Evaluating Online Courses in light of Quality Matters (QM) Standards at Umm Al-Qura University

Ali Suwayid Alqarni[†]

Umm Al-Qura University, Makkah, Makkah, SA

Summary

This study aimed to ascertain whether electronic courses at the deanship of electronic learning and distance education at Umm Al-Qura University meet the quality standards developed by the Quality Matters (QM) organization. This endeavor adopted a mixed method of an explanatory sequential research design for an in-depth understanding of the topic under scrutiny. The sample of the study consisted of ten courses designed at the deanship and reviewed using an evaluation form. The results showed that the courses in focus did not meet the criteria of QM. Based on this finding, a semi-structured interview was designed to collect relevant data from the syllabus designers at the deanship. The interviews yielded information on the difficulties the course designers faced when designing QM-criteria-based courses. The results obtained from the interviews showed that the designers experienced administrative, technical, and faculty-member-related challenges that, when producing online courses, intercepted their way to achieving the QM standards. The study closed with some recommendations, the most important of which is a call for re-developing online courses in alignment with the well-recognized QM standards.

Keywords: *electronic evaluation, online courses, Quality Matters (QM)*

1. Introduction

When talking about electronic learning discussing electronic courses is inevitable. They are touted as a cornerstone of this learning mode. Educators interested in e-learning have strived to simplify the concept, and they have come up with short illustrative and indicative terms. For instance, Al-Jerf (2008) conceptualized it as a type of learning dependent on computers to display its content. Some experts in this field assert that it is designed to suit the information era that gave way to an array of technical tools of telecommunication and information sharing, making online courses accessible anywhere at any time. This feature sets e-learning apart from other kinds of courses [2,4]. Arguably, online courses are one of the most important reasons for spreading e-learning in its various types. Perhaps, this is due to the interactive multimedia that allows students to interact through the online course and make learners permanently active. Let alone the availability of internet technology and its various services that enable interaction between students or teachers.

In the literature, two main types of electronic courses are evident: The first type is electronic courses that are not Internet-based. These courses contain multiple media prepared and designed with appropriate coordination and synchronization and are presented to students through CDs [3]. The other type is the online courses based on the Internet. They are classified into three forms. The first is the supportive electronic courses used in conjunction with the traditional courses given in the classroom. The student may resort to such courses to obtain knowledge or skills that improve and develop their understanding of the subject. The second is the integrated (mixed) online courses in which the course is presented in an integrated manner, so that part of it is introduced in the classroom and another part via the Internet. The third pattern is online courses through which the course is fully presented in a virtual environment and through Internet technologies and services [5,6].

Prior research capitalized on the design and production of online courses. Numerous studies enclosed characteristics and features that distinguish online courses from other types of courses. Zain Al-Din [7] outlined a group of characteristics, including flexibility. This feature enables students to access the content at the appropriate time and place. Hence, it contributes to overcoming the daily routine of the study schedule that may make the students feel bored. Arguably, an online course provides equal opportunities for students; every student has the same opportunity to access information and express an opinion about it. Equal accessibility chances contribute to overcoming some psychological problems such as shyness or fear that some students suffer from in the classroom. Al-Sigini and Khalil [3] pointed to the role of the online course in the effectiveness and communication between students with each other and with their teachers. The discussion forums, for instance, enable the teacher to ask questions about the topic of the lesson and add comments from

students. In addition, video conferencing, chat, and e-mail services enhance communication between learners and teachers. The online course enhances the individual differences between students. Each student proceeds in the course according to their abilities. Online courses also eliminate the boredom that may affect some students because of repeating information more than once. At the same time, it considers students with learning difficulties or slow learners by presenting the information in an easy and simplified manner. Khalil [3] speculated that the diversity of student assessment methods in online courses helps teachers to form a clear and accurate picture of the learners, helps them diagnose the learners' weaknesses, and work to develop their knowledge and skills.

The electronic course is presented through the Learning Management System (LMS) platforms. Online course designers should consider the features of such platforms to harness them in designing their courses. Vai and Sosulski [8] highlighted the standard features in those platforms such as the syllabus, calendar, teacher announcements, course email, discussion forum, content, drop boxes, assignment upload, grade book, quizzes/tests, virtual classroom, and chats. In general, an electronic course consists of (a) the main page of the course, which contains the topics of the course through which it is possible to navigate between the contents, (b) the content of the course - the scientific material that the teachers collects for their students, (c) the electronic references that the teachers cite for to make it easier for students to refer to information related to the course, (d) electronic exams to familiarize students with the knowledge contained in the course, (e) topics for discussions that the teacher puts in the discussion forum to solicit students' opinions about the topics covered, and (f) interviews and live video dialogues that allow the teacher to meet with students online [3,9].

The specialists concerned with the design and production of electronic courses strive to follow standards that improve the online course designs and help them achieve the desired goals. Many of those specialists individually sought to prepare a list of criteria that could be an indicator of the quality of the course if they were met. Adawi, Hassan, and Al-Sayed [10] prepared a list of quality standards for art education electronic courses. Some specialists reviewed the standards to add their touches, and the list consisted of 17 basic standards and 166 sub-criteria in its final form. Likewise, Al-Qahtani et al [11] attempted to prepare quality standards of online courses, furnishing 35 sub-criteria that cover seven basic criteria: reference,

accuracy, objectivity, consistency, accessibility, modernity, and relevance. In another study, Jalila [12] prepared standards for evaluating open courses that are broad in enrollment in Saudi universities and identified eight main criteria for the online courses quality: course objectives, course content, teaching and learning strategies, multimedia, modernity, modeling, evaluation and its methods, and feedback on responses of the students. Then sub-standards were prepared and presented to faculty members and students to get their views on the degree of achievement in the courses offered at King Khalid University. The study concluded that most of the standards were not achieved. In a similar vein, Naifeh and Abdul Ghaffar [6] enlisted criteria for evaluating electronic courses in the light of quality requirements at Najran University. The two researchers provided 70 sub-criteria to be taken into account when producing the online courses. They are generally clustered around nigh main standards: content, content design, teaching strategies, evaluation, feedback, technical design, interaction, help and guidance. Likewise, Al-Sabeeh [5] evaluated electronic courses through a learning system called *Tarrees* in Riyadh girl schools. The author identified nine main criteria with 35 sub-criteria. The main criteria are (a) analysis of the needs and characteristics of learners, (b) course vocabulary, (c) objectives, (d) course content, (e) teaching strategies and learning activities, (f) interaction and participation, (g) interface design, (h) learner performance evaluation, and (i) course effectiveness evaluation. The quality of these courses can be judged by these standards.

Most of the main criteria proposed by studies concerned with the online courses quality standards overlap noticeably. For instance, all the previous studies have some commonalities, including the goals, content, teaching and evaluation strategies of the courses which were main standards for the electronic course quality. However, some studies contained additional standards, e.g. Adawi et al. [10] who underscored the mechanism and systems of navigation in the course and assigned it a main criterion as well as Al-Sabeeh study [5] who indicated the importance of analyzing the needs and characteristics of learners and considered it a basic criterion for the quality of electronic courses. The study of Al-Qahtani et al [11] differs from other studies in its focus on the content of the course and the omission of some other elements that contribute to enhancing the quality of the course, such as teaching methods, assessment and interaction between students themselves and their teachers.

Attention to the online courses quality was not limited to individuals, but organizations and educational and governmental bodies who sought to find standards to judge the quality of the electronic courses. The most important of these standards is the Sharable Content Object Reference Model (SCORM), developed in 1997 by the Advanced Distributed Learning (ADL) initiative, supported by the US Department of Defense and the White House Office of Science and Technology. The initiative aimed to provide common standards for e-learning, and work continued until the first standards appeared in 2000. Many versions and development of the standards appeared [13].

One of the organizations interested in preparing standards for the quality of online courses in the United States is the International Organization for Online Learning for General Education iNACOL, which issued standards called National Standards for the Quality of Electronic Courses. Its second version included 52 sub-standards covering five basic standards: Content, instructional design, student assessment, technology, course evaluation and support [14]. Among the bodies that have been interested in preparing standards for the quality of online courses is California State University in Chico. It prepared standards of six areas that include everything related to online courses, and these areas are sources and support for the learner, design and organization of the course via the Internet, presentation and design of course instruction, student learning assessment, creative teaching using technology, and use of feedback from students about the course and the technology used [15].

2. QM Standards of Electronic Courses

The QM started in 2003 as an initiative of Maryland Online– an organization that includes several community colleges and other institutes of higher education. Educationalists have recognized the need for a structured mechanism for measuring the quality of partially or wholly accredited online courses. They conducted research to identify criteria for evaluating electronic courses [16]. The US Department of Education Support to Improve Post-Secondary Education (FIPSE) supported the QM activities until 2006. The organization provided fee-based services, resources and tools to help the participants build a quality system in online education [17,18]. In 2014, the QM became an independent and non-profit organization, and its subscribers from educational institutions and institutions increased significantly [19, 20].

The organization exerted efforts to prepare online courses quality standards in various educational institutions,

including higher education. It has developed and reviewed these standards periodically to ensure that best practices are provided in electronic courses. It kept on improving the initial versions until it launched the sixth version that contains eight general criteria with 42 sub-criteria [16], as displayed in Appendix 1.

Achieving the QM standards require 100 points assigned to sub-criteria. Three points were assigned to the essential criteria and two points to the important criteria. The rest of the criteria receive one point. Out of 100, the final overall score should be 85 or higher (see Table 1). Obtaining the QM certificate is based on this scoring system [16, 21]. It is to be noted that when these points are fully achieved, the degree of the sub-criterion is fully obtained. If it is not achieved or achieved partially, the degree of the sub-criterion is zero. According to QM, one point (out of two points) for the sub-criterion is unacceptable [22].

Table 1. Categorizing Sub-standards and Their Points

Categorizing Criteria	Number	Score	Score total
Basic	23	3 points	69
Very important	12	2 points	24
Important	7	1 point	7
Total	42		100

Individuals may use these standards informally to assess the quality of online courses. However, to obtain an accreditation certificate from the organization, the course presenter have to follow the official procedures approved by the organization. The MQ requires three evaluators certified by the organization to evaluate an electronic course in higher education institutions [23]. Assessors are accredited by proving their experience teaching accredited online courses and receiving a two-week training course called APPQMR Course. They learn how to apply course quality standards by studying the basic concepts and identifying the proper mechanism for reviewing and writing recommendations through practical exercises. The electronic course developers obtain a quality certificate from the organization when at least two reviewers approve that the course gets points equal to or higher than 85%. If the course does not meet the required scores, the developer is provided with an evaluation report with some recommendations to improve it. When these recommendations are addressed, the QM certificate seeker can apply for a course quality certificate from the organization [22].

It is worth mentioning that subjecting the online courses to approved standards contributes to improving the efficiency of the educational environment. In a study of developing some criteria for evaluating online courses quality in two community colleges, Jaggars and Xu [24]

pointed out the quality of interaction between students themselves and their teachers. It positively affected their academic achievement.

Researchers have sought to explore the impact of online courses that consider the QM standards in their design. For instance, Woods[23] tried to improve an electronic course of business management. The researcher aligned the course to QM standards with a purpose to improve it, taking in students' input. The researcher was quite satisfied after improving the course in light of the required standards. He recommended the faculty members who use online courses to apply those standards. In another study aimed at designing an online course with the QM standards in mind, Kreie [25] indicated that the quality of the course increased in each standard and that the lecturer would reuse it in subsequent chapters. In the same context, Brown, Toussaint, and Lewis [26] conducted a three-year study to compare four different models for designing an online course from the students' point of view. The models include a course in which the lecturer was trained to develop an online course, a course built by the instructional designer, a course created by the instructional designer and the lecturer, obtained a course quality certificate from QM, and a course designed the lecturer without training. The results showed the importance of the educational designer being familiar with the QM standards and their application in the course because of its impact on attracting students to the electronic course.

The studies also examined the positive impact of designing courses according to QM standards on the learning environment and students' academic achievement. Al Zumor [21] delved into the effects of the standards on an online course for English for non-native speakers. The results concluded that the application of standards contributed to the promotion and strengthening of the learning environment due to the positive interaction of the lecturer and the students. Omar, Abdul-Majid, Al-Shehri, and Faraj Allah [4] conducted a study on the College of Education students at King Khalid University. The results indicated an increase in cognitive achievement, skills and environmental ethics through an online course designed according to the QM standards.

In the same context, Dawood [27] conducted a study on Sharia students at Qassim University. The study concluded the positive impact of the application of standards on students' achievement and attitude. The design of the online course in light of QM standards may contribute to the development of creative thinking skills among students, according to the findings of Al-Amrousy's study [28] conducted on a sample of female students at King Khalid University.

3. Difficulties of Achieving Quality Standards

The online courses teamwork may face some difficulties that thwart preparing such courses with high quality. The obstacles vary according to their nature. One of these obstacles is the insufficient time the educational experts have. They hardly sit with the educational designers and acquire best practices that can be included in an online-based course [29]. It is considered one of the biggest obstacles that may affect the design of an electronic course with high-quality standards. This is because the educational designer does not have sufficient knowledge in the specialization and therefore cannot design a course that considers the knowledge and skills the students should acquire after completing their studies. One of the difficulties that may affect the quality of the electronic course is that it does not include learning activities that help learners and the teacher and know the level of students' mastery of the knowledge contained in the course. Sanga [30] maintained that some of the courses prepared by faculty members hardly contain any learning activity. Therefore, the team tackled this problem by adding discussion forums or any other educational activities that suit the unit, thus improving the quality of the course.

In addition to the above, building measurable educational goals is one of the dilemmas facing educational course experts. Sanga [30] reported faculty members' inability to identify appropriate actions that make goals measurable. The author contend that the work team tried to solve this problem by developing a list of measurable actions to help members set correct educational goals.

Among the obstacles that may affect the design of an online course of high-quality is the negative attitudes of some educational experts towards the applying quality standards. In a study of implementing a QM standard-based program in online courses at university, Budden and Budden [31] found that the great challenge lies in the faculty members who disbelieve in these standards. They appeared less motivated to cooperate with the work team in designing a high-quality course. Hence, achieving the quality standards becomes a daunting task for the work team.

4. Research Questions

The present study addressed the following questions:
- What is the extent to which QM standards are achieved in designing electronic courses at Umm Al-Qura University?
- Which criterion ranks highest according to QM Quality Standards for electronic courses?
- What are the difficulties that faced the electronic courses designers when they prepared the course according to QM criteria?

5. Significance of the Study

The novelty and importance of the present study accrue from the university's interest in producing online courses of high quality so as to achieve the desired learning outcomes. With the recently increased production of online course and adopting an initiative to convert some of the traditional courses to electronic course, corrective procedures based on international standards are necessary to measure the extent to which the online courses are developed. Undoubtedly, the QM standards are a reliable and reliable tool for evaluating the quality of online courses. Through an objective evaluation with internationally recognized standards, this study provides feedback to those in charge of designing and producing online courses at Umm Al-Qura University to identify the shortcomings in those electronic courses and improve them. Equally, it identifies and enhances strengths, which contributes to reducing financial waste on producing low-quality online courses and thus enhancing opportunities to benefit from high-quality online courses.

Add to that the noticeable efforts that the Saudi universities and educational institutions exert to develop educational programs that contain courses based on modern technologies in communication between the elements of the educational process. However, many studies focused on evaluating the quality of electronic courses using criteria prepared by the researcher [5,12,11, 6, 32]. The studies that focused on assessing the quality of these courses according to QM standards were almost non-existent. To the best knowledge of the researcher, only a study conducted by Al-Qarni [33] examined the online courses quality at Majmaah University according to these criteria. Such evaluative studies (a) contribute to the production and development of electronic courses of high quality, (b) reduce the gap between traditional and online education, and (c) contributes to providing the researchers interested in this field with results and knowledge that may benefit them in their research.

6. Method

The study adopted the explanatory sequential research design. It began with collecting qualitative data to get an overview of the topic under investigation. Then it elaborated on the reasons for the research problem using one of the qualitative research tools [34].

7. Population and Sample

The study population included all the online courses designed in the deanship of e-learning and distance education at Umm Al-Qura University and all the designers who work in the deanship and participate in the design of these courses. According to the deanship, the following ten courses were designed electronically: Surgery3, Volleyball, Behavioral Management, Ethics and Professionalism, essays and debate, Rhetoric, inheritance, Fiqh, English language, and the biography of the Prophet. The sample also included some employees of educational course designers at the deanship to conduct interviews for a broader and deeper understanding of the findings. Three of the instructional designers were selected based on Creswell's [34] contention that a sample of three to ten individuals is sufficient to describe a particular phenomenon.

8. Validity & Reliability

The researcher adopted the sixth version of the QM standards for the quality of online courses in higher education. This quality evaluation form contains forty-two sub-criteria representing eight main areas and 100 points distributed on the standards according to their importance [21]. This instrument was chosen to measure the extent to which these standards are achieved in the online courses designed at the deanship of e-learning and distance education at Umm Al-Qura University until the end of the second semester, 1439 (Hijri calendar). As the original version of the tool was in English, it was translated into Arabic by a specialized and certified translator. Then the Arabic model was reverse-translated by another certified translator to return it to the English language. To maintain translation accuracy and ensure the validity of the tool's content, two specialists (reviewers) in language and curriculum assessment compared the original English version with the second version and the reverse translation. The versions of translation were more or less identical. The tool has already been applied to thousands of electronic courses in many institutions and educational bodies involved in the organization.

Both reviewers evaluated two online courses, and the correlation coefficients between their evaluation were high. The percentage of agreement between the reviewers in the course of Technology and Learning Aids for the Hearing Impaired Learners was 95.2 while it was 92.8 in the course *Computer Use in the Field of Disorders*. This indicates that the tool was of high constancy and valid for giving a judgment on the quality of online courses.

The researcher also designed a semi-structured interview with a set of questions intended to clarify and interpret the results of the online course evaluation based on QM standards. Creswell [34] contends that one of the ways to check the instrument's validity in qualitative research is *Peer Debriefing*, in which the instrument is presented to another colleague in the same field to review questions and give feedback. Insofar as this semi-structured interview is concerned, some questions were modified based on two colleagues' feedback.

9. Results
Research Question#1

Q1: What is the extent to which QM standards are achieved in designing electronic courses at Umm Al-Qura University? Descriptive statistics were used to answer this question and the results are outlined in Table 2.

Table 2. The Extent to Which the QM Standards Have Been Met

online course	Surgery 3	Volleyball	Behavioral Management	Ethics & Professionalism	Essay & debate	Rhetoric	Inheritance	Fiqh	English	Biography of the Prophet
(out of 100)	67	46	39	41	25	36	25	22	28	21

As Table 2 indicates, all the online courses designed under the supervision of the deanship of e-learning and distance education at Umm Al-Qura University received a total of scores of fewer than 85 points. Therefore, they do not meet the QM standards for the quality of online courses. This could be attributed to the recent accession of the university to the QM organization. That is to say. The deanship officials did not have enough opportunity to review and develop electronic courses following the QM standards. There may be other difficulties, including contact with educational content experts, who are considered a cornerstone of the teamwork of designing online courses. The result of this study confirms the investigations of Al-Qarni, Jalila, Al-Qahtani et al. and Al-Husseini [11, 12, 33, 32].

Research Question#2

Q2: Which criterion ranks highest according to QM Quality Standards for online courses?
Descriptive statistics were used to answer this question and the results are outlined in Table 3.

Table 3. Quality Standards Achievement in Electronic Courses at Umm Al-Qura University

Cours	Criteria															
	1st		2nd		3rd		4th		5th		6th		7th		8th	
	P	%	P	%	P	%	P	%	P	%	P	%	P	%	P	%
1	16	100	15	100	5	38.5	7	58.3	6	54.5	5	62.5	10	30	10	6.67
2	6	37.5	9	60	0	0	10	83.3	0	0	8	100	3	0	13	90
3	3	18.7	6	40	8	61.5	7	58.3	0	0	8	100	0	0	10	6.7
4	4	25	9	60	3	23.1	7	58.3	0	0	5	62.5	0	30	10	6.7
5	3	18.7	3	20	0	0	10	83.3	0	0	2	25	3	0	10	6.7
6	3	18.7	9	60	0	0	10	83.3	0	0	1	12.5	0	0	13	90
7	3	18.7	3	20	0	0	7	58.3	0	0	5	62.5	0	0	10	6.7
8	3	18.7	3	20	0	0	7	58.3	0	0	2	25	0	0	10	6.7
9	3	18.7	9	60	0	0	7	58.3	0	0	2	25	0	0	10	6.7
10	3	18.7	3	20	0	0	4	33.3	0	0	2	25	0	0	12	80
Average of %	29.3		46		12.3		63.3		5.45		50		6		72.7	

(1)Surgery3, (2)Volleyball, (3)Behavioral Management, (4)Ethics and Professionalism, (5)Essay & Debate, (6)Rhetoric, (7)Inheritance, (8)Fiqh, (9)English, (10)Biography of the Prophet.

Table 3 displays the average percentages achieved for each criterion of quality in the university's online courses. The standards of access and use, the educational materials, and the techniques used in the course obtained the highest scores, with percentages of 72.7, 63.3, and 50, respectively. This may be because these standards are not directly related to course experts; there may be a space of freedom for course designers to implement those standards without constantly referring to the educational expert.

Nevertheless, the standards of educational activities, learners interaction and learner support obtained the lowest percentage of achievement between the standards at 5.45 and 6, respectively, which indicates that they did not receive the same attention during the course production process. Perhaps, this is because the online course production team was interested in the scientific and technical aspects more than the organizational and guiding procedures of the courses. These two criteria include sub-criteria, most of which are concerned with these aspects. This is consistent with Al-Qahtani et al. [11] who showed that the online courses at the University of Najran hardly achieved a set of sub-standards concerned with the organizational and guiding aspects. It also accords with Sanga [30] showing a significant shortcoming in the electronic courses' instructions.

Research Question#3
Q3: What are the difficulties the electronic courses designers faced when they prepared the course according to QM standards?
The researcher conducted a semi-structured interview to answer this question. Three online course designers at the deanship of e-learning and distance education were

interviewed. The interview concentrated on the reasons of not achieving QM standards in all courses. The interview disclosed three main reasons. First, the administrative aspects that cannot be overlooked in the success of any educational project were evident. Designer No. (2) argued that the failure to comply with the QM standards might stem from the delay in adopting these standards. The author further claimed that "instructional designers before the university acceded to QM, adopted internally designed standards for improving electronic courses." This reason may be sufficient for not achieving the standards. The difference in the criteria used in building online courses may lead to focusing on particular aspects and neglecting others. However, according to the results It is noted that some of the sub-standards that cannot be overlooked in any online course have not been achieved, regardless of the criteria used in its construction, such as the course objectives.

Adding some tasks to the educational designers that are not directly related to their work is also among the difficulties associated with the administrative aspects. This is what the course designers No.2 and No.3 consensually agree on. Periodic training aims to introduce members to the electronic system used at the university and the services it provides to them. Since most of these courses are held during the working hours of the designers, it may constitute an additional burden for them and thus may delay the completion of the work that could be accomplished in a specific time, especially in light of the lack of specialists in educational design. This surfaced from the interview with designer No. (3), who asserted that there were only two designers. That is, adding other burdens on the designers will negatively impact their performance.

Besides the administration-related difficulties, the financial incentives may be a hinderer of meeting the QM standards. Additional rewards would encourage the designing team to continue working on the project even outside the working hours so as to complete it properly on time. In response to the interview with designer No. (2), he asserted that "the material incentives for faculty members are few and do not encourage them to continue with the work team". This was confirmed by Designer No. (3), who confirmed that there are no additional financial incentives for the educational designer.

The second main reason relates to technical difficulties. Designer No. (3) indicated that "sound recording and production studios were unavailable until recently." Therefore, some of the courses may have been affected by the shortage of such materials, producing them with the desired quality according to QM standards. According to designer No. (1), "the deanship has provided all the laboratories and equipment necessary for the production of educational courses." Hence, these difficulties may be the least influential in not achieving QM standards.

The third primary reason has to do with organizational inadequacies. Despite the importance of the administrative and technical aspects and their impact on the failure to conform to quality standards, the organizational difficulties of the work team are more influential, and their imbalance necessarily leads to the collapse of the project altogether. According to what the designers mentioned, it can be said that faculty members who are considered course experts are the biggest obstacle they face due to several things: First, the difficulty of communicating with them. Designer No. (1) stated that "the faculty members did not have enough time for effective communication with the team and Designer No. (2) confirmed this by stating that "faculty members have administrative tasks assigned to them or multiple committees, which makes reaching them difficult." Indeed, lack of communication by course experts means delayed completion of many components of the course. Thus, many standards likely are unfulfilled. This result is consistent with the findings of Dick et al. [29].

Moreover, designer No. (2) explained that "there was resistance from faculty members to change and the transition to the digital educational curriculum." It goes without saying that negative attitudes towards digital transformation in education affect how they use it and their conviction of the importance and feasibility of the technology in education. This result is consistent with the findings of Budden and Budeen [31], who indicated that some faculty members did not see the importance of observing quality standards in designing online courses.

In addition to the above, designers No. 1 and 2 contend that faculty members face salient challenges in writing sound and measurable procedural goals for their courses. Undeniably, setting measurable goals is one of the most crucial sub-criteria that must be achieved. Therefore, failure to achieving them necessarily means the failure of the electronic course to meet the quality standards. This is consistent with the findings of Sanga [30], who examined the most important teaching and design issues for the development of a high-quality online course and concluded that formulating measurable goals is one of the most critical issues it faces the faculty members.

10. Recommendations and Suggestions

Based on the findings the present study has come up with, the researcher put forwards the following recommendations:

1. Re-developing the courses designed at the deanship of e-learning and distance education following the standards of QM to promote their quality, reduce the gap between the traditional and virtual educational environment, and ensure the achievement of the desired educational attainment objectives in the course.

2. Co-coordinating with the faculty members who are part of the team whose online courses are to be developed to ensure that their teaching and administrative burdens are relieved. This coordination will help find enough time to communicate with the team and actively participate in the production of the courses.
3. The university administration should provide faculty members with financial and moral incentives for participation in the electronic course design teams.

The researcher also suggests conducting

(a) a comprehensive study to explore the extent to which the standards are met in all the online courses at the deanship of e-learning and distance education in Saudi universities.

(b) a quasi-experimental study to examine the construction of two electronic courses, one of which meets the QM standards and measures its impact on students' academic achievement.

References

[1] Abu Shaweesh, A. (2013). *A proposed program for developing the skills of designing electronic courses via the web among students of educational technology at Al-Aqsa University in Gaza*. The Islamic University, Gaza.

[2] Etmezi, J. (2013). *E-learning systems and tools.* Dammam: Al Mutanabbi Library

[3] Al-Sigini, W., & Khalil, H. (2017). *Designing curricula and electronic courses via the web*. University Theses House and Dar Al Masirah for Publishing and Distribution. Amman: Jordan.

[4] Omar, A. M., Abdul Majeed, A. S., Al-Shehri, M. S. & Faraj Allah, W. M. (2018). Designing an electronic course for environmental education in light of Quality Matters (QM) standards and its impact on cognitive achievement, skills development, and environmental ethics among students of the College of Education at King Khalid University. *Journal of the College of Education -Assiut, 34* (3), 453-499.

[5] Al-Sabeeh, L. (2018). Evaluating the quality of electronic courses through the learning management system 'Tarire' in Riyadh schools (girls) in Riyadh. *Reading and Knowledge Magazine, 196*, 239-282.

[6] Nashwa, N. & Tulip, A. (2018). A proposed model for evaluation criteria for electronic courses in light of quality requirements at Najran University. *Journal of Arab Studies in Education and Psychology, 97*, 431-443.

[7] Zainuddin, M. (2011). *E-learning competencies*. Second edition, Scientific algorithm, Jeddah.

[8] Sosulski, K. & Vai, M. (2016). *Essentials of online course design: A standards-based guide* (2nd ed). Routledge.

[9] El-Desouky, W. (2014). Educational technology students' attitude towards learning courses online and its impact on their academic achievement motivation. *Educational and Social Studies, 20* (2), 295-342

[10] Adawi, M., Sabreen, H. & El-Sayed, Q. (2014). Quality standards for designing and producing electronic courses for art education courses. *The Egyptian Journal of Specialized Studies, 10*, 170-193.

[11] Al-Qahtani, M., Nadia, S. & Ibrahim, A. (2015). Quality controls and standards in the production of electronic courses to contribute to building a knowledge society: An analytical Study, Najran University. *The Arabian Gulf Message, 136*, 87-102.

[12] Jalila, M. (2016). Evaluation of open courses and wide enrollment in Saudi universities in light of quality standards. *Journal of Educational Technology, 26* (2), 61-106

[13] Shackelford, B. (2002). A SCORM Odyssey. T+D, 56(8), 30–35. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ651615&site=ehost-live

[14] iNACOL Website (2019). Retrieved on Feb, 2019 from https://www.inacol.org/resource/inacol-national-standards-for-quality-onlinonline courses-v2/

[15] California State University Chico (CSU, Chico) Website. Retrieved in Feb 2019 from https://www.csuchico.edu/eoi/rubric.shtml

[16] Quality Matters Website. Retrieved on April, 2019 from https://www.qmprogram.org/qmresources/subscriptions/subscribers.cfm?program=0

[17] Adair, D., & Shattuck, K. (2015). Quality Matters™: An educational input in an ongoing design-based research project. *American Journal of Distance Education, 29*(3), 159-165.

[18] Loafman, L., & Altman, B. W. (2014). Going online: Building your business law course using the quality matters rubric. *Journal of Legal Studies Education, 31*(1), 21–54.

[19] Miner, A. (2014). *The effect of Quality Matters certification on student satisfaction, grades, and retention at Florida International University* (PhD Dissertation), Morgan State University. Retrieved in Apr 2019, from https://search-proquest-com.sdl.idm.oclc.org/education/docview/1552467109/45D1766579E94779PQ/1?accountid=142908

[20] Shattuck, K . (2015). Focusing research on quality Matters. *American Journal of Distance Education, 29* (3), 155-158

[21] Al Zumor, A. W. Q. (2015). Quality Matters rubric potential for enhancing online foreign language

education. *International Education Studies, 8*(4), 173-178.

[22] Varonis, E. (2014). Most courses are not born digital: An overview of the Quality Matters peer review process for online course design. *Campus-Wide Information Systems, 31* (4), 217-229.

[23] Woods, D. R., Jr. (2014). Applying the Quality Matters (QM)™ rubric to improve online Business course materials. Research in Higher Education Journal, 23. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1064131&site=ehost-live

[24] Jaggars, S. S., & Xu, Di (2016). How do online course design features influence student performance? *Computers and Education, 95*, 270-284

[25] Kreie, J., & Bussmann, S. (2015). Course redesign based on the Quality Matters program: Examples of before and after. *Information Systems Education Journal, 13*(6), 109–122.

[26] Brown, V. S., Toussaint, M., & Lewis, D. (2018). Students' perceptions of quality across four course development models. *Online Learning, 22*(2), 173-195.

[27] Daoud, S. (2018). The effectiveness of an electronic course for communication skills in accordance with e-learning quality standards in academic achievement and attitude towards course among students of Sharia College, Qassim University, Saudi Arabia. *International Journal of Educational Research, 42* (1), 1-34.

[28] Al-Amrousy, N. (2016). The employment of Facebook social networks in e-teaching according to QM standards and its impact on developing creative thinking skills for a sample of King Khalid University students. *International Journal of Educational Research, 40* (1), 105-139.

[29] Dick, W., Carey, L., & Carey, J. (2009). *The systematic design of instruction* (7th ed.). Boston, MA: Pearson.

[30] Sanga, M. W. (2017). Designing for quality: An analysis of design and pedagogical issues in online course development. *Quarterly Review of Distance Education, 18*(2), 11-22.

[31] Budden, C. & Budden, M. (2013). A look at an implementation of the Quality Matters program in a collegiate environment: Benefits and challenges. *Contemporary Issues in Education Research, 6*(4), 381-384.

[32] Al-Hussaini, H. (2014). Evaluation of the electronic book in the Arabic language for the third grade in the light of quality standards. *Arab Studies in Education and Psychology, 2* (45), 11-72.

[33] Al-Qarni, D. (2019). Assessing the quality of electronic courses provided through the e-learning management system. *Tabuk University Journal for Humanities and Social Sciences, 5*, 243-276.

[34] Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approache*s. Thousand Oaks, CA: SAGE Publications.

A**li Alqarni** received the B.E. from Teacher College in Jeddah in 2004, and M.E. degree from Umm Al-Qura Univ. in 2010. He received the PhD. from Southern Illinois Univ. in 2016. After working as a computer teacher from 2005 to 2010, an assistant professor (from 2016) in the Dept. of Curriculum and Instruction, Umm Al-Qura Univ., he has been an associate professor at Umm Al-Qura Univ. since 2020. His research interest includes educational technology, e-learning, using computer in education.

Appendix 1: QM Standards of Electronic Course Quality

General standards	Sub-standards	
Course Overview and Introduction	1.1 Instructions make clear how to get started and where to find various course components.	1.2 Learners are introduced to the purpose and structure of the course.
	1.3 Communication expectations for online discussions, email, and other forms of interaction are clearly stated.	1.4 Course and institutional policies with which the learner is expected to comply are clearly stated within the course, or a link to current policies is provided.
	1.5 Minimum technology requirements for the course are clearly stated, and information on how to obtain the technologies is provided.	1.6 Computer skills and digital information literacy skills expected of the learner are clearly stated.
	1.7 Expectations for prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	1.8 The self-introduction by the instructor is professional and is available online.
	1.9 Learners are asked to introduce themselves to the class.	
Learning Objectives (Competencies)	2.1 The course learning objectives, or course/program competencies, describe outcomes that are measurable.	2.2 The module/unit-level learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.
	2.3 Learning objectives or competencies are stated clearly, are written from the learner's perspective, and are prominently located in the course.	2.4 The relationship between learning objectives or competencies and learning activities is clearly stated.
	2.5 The learning objectives or competencies are suited to the level of the course.	
Assessment & Measurement	3.1 The assessments measure the achievement of the stated learning objectives or competencies.	3.2 The course grading policy is stated clearly at the beginning of the course.
	3.3 Specific and descriptive criteria are provided for the evaluation of learners' work, and their connection to the course grading policy is clearly explained.	3.4 The assessments used are sequenced, varied, and suited to the level of the course.
	3.5 The course provides learners with multiple opportunities to track their learning progress with timely feedback.	
Instructional Materials	4.1 The instructional materials contribute to the achievement of the stated learning objectives or competencies.	4.2 The relationship between the use of instructional materials in the course and completing learning activities is clearly explained.
	4.3 The course models the academic integrity expected of learners by providing both source references and permissions for use of instructional materials.	4.4 The instructional materials represent up-to-date theory and practice in the discipline.
	4.5 A variety of instructional materials is used in the course.	
Learning Activities & Learner Interaction	5.1 The learning activities promote the achievement of the stated learning objectives or competencies.	5.2 Learning activities provide opportunities for interaction that support active learning.
	5.3 The instructor's plan for interacting with learners during the course is clearly stated.	5.4 The requirements for learner interaction are clearly stated
Course Technology	6.1 The tools used in the course support the learning objectives or competencies.	6.2 Course tools promote learner engagement and active learning
	6.3 A variety of technology is used in the course.	6.4 The course provides learners with information on protecting their data and privacy.
Learner Support	7.1 The course instructions articulate or link to a clear description of the technical support offered and how to obtain it.	7.2 Course instructions articulate or link to the institution's accessibility policies and services.
	7.3 Course instructions articulate or link to the institution's academic support services and resources that can help learners succeed in the course.	7.4 Course instructions articulate or link to the institution's student services and resources that can help learners succeed.
Accessibility & Usability	8.1 Course navigation facilitates ease of use.	8.2 The course design facilitates readability.
	8.3 The course provides accessible text and images in files, documents, LMS pages, and web pages to meet the needs of diverse learners.	8.4 The course provides alternative means of access to multimedia content in formats that meet the needs of diverse learners.
	8.5 Course multimedia facilitate ease of use.	8.6 Vendor accessibility statements are provided for all technologies required in the course.