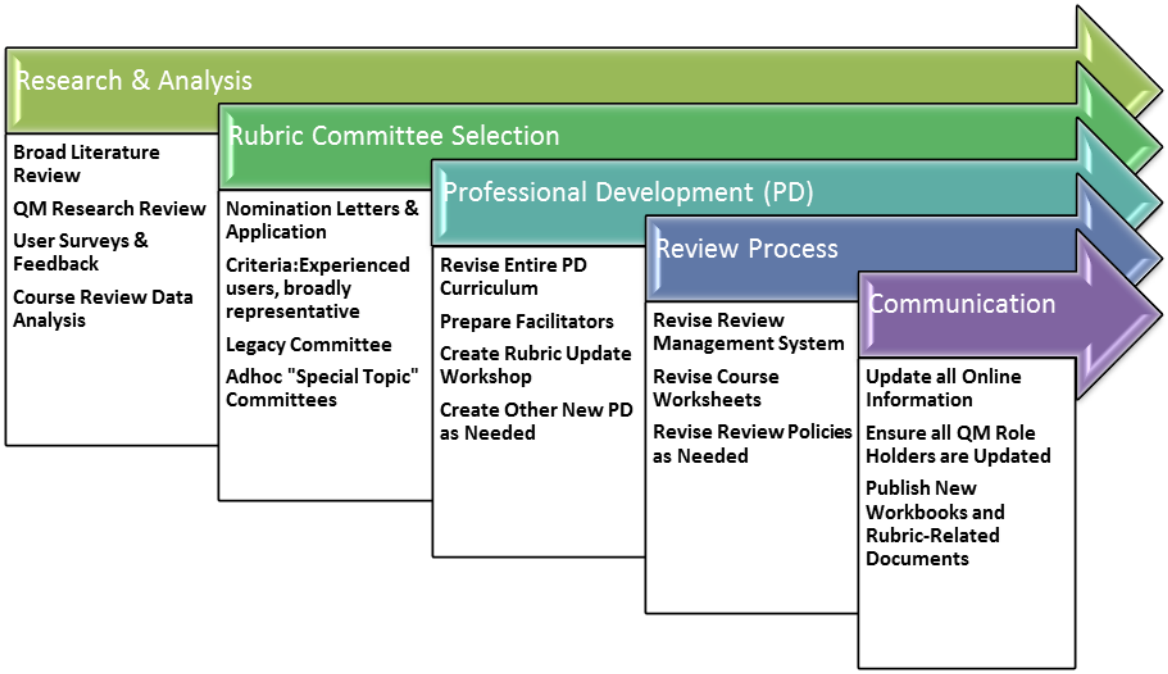
**Results of Review of the 2014-2016 Higher Ed Research Literature**

**Report prepared by Kay Shattuck—June 16, 2017**

This report is submitted to members of the 2017 Higher Ed Rubric Review Committee to inform their upcoming work when reviewing the Fifth edition of the QM Rubric™. The report summarizes the recently completed review of the 2014-2016 instructional/course design research literature focused on higher education and is meant to be one of several sources of data that will inform the committee's work.

**Rationale:** Scholarly research related to online course design has been identified, review, documented, and summarized as a data point for the work of those online distance educators who comprise the Quality Matters Rubric Committee. Formal reports have been issued to members of that committee in 2005 (under the FIPSE grant), 2008, 2010, and 2013. The review of the research literature is one set of research and analysis data that informs the committee's work.



**Methodology:** The review of the scholarly literature was led by Dr. Dave Meabon, Director of the John H. Russel Center for Educational Leadership at the University of Toledo, and conducted with the assistance of Wade Lee, Rachel Barnes, Shannon Neumann, Phoebe Ballard, Mingli Xiao, Shujuan Wang, Silvia Lucaschi-Decker, Silvia Shu, Jeff Jablonski, Claire Stuve, Kirsten Winek, and Lei Song.

- On July 5, 2016, the librarian member of the QM team conducted a comprehensive search in relevant education, psychology, and general article and thesis/dissertation databases to locate literature relevant to design of online instruction courses.
- Each research piece was reviewed with an eye to instructional/course design topics for quality online courses. While theoretical pieces were reviewed, the focus was on published articles that documented a research methodology and findings. There was no attempt to document every article in the journals that might inform course design; however, a total of more than 163 pieces were recorded that can inform the committee's work.
- The following databases were searched using selected keywords:

| Database Name | Platform | # of Results |
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| Education Research Complete | EBSCOhost | 484 |
| ERIC | EBSCOhost | 378 |
| Academic Search Complete | EBSCOhost | 319 |
| Education Full Text (H.W. Wilson) | EBSCOhost | 237 |
| PsycINFO | EBSCOhost | 192 |
| Professional Development Collection | EBSCOhost | 164 |
| Psychology and Behavioral Sciences Collection | EBSCOhost | 25 |
| ProQuest Dissertations & Theses A&I | ProQuest | 401 |
| | Total | 2200 |
| | Total after removing duplicate items | 1232 |

- Results of two rounds of screening:

| All Citations Identified (n=1232 items) | After Title/Abstract Screening (n=590 items) | After Final Screening (n=163 items) |
|---|---|---|
| Journal Article (752) | Journal Article (340) | Journal Article (98) |
| Thesis/Dissertation (469) | Thesis/Dissertation (243) | Thesis/Dissertation (65) |
| Report (5) | Book Section (3) | |
| Book Section (3) | Conference Paper (3) | |
| Conference Paper (3) | Report (1) | |

- These latest references citations now raise the total since 2005 of documented citations in the QM Research Library and Research page to more than 1,200 entries.

**Historical benchmark:** The original rubric was developed in 2005 from identification and consolidation of course design principles found in existing online teaching and learning best practices. A process of professional vetting by the members of the initial QM committees resulted in eight general standards and 40 specific standards. The **relationship between research and the identified QM standards of quality course design** continues to be a supportive one. While the QM Rubric is supported by the existing general distance/online literature, the ethical limitations of generalizing individual research results to other contexts are well established in the research field. The aim is to identify the themes and directions of **a body of research focused on course design topics**.

**Themes** from the 2014-2016 review of the higher edu research literature have been identified by Kay Shattuck, QM Director of Research, based on an analysis of the raw data provided by the Toledo group and review of additional research and reports. Caveat: The selection of research topics and areas of interest to be explored is guided by the researcher's interest. Thus, interest continues to focus on interaction; that continues to be evident in the number of published scholarly works that relate to QM Standard 5.

| **Theme** | **Discussion** |
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| The field is maturing beyond descriptive case study to more sophisticated methods that correlate various research-informed variables of online course quality. | Retention and outcomes of success are two research areas that are increasingly being investigated with attention to correlation to possible intervening variables. For example, James, Swan, and Daston (2017) Retention, Progression and the Taking of Online Courses. |
| The topic of learning objectives is so embedded with the learning design literature that it rarely is explored; rather it is the basic assumption. | The importance of learning objectives has been an essential standard since the development of the initial set of QM Standards. The emphasis comes primarily from applications of instructional design principles which point out the importance of providing an organizational, sequencing framework to guide students to targeted learning. It is particularly important to inform learners of the specific chunks of learning that will be the target in a doable timeframe (a unit or module). A good source for understanding the connections between instructional-design theories and application can be found in *Instructional-Design Theories and Models: Building a Common Knowledge Base* (Vol iii) (2009) edited by Reigeluth and Carr-Chellman.<br><br>Additional support comes from cognitive science, for example, the |

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| | recent treatment by Michelle Miller in *Minds Online: Teaching Effectively with Technology (2014)*. In particular, as a cognitive psychologist, Miller connects learner's attention as one of the target areas of the design of a course. She writes, "And so, to build processes such as memory, critical thinking, and so on we instructors need to consider how attention interacts with the design of our learning activities" (p.65). Relating that to unit/module learning objectives: They are those stated guideposts and outcome expectations that facilitate students' attention on specific targets of learning. Unit/module learning objectives, written in student-language prior to the content delivery helps draw attention to the expected outcomes at the completion of the unit/module.<br><br>Another source of support for informing learners of learning objectives at smaller than course level is a well-done and very readable, full book treatment on the topic, *How Learning Works: Seven Research-based Principles for Smart Teaching.* Those principles include two that inform unit-level objectives: how students organize knowledge influences how they learn and apply what they know, and students' motivation determines, directs. and sustains what they do to learn [Ambrose, S. A., Bridges, M. W., DePietro, M., Lovett, M. C., & Norman, M. K. (2010).]<br><br>While QM Standards are set as applications of the body of research and instructional design principles, one entry from the QM Research Library provides support for clear, learner-level objectives. The article contains an excellent discussion of research supporting view that learning objectives are important for students to make connections between a list of learning goals and better knowing what to focus on in a course/unit of study, which will allow development of "strategies for reading, attention allocation" (p. 554). Study investigated 72 students' reading behaviors and cognitive processes. Of particular interest to QM is the importance that learning goals need to be interpreted by students for them to be useful in guiding their learning: The current study suggests that this goal characteristic may affect students' task understanding and goal setting, thus influencing subsequent information processes (e.g., monitoring), which, in turn, has an impact on learning |

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| | outcomes. It is of vital importance that the provided learning goals should not only specify what exactly students were expected to learn, but also clarify which cognitive activities students should [be] carried out (e.g., memorize, apply or synthesize) in a specific context. (p. 566) [Jiang, L., & Elen, J. (2011).] |
| The clear theme in the literature is that pedagogy must drive the choice of technology and furthermore it is essential that students understand the pedagogy over-and-above the use of a particular tool or technology. | While the need for pedagogy to drive the choice of technology is not a new theme in the research literature, as was noted in the past review of the literature it increasingly becoming acknowledged and woven into studies. (For recent example, see Ortiz-Arteaga in the sample document.) |
| Constructivism continues to be the dominant theoretical perspective used in online distance education and educational technology research. The Community of Inquiry framework (CoI) (http://communitiesofinquiry.com/model is frequently used as guiding the methodology - and for interpretation - of a quality online learning experience. | The field of instructional design, like all scholarly fields, is an evolving one in which dominant educational philosophies are influenced by practice, and versa vice versa. In the study of online learning the emphasis has moved into a more constructivist, learner-focused approach, even while keeping the established traditions of ADDIE and ISD.<br><br>CoI focuses on the interaction of individual learners for whom a sense of being "real" in an online environment (presence) is facilitated so that they engage in actively purposeful discourse, which results in deeper levels of learning.<br><br>The interdependent dimensions of CoI are social, teaching, and cognitive presence. Teaching presence (note: not teacher) includes the design elements of an online course that allows improved instructor facilitation and pedagogical direction to learners in the social and cognitive processes to promote "personally meaningful and educationally worthwhile learning outcomes" (Anderson, Rourke, Garrison, & Archer, 2001, para. 4).<br><br>Gunawardena and Zittle (1997) began using the term social presence to refer to the psychological sense that the learner has of being a part of the virtual group as result of interactions. A well-designed course allows for more facilitative engagement between the instructor and students (Hall, 2010). Burkle and Cleveland-Innes (2013) tied social presence to |

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| | motivation and use of learner support.<br><br>It can be argued that a number of existing QM Standards already promote the development of the three presences. For example, Standards 1.8 and 1.9 (instructor and student introductions) can be understood as design strategies for developing students' social presence and for establishing teaching/facilitator presence.<br><br>Matthews, Bogle, Boles, Day, and Swan (2014, 2011, 2010) consistently point out that that the QM and CoI frameworks are orthogonal in nature, and that the "linking of online course design to implementation and learning processes to course outcomes is long overdue in online learning" (2011, p. 13). The CoI (constructivist) framework can assist in understanding why and how specific QM Standards (based on objectivist ID and ADDIE models) can influence the learning process. |
| Increasingly research studies are being released via the online professional media, such as The Chronicle of Higher Education or Inside Higher Education, rather than being submitted to peer-reviewed journals. | These reports often are not submitted for the long and rigorous peer review of scholarly journals but get a great deal of "play time" in the fast moving, instant information world we operate in. That is not to say none of these studies are rigorous, but it must be kept in mind that they are only vetted for dissemination by an educational reporter as news-worthy, not by undergoing the lengthy scholarly peer review for worthiness of publication. For example, https://www.insidehighered.com/news/2017/06/12/study-questions-effectiveness-online-education-risk-students?utm_source=Inside+Higher+Ed&utm_campaign=b298658ced-DNU20170612&utm_medium=email&utm_term=0_1fcbc04421-b298658ced-197529557&mc_cid=b298658ced&mc_eid=9c7781b1e3 |
| Research revolving around accessibility and inclusivity continues to grow significantly. | In 2005, Standard 8 was included from an ethical and coming legal responsibility. There was little research focused on the topic. That has been changing in the past five-six years. |

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