and on the Avatar video Blackboard forums. We all then sat at the back of the class.
- I explained to the students that the purpose of the planned focus group was to check that all the survey questions were easy to understand and answer, as well as to gather a range of opinions about a variety of issues; in particular, observing their reaction and behaviour.
- I collected more responses to the pre- and post-surveys, and thanked the students and lecturer for their cooperation.

Appendix 14 Interview Transcript for the Teacher (Case Study 2)

1- What is the highest degree you have received?

PhD in Comparative Literature

2- Can you tell me about your experience on teaching online courses?

I have been teaching online courses now for five years, using static web pages at the beginning, and moving towards interactivity.

3- How long did you take on preparing an online course compared to the preparation of a normal course?

I need 14 weeks exactly from storyboard to production for online course, about the traditional course it depends; it can sometimes take longer especially if you want to provide students with extra resources. I think that working with online courses like directs you towards minimising the amount of content and concentrating more on activities but on the traditional course and face-to-face classes the more content you provide the students with the more you are successful in presenting, so I spent a lot of time on traditional courses.

4- To what extent do you think this method of online teaching promotes social interaction among learners? How would you rate the level of this interaction?

Ideally speaking, that online learning will promotes such social interaction and collaboration but again when you applied it to a specific group of students, the outcome varied. For example, students like post independently from each other although they are collaborating and interacting in one specific forum.

5- As cultural or religious issues in Saudi, do you decide to show your face or not in online videos? Why?

Definitely not, regardless of everything, it's some kind of principle yes, but I can find other alternatives and this what I am working on.

- 6- One of these alternatives I think is the Avatar; you were the first who teach an Avatar course for undergraduate in King Abdul-Aziz University, what motivated you to teach using the Avatar?

I am not sure whether I am the first one in the university, but this is the first application via the blackboard and with the students in my department at least. What motivates me is that the students were complaining about the online course and then the teacher were not following up with them or they go there and feel bored like in the classroom. So, why not take some part of me whether that part is stimulation or whatever and put it inside the learning environment or the LMS, and try to see whether this is effective and enjoying to the students to the online course that is being presented. Until now, I am not sure if this is successful but I am trying my best to come up with different solutions. Still I am experimenting not only with the Avatar but also thinking with other thing as well. For example, why not the Avatar will be LMS and be more interactive instead of video recording later on.

- 7- Can you tell me about your experience of teaching the SL Avatar course?

Till now I cannot just give you a proper evaluation because I have my own evaluation sheet, which I am going to use to see students' responses and acceptance of the avatar tool I am using. But as far as I know students are responding to the requirements, which are presented via the videos, and this is what I want to make sure of. Also, I am presenting these avatar videos in the forum and the students had to watch and while they are looking for the task, which is at the end of the video, they listen to something, which is related to the topic we have been discussing in the class and maybe this will refresh their memories, so it is content plus activity.

- 8- Why and how did you decide to implement this new tool in your teaching?

Last year, I have been teaching a course in research methodology in literature, so I started by emailing them recordings of the same type of recordings. It is Extra content they have to come across while for example, how write a review of literature. And they appreciated that especially for a course of research methodology, because they believe that the drilling some information. It was successful to certain extent. It lasted for 2 months and I evaluated it after that.

9- Do you feel that the time of teaching on SL fulfils needs that may not be met in normal classroom teaching? (The production of recordings)

Micro learning is having to have very short doses of content and provides students with, and the idea is very simple, if I can as students review the videos form my Phone while I am in the car for 3-5 minutes maximum, but more than that the students will have to set and listen carefully and they would be an extra load on students. I am still experimenting with micro learning regarding the creation of content. I am going to present them via the LMS or via application just for mobile device. I already produced a reference application for iOS and Android for literature students.

10- Does second life support the production of longer videos?

Yes, definitely, but it depends on the machine you are working on, because it will be hooked up for Second life for 3 or 4 hours. I can record a video with cinematic production inside second life they call it (Machinima), so they can be produced as long as you want. But I have a pedagogical objective and I want to observe that as much as possible. Maybe in the coming semesters I can produce like longer lectures, but not for asking the students to do something but just for the sake to present an idea which was not presented in class. It can actually be done easily. And now we have different platforms for producing Avatar recordings for example, in the form of flash or flab extension etc.

11- Do you feel that your Avatar in your videos is an accurate representation of your real life physical appearance? Why?

No, although I am playing with that if you have noticed, I tried to make her look fat etc. but still you cannot just, although I can do it in 'blender', I can re produce myself exactly in 'blender' and upload the package, but the time you are going to spend on reproducing yourself as a 3D Avatar etc. can be spent in coming up with idea and focusing on a certain pedagogical objective. There is a research on participants' psychological perceptions of other Avatars in second life.

12- How much do you care about how your Avatar looks?

Sometimes I really want it to be like me, epically if I am uploading the videos on YouTube and streaming them back to the LMS blackboard. Definitely, I don't want

people to see that I am trying to create someone who is different from me which is again some kind of psychological problem, so I am trying to come close to my physical appearance in real life without going to details.

13- To what extent do you think that your Avatar's appearance should represent some aspects of your identity?

Yes, I feel comfortable when I represented it as a fat person and I am happy.

14- To what extent do you think replacing the real person with the Avatar will give benefits for the learners?

As I told you, whatever tool you are going to use, you have to consider the pedagogical objectives, which is settled beforehand, so this is my idea. I am using this simulation because for a digital native and this age between 18-20 years old, students are still captivated by visual representations especially our students. And to present something like this to them as well as informative this might attract their attention to listen to the material and maybe perform some of the tasks and enjoy that instead of just having like to post a text question in the forum etc. so give them what they need although it is the same outcomes and maybe they will not do interactions among themselves but at least, give them what they want. In learning style some people are just drowning to something visually. I am trying to cover all these bases and see what are the results later on.

15- Do you expect it will create an enjoyable or boring learning experience to learners?

I want to create an enjoyable learning experience for the students because I want them to feel that I took care of the needs and concerns of each one of them individually, I am trying to give them what they want, but still it is standardised.

16- To what extent do you feel like you connect and engaged with your students on online Avatar class comparing with teaching in normal classroom?

I think I am talkative in both, but in the online videos in the forum, I stick to responding to what the student has posted, specific and focused as much as possible. But in the normal classroom I tend to digress, so I think that interaction via the forum under the heading of recording that was presented, channels the things that I have to focus on as a teacher instead of being just talkative.

17- As a gender segregated society in Saudi Arabia, to what extent do you think that the learners accept the idea of Saudi females appearing in a MOOC course using Avatars?

“With digital natives’ students in the university level, maybe they will enrol and enjoy such course, but for people like 30 or 40 years old, I think they will not be interested in a course with Avatar being used, simply because it not part of the Saudi culture, we are not drowning to cartoons, they want to have a teacher in front of them, learning it is the type of resource for older people that decide they want to join or not, but to digital natives will draw them to join a particular course”.

18- To what extent do you think this Avatar technology will make the learners keen and enthusiastic to learn in regards to these social and cultural issues?

From my experience if the tasks in the videos are performed with in the limited time that is one week, then the students are responding positively to the recordings, but I use to wait for 2 weeks or more to respond to a text box. But now in the avatar videos it can see that the majority of students respond within the limit of time, which is good indication. Later on, I have to take their input about the length of the presentations, the amount of information presented. It is difficult just to transfer a whole lecture especially in literature courses to be presented an online forum it be a bit confusing for the students. Also, I sit down and sliced the information and take the slice, which could be engaging and turn it to videos and the rest we discussed in class.

19- Did you create these videos by yourself? Did you face any problems with creating these videos?

Yes, it is very easy; I used ‘Camtasia’ recording application. To be honest, I have a studio room in my home.

20- Do you think developing the online course has improved your teaching skills and what is their impact on the face-to-face teaching?

Until now it is little impact, in a way of focusing on the topic because in online it is helping me to be filtered and focused.

21- Would you prefer the language to be in Arabic or English? Why?

I prefer in classes English but I can use Arabic in training courses.

22- Do you think it should be a MOOCs platform in Saudi universities as a future plan?
What impact that will that have on education?

Here in King Abdul-Aziz University there is a complete plan and 2 complete courses one in Arabic and one in English are reading to be presented as a MOOC course worldwide. They believe that we have to go to Coursera and EdX to be published there. I supported that 100%.

23- Do you have plans to teach courses using Avatar through MOOCs?

Yes, but I have to choose I platforms, I have contact iversity last year and they send me a pdf file, but again to publish something a platform which does not belong to your country is a bit confusing to some people, and we are restrict to some extent, academically speaking, I don't want to do something affect my academic status here in the university.