

# Quality Approaches in Higher Education



Understanding student perceptions of design quality of face-to-face and online courses.

## Closing the Feedback Loop: Hearing the Student Voice in Course Quality

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### **Abstract**

One hundred eighty-three students from a Midwestern public university were surveyed to determine their perceptions of the design quality of their courses using items from the Quality Matters (QM) framework. The respondents rated the extent to which each of the 68 QM-based items was generally important in their courses. The data revealed that students perceived the design quality of their face-to-face and online courses similarly. This finding extends the generalizability of prior QM research, which focused solely on the perceptions of students assessing online offerings. The data also revealed how students ranked the quality dimensions associated with the QM framework. Areas where students' perceptions of course quality differed from the framework are summarized. Implications for instructional design and course facilitation are addressed.

### **Keywords**

Educational Quality, Teaching Quality, Online Classes, Assessment/Surveys

### **Introduction**

This study measured the perceptions of students on the design quality of their courses. It used the eight general standards that define quality expectations in the Quality Matters Rubric. Quality Matters (QM) is a continuous improvement program available to higher education institutions to assure the design quality of their online and blended courses. Since its inception, leaders of the QM program began sponsoring research focused on the impact of QM—both its rubric and its review process, which involves analyzing the design of a peer's course and providing recommendations for improvement of that course's design. The review process culminates in a determination as to whether the course design meets the thresholds established for quality (Shattuck, Zimmerman, & Adair, 2014).

This study extended the work of Ralston-Berg (2014) who asked whether “students agree that items presented in the QM Rubric indicate quality?” Understanding how students perceive course experiences can provide suggestions for instructors on how to promote improved learning outcomes (Rodriguez, Ooms, & Montanez, 2008). This is important for faculty interested in presenting high-quality online as well as face-to-face courses. It is even more important for university administrators who recognize the need to deliver quality instruction to students who have choices in today's highly competitive educational market. Astani, Ready, and Duplaga (2010) reported that higher education institutions are increasingly considering the addition of online course offerings as part of their strategic planning process. They also reported that students in their study believed that the quality of online courses was as good as face-to-face courses. The active involvement of students in the learning process coupled with opportunities for online teamwork, an activity particularly important in today's virtual work environment, provided for increased student satisfaction. This was the much sought-after outcome associated with quality course design.

Ralston-Berg's (2014) work used the QM criteria to examine students' perceptions of quality in online courses. This study extended her work by examining how students rate the QM criteria for courses in general. Further, it aimed to determine whether the differences between students' perceptions of what is valued in a course and QM's ratings for what

is considered a quality-oriented course are practically significant. Understanding these differences has the potential to help institutions of higher learning with the development and promotion of quality course offerings.

## Literature Review

Over the past decade, the number of students taking online courses has risen dramatically. In their annual report that tracks online education in the United States, Allen and Seaman (2014) noted that in 2013, the number of additional students taking an online course continued to grow at a rate far in excess of overall enrollment with 7.1 million students taking at least one online course. In other terms, about one-third of all eligible course enrollment is online.

With the rise in the acceptance of online education comes the concern of student retention in course offerings at a distance. In a national survey of more than 10,000 faculty members, 70% of respondents indicated the learning outcomes for online courses were inferior to or somewhat inferior to the learning outcomes for face-to-face instruction (Seaman, 2009). However, a meta-analysis conducted by the U.S. Department of Education (USDOE, 2010) found that online students performed “moderately better on average” compared to their traditional face-to-face counterparts and differences in implementation of online courses did not affect learning outcomes. It is important to note, though, that this meta-analysis focused primarily on studies of students in K-12 settings.

Among academic leaders, the concern about overall student retention is growing (Allen & Seaman, 2014). Historically, studies of online retention rates confirmed that many colleges and universities retain fewer online students than their face-to-face counterparts (Fetzner, 2013). Academic quality is a major factor when attracting and retaining students to programs and universities. A look at the research reveals that quality is an ongoing topic when comparing online and traditional courses. But does quality matter to students?

To understand whether students value quality in courses, it is important to understand quality and a brief history of the standards movement. With the 1983 release of *A Nation at Risk* (National Commission on Excellence in Education [NCEE], 1983), there was a strong public push toward “rigorous and measurable standards, and higher expectations for academic performance and student conduct” (NCEE, p. 27).

About the same time, a foundational set of principles to serve as a guide for teaching in higher education was developed by Chickering and Gamson (1987). Their resulting seven principles for university teaching have served as a benchmark for effective teaching and learning at the university level. The seven principles are: encouragement of contact between students and

faculty, development of reciprocity and cooperation among students, encouragement of active learning, provision of prompt feedback, emphasis on time given to tasks, communication of high expectations, and respect for diverse talents and ways of learning. Although they emphasized undergraduate education, these principles are also applicable to graduate education, K-12 schools, and other learning environments.

Building on the need for standards at the university level, Merrill (2002) analyzed design theories of effective instruction. He advanced the idea of five “first principles” of instruction: learning is promoted when learners are engaged in solving real-world problems, learning is promoted when existing knowledge is activated as a foundation for new knowledge, learning is promoted when new knowledge is demonstrated to the learner, learning is promoted when new knowledge is applied by the learner, and learning is promoted when new knowledge is integrated into the learner’s world.

With the advent of online education, the need for standards to determine quality arose. QM originated from a grant project entitled “Fund for the Improvement of Postsecondary Education.” It is a faculty-centered, peer review-based process that is designed to certify the quality of online and blended courses and components and assure continuous improvement. The eight research-based standards and elements developed were selected because of empirical evidence demonstrating they had a positive impact on student learning.

The QM framework emphasizes navigability, interaction, and instructional alignment. Specifically, the eight standards included in the QM rubric are:

- Course overview and introduction
- Learning objectives
- Assessment and measurement
- Instructional materials
- Learner interaction
- Course media and technology
- Learner support
- American Disabilities Act (ADA) compliance

Each standard includes a number of indicators, each of which is ranked in importance and assigned a weight, where essential = 3, very important = 2, and important = 1.

The QM rubric continues to evolve based on the research literature related to online course design. Shattuck and Diehl (2011) completed a thorough review of the relevant literature and compiled a summary of the research supporting the 2011-13 version of the QM rubric. The extensive research base supporting the QM rubric lends credibility to the instrument. But what do students value in their courses and how do student perceptions of quality

align with those supported by the research? As Ralston-Berg (2014) argued, students are the consumers of courses, and they may have a differing perspective on what constitutes a quality-oriented course.

Many research studies have explored students' perceptions of quality in online courses (e.g., Chitkushev, Vodenska, & Zlateva, 2014; Paechter & Maier, 2010; Robins, Simunich, & Kelly, 2013; Young & Norgard, 2006). Other research projects examine students' perceptions of the QM criteria specifically (e.g., Lyengar, 2006; Mott, 2006; Bowen & Bartoletti, 2009, all as cited in Shattuck, 2012). These studies report that students perceived the elements contained in the QM rubric to be important, but the studies have had a limited scope and the findings have not been widely disseminated.

Ralston-Berg (2014) conducted the most extensive investigation of online students' perceptions of the importance of the QM criteria. Her report summarized the results of a survey of 3,160 students enrolled in 31 institutions spanning 22 states. She found that students valued each of the statements associated with a QM criterion, and the value ratings of many statements were similar to the weights assigned by QM. She also found that some statements weighted by QM as "3" (essential) were rated more than one point lower by students. Similarly, she found that some statements weighted by QM as "1" (important) were rated more than one point higher by students.

This study went beyond the comparisons reported by Ralston-Berg (2014). It examined students' perceptions of the QM statements for courses in general (not just online courses). It also aimed to determine whether the differences between students' perceptions of what is valued in a course and QM's ratings for what is considered a quality-oriented course are practically significant. Understanding these differences has the potential to help institutions of higher learning with the development and promotion of quality course offerings.

## Methods

### Research Questions

Using the QM criteria as a framework for examining perceptions of quality in college-level courses, this research study addressed two primary research questions.

- Question 1: What do students value in a college-level course?
- Question 2: How do students' ratings of standards and criteria compare with those of course designers and developers of quality criteria?

### Participants

One hundred eighty-three students attending a regional campus of a Midwestern public university participated in the study.

Seventy-five percent of the respondents were female and attending the university full time (67%). They represented a wide range of ages (as shown in Table 1), which is consistent with the diverse student body.

**Table 1: Age of Respondents**

Age Range	Number of Respondents	Percentage of Respondents
18-23	55	30.2%
24-29	31	17.0%
30-39	37	20.3%
40-49	27	14.8%
50-59	25	13.7%
60 or older	2	1.1%

### Survey Instrument

The survey contained 68 student-centered statements based on the QM criteria. These statements reflect those used by Ralston-Berg (2014) but were modified to reflect all courses (not just online courses). For each statement, students indicated the importance of each feature to the success of a course (4-point scale: 3 = essential, 2 = very important, 1 = important, 0 = not at all important). The questionnaire also contained items on course satisfaction and effectiveness, perceptions of online education, and demographics.

### Procedure

The questionnaire was administered electronically to all students attending the university. Participation was solicited through multiple communication channels including announcements in the university's course management system and messages sent to an "All Students" email distribution list.

### Results

Participants valued each QM criterion for all courses, with all statements receiving a value rating of greater than 1 (with 1 indicating an "important" rating). Participants made meaningful discriminations between the QM criteria with mean value ratings ranging from 1.23 to 2.61 on a 4-point scale (3 = essential, 2 = very important, 1 = important, 0 = not at all important). Table 2 (end of article) summarizes the participants' mean rating for each QM statement, shown in descending order of importance.

To better understand how students' perceptions of what is valued in a course compare with QMs' weights for statements

describing online courses, one-sample t-tests were computed for the mean participant rating score and the QM weight for each statement. The effect size was also calculated using Cohen's *d* to identify practically significant findings. The results of the t-tests and effect sizes are reported in Tables 3 through 5.

Table 3 (end of article) shows that all statements weighted as "essential = 3" by QM were valued significantly less by respondents. To identify those items with the biggest discrepancy in value ratings between participants and QM, effect sizes were examined. Effect sizes greater than 0.8 are considered large, with increasing *d*-values signifying a greater effect.

Although all respondents' ratings in Table 3 were significantly less than the QM value, there were three items with an effect size less than 0.8, indicating a smaller mean difference and lower practical significance. Students greatly value clear instructions for getting started in a course, a clearly stated grading policy, and a clear explanation of how work will be evaluated.

Two items weighted as essential by QM were rated more than one point lower in importance by participants. Respondents, as compared to the designers of the QM instrument, place significantly less weight on the importance of learning activities that require interaction with the instructor or other students.

Table 4 (end of article) shows that one item weighted as "very important = 2" by QM was valued significantly less by respondents, and several items were valued significantly more by respondents. It is important to note that no items weighted as "very important = 2" by QM had an effect size which indicated a meaningful, practical difference between the QM ranking and participants' value rating. The mean difference between the QM weight and participants' ratings for all items was less than 0.4.

Table 5 (end of article) shows that all statements weighted as "important = 1" by QM were valued significantly more by respondents, most of them at a practically significant level. Two statements did not have a practically significant effect (*d*-value >0.8). For these two statements, respondents, as compared to the designers of the QM instrument, gave less weight to the importance of introducing oneself to the class and having netiquette guidelines clearly stated.

There were several statements in this group for which respondents' ratings were more than one point higher (on the four-point scale) than the QM weight. Respondents felt it was very important that the course take full advantage of available tools and media, that instructions explain how to access resources, and that course components are easily downloadable for offline use. Respondents also felt strongly that the minimum preparation and prerequisite knowledge be clearly stated. Screen readability and proper citation for all course materials and resources were also more highly valued by respondents than by QM.

## Discussion

Although the QM framework focuses on online courses, this study provided initial support for use of the tool more broadly. When the importance ratings for each QM-based survey item in the current study were compared with the overall importance ratings reported by Ralston-Berg (2014), there were clear similarities. Specifically, students appear to value the QM criteria regardless of the course format.

In both the current and Ralston-Berg (2014) studies, the following statement was rated by students as most important: "Clear instructions tell me how to get started and how to find various course components." Regardless of the course format, students feel it is crucial that they get off to a good start and be able to easily locate course materials.

Several items related to assessment were also in the top eight in both studies. Those statements included:

- The grading policy is stated clearly.
- Criteria for how my work and participation will be evaluated are descriptive and specific.
- Assessments are appropriately timed within the length of the course, varied, and appropriate to the content being assessed.
- Assessments measure the stated learning objectives and are consistent with course activities and resources.

Students felt it was critical that assessments were appropriate and relevant and that there were well-defined statements about how their work would be assessed. This is consistent with the value QM places on these statements, as each is weighted 3 (essential), with the exception of the statement related to the timing of assessments (which is weighted 2 = very important). This finding is a good reminder to faculty about the importance of developing clear and appropriate guidelines that show how students will be assessed.

Concerning what students value least, there were similarities in the ratings between the current and the Ralston-Berg (2014) study. In both, the statement that received the lowest value rating is "I am asked to introduce myself to the class." It is interesting that students place little value on getting to know others in their class, regardless of the course format. It is important to note that QM also weights this item low (1 = important) and does not view student introductions as essential to success in a course. In fact, the rating for this item given by students in the current study is significantly higher than QM's weight, although the difference is not practically significant.

Consistent with students' lack of value on self-introductions, two other statements related to learning activities encouraging interaction with peers and the instructor appeared in the bottom

10 in both the current and Ralston-Berg's (2014) study. This suggests that students do not value collaboration and do not view it as a means to learning. QM weights these items as essential (3), which makes the difference both statistically and practically significant. The research on which QM's criteria are based clearly emphasizes the importance of interaction in online classes and additional research echoes its importance for non-online courses (e.g., Kirschner, Paas, & Kirschner, 2009). However, these findings are evidence that students do not value and may resist interaction in courses.

Knowing that students are resistant to interaction has important implications for course design and facilitation. Faculty need to be encouraged to include interaction in all course formats as appropriate interaction with others in a variety of settings is critical for success in the 21<sup>st</sup> century (e.g., Larson & Miller, 2011; Partnership for 21<sup>st</sup> Century Skills, 2009). A possible reason for students' resistance to interaction and collaboration may be that they have had deficient experiences in previous courses. Faculty must ensure that the interaction required in courses is relevant, appropriate, and well-structured. Providing faculty development opportunities focused on designing and facilitating high-quality group interactions is one way institutions can perhaps begin to change students' perceptions related to interaction in their courses.

Another way for faculty to ensure the high quality of their courses from the student perspective is to be careful and deliberate in their use of tools, media, resources, and course components. While criteria related to these elements are rated as important in the QM framework, students valued them significantly more. Specifically, students felt it was important for courses to make good use of the available tools and media to benefit learning. Course management systems offer a variety of instructional, assessment, collaborative, and media-based tools that have the potential to support and enhance student learning. Students want to engage in learning environments that utilize these tools and provide clear directions for accessing and using them.

## Conclusions

This study extended the work of Ralston-Berg (2014), and suggested that quality as defined by QM is applicable beyond online courses. One area of particular interest is in relation to interaction and collaboration in courses. Research confirms the value of these elements in courses, but students do not appreciate their value for learning. It is important that faculty include collaborative activities in their courses and design such activities to ensure student success. When faculty are trained and quality elements (as defined by QM standards) are built into the design of a course, students derive a high-quality experience that may result in increased satisfaction, learning, and retention.

Regardless of the course format, faculty and course developers should pay special attention to the following QM criteria to develop an effective course from a student's perspective:

- Provide clear instructions for how to get started in a course and a clear explanation of how to navigate course materials and resources.
- Clearly explain how students' work will be assessed and how grades will be calculated.
- Include relevant and timely assessments that are clearly connected to course objectives.
- Ensure that necessary materials/resources are easily available and clear directions tell students how to access them.
- Include meaningful opportunities for peer interaction, being sure to clearly communicate the relevance and value of such activities. Avoid requiring peer interaction when it is not central to the learning objectives.

## Limitations and Future Research

The nature of this survey-based study introduced potential limitations. A survey was deemed to be the most appropriate way to collect data from students efficiently. However, relying on a single data-collection source created the potential for mono-method bias. Similarly, the nature of a survey is that it relies on self-report data, which can produce a social-desirability bias. Given that it was unlikely participants knew the research questions and there were not clear socially desirable responses, the potential for this effect to impact the findings was minimal. Future research should seek to further explore and substantiate these findings with rich, qualitative data, perhaps in the form of interviews or focus groups with students.

Additionally, future research should seek to obtain a larger sample size to allow for more stratification of the sample to better understand the factors impacting students' ratings of the QM statements. Specifically, it would be of interest to determine if factors such as gender, age, previous online course experience, or the academic achievement of students impact students' perceptions of quality in their courses.

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**Table 2: QM Statements in Order of Descending Mean Importance as Rated by Participants**

QM #	QM-Based Questionnaire Statement	QM rating	Mean	SD
1.1	Clear instructions tell me how to get started and how to find various course components.	3	2.61	0.70
3.2	The grading policy is stated clearly.	3	2.50	0.70
3.3	Criteria for how my work and participation will be evaluated are descriptive and specific.	3	2.43	0.77
3.4	Assessments are appropriately timed within the length of the course, varied, and appropriate to the content being assessed.	2	2.38	0.77
2.5	The learning objectives are appropriate for the level of the course.	2	2.38	0.80
5.3	Clear standards are set for instructor availability (office hours, etc.).	2	2.37	0.79
6.4	Technologies required are readily available.	2	2.34	0.87
3.1	Assessments measure the stated learning objectives and are consistent with course activities and resources.	3	2.32	0.79
6.6	Instructions on how to access resources online are sufficient and easy to understand.	1	2.31	0.84
4.1	Instructional materials contribute to the achievement of the course and module/unit learning objectives.	3	2.27	0.84
5.1	The learning activities promote the achievement of the stated learning objectives.	3	2.27	0.85
2.4	Instructions on how to meet the learning objectives are adequate and stated clearly.	3	2.27	0.83
2.1	The course learning objectives describe outcomes that I am able to achieve.	3	2.26	0.81
4.2	The relationship between the instructional materials and the learning activities is clearly explained to me.	3	2.25	0.83
6.3	Navigation is logical, consistent, and efficient.	3	2.24	0.88
2.2	The module/unit learning objectives describe outcomes that I am able to achieve; consistent with course objectives.	3	2.22	0.84
5.3	Clear standard set for instructor response.	2	2.22	0.84
4.3	Instructional materials have sufficient breadth, depth, and currency for me to learn the subject.	2	2.19	0.90
5.4	Requirements for my interaction with the instructor, content, and other students are clearly explained.	2	2.19	0.89
5.2	Learning activities encourage me to interact with content in the course.	3	2.15	0.87
6.1	Tools and media used are appropriate for the content being delivered.	3	2.12	0.91
8.4	Course ensures screen readability.	1	2.12	0.97
1.6	Minimum preparation or prerequisite knowledge I need to succeed in the course is clearly stated.	1	2.10	0.92
2.3	All learning objectives are clearly stated and written from my perspective.	3	2.09	0.88
6.2	Tools and media support engagement and guide student to become an active learner.	3	2.08	0.92
8.1	Course is accessible to people with disabilities.	3	2.08	1.00
6.5	The course components are web-based or easily downloaded for use offline.	1	2.07	1.03
1.2	A statement introduces me to the purpose of the course and its components.	3	2.05	0.87

**Table 2: QM Statements in Order of Descending Mean Importance as Rated by Participants (Continued)**

6.7	The course design takes full advantage of available tools and media.	1	2.05	0.91
4.4	All resources and materials used in the course are appropriately cited.	1	2.04	1.00
6.1	Tools and media used support the achievement of learning objectives.	3	2.03	0.94
3.5	“Self-check” assignments are provided, and I am provided with timely feedback.	2	1.98	1.04
1.7	Minimum technical skills expected of me are clearly stated.	1	1.96	0.96
5.2	Learning activities encourage me to interact with my instructor.	3	1.94	0.93
1.3	The instructor introduces her- or himself.	1	1.93	0.95
8.3	Course includes web links that are self-describing and meaningful.	2	1.89	1.07
7.2	Course includes or links to a clear explanation of how the institution’s academic support system can assist me in effectively using the resources provided.	2	1.89	0.96
7.1	Course includes or links to a clear description of the technical support offered.	2	1.89	0.91
7.3	Course includes or links to a clear explanation of how the institution’s student support services can help me reach my educational goals.	1	1.84	0.93
7.4	Course includes or links to tutorials and resources that answer basic questions related to research, writing, technology, etc.	1	1.81	0.92
5.2	Learning activities encourage me to interact with other students.	3	1.69	1.00
1.3	Etiquette (or “netiquette”) guidelines for how to behave online are clearly stated.	1	1.63	1.05
1.5	I am asked to introduce myself to the class.	1	1.23	1.05

**Table 3: Comparison of Participant Values to QM Values for Items Ranked “3 = Essential” by QM**  
 \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ,  $^{\$}d > 0.8$ ,  $^{SS}d > 1.0$

QM #	QM Statement	N	Mean	SD	t	p	Mean Diff.	d
1.1	Clear instructions tell me how to get started and how to find various course components.	178	2.61	0.70	-7.41	0.000**	-0.39	0.56
3.2	The grading policy is stated clearly.	169	2.50	0.70	-9.35	0.000**	-0.50	0.72
3.3	Criteria for how my work and participation will be evaluated are descriptive and specific.	166	2.43	0.77	-9.53	0.000**	-0.57	0.74
3.1	Assessments measure the stated learning objectives and are consistent with course activities and resources.	167	2.32	0.79	-11.02	0.000**	-0.68	0.85 <sup>\$</sup>
5.1	The learning activities promote the achievement of the stated learning objectives.	173	2.27	0.85	-11.38	0.000**	-0.73	0.87 <sup>\$</sup>
2.4	Instructions on how to meet the learning objectives are adequate and stated clearly.	170	2.27	0.83	-11.50	0.000**	-0.73	0.88 <sup>\$</sup>
4.1	Instructional materials contribute to the achievement of the course and module/unit learning objectives.	166	2.27	0.84	-11.28	0.000**	-0.73	0.88 <sup>\$</sup>
2.1	The course learning objectives describe outcomes that I am able to achieve.	171	2.26	0.81	-11.92	0.000**	-0.74	0.91 <sup>\$</sup>
4.2	The relationship between the instructional materials and the learning activities is clearly explained to me.	166	2.25	0.83	-11.63	0.000**	-0.75	0.90 <sup>\$</sup>
6.3	Navigation is logical, consistent, and efficient.	163	2.24	0.88	-11.03	0.000**	-0.76	0.86 <sup>\$</sup>
2.2	The module/unit learning objectives describe outcomes that I am able to achieve; consistent with course objectives.	171	2.22	0.84	-12.15	0.000**	-0.78	0.93 <sup>\$</sup>
5.2	Learning activities encourage me to interact with content in the course.	165	2.15	0.87	-12.60	0.000**	-0.85	0.98 <sup>\$</sup>
6.1	Tools and media used are appropriate for the content being delivered.	165	2.12	0.91	-12.54	0.000**	-0.88	0.98 <sup>\$</sup>
2.3	All learning objectives are clearly stated and written from my perspective.	167	2.09	0.88	-13.31	0.000**	-0.91	1.03 <sup>SS</sup>
6.2	Tools and media support engagement and guide student to become an active learner.	163	2.08	0.92	-12.73	0.000**	-0.92	1.00 <sup>SS</sup>
8.1	Course is accessible to people with disabilities.	162	2.08	1.00	-11.67	0.000**	-0.92	0.92 <sup>\$</sup>
1.2	A statement introduces me to the purpose of the course and its components.	177	2.05	0.87	-14.58	0.000**	-0.95	1.10 <sup>SS</sup>
6.1	Tools and media used support the achievement of learning objectives.	166	2.03	0.94	-13.34	0.000**	-0.97	1.04 <sup>SS</sup>
5.2	Learning activities encourage me to interact with my instructor.	174	1.94	0.93	-15.15	0.000**	-1.06	1.15 <sup>SS</sup>
5.2	Learning activities encourage me to interact with other students.	171	1.69	1.00	-17.20	0.000**	-1.31	1.32 <sup>SS</sup>

**Table 4: Comparison of Participant Values to QM Items Weighted as “2 = Very Important” by QM**  
 \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ , <sup>§</sup> $d > 0.8$ , <sup>§§</sup> $d > 1.0$

QM #	QM Statement	N	Mean	SD	<i>t</i>	<i>p</i>	Mean Diff.	<i>d</i>
8.2	Course includes equivalent alternatives to audio and visual content.	159	1.71	1.09	-3.34	0.001**	-0.29	0.26
7.1	Course includes or links to a clear description of the technical support offered.	166	1.89	0.91	-1.53	0.129	-0.11	0.12
7.2	Course includes or links to a clear explanation of how the institution’s academic support system can assist me in effectively using the resources provided.	165	1.89	0.96	-1.47	0.145	-0.11	0.11
8.3	Course includes web links that are self-describing and meaningful.	163	1.89	1.07	-1.32	0.188	-0.11	0.10
3.5	“Self-check” assignments are provided, and I am provided with timely feedback.	165	1.98	1.04	-0.30	0.764	-0.02	0.02
4.3	Instructional materials have sufficient breadth, depth, and currency for me to learn the subject.	166	2.19	0.90	2.68	0.008**	0.19	0.21
5.4	Requirements for my interaction with the instructor, content, and other students are clearly explained.	173	2.19	0.89	2.81	0.005**	0.19	0.21
5.3	Clear standard set for instructor response.	172	2.22	0.84	3.46	0.001**	0.22	0.26
6.4	Technologies required are readily available.	164	2.34	0.87	4.91	0.000***	0.34	0.38
5.3	Clear standards are set for instructor availability (office hours, etc.).	172	2.37	0.79	6.19	0.000***	0.37	0.47
2.5	The learning objectives are appropriate for the level of the course.	171	2.38	0.80	6.23	0.000***	0.38	0.48
3.4	Assessments are appropriately timed within the length of the course, varied, and appropriate to the content being assessed.	167	2.38	0.77	6.37	0.000***	0.38	0.49

**Table 5: Comparison of Participant Values to QM Items Weighted as “1 = Important” by QM**  
 \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ,  $^{\$}d > 0.8$ ,  $^{\$\$}d > 1.0$

QM #	QM Statement	N	Mean	SD	<i>t</i>	<i>p</i>	Mean Diff.	<i>d</i>
1.5	I am asked to introduce myself to the class.	173	1.23	1.05	2.89	0.004**	0.23	0.22
1.3	Etiquette (or “netiquette”) guidelines for how to behave online are clearly stated.	177	1.63	1.05	7.92	0.000***	0.63	0.60
7.4	Course includes or links to tutorials and resources that answer basic questions related to research, writing, technology, etc.	165	1.81	0.92	11.30	0.000***	0.81	0.88 <sup>\$</sup>
7.3	Course includes or links to a clear explanation of how the institution’s student support services can help me reach my educational goals.	165	1.84	0.93	11.52	0.000***	0.84	0.90 <sup>\$</sup>
1.4	The instructor introduces her- or himself.	177	1.93	0.95	13.04	0.000***	0.93	0.98 <sup>\$</sup>
1.7	Minimum technical skills expected of me are clearly stated.	178	1.96	0.96	13.33	0.000***	0.96	1.00 <sup>\$\$</sup>
4.4	All resources and materials used in the course are appropriately cited.	166	2.04	1.00	13.44	0.000***	1.04	1.04 <sup>\$\$</sup>
6.7	The course design takes full advantage of available tools and media.	164	2.05	0.91	14.72	0.000***	1.05	1.15 <sup>\$\$</sup>
6.5	The course components are web-based or easily downloaded for use offline.	164	2.07	1.03	13.29	0.000***	1.07	1.04 <sup>\$\$</sup>
1.6	Minimum preparation or prerequisite knowledge I need to succeed in the course is clearly stated.	176	2.10	0.92	15.85	0.000***	1.10	1.20 <sup>\$\$</sup>
8.4	Course ensures screen readability.	163	2.12	0.97	14.68	0.000***	1.12	1.15 <sup>\$\$</sup>
6.6	Instructions on how to access resources online are sufficient and easy to understand.	166	2.31	0.84	20.03	0.000***	1.31	1.55 <sup>\$\$</sup>