RESEARCH ARTICLE

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Redefining the Quality of Online Courses: From A Smiley Test To A Seven-Star Rating

Mohamed El Tahir Osman

ABSTRACT

The past two decades have witnessed an exponential increase of both blended and fully online courses in higher education. Nevertheless, despite the invested efforts in defining and examining quality issues concerning online courses, there seems to be an equal growth in the challenges as well as the boundaries for defining the quality of online courses. According to a large body of literature, it appears that the most common instruments for gauging quality are course evaluations and surveys from the perspectives of instructors, learners, and administrators based on their perceptions, and experiences. In light of the rapidly changing needs of the new generation of "digital" learners, this study aims to redefine the quality of online courses from a comprehensive perspective that would expand the quality standards beyond pedagogical issues to include the hidden aspects of quality such as the instructional design, web design, facilitation and coaching, course presentation, learning experience, as well as service experiences. The study employs a mixed-method research design including, a descriptive-analytic methodology of both quantitative and qualitative approaches, where a triangulated set of data were collected from a diverse sample of Instructional designers, SMEs, and students enrolled in a fully online course at Sultan Qaboos University. The outcomes of this study could be used as a blueprint for designing online courses that respond to learners' diverse needs.

Keywords: Design-Based Research, Instructional Design, Online Course, Quality Standards.

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M. E. T. Osman*
Sultan Qaboos University, Sultanate of Oman.
(e-mail: msoamn@squ.edu.om)

****Corresponding Author***

I. Introduction

Higher education institutions around the globe are currently pressured more than ever before by the changing needs and expectations of the "digital" generation and the increasing demand for e-learning. Kauffmann (2015) argues that e-learning has reached a point where it has been accepted as an important alternative or enhancement to traditional face-to-face education. Accordingly, higher education institutions are taking advantage of web-based learning and they are utilizing it to complement the face-to-face or traditional approach to learning. Additionally, during the past two years, COVID-19 has had a significant impact on the rate of adoption of e-learning in higher education It serves as an effective 'change agent' for promoting rapid adoption of e-learning in such classically change-resisting institutions (Osman, 2021). Thus, it can be argued that, although e-learning has been initially introduced as a protective measure against the spread of the pandemic, it eventually changed the learning landscape in higher education institutions.

Obviously, e-learning has been recognized for its flexibility of any time, anywhere learning. Students, for example, may have a large number of options for how and where they can pursue their educational goals. Accordingly, students are increasingly turning to online courses because these courses offer them greater control over their own learning by enabling them to work at their own pace, providing them with more engaging multimedia content, and more frequent interaction with their instructors and fellow classmates. Research has shown that many students who have taken both face-to-face and online courses now rank their online experiences on various measures as equal to or better than their traditional classroom courses (Baldwin, 2019; Kauffman, 2015; Richardson, *et al*., 2020; Smidt, *et al.,* 2017). Nonetheless, it is important to note that the quality of e-learning is questionable when traditional models of learning are replicated simply by uploading learning materials on e-learning platforms. Zimmerman *et al.* (2020) reported that students enroll in online courses for many other quality features than course materials. They further argue that course design standards represented in the Quality Matters Rubric were more important to the students' success and satisfaction.

II. Problem Statement

Conventionally, it is believed that face-to-face instruction appears to be the hallmark of quality when it comes to higher education (Esfijani, 2018). Apparently, this belief is currently being challenged by the steady growth of e-learning in higher education. Additionally, the realities of the COVID-19 pandemic highlight a crucial need for comprehensive quality assurance systems for online learning which interns require that the quality issues be probed from several perspectives. The quality assurance in face-to-face courses is defined, in general by the service providers. It is usually done based on feedback from students through course evaluations, and in some cases via an institutional quality review as another source of information to inform decisions on possible course improvements. According to Chang and Chen (2014), the evaluation of instructional and training programs is usually done based on the four levels of the Kirkpatrick Model (i.e., learners' reaction, achievement, behavior, and return on investment), with more emphasis on level one, which is generally referred to as "a smily test" of learners' reaction. However, as higher education institutions focus more on issues of quality online learning, it becomes increasingly important to define the quality of online courses from the diverse perspectives and expectations of the stakeholders, taking into consideration the changing needs and expectations of the new generation of "digital" learners. This study, thus, aims to identify the quality features from the consumers' perspectives. More specifically, the study intends to answer the following questions:

- How do both students and instructors define the quality of online courses?
- Are there any significant differences in the relative importance of quality features between students and instructors?
- How do instructors and students prioritize the main quality features of online courses?

III. Methodology

The study employs a mixed-method research design including a descriptive-analytic methodology of both quantitative and qualitative approaches, where a triangulated set of data were collected using a three-section questionnaire. The first section is an open-ended question for collecting qualitative data, the second section includes 21 quality features that have been rated on a five-point scale for their relative importance to the target sample, and the last section includes 10 main quality features that were ranked according to the number of references. The sample of the study consists of 17 instructors involved in teaching online courses, and 23 students from the college of education at Sultan Qaboos University who took a minimum of 15 online courses during the past two years.

IV. Results and Discussion

With regard to the first question (How do students and instructors define quality?), the qualitative responses of the two groups were coded and analyzed using NVivo qualitative data analysis software. Table I below presents the thematic analysis of the participants' responses. The results reveal that there are 13 common quality features that were shared with varied frequencies in the definitions of quality of online courses by both students and instructors.

As illustrated in Table I, both students and instructors put more emphasis on the qualities of course design, course content, course interface, e-resources, interactivity, and technical qualities. However, students seem to define quality from a design perspective (e.g., course design, interface, interactivity, locus of control, etc.).

TABLE I: Students' and Instructors' Definitions of Quality

Students' Responses			Instructors' Responses		
Rank	Quality features	Percentage	Rank	Quality features	Percentage
1	Course design	%36	1	Course content	49%
2	Navigation	32%	2	Activities	28%
3	Student-centered	13%	3	Content organization	20%
4	Interface	13%	4	Students-student relationship	20%
5	Content sources	10%	5	Design features	15%
6	Online feedback	9%	6	Technical support	15%
7	Synchronous	8.5%	7	Student engagement	13%
8	Interactive	7.8%	8	Technical features	13%
9	Ease of use	7.5%	9	Integrated technologies	10%
10	Privacy	6.8%	10	E-learning standards	10%
11	Time-saving	6%	11	Easy access	9.6%
12	Information-rich	6%	12	Clarity of objectives	8.7%
13	Asynchronous	6%	13	assessment	7.9%

The following examples are students' excerpts that illustrate their views of quality online courses:

- *S1 "The online training course is characterized as being of high quality, in terms of content accuracy, ease of presentation, and reference to explanation and understanding more. The course presenter is also very excellent and facilitates the training process. The techniques used in this course were advanced and fast, saving the time of the student and the presenter together".*
- *S5: "There are many advantages that distinguished this course. First, as the course design is beautiful and suitable for students as it allows us as students to work easily and easily obtain information, memorize and study it, and the course content is very beautiful content as it".*
- *S 8: "Content is provided in different flexible and accessible media".*
- *S 10: "The learning outcomes in the online course to be the same as what the student might obtain if the learning was face-to-face, or it might be better than it".*
- *S 18: "A User Interface that is easy to use Multiple ways to contact course instructors. Course material is easily accessible".*

While instructors, on the other hand, define quality from a content perspective (e.g., quality of course content, activities, content organization, technical support, etc.). For instance, 49% of the instructors mentioned the "quality of content" in their definitions, compared to only 10% of the students. The following are some examples of excerpts from the instructors' definitions of quality:

- *I 8: "Quality in an online course for me is good content relevant to the student's level and interest. The teacher should be only a facilitator and students can be encouraged to bring in their own version of understanding as input for the course. Technology should be sued to an advantage"*
- *I 3: Quality of an online course means diverse content resources, organized well with practical and theoretical components, communication channels for Instructor/Student, Student/Student, respect for the sources of the information (referenced well, not plagiarized), willing to contribute to OER efforts adhering to the various creative commons licensing, inclusive strategies for diverse learners' physical and mental abilities".*
- *I 7: Clarity of objectives, effective use of Course Management System, Instructions should be clear, Learner feedback, Technical support for students and instructors, Interaction, and Effective assessment".*

TABLE II: EVALUATION CRITERIA FOR THE RELATIVE IMPORTANCE OF THE QUALITY FEATURES

Means	Decision
1.00-1.79	Very low
1.80-2.59	Low
2.60-3.39	Medium
3.40-4.19	High
4.20-5.00	Very high

TABLE III: THE MEAN SCORES OF THE RELATIVE IMPORTANCE OF THE QUALITY FEATURES

Item	Instructor		Student	
	Mean	SD	Mean	SD
1	4.70	0.59	4.43	0.79
2	4.29	1.31	3.91	0.90
3	4.58	0.80	4.47	0.59
4	4.47	0.87	4.17	0.98
5	4.35	1.00	4.43	0.84
6	4.29	0.85	3.91	0.79
7	4.47	0.80	4.00	0.80
8	4.47	0.72	4.00	0.90
9	4.35	1.00	3.65	1.19
10	4.23	0.90	4.00	1.00
11	4.23	1.03	3.60	1.31
12	4.53	0.80	4.00	0.90
13	4.47	087	3.91	0.90
14	4.47	0.80	3.69	1.02
15	4.29	1.05	4.00	1.00
16	4.58	0.87	4.43	0.59
17	4.35	1.00	4.00	0.80
18	4.47	1.07	4.30	0.97
19	4.29	1.10	3.61	1.12
20	4.65	0.61	3.74	1.18
21	4.47	1.01	3.83	0.98
Grand Mean	4.43	0.91	4.01	0.93

In reference to research question two, both groups were asked to assess the relative importance of 21 quality features that characterize high-quality online courses adapted from Quality Matters and based on a synthesis of a plethora of literature (Debattista, 2018; Kanekar, 2018; Kumar, *et al*., 2019; Quality Matters.org, 2020; Richardson, *et al*., 2020; Shattuck, *et al*., 2014; Warren, & Robinson, 2018). The data were analyzed using descriptive and inferential analysis. Table II describes the evaluation criteria based on which the quality features were rated by both instructors and students.

Based on the evaluation criteria, Table III illustrates that all 21 quality features of online courses are of a high degree of importance for both instructors and students, with an overall mean score of 4.43 for instructors and 4.1 for students, and standard deviations of 0.93, and 0.91 for students and instructors respectively. The results also indicate that although all quality features appear to be of high h degree of importance to the instructors, the most important quality features for instructors include: *Instructions on how to get started and where to find various course components, how to communicate with the instructor", followed by " Content is made available to students in manageable and sequential segments", and " Student connectivity issues are considered by making content available in a variety of formats (i.e., "pdf" files, off-line media files, etc.),* respectively. Whereas, the most important quality features for students include: "*Content is made available to students in manageable and sequential segments", Navigation and presentation of course materials consider web accessibility.." and Instructions on how to get started and where to find various course components, how to communicate with the instructor, etc.).* The descriptive statistics indicate that some of the quality features of online courses appear to be of equal importance to both students and instructors. For example, both instructors and students consider the quality features such as "The course meets the objectives and outcomes", Comparable rigor" and "Interaction "as equally important quality features of an online course. Nonetheless, further inferential analysis of T-Tests reveals some significant differences between the instructors in a number of quality features.

Table IV shows that there is an overall statistically significant difference between the instructor and students in terms of how they both view the important features of quality in online courses, t (38) = 6.28, p = 0.001, and an overall mean score of 4.43 for teachers, and 4.01 for students. However, they vary significantly in their views of the relative importance of a number of other quality features. For example, instructors value some quality features more than the students such as: *"Learners have an opportunity to practice and apply their newly acquired knowledge or skill"; "The courseware provides techniques that encourage learners to integrate the new knowledge into their everyday life",* and **"***Creating a learning community using such strategies as group projects/assignments/activities"*. While, on the other hand, students value other quality features such as *"Navigation and presentation of course materials* " more important than do teachers.

TABLE IV: T-TESTS FOR THE MEAN SCORES OF THE QUALITY FEATURES BETWEEN INSTRUCTORS AND STUDENTS

Item	N	Mean	df	T	P
1	17	4.70	38	1.19	0.12
	23	4.43			
2	17	4.29	38	1.09	0.14
	23	3.91			
3	17	4.58	38	0.50	0.31
	23	4.47			
4	17	4.47	38	0.98	0.16
	23	4.17			
5	17	4.35	38	-0.28	0.39
	23	4.43			
6	17	4.29	38	1.45	0.07
	23	3.91			
7	17	4.47	38	1.84	0.03
	23	4.00			
8	17	4.47	38	1.77	0.04
	23	4.00			
9	17	4.35	38	1.96	0.02
	23	3.65			
10	17	4.23	38	0.76	0.22
	23	4.00			
11	17	4.23	38	1.63	0.05
	23	3.60			
12	17	4.53	38	1.92	0.03
	23	4.00			
13	17	4.47	38	1.95	0.02
	23	3.91			
14	17	4.47	38	2.59	0.00
	23	3.69			
15	17	4.29	38	0.90	0.18
	23	4.00			

Cont. of Table IV

15	17 23	4.29 4.00	38	0.90	0.18
16	17 23	4.58 4.43	38	0.66	0.25
17	17 23	4.35 4.00	38	1.244	0.11
18	17 23	4.47 4.30	38	0.51	0.30
19	17 23	4.29 3.61	38	1.92	0.03
20	17 23	4.65 3.74	38	2.90	0.03
21	17 23	4.47 3.83	38	2.03	0.02
Grand Mean	17 23	4.43 4.01	38	6.28	0.001

In order to answer question three, the participants were asked to prioritize the main quality features of online courses in rank order. As illustrated in Fig. 1 and Fig. 2, the results seem to be in congruence with the thematic qualitative analysis of the definitions in question one. For example, the quality feature of "The course meets objectives or outcomes" was ranked number one by both instructors (70%) and students (57%), whereas the "navigation" and "multiple ways of learning" features were ranked higher by the students compared to instructors.

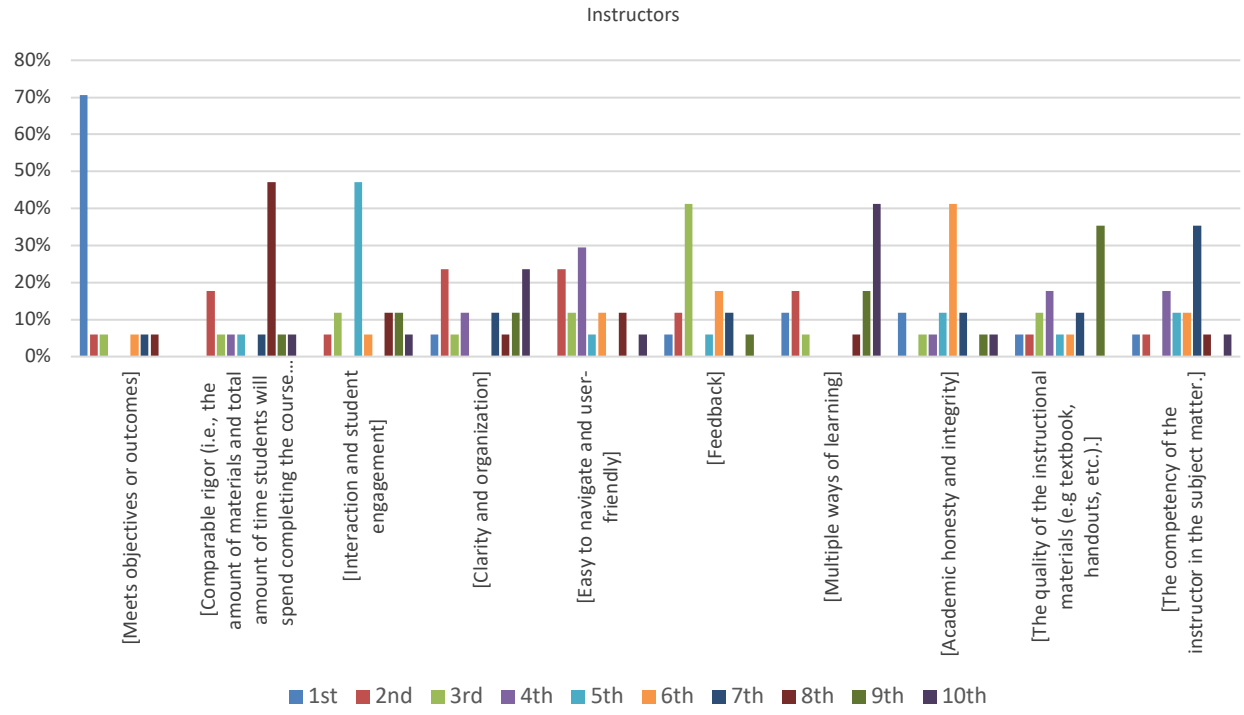

Fig. 1. Instructors' priority rank order for the quality features of online courses.

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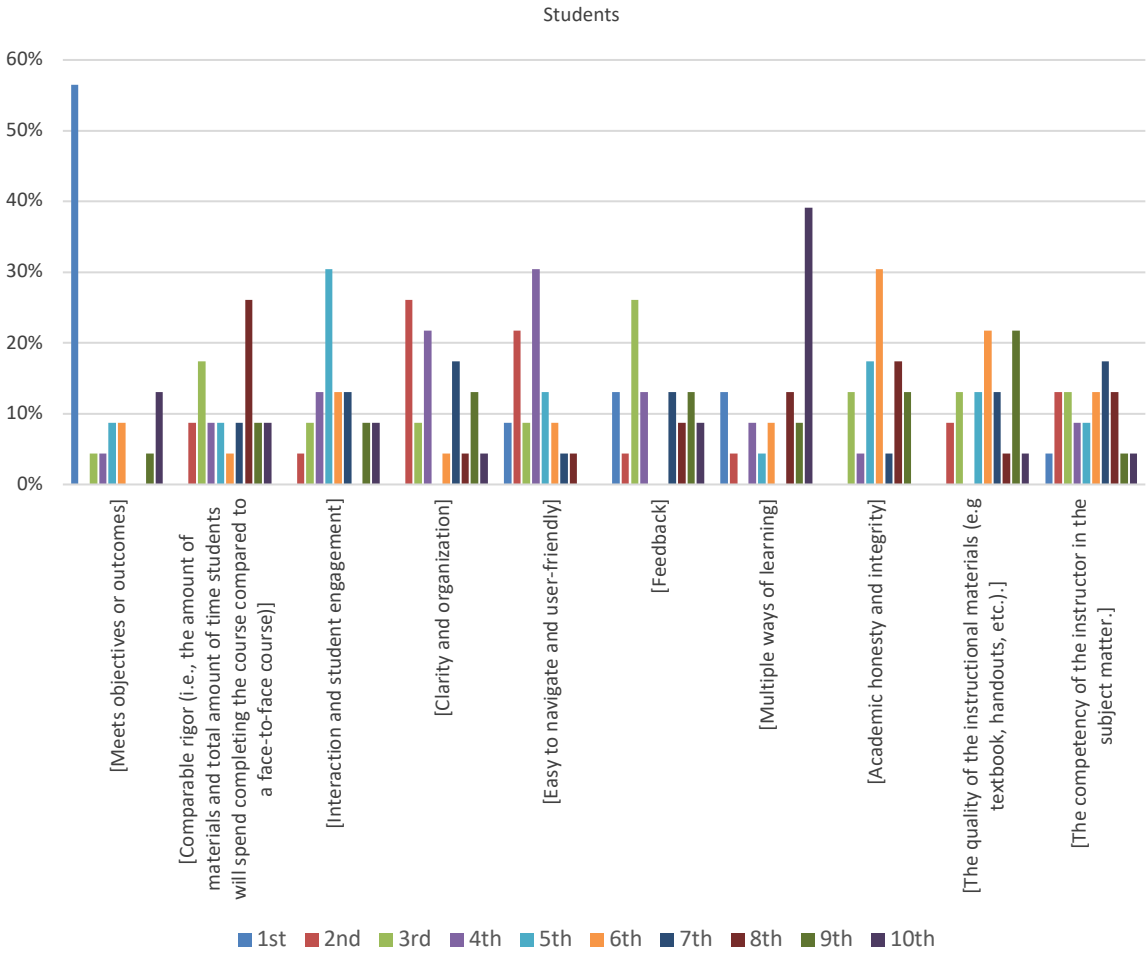

Fig. 2. Students' priority rank order for the quality features of online courses.

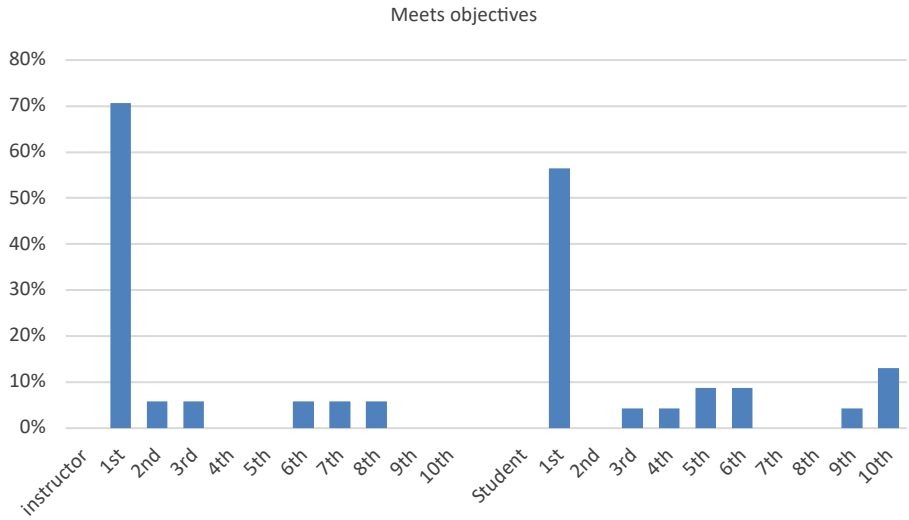

Fig. 3. The rank order of the t quality feature "The course meets objectives and outcomes".

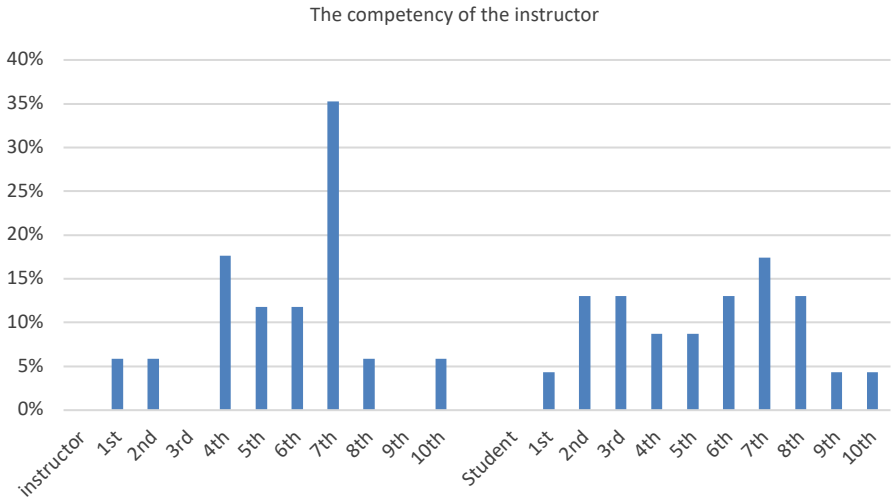

Fig. 4. The rank order of the t quality feature "The competency of the instructor".

Interestingly, as shown in Fig. 4, "the instructor's competency in the subject matter" was ranked very high by 35% of the instructors, while it came in a lower rank by the students with only 17% rated it as an important quality feature. In line with previous research (Esfijani, 2018; Smidt *et al.,* 2017), the findings of this study indicate that there is a disparity between what is important to instructors and students. With the exception of "the course meets the objective", and "students engagement", the quality features that are important to instructors (amount of materials and time, quality of instructional materials, and academic honesty and integrity) ranked lower for students, while the quality features that are important to students (easy to navigate and user-friendly, clarity and organization, multiple ways of student learning) were ranked lower on the priority scale.

V. Conclusion

The findings of this study indicate that the quality of online courses goes beyond the quality of content materials and the competency of the instructor in the subject matter. Not surprisingly, the findings indicate that both the providers and the consumers, in general, define the quality of online courses, differently. Nonetheless, it is important to note that there are more than 21 quality features that are considered very important to both instructors and students. In order to meet the changing needs of the new generation of learners, it is important, thus, that a broad definition of the quality of an online course should encompass all these features. which in turn, will have significant implications for academic institutions and course developers. Institutions, for example, would need to continuously update their policies and quality standards for online courses, and at the same time, continue to focus on faculty professional development for online course design. Osman (2021) points out that although digital literacy appears to be a crucial prerequisite for online teaching and learning online, the need for faculty training in instructional design is becoming an increasingly critical training need. Based on the findings of this study, it is anticipated that the debate among the higher education communities will no longer be about the relative merits of online learning, but eventually on how best to develop high-quality online courses and programs for maximum effect on student enrolment and performance. Thus, it can be argued that students' satisfaction and expectations for a seven-star online course can no longer be measured by a smily survey of end-of-course evaluation.

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Mohamed El Tahir Osman (Ph.D.). Dr. Osman is an associate professor of educational technology, with over 20 years of experience teaching graduate and undergraduate courses in instructional systems design, information and communication technologies, and research in educational technology. He served as chair of the Instructional and Learning Technology department, and also as the Assistant Dean for Postgraduate Studies and Research in the college of education at Sultan Qaboos University, Sultanate of Oman. In 2017, he received the Distinguished Researcher Award at the university level. Dr. Osman is an Emeritus Board member and Vice President of the International Council of Education for Teaching (ICET) for the MENA region.

Mr. Osman has presented and researched extensively on issues related to school improvement, quality assurance, web-based learning environments, human resources development, and student empowerment. More information can be found on his webpage at: https://mtosman.com/en/