

**Research Inputs and Outputs of Quality Matters:  
Update to 2012 and 2014 versions of  
*What We're Learning from QM-Focused Research***

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## Abstract

Research continues to be an input and an output of Quality Matters (QM). This paper summarizes the QM-focused research outputs from the first decade of QM. It is an update and extension to the 2012 and 2014 *What We're Learning from QM-Focused Research* paper and presentation. A number of themes have emerged from QM-focused research, including instructor and learner perceptions of quality and satisfaction, the learner voice to validate the importance of the standards, learners' motivation to persist and complete a course, interaction of course design and teaching facilitation, the challenges of and strategies for measuring learning, and the relationship between the Community of Inquiry (CoI) and QM. Themes emerging under professional enhancement outcomes include the impact of participation in formal QM Reviews, professional development, and the impact of informal use of QM Standards and processes. Other themes that have emerged from QM-focused research include organizational impact, the continuing validation of QM tools and processes, and the alignment of QM Standards to other recognized standards of quality in online education. Discussion and recommendations for deepening the scholarly and practical approach to QM-focused research are provided.

Quality Matters (QM) was established under a 2003-2006 grant from the Department of Education's Fund for the Improvement of Post-Secondary Education (FIPSE). The grant's charge was to develop a replicable and scalable process to assure quality in online course design. A review of the scholarly literature was a key component in establishing the initial 2005 QM Rubric<sup>TM</sup>. Even within the FIPSE grant period, research was encouraged and supported with small grants to provide baseline feedback on the effectiveness of QM Standards in improving course design. Research has been both an input and an output of Quality Matters (QM) since its 2003 inception, and it continues to be one. Ongoing independent educational research has always informed the development of the QM Standards. The action studies that have been conducted also provide actionable steps for reflective instructors and programs to improve their online learning courses.

This paper is an update to the 2012 paper<sup>1</sup> and 2014<sup>2</sup> presentation, *What We're Learning from QM-Focused Research*. The research that was the basis for the *What We're Learning* paper and presentation can best be understood as developing in three continuing and overlapping emphases:

1. Scholarly research used as an input to the establishment of the QM Standards of quality online course design, initiated in 2003, resulted in the output of the QM Rubric.
2. Small research grants focusing on identifying and measuring impacts of QM adoption as an input, initiated in 2005, resulted in the output of baseline research on QM's impact.

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<sup>1</sup><http://tinyurl.com/oalcwvj>

<sup>2</sup> <https://www.qualitymatters.org/whaht-were-learning-focused-research>

3. Multi-institutional studies of QM's impact as an input across the broad QM community, the first of which focused on the learner voice, initiated in 2015, resulted in the output of extending the baseline research on QM's impact.

Themes and an overview of the findings from the research are presented in this paper. Themes include (1) learning outputs, (2) professional enhancement outputs, (3) organizational impact, and (4) the validation of QM tools and processes. A discussion of the findings is followed by recommendations for future research.

### **Learning Outputs**

Themes emerging under learning outputs include learner and instructor perceptions of quality and satisfaction, the learner voice, learners' motivation to persist and complete a course, the interaction of course design and teaching facilitation, the challenges of and strategies for measuring learning, and the relationship between the Community of Inquiry (CoI) and QM.

### **Learners' Perceptions of Quality and Satisfaction**

Surveying learners about their perceptions of quality and satisfaction with online distance education courses has a broad and deep history and is tied to motivation and learning (Davies, Howell, & Petrie, 2010; Sener & Humbert, 2011; Palmer & Holt, 2009). Some of the earliest QM-focused studies followed that approach. Those studies have provided important baseline data and, at the same time, exposed the methodological challenges of isolating the impact of the QM Rubric and Peer Review processes when measuring learning. Recent QM-focused studies have gone further, with deeper analyses, expanded correlations, and the measurement of the many dimensions influencing quality assurance in online learning.

As early as 2005, evidence of increased learner satisfaction after implementing course design improvements recommended by QM Peer Reviewers (PR) was measured by an end-of-course evaluation (Finley). After the design improvements, learners were less confused about how to navigate the course and locate course requirements and expressed less concern about what they needed to succeed in the course. In addition, learners asked fewer procedural questions. On a larger scale, Aman (2009) collected survey data in 2006 and 2007 on learner satisfaction from 554 learners in discipline-matched online courses at nine institutions. This study found a significant positive relationship was found between learner satisfaction and QM peer-reviewed courses.

Other studies have explored the impact of QM on learners' and instructors' levels of satisfaction with their online courses. A 2010 QM-funded study done at Park University (Knowles & Kalata, 2010) provided important information about the challenges of effectively gathering and accurately analyzing learner satisfaction data. The Knowles and Kalata study surveyed learners' perceptions as to whether QM Standards were met in two online courses. The vast majority of learners in those courses answered "yes" to all questions on the survey indicating they thought that all QM quality course design features were met in both courses. As part of the study, two QM-certified Peer Reviewers (PRs) informally reviewed the courses and completed the same survey that was given to the learners. From their perspective, neither course met QM Standards. The researchers commented on the surprising difference between learners' and QM PRs' assessments of the courses and suggested that the discrepancy might be due to the different expectations learners and experienced QM PRs have. Other possible explanations were offered: (1) that learners did not take time to completely read the questions and just checked "yes" to complete the survey, or that (2) perhaps, during the delivery of the two courses, the

instructors contributed clarifying statements and directions to the learners that were required because of some weak areas in the course design. Unfortunately, the study was a one-time event with no follow-up or further analysis.

A team of researchers at the University of Toledo (You, Hochber, Ballard, Ziao, & Walters, 2014), however, was intrigued with the discrepancy reported by Knowles and Kalata between learners' and experienced QM reviewers' assessment against QM Standards of the same courses. The team used Rasch analysis to validate the measurement instrument and a nonparametric Mann-Whitney U test was used to evaluate the difference between the learners' and QM certified reviewers' perspectives. The study's aim was to explain the gap between the two perspectives. Learners in three courses (n=73) were surveyed to determine if the QM Standards were met. The same courses were then reviewed by three QM certified Peer Reviewers. Statistical analysis indicated that both learners and peer reviewers "share the same point of view in regard to evidencing the Standards" (p. 35). However, their assessment differed significantly regarding a few of the QM deemed essential Standards (2.1; 2.2; 2.4; 3.2)<sup>3</sup>. The researchers suggested PRs might seek solid evidence of measurability, while learners looked for clearly articulated objectives. Additionally, QM PRs are trained to assess Standards using an 85% benchmark, while learners likely make decisions on the presence of design features simply by their being visible. The researchers also suggested that, during the delivery of the course, the instructors might have clarified any confusing design issues with learners.

Another QM-funded study done at the University of the Rockies found that learners, as well as faculty, did not perceive a change in course quality after their courses formally met QM

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<sup>3</sup> Standard 2.1: The course learning objectives describe outcomes that are measurable. (3 points); Standard 2.2: The module/unit learning objectives describe outcomes that are measurable and consistent with the course-level objectives. (3 points); Standard 2.4: Instructions to students on how to meet the learning objectives are adequate and stated clearly. (3 points); Standard 3.2: The course grading policy is stated clearly. (3 points)

Standards. In analyzing the results, Parscal, Frey, and Lucas (2011) recognized that one of the unintended consequences (Ruhe & Zumbo, 2009) of the study was the discovery of the positive impact of the institution's embedding QM Standards into the course development process. Since the courses had been developed following QM guidelines and informally reviewed and revised prior to official course offering, they met Standards during the formal QM review with little, if any modification and would have been perceptively the same to learners as they were prior to the formal QM Reviews. The importance of identifying and documenting the "before QM" assessment of a course was recognized for future studies that hoped to provide evidence of the impact of a formal QM assessment.

Dabney (2012) grounded her study, *Using Learners' Input to Reassess Online Course Quality*, in the theory of connectivism. She clustered Standards 1 (course overview and introduction), 4 (resources and materials), 5 (learner engagement), 6 (course technology), and 7 (learner support) to measure learners' assessment of quality of the course resources and materials in a course that had been designed based on the QM Standards. Survey data from six semesters indicated very positive correlations. Of interest is her associating connectivism principles with the five clustered QM Standards (p. 70).

Recently Myers (2015) investigated ease-of-use (usability, as defined by five specific QM Standards<sup>4</sup> and by meeting the System Usability Scale/SUS<sup>5</sup>) impact on learners' satisfaction with an online course. In this lab-based study, two versions of the same course were presented to randomly assigned student volunteers. Both versions included the same content

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<sup>4</sup> Myers identified the following QM Standards from the Fifth Edition, 2014 of the QM Rubric to be the usability Standards for her study: 1.1: Instructions make clear how to get started and where to find various course components. (3 points); 1.2: Learners are introduced to the purpose and structure of the course. (3 points); 1.8: The self-introduction of the instructor is appropriate and available online. (1 point); 3.2: The course grading policy is stated clearly. (3 points); and 8.1: Course navigation facilitates ease of use. (3 points)

<sup>5</sup> System Usability Scale (SUS) <http://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html>

and course elements but differed in the design placement and graphic enhancements: One course simulation was designed and assessed to meet QM Standards on usability and the SUS Standards, while the other course simulation was designed and assessed not to meet QM Standards on usability and the SUS Standards. When the construct of usability was isolated, learner satisfaction was greater at a statistically significant level in the course version designed to meet the identified QM Standard on usability. Learners also expressed motivation to take the course that met SUS usability standards.

Hintz (2014) also explored learners' satisfaction in courses designed using the QM Standards. She found learners were satisfied with the six courses regardless of their reported previous online experience, their self-identified locus of control, or their perceptions of presence. She discovered that learners "want and need technology that is useful and easy to use" (p. 144). To what point a course designed to meet QM Standards might mitigate the experiences and attributes that learners bring into a course is a question taken up by Geiger (2013, 2014) and colleagues. (See the section on Interaction of Course Design and Teaching Facilitation.)

### **The Learner's Voice**

Taking the learner's perspective is a guiding, core QM principle. Gathering and analyzing the learner voice is of key importance to the continuous validation and improvement of QM Standards and processes. Two early QM-funded exploratory studies focused on gathering the learner voice. Iyengar (2006) surveyed learners in four blended courses about online course design items found in the 2005 QM Rubric. She discovered that learners, even in blended courses, valued design elements identified in the Rubric. In a similar vein, Mott (2006) related missing design features, as reported by learners in an online course, to the QM Standards. The



learner voice was also sought in a small 2010 QM-funded study with Dallas TeleCollege (Bowen & Bartoletti, 2009). Learner input was gathered on course design issues relating to learner accessibility (QM Standard 8). Even learners who did not identify themselves as requiring specialized adaptive services noted the importance of a course being designed to meet the needs of all learners, including those who might need assistive technologies.

Another study by Ralston-Berg (2010, 2014), began gathering the learner voice in 2007 by surveying online learners' views on the importance of the QM Standards for satisfying and effective online learning. Throughout the next five years, 3,160 learners from 31 institutions in 22 states were surveyed about their perceptions of course design features that indicate quality (Ralston-Berg, 2014). The results, ranked by importance to learners, revealed that learners' responses correlated with Standards of quality identified in the QM Rubric.<sup>6</sup>

Hizon, Buckenmeyer, and Barczyk (2015) were motivated by Ralston-Berg's focus on documenting the learner voice and wondered if/how it might differ in other learning formats. One hundred eighty three learners taking online, as well as face-to-face courses, were surveyed in order to obtain their perceptions of the quality of the course design. Learners in both face-to-face and online courses perceived quality course design in the same way. As in the Ralston-Berg study, learners in this study ranked highest the necessity of clear instructions on how to get started in a course and where to find various course components as the most important course design features. They also ranked design features that forced them to interact with other learners. Hixon, Buckenmeyer, and Barczyk summarized the findings by stating that, whether

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<sup>6</sup> The QM Learner Bill of Rights (<http://www.youtube.com/watch?v=2mDbSvqBvR8>) is an outcome of the Ralston-Berg emphasis on gathering learner voices of quality in online learning.

online or face-to-face, “Faculty must ensure that the interaction required in courses is relevant, appropriate, and well-structured” (p. 30). This is the overall theme of QM Standard 5.

In other explorations of QM impact across learning formats, Knapp and Paull (2013) measured the impact on learner engagement of QM Standards in a redesigned blended sociology course. The study sample included students in three face-to-face sections, two online sections, and two blended sections of the course and had an overall response rate of 62 percent. Using the Community College Survey of Learner Engagement (CCSSE) learner effort benchmark, Knapp and Paull found that learners scored the blended learning course (designed to meet QM Standards) markedly lower in needed effort than the same course offered in online and face-to-face formats. The researchers suggested further investigation to determine why the blended course was perceived as needing less effort than online or face-to-face offerings of the same course. In exploring outcomes of integrating QM into hybrid (blended) course design Young (2014) used the Perceived Knowledge and Learners’ Study Process Questionnaire with 321 learners in the hybrid/blended format and 186 learners in the face-to-face format of the same course. Those learners in the hybrid/blended format designed to meet QM Standards indicated they were more motivated, had more positive attitudes, and reported they were gaining knowledge to a greater extent than learners in the face-to-face course.

Another study explored the learner voice through creatively isolating the impact of one dimension of online course design when Simunich, Robins, and Kelly (2015) used eye-tracking and think-alouds to correlate findability, an aspect of usability, with learners’ perceptions of course quality. The researchers queried how the findability of five specific features of a course related to learner participants’ reported self-efficacy and to their willingness to take the course being previewed. In a lab environment, volunteer learners were randomly assigned to view

either a course that had been designed specifically to meet QM Standard 6.3 (2011-2013 edition of the Rubric) associated with usability<sup>7</sup> or another version of the course that had been designed specifically not to meet the Standard. The outcome was that the course designed specifically not to meet the QM usability Standards produced a negative, linear relationship between the course experience and motivation to take the online course. A positive relationship was found with the course designed to meet the Standard. The researchers defined a basic relationship between courses that met usability Standards and learners' sense of self-efficacy in the course. In another study using simulated courses to isolate ease-of-use in an online course design, Myers (2015) found statistically significant levels of learners' motivation to continue in or enroll in a course that met QM usability Standards and the System Usability Scale (SUS) rather than the course that knowingly did not meet QM or SUS usability Standards.

As of the summer of 2015, QM is organizing two multiple institutions studies<sup>8</sup> to expand efforts in gathering the learner voice. One study will emphasize real-time, electronically gathered learner feedback using [DropThought](#) on course features, such as assignments and activities. Those feedback data will be semantically analyzed in alignment with the Quality Matters Standards. The study has been piloted with 15 sections of the online Applying the QM Rubric (APPQMR) course (the foundational QM Professional Development course). A total of 2,230 feedback items are currently being analyzed. The study will begin gathering and analyzing anonymous learner data from interested QM-subscribing higher education institutions over the 2016 academic year. The other study is an attempt to gather evidence via Ruffalo Noel Levitz's

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<sup>7</sup> The concept of Standard 6.3 in the 2011-2013 Rubric was rolled into Standard 8.1 in the current 2014 Rubric. That standard reads "Course navigation facilitates ease of use." The wording was changed to broaden the concept, although the expression, "logical, consistent, and efficient," appears in the first paragraph of the Standard 8.1 annotation.

<sup>8</sup> For more information on QM research projects on the student voice see <https://www.qualitymatters.org/20142015-research-agenda-student-impact>

Priorities Survey for Online Learners (PSOL) which has been aligned to QM Standards on online learners' priorities and satisfaction.

### **Motivation to Persist and Complete a Course**

Motivation to persist and complete a course is often associated in the literature with learner satisfaction. Even in the earliest days of QM's existence, many practitioners expressed a gut feeling that improved course design would improve course completion rates. Loser and Trabandt (2006) used a QM research grant to explore the impact of learning activities on online course completion. The authors hypothesized that by revising learning activities to be more engaging (one of the QM Rubric Standards) more learners would complete the course. They reported that there was no apparent difference in completion from a previous semester's completion rate; however, they noted positive comments about the revised activities from learners' end-of-semester evaluations.

Two later studies attempted to determine if there is a relationship between a course meeting QM Standards and learner completion of the course. While Aman (2009) found learners expressed their satisfaction with courses that met QM Standards (described above), he could find no statistically significant relationship with course completion. He pointed out that the literature supports the complexity of studying learner course retention, especially because of the myriad of influences and expectations that learners bring into a course.<sup>9</sup> The Aman study was also challenged by lack of access to learner records, requiring reliance on surveyed instructors to report course completion data. In an earlier, more focused study, Dietz-Uhler, Fisher, and Han (2007) noted that the challenge of studying learner retention in online education begins with the

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<sup>9</sup> A separately funded MarylandOnline project provides additional information on why 3,352 learners reported they withdrew from online courses. See Hilke, 2010.

lack of a common definition of retention. However, they found that course completion in two courses, a psychology and a statistics course, that met QM Standards of quality and were taught by the same instructors was consistently higher (95.5 and 95 percent) in an eleven- and a six-semester timeframe than the average course completion rate for online courses. The Dietz-Uhler et al. study provided early evidence of the methodological benefits of measuring impact over time and controlling for, at least correlating with, possible instructor impact.

In 2011, a QM research grant was provided to Cleveland State University to further explore the possible impact on student withdrawals in courses that met QM Standards. By categorizing improved course design as the institutional systems factor, the Rutland and Diomedea (2011) team hoped to determine if course withdrawals were reduced in courses that formally met QM Standards. Identified courses in the study were undergraduate and had been taught online at least two times by the same instructor. Instructors agreed to submit their courses for formal QM Peer Review. Immediately, upon meeting QM Standards, the courses were offered the following semester. Students who completed and those who did not complete the course were surveyed about their attitudes and experience in the course. Withdrawal rates were compared with other courses that had not been formally exposed to QM Standards (n=2,511 learners in “non-QM” courses, and n=409 in courses that met Standards). This one-semester study did not show statistical significance. No difference in terms of learners’ pre-course GPA was significant between the two groups; however, the researchers noted that, in the QM-recognized courses, students “on average received lower grades, which might indicate that the instructors held students to higher standards” (p. 7). Unlike the Dietz-Uhler, Fisher, and Han study, which described course completion rates in QM certified courses over a six- and 11-semester timeframe with the same instructors, the Cleveland State University team had hoped to

find immediate (next semester) improvement in course retention. The study revealed much to consider for future research attempts. Rutland and Diomedede (2011) posited

Although this study as completed in a short two-semester "turn-around" did not find statistically significant evidence either supporting or refuting QM's effect on withdrawal rates, there are ways to expand upon the research to tell a greater piece of the story of attrition.

One important factor in future research would be to control for the delivery variable-- meaning instructor level of interaction with learners. According to our survey, instructor presence seems to have a direct effect on learners' perceptions about their online learning experience. This likely impacts decisions that learners (even in QM-reviewed courses) are making when deciding to persist or withdraw from a course. Therefore, to further understand the effects of QM recognition on attrition, a more accurate control for variables is necessary. (p. 11)

### **Interaction of Course Design and Teaching Facilitation**

The Rutland and Diomedede study was not the only one to raise the question about the impact of teaching facilitation. You, Hochber, Ballard, Ziao, and Walters (2014) had noted possible instructor intervention in clarifying any problematic design issues during the actual delivery of the course. Hall (2010; see below in Community of Inquiry section) determined less time was required in clarifying problematic design issues once a course was modified to meet QM Standards. Geiger (2013) and Geiger, Morris, Shattuck, and Viterito (2014) suggested that learner success as measured by completion rates might have been positively impacted by engaging, experienced instructors for learners who score low on the SmarterMeasure™

readiness assessment. The researchers found that when course design (courses that had met QM Standards several semesters previously), the Learning Management System (LMS), and instructor experience and high-engagement skills were held constant, only typing/accuracy and reading rate/recall were positively correlated to course completion and grades. Final passing course grades for the 200 community college learners in three different courses (Fundamentals of Physics, Introduction to Sociology, and Applied Business Communication) were not statistically significantly related to life factors and motivational issues as identified in the SmarterMeasure™ readiness assessment. An extension of the study to explore possible instructor interventions that might have mitigated life issues that are often cited as confounding issues that likely impact learner success and persistence (Tinto, 2006-2006, 2005, 1993; Diaz & Cartnal, 2006) had to be abandoned because of changing roles of the researchers in the college.

Tying together instructor preparation to design and teach online courses that formally meet QM Standards, Harkness (2015, 2014a, 2014b) and colleagues (Harkness, Soodjinda, Hamilton, and Bolig, 2011) at the University of the District of Columbia (UDC) documented results of five years of the strategic introduction, infusion, and mapping of QM Professional Development courses along with a system in which courses were designed to meet QM Standards and were then formally certified as meeting them. Withdrawals from online courses dropped by 23.53 percent. (See the next section for this study's findings on impact on final course grades.)

## Measuring Learning<sup>10</sup>

Runyon (2006) led a QM-funded research project to determine the impact on grades for learning activities that were improved to meet QM Standards. Specifically, content modules in a community college computer science course were enhanced with more interactive activities. The study found that learners engaged more with the course content, and their grades improved as a result of the more interactive activities. While the focus was on improved course design, Runyon noted that the quality of teaching was as important as the improved quality of the design, thus, it was recognized early-on of the complications of intervening variables when measuring educational impact.

Also look at grades, Geiger and colleagues (2013, 2014), in their study mentioned above, found that learners who scored low on the SmarterMeasures<sup>TM</sup> readiness factors, including individual attributes (such as motivation), life factors, comprehension, and general knowledge were successful in earning a passing grade in courses that met QM Standards of design and were taught by experienced, engaging instructors. In this study, only low scores in reading rate/recall and typing speed/accuracy had a statistically significant correlation with earning failing course grades.

In recent years, results showing the impact of QM on learning outcomes are coming forward via educational analytics. In the previously mentioned study at UDC, learning outcomes were tracked from 2007 through 2012 and correlated with QM guided course design, with a course formally meeting QM Standards and with being mapped to instructor participation in QM Professional Development courses. Passing course grades of A-D increased 19.74 percent, and

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<sup>10</sup> Video from Educause <http://er.educause.edu/multimedia/2015/8/why-is-measuring-learning-so-difficult-y>, offers glimpses as to why measuring learning is so difficult in any learning format.



failing class grades of F decreased 66.66 percent; withdrawal rates decreased by 23.53 percent (Harkness, 2015, 2014a, 2014b; Harkness et al. 2011). At the University of the Rockies, 890 of the more than 2,000 learner assignments in online courses have been tracked as impacted by QM. Parscal (2014) reported, “Learners in QM certified courses score higher in content, research, and style than those in non-certified courses” (p. 8).

### **Community of Inquiry and QM**

Swan (2010, 2011), Bogle (2009, 2014), and colleagues at the University of Illinois - Springfield first noted the relationship between Quality Matters Standards and the Community of Inquiry (CoI) framework as they engaged in a 2009 QM-funded research grant. After offering a graduate-level education course redesigned to meet QM Standards, learner grades were statistically significantly higher on a major written assignment and in the final exam, as well as in overall course grades. The interaction of course design, teaching, and learning was noted by the researchers, who posited “Arguably, learner performance improved because the QM revision led instructors to focus on objectives and the mapping of objectives to outcomes, such focus translated into their activity in the course” (Swan, 2011, p. 7). The study was the earliest known scholarly exploration to establish a relationship between QM influenced course design improvements and measurement according to the Community of Inquiry. The researchers concluded

The linking of online course design and implementation to learning outcomes is long overdue in online education. This online study is not only a first step in that direction but it employs what are probably the two most commonly used theoretical frameworks in online education in the process. Findings suggest that both can be linked to improved

outcomes but unfortunately not to each other. However, they do suggest a trajectory-- QM review and revision of courses and incremental 'tweaking' of course implementation relative to deficiencies revealed by the CoI survey—for incremental improvement of online courses. (p. 11)

This group of researchers point to an orthogonal relationship between QM and CoI (QM measures course design features, CoI measures learners' perceptions of connections), which are therefore at right angles, statistically independent variables. They suggest using the QM Rubric as a guide to activities development for online and blended courses. By doing so, the course will be designed "with an eye toward the development of the CoI presences in course implementation provided the structure to insure that the high quality and inquiry focus of the original courses were preserved" (Bogles, Cook, Day, & Swan, 2009, p. 62). Specifically, they related QM Standards 1 (course overview), 2 (learner objectives), 3 (assessments) with designing for cognitive presence; Standards 2 (course objectives), 4 (learning activities), 6 (pedagogically appropriate technologies) with designing for teaching presence, and Standards 2 (learning objectives), 5 (learning engagement), and 7 (learner support) with designing for social presence.

Miner (2014) used the Community of Inquiry survey to measure satisfaction, and, although the response rate was low, she agreed with Bogle, Cook, Day, and Swan (2009) that QM emphasizes course structure quality, while the CoI framework emphasizes interactions within a course. It is therefore, "probably unrealistic to hypothesize the CoI framework would ever ascertain the true effect of Quality Matters improvements" (p. 105). She noted the infusion of QM within the institution might have been the reason she could find no significance in changed upper-level and graduate learner satisfaction, grades, or course retention from before to after formal QM certification in twelve courses (small sample size prevented statistical

correlations). There had been no documentation during the study of the extent of modifications to meet QM Standards; however, “only one did not meet requirements for QM certification on the first try” (pp. 90-91). Therefore, it is likely that at least eleven of the twelve courses were modified very little as result of the formal QM review. Hintz (2014) could not find a significant difference between learner satisfaction levels in courses designed to match QM Standards and CoI presences (as measured by three survey questions at the end of the course), although positive comments were provided during participant interviews. On the other hand, Myers (2015) in a lab-based study found that a course designed for strong CoI teaching presence also provided statistically significant differences in learners’ satisfaction from the course that made no design provisions for the instructor presence.

Another study related to CoI by Hall (2010), was a QM-funded research project that explored the relationship of QM and CoI by narrowly focusing on CoI dimensions of teaching presence that included (1) design/organization and (2) directed facilitation. She equated QM-influenced course design improvement to the design and organization dimension and instructor interaction during the course delivery with the directed facilitation dimension. She then coded all exchanges made on the discussion board of 14 sections (five pre-, nine post-QM reviews) and in instructor-learner email interactions of an undergraduate sociology course taught by the researcher. She discovered that the improved design and organization increased teaching presence by reducing course management tasks, thereby allowing higher quality directed facilitation by the instructor. The improved design also improved learners’ self-management of their course activities by reducing time and effort previously expressed as a concern. Reported findings included a positive effect on learners’ higher-order cognition via greater teaching

presence, resulting higher grades on discussion board activities, and a positive effect on learner satisfaction.

### **Summary of Learning Outputs**

Research focused on learning outputs has been explored in various implementations of QM tools and processes and is maturing from the rudimentary, yet important baseline, dimension of learner satisfaction. Gathering the learner voice on the validity of the QM Standards, first begun by Ralston-Berg, is the focus of the first multiple-institution QM research project. The challenges of isolating the impact of course design on learners' motivation to persist and complete an online course are being strategically teased out, especially when approached from a Community of Inquiry (CoI) framework and from an institution's quality assurance processes. Despite the research challenges, evidence of QM's positive impact on learning, as well as motivation and course completion have been documented.

### **Professional Enhancement Outputs**

Three avenues of professional enhancement are evident in the QM-focused research: (1) results of online faculty participation in formal QM course reviews; (2) results of the participation of online faculty, instructional designers, and others associated with course design processes in QM- or local delivery of QM-specific training; and (3) results of informal use of QM Standards of online faculty, instructional designers, and others and ad hoc course review processes to develop and review courses.

## **Participation in Formal QM Peer Reviews**

Data captured in the formal QM Peer Review exit survey focuses on consistent application of the QM process, as well as on the experience for the individual peer reviewer. Analysis of open-ended comments has provided anecdotal evidence on the impact of participation in a QM Peer Review (Sener, 2011). Several emerging themes have been identified: (1) Peer Reviewers learn about improving online learning through their collegial interaction with others on the team during the review process; (2) Review team chairs gain valuable leadership experience; (3) Peer Reviewers make changes in their own courses by idea shopping and by doing a parallel review on their own courses while participating in a formal review of a peer's course. Deeper, quantitative analysis of data captured by QM from more than 5,400 formal peer reviews conducted is planned for 2016.

## **Impact of QM Professional Development**

The second avenue of research evidence regarding professional enhancement attributes of QM actually evolved from the original purpose of QM training - that is to prepare and certify online instructors to participate in formal QM Peer Reviews. Reported acceptance and comments on the ease in applying the QM Peer Review process came almost immediately during the grant period from the field and was quickly followed by requests to expand the course design topics offered by QM's Professional Development Department. Thus, expanded professional development and enhancement have become a key component of QM's offerings. As of summer 2015, 45,300 faculty, teachers, and staff have participated in 30 different QM Professional Development workshops and courses.

A small study by Wright (2010) looked at the question: Can training on the QM framework positively increase faculty perceptions of their ability to design, develop, and deliver online courses? Utilizing the Online Technologies Self-Efficacy Scale (OTSES), Wright found a significant increase in faculty self-efficacy after QM training. It was pointed out that participants in this study might have been early adopters of technology. Blundell (2015), however, when looking at faculty's self-reported levels of satisfaction with online courses that had been designed using the QM Rubric Standards compared with those courses that had not been designed using the QM Standards could establish no statistically significant differences. He suggested that future research should "be targeted towards 'rookie' instructors" (p. 169). The chosen instructor satisfaction measurement in the study may have detracted from the validity of measuring QM impact. Seven statements from an adaptation of the Online Faculty Satisfaction Survey (OFSS) developed originally in 2009 by Bollinger and Wasilik were used to measure faculty's satisfaction with courses that were or were not designed to meet QM Standards. Those OFSS statements included: technical problems do not discourage me from teaching online; my learners use a wider range of resources in the online setting than in the traditional one; and online teaching is often frustrating because of technical problems. While these questions provide valuable information on faculty's perspectives of online education, they are focused on broader issues than those addressed in the QM Standards of course design.

Exploring the possible impact of the exposure of QM Standards to new online instructors was the focus of a study done in 2011 by Ward (2011). She hypothesized that the use of the Quality Matters process would help new online instructors develop the complex knowledge that would enable them to discuss, develop, and implement more online learning more effectively. Under a QM research grant, she and colleagues at the University of Akron used TPACK

(Technological, Pedagogical, and Content Knowledge) as the conceptual framework. They found that participation in QM training and the related course improvement process helped instructors understand the interaction among technology, online learning principles, and subject content (dimensions of the TPACK framework). They concluded

The data analysis results from this study suggest a developmental model that depicts a few key transitional points in order to become effective online instructors, and how QM training can effectively consider these transitional points to deliver the training more efficiently to enhance the quality of online courses with more explicit guidelines to not only course design, but permeate to the other aspects of online teaching and learning. (p. 10)

The Ward study pointed out that there is likely more of an impact from QM on some instructors than there is on others, depending on the instructor's pedagogical and experience starting point. Budzick (2014) used Davis' Technology Acceptance Model, informed by the Human Performance Technology model, as a theoretical framework when replicating a study done by Mercer (2013) to investigate (1) any change in faculty knowledge and perceptions of course design, (2) any change in willingness to use the QM Rubric to design or redesign an online course, and (3) any change in the faculty's perceived quality of the design of their own course as a result of taking QM's foundational course, Applying the Quality Matters Rubric (APPQMR). Twenty full-time and adjunct faculty at a community college participated in the Budzick study, whereas Mercer's earlier study included 25 tenured and adjunct faculty, lecturers, and staff at a four-year institution. Using the same pre-/post-questionnaire, Mercer found statistically significant gains in the knowledge of best practices in online course design, although not in the perception of online course quality or in willingness to use the QM Rubric. Budzick

found a slight, but not statistically significant increase in participants' knowledge of best practices in online course design; however, she did find significance for increased willingness to use the QM Rubric and for increased perception of the course quality of instructors' own courses after the APPQMR training. Prior online teaching and other training available at the institutions may have impacted the difference in findings.

Anecdotal comments from faculty about QM Professional Development and the Peer Review experience crossing over to their traditional face-to-face course design and delivery have been heard since the beginning of QM. As of the summer of 2015, Kearns at the University of Pittsburgh has a QM research grant move beyond anecdotal comments to gather and analyze data on the possible impact of QM Professional Development on online courses, as well as any transfer of course design principles and practices from QM Professional Development on face-to-face courses. Data will be gathered in the fall of 2015; final results will be made available on the QM website<sup>11</sup> in late spring of 2016.

Hagan and Arabie (2014) pursued the connection of internal, informal QM reviews to an institution's faculty development offerings. They analyzed which Standards were met or unmet most frequently in more than 70 informal reviews that engaged more than 85 faculty. General Standards 1, 7, and 8 were discovered to contain more than half of the missed Standards in those informal reviews. The author suggested, "Interestingly, there are no Alignment Standards in General Standards 1, 7, or 8, which may indicate that faculty are spending significantly more time focusing on General Standards 2, 3, 4, 5, and 6 in order for their course to be aligned" (para. #5). As a result, they modified their faculty training to include a "Reviewer Refresher"

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<sup>11</sup> <https://www.qualitymatters.org/research>



workshop. Others, such as the current work of Engelmann, McMahon, and Coyle (2014) and Dowden (2014) are gathering QM implementation data within their own institutions to establish a baseline for the impact of exposure of QM tools and processes in setting up possible longitudinal studies.

### **Informal Use of QM Standards and Processes**

As early as 2006 the positive impact on members of a design team was noted when using the QM Rubric as a guide for revising a course (McMahon, Tipperman, & Paugh). The Rubric was later cited as an easy-to-use self-assessment tool for developing an online course (Pollaci & McCallister, 2009; Pollacia, Russell, & Russell, 2009; Effken, McEwen, Vincent, Shea, Garcia-Smith, & Kang, 2009; Little, 2009; Bento & White, 2010). Greenberg's 2010 dissertation study found that the use of QM design Standards led to "development of a quality product, as defined by faculty, course designers, administrators, and learners, primarily through faculty professional development and exposure to instructional design principles" (p. 214). Monroe (2011) found that the QM Rubric could be effectively used by instructional designers, faculty with subject-matter expertise, peer faculty with no subject-matter expertise, and administrators. Ashbaugh (2011) used a modified version of the publicly available 2010 QM Rubric as she identified instructional designers' leadership competencies.

Young (2014) summarized that QM Standards in the Rubric contributed to better collaboration and provided a shared language and a shared course design focus for three experienced face-to-face instructors who redesigned a junior-level marketing education course into a hybrid/blended format. In fact, faculty workload was reduced by two thirds when teaching the redesigned course (p. 236).

Altman, Schwegler, and Bunkowski (2014) used internal, informal QM Peer Review processes to introduce QM to their peer faculty at their institution. Applying the Theory of Planned Behavior, they sought to investigate attitudes, norms, and perceived behavioral controls and intentions that influenced voluntary participation in the informal QM review process. Although the sample size was too small to produce a viable quantitative analysis, the researchers highlighted some nuggets worthy of extended study: For example, both those faculty who participated in the informal QM reviews, as well as those who did not, believed completing a QM Peer Review would help them learn new teaching techniques, improve their own courses, and get a better grasp of quality in online learning. Interestingly faculty that did not participate in the QM Peer Reviews, rather than those who did, believed the reviews would be too time consuming. This belief that the QM review was too time consuming is likely what kept the non-participating faculty from participating in the first place. Schwegler and Altman (2015) have continued their exploration into understanding the dynamics of their grassroots attempt to introduce faculty to QM by applying Feedback Intervention Theory. An unintended consequence provided validating support for the formal peer reviewer training requirements.

### **Organizational Impact**

Over Quality Matters' first decade, information emerged on the impact of QM at the program and organization levels at subscribing institutions. Initially QM was developed as an inter-institutional peer review process for validating the instructional design quality of a single online course. However, QM was quickly called upon by participating institutions to provide more local access to QM virtual assessment tools for conducting both formal QM Peer Reviews and internal, informal review of courses and for providing "in-house" QM Professional Development. These requests forwarded the original promise during the grant period to provide a

replicable, scalable program to improve the quality of online education and were the motivation for providing two levels of subscriptions available to institutions<sup>12</sup>.

Even before providing ways for officially embedding QM processes into institutions (described above in the Motivations to Persist and Complete a Course section), Aman noted the possibility of a diffusion of treatment—a carry-over effect informally generated and shared by exposure to the QM Standards of quality online course design. Statistical analyses revealed that learners at QM participating institutions in both QM reviewed and non-reviewed courses were more satisfied than learners at non-QM participating institutions.

Following that lead, and in an attempt to determine how QM was disseminated across a large educational system, a 2010 QM research grant was provided to Strickland and Alarcon at the Maricopa Community College system, which encompasses ten colleges, 4,000 faculty, and 250,000 learners. Through a survey and a series of focus groups, the researchers learned that the informal sharing among faculty and administrators at departmental meetings and among colleagues was the most prevalent method of dissemination, followed by sharing during college-wide meetings.

As noted previously, while initially planning to study learner and faculty satisfaction rates in pre- and post-QM recognized courses, Parscal, Frey, and Lucas (2011) found that their project was challenging because the online courses in the University of the Rockies study were part of an embedded course development, followed by an informal and then a formal review process. Further analysis called attention to the fact that the university had established an extensive six- to eight week system of using the QM Rubric and a team approach to designing

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<sup>12</sup><http://tinyurl.com/q6dz4we>

new courses. Therefore, most courses easily met QM Standards when reviewed officially. It was posited that measurement of learners' satisfaction by using the simple, pre- and post-test did not reveal any significant change in satisfaction rates but revealed the unanticipated positive consequences of QM adoption at the organizational level. Miner (2014) also noted this possibility when eleven of twelve courses at the institution, which was heavily immersed in QM processes, immediately, met QM Standards during formal Peer Review.

Further impact of the QM Rubric can be found in the work done by Frey, Kearns, and King (2010) regarding institutions' accessibility practices and policies for online courses. From a sampling of administrators and faculty from 84 QM-subscribing institutions, Frey and King learned that many did not have defined practices and instructor training in creating accessible online course-level materials (p.10). Using a 2012 QM research grant, Frey and King developed a template of policies and suggested practices that is adaptable and openly available to the online educational community<sup>13</sup>.

### **Continuous Validation of the QM Rubric and Processes**

Establishing and assuring the validity of the QM Standards of quality online course design began during the 2003-2006 development of the original Higher Education Rubric under a U.S. Department of Education's Fund for the Improvement of Post-Secondary Education (FIPSE) grant (Shattuck & Adair, 2015). A review and analysis of the scholarly research and most widely recognized best practices informed the work of a community of practice (Shattuck, 2007) in establishing QM's General and Specific Standards. With an eye toward replication, reliability, and application strategies, guiding annotations were provided with each Specific Standard. The

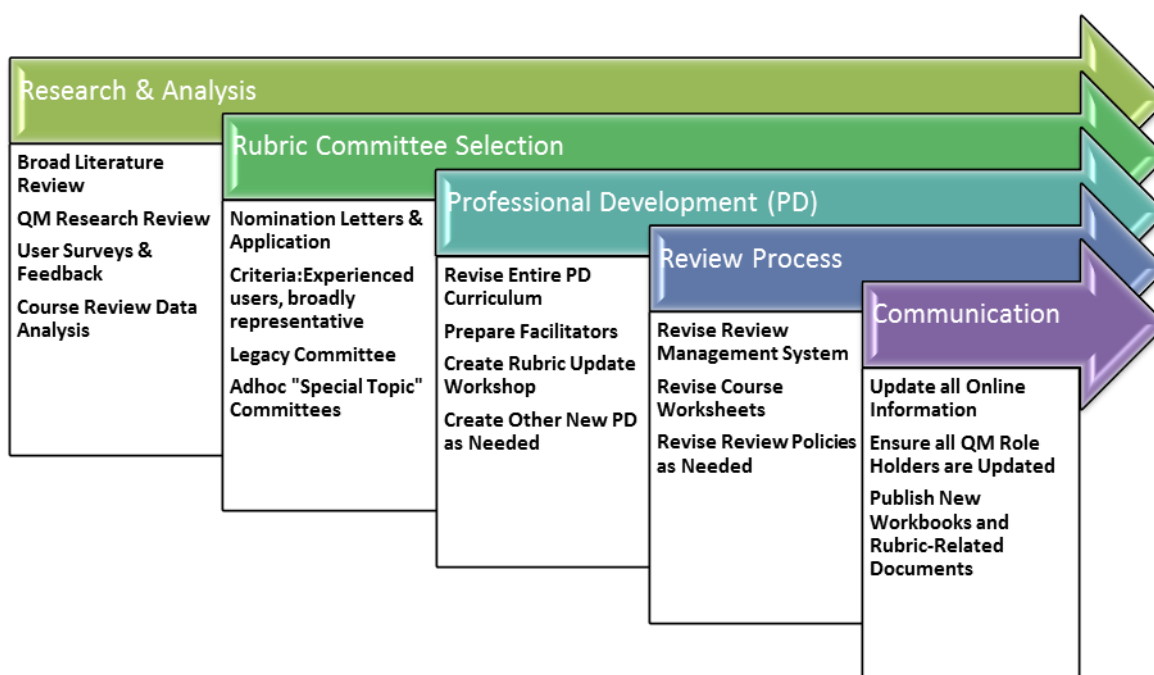
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<sup>13</sup> <https://www.qualitymatters.org/accessibility-policy-request>

annotations guide each PR on the team in his or her individual assessment of the course during the review and in focusing constructive team discussions if there is confusion or disagreement among the three PRs on how a particular Standard is being met or not met in the course. As stated by Adair (2015), manager director and chief planning officer of QM, “The review process is diagnostic and not prescriptive since there are many ways in which each specific QM Standard can be met” (p. 160)

The Rubric is completely reviewed every two to three years, and involves a sophisticated process and system (Shattuck, Zimmerman, & Adair, 2014) (See Figure 1).

Figure 1: Steps in QM Rubric Revision Process



Zimmerman (2011) completed quantitative analyses (1) to determine the consistency of application of the rigorous QM Peer Review formal process; (2) to determine the rate of courses initially officially meeting QM Standards; (3) to identify the most frequently missed standards;

(4) to identify differences of formal review success by course discipline; (5) to determine the relationship between course author (instructor or designer) of reviewed course and familiarity with the QM Rubric; and (6) to establish the proportion of rater agreement by Specific Standards.

#### Results indicated

1. No statistically significant difference between QM- and subscriber-managed formal course reviews<sup>14</sup>. These findings provide evidence of the validity of the QM Professional Development that each PR must successfully complete prior to being placed in the pool of available PRs for assignment to a formal QM Peer Review, as well as the rigorous oversight by QM staff.
2. Thirty-nine percent of courses formally reviewed from 2008 through 2010 met QM Standards during the initial review, while 48 percent met Standards upon amendments. Analysis of formal QM reviews from 2011 through July 2013 indicated that 71 percent of courses officially met QM standards initially and 27 percent of the courses did so after amendments. These data indicate a positive impact of QM being embedded at the program or institutional level.
3. Analyses of the most frequently missed Standards have been provided to the Rubric Review Committees who used this data as a basis for a focus on the clarity and wording of the Standards and their accompanying annotations. The two Standards, one standard dealing with providing learners self-assessment opportunities and the other standard dealing with provision of alternatives to auditory and visual content, that were initially met less than 65%

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<sup>14</sup> Informal reviews, by their very creative and flexible nature are not recorded or analyzed in this study. Only formal QM peer reviews are required to adhere to rigorous guidelines and can result in a course being designated as meeting QM Standards.

of the time were carefully reviewed by the Rubric Review Committee and were emphasized in the subsequent QM PR training.

4. Business courses, followed by education courses, met QM Standards most frequently during the initial review.
5. Analysis of the 2011-2013 data indicated that 93.3 percent of course authors were familiar with the QM Rubric. This would indicate that more institutions are using the QM Rubric to design and informally review courses prior to submitting them for formal Review.
6. The construct of rater agreement is helpful in gleaning information about the faculty-centered, collegial, Peer Review process of QM. Zimmerman explained

The measurement of interest concerning the QM Rubric is the proportion of reviews in which all three raters assigned the same rating to a specific standard (i.e., all three reviewers assessed a standard as met or not yet met). This is different from inter-rater reliability in that it is not an attempt at describing unsystematic variance (see Hallgren, 2012; Liao, Hunt, & Chen, 2010); its purpose is to provide an easily interpretable statistic that will allow for the comparison of specific standards for practical purposes. Thus, in the discussion of consistency of results of QM's reviews, the term proportion of rater agreement is used as it explicitly describes the analyses performed as opposed to inter-rater reliability, which it technically is not. (p. 31)

Zimmerman further explains the significance

One of the primary purposes of analyzing proportion of rater agreement is to identify specific standards that may require attention to keep the Rubric reflective of the research and fields of practice while being workable for a team of inter-institutional, inter-

disciplinarian academic peers—Individual ratings given by a QM Peer Reviewer in course reviews reflect, to at least some extent, that particular reviewer’s professional/pedagogical opinion, and, therefore, may vary from the ratings of the other individual reviewers. However, markedly lower rater agreement for specific standards in the QM Rubric is a prompt to members of the Rubric Committee to focus attention on those standards during the regular review and refreshment of the QM Rubric. (p. 32)

### **Alignment of QM Standards to Other Recognized Standards**

Quality Matters Standards have been aligned with accreditation standards (Legon, 2006)<sup>15</sup> and the K-12 Secondary and K-12 Publisher Rubrics, since their inception, have been aligned with iNACOL National Standards for Quality Online Courses (Voelker, 2015). Bose (2012) explored the relationship between the IBSTPI’s (International Board of Standards for Training, Performance and Instruction) instructional competencies and QM Standards foci on technological affordances<sup>16</sup>. By using a Spearman’s rho rank correlation research design and ordinal logistic regression analysis, Bose established a significant relationship between QM Standards and technological affordances (abilities) of online learning. Both were found to have a significant positive relationship to technological affordances, with 46 percent of QM Standards, in such a relationship.

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<https://www.qualitymatters.org/sites/default/files/Documents/Comparison%20of%20the%20Quality%20Matters%20Rubric%20-%20Summary.pdf>

<sup>16</sup> Bose explained technological affordances: “The use of instructional multimedia represents the input of visual and auditory sensory input as it relates to cognitive information processing theory...Between conveying information (communication theory) and convergence of meaning (cognitive information processing theory) are the technological affordances” (pp. 10-11).



## Discussion and Recommendations

Over the first decade of its existence, Quality Matters grew from a small research informed community of practice charged under a federal grant with developing a replicable, scalable peer review process for improving online education into a large researching, not-for-profit organization<sup>17</sup> providing tools, professional development, and processes for evaluating quality in online education. QM can be understood as evolving from a community of practice perspective (Shattuck, 2007) and maturing into a dynamic design-based research program (Shattuck, 2015). Research continues to be an input into establishing validity in standards of quality course design—the QM Rubric and Peer Review processes. Research is one of QM’s outputs.

QM impacts the stakeholders of quality education—most directly learners, faculty, instructional designers, program managers, and institutional administrators<sup>18</sup>—in numerous ways. QM has no access to institutional data, and, during its first decade, relied on research studies to be designed and carried out by reflective practitioners (Schön, 1983; Brookfield, 1995). Keen observers of the results of some of those early studies suggested that even informal QM dissemination within an institution might produce a carryover effect, thereby having a more systemic impact than originally anticipated when a study was designed. The impact of QM participation, as defined by each study, has been explored in relationship to learner satisfaction, motivation to persist and complete a course, and learning outcomes, as well as faculty satisfaction and involvement. Studies designed and completed by and at subscribing institutions

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<sup>17</sup> <https://www.qmprogram.org/qmresources/subscriptions/subscribers.cfm?program=2>

<sup>18</sup> For a fuller discussion on inputs/outputs and shareholders, see Adair, D., & Díaz, S. (2014). Stakeholders of quality in online education: Inputs and outputs. In K. Shattuck (Ed.), *Assuring quality in online education: Practices and processes at teaching, resource, and program levels* (pp. 3-17). Sterling, VA: Stylus Publishing, LLC

have produced evidence of positive impact at the course, as well as at the program and institutional levels. A marked increase in the use of institutional data and of correlational inferences is emerging as QM is explored in relationship to other educational inputs, such as learner readiness and instructor presence and engagement. To date, a few studies have isolated and clustered Standards while using random-assignment in lab-based, experimental studies. At least one study has used longitudinal methodologies.

Awareness of the institution's involvement in QM is of increasing importance when conducting QM-focused research. Deborah Adair, QM's managing director and chief planning officer, has identified five implementation approaches used by subscribing institutions:

- An ad-hoc approach of faculty using the QM Rubric with Annotations as a self-review tool or guideline in developing course templates. This can be a low-threshold way to start with QM.
- A continuous improvement approach within faculty development programs that engage faculty in on-going workshop opportunities to master QM Standards and principles.
- A continuous improvement approach as an internal measure of quality assurance, utilizing the online review tools provided by QM for non-monitored, internal reviews in the first-level scanning of online courses against the established QM Standards.
- A continuous, Quality Assurance, benchmarking approach in which a limited number of official QM official Peer Reviews are conducted to establish institutional benchmarks to informally guide the development and evaluation of a larger number of courses.

- An institutional change approach that embeds QM processes into course design templates, strategic plans, standing committee missions, and promotion and tenure recognition.

(Shattuck, 2015, 157)

### **Phases of QM Research**

Quality Matters research can be organized in three phases:

Phase 1: Input of scholarly research to inform a community of practice (members of the QM Rubric Committee) in the development of standards of quality online course design. The initial QM Rubric was the output of this effort. A few QM research grants were provided to gather rudimentary evidence of impact of the QM Rubric's use.

Phase 2: Input from analysis of scholarly research, qualitative feedback data from active QM users, and QM-collected data on QM- and subscriber-managed formal QM Peer Reviews and on QM Professional Development course offerings. As of the late summer of 2015, the outputs have been

- Editions Two, Three, Four, and Five of the QM Rubric for Higher Education
- Editions One and Two (Third to be released in Fall of 2015) of the Higher Education Publisher Rubric
- Editions One, Two, and Three of the K-12 Secondary Publisher Rubric
- Editions One and Two of the K-12 Secondary Rubric
- Editions One and Two of the Continuing and Professional Education Rubric

Eighteen small QM research grants were provided to faculty at QM subscribing institutions to encourage building a research base of course, program, and institutional outputs of QM implementation.

Phase 3 [2015 onward]: Input of scholarly and QM-specific data to build more tools and processes for subscribers to use in their own research efforts and quality assurance plans. As of late summer of 2015, outputs include implementing a multiple-institution student voice project<sup>19</sup>, collaborating with Fudan University in Shanghai, China, to adapt a culturally relevant QM Rubric and Peer Review system (Gao & Legon, 2015), and finalizing the QM Program Certification Program that has been piloted and analyzed over the past year. Looking forward into 2016, QM will be developing and disseminating at least two adaptable decision-tree research-question-and-design templates. As noted by Ron Legon (2015), executive director of QM, the QM community would benefit from “questions that can be answered and research strategies that can be replicated” (p. 168).

### **Recommendations**

Quality Matters-focused research, like other distance education research, is maturing. As Otto Peters, wrote in the forward of the must read book, *Online Distance Education: Towards a Research Agenda* (Zawacki-Richter & Anderson, 2014), “distance education can no longer be considered a one-dimensional phenomenon. . . . online distance education is a comprehensive, many-sided process and a multifunctional system. . . . [Recognition of this] is a major step forward” (p. x). In order for research on the impact of QM to continue building on and extending the baseline of research overviewed in this paper, interested researchers will want to

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<sup>19</sup><http://tinyurl.com/peybwbj>

- Use due scholarly diligence. A lack of knowledge of and use of the complete QM Rubric with annotations and lack of understanding the well-established requirements of a QM Peer Review distract from the established validity of the QM Rubric and formal, official Peer Review process. For example, researchers who use the list of QM Standards from the public web<sup>20</sup> as “the Rubric” or who label a course as “meeting QM Standards” without following established formal QM Peer Review criteria can produce distracting findings. “QM” needs to be contextualized when talking research: QM is more than the set of Standards listed on the website and explained in the annotations of the Rubric; it is an approach with multiple validated processes that is applied in various organizational/departmental cultures as exhibited by different levels of QM implementation (see above). That being said, informal use of the tools and processes, for example, in self-assessment of a course, is encouraged for reflective practitioners. Descriptive case reports should note that applications of the QM Standards and processes are informal.
- Resist the error of using the Rubric as an all-inclusive, all-encompassing variable in any study on learner impact. Course revision to “meet Standards” can encompass dramatically different changes in a course, as well as impact teaching approaches and institutional learner support. On the other hand, we know some of the baseline studies at institutions in which QM processes are embedded, or even have informal “carry-over effect,” can indicate little impact: Essentially, a formal QM Peer Review might be more of a confirmation of the QM embedded process than an independent variable with its own significant impact. Courses should be described and analyzed both before and after course design modification in terms

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<sup>20</sup> <https://www.qualitymatters.org/rubric> Faculty and staff at QM subscribing institutions have ready access to the complete Rubric, however, the complete QM Rubric, with annotations is copyright and cannot be reproduced.

of correlations to other quality assurance components. Researchers need to be more careful in comparing apples to apples.

- Move from being primarily exploratory in nature into theoretical and deeper levels of research. QM-focused researchers should design studies that are supported by a scholarly review of the literature. New research must be built on existing research by identifying the gaps in extant research and replication possibilities to avoid falling into stagnation on a few popular and basic topics (Zawacki-Richter & Anderson, 2014; Simonson, Schlosser, & Orellana, 2011; Davies, Howell, & Petrie, 2010; Bebell, O'Dwyer, Russell, & Hoffmann, 2010; Shachar, 2008; Zawacki-Richter, 2008; Lee, Driscoll, and Nelson, 2004; Berge & Mrozowski, 2001). Over the past few years, it has become evident that new QM-focused research is increasingly extending prior QM research and that more studies have strong theoretical frameworks.

### **Summary**

Research is an input and an output for Quality Matters. This is an exciting time in online learning, but care must be taken to move forward with well-designed, implemented, and analyzed research studies. This article has described the known QM-focused research that has been conducted during the first decade of Quality Matters' existence. The hope is that it will inform and encourage further research on improving online learning.

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