INFLUENCE OF QUALITY MATTERS PROFESSIONAL DEVELOPMENT ON FACULTY MEMBERS PERCEPTIONS OF DESIGN STANDARDS AND THEIR COURSE DEVELOPMENT ABILITIES

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INFLUENCE OF QUALITY MATTERS™ PROFESSIONAL DEVELOPMENT ON FACULTY MEMBERS’ PERCEPTIONS OF DESIGN STANDARDS AND THEIR COURSE DEVELOPMENT ABILITIES

by

Rhonda L. Gregory

A Dissertation
Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Education
Major: Instruction and Curriculum Leadership

The University of Memphis
May 2018
Dedication

To the three most important men in my life – Brian, Matthew, and Brennen. You mean more to me than words can adequately express.
Acknowledgements

I am grateful beyond measure to God – from whom all blessings flow.

I wish to thank my many friends, colleagues, mentors, and supporters from Volunteer State Community College, the Tennessee Board of Regents, and Greenville University. Your names are too many to list, but I appreciate and cherish each one of you for the role you have played in my education, career, and life.

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Last, but in no way least, I would like to thank my committee members. To Dr. Amanda Rockinson-Szapkiw, advisor and committee chair, thank you for taking over this crucial leadership role when I needed it most and guiding me throughout the process. To Dr. Vickie Cook for being the first to see my potential in academia, thank you for being a long-term mentor, role-model, and friend. To Dr. Clif Mims and Dr. Andrew Tawfik, I am grateful for your expertise and support during the completion of this project.
Abstract

Distance education quality assurance is a concern throughout the literature. Standards such as the Quality Matters (QM) Higher Education Rubric, 5th edition, are meant to support course design quality assurance. Professional development is associated with quality assurance initiatives, including the goal to transform faculty’s instructional practices. Some community college faculty members who create online and hybrid courses participate in the Applying the Quality Matters Rubric (APPQMR) training to learn how to apply the QM rubric. While the literature provides many in-house training program evaluations, there is a research gap about community college faculty experiences in APPQMR and what influence it may have on their perceptions of QM and their course design skills. A description of how social influences and facilitating conditions may influence long-term QM adoption and use is also lacking. Higher education administrators need to better understand these factors because faculty buy-in and support of the quality assurance process is critical to the success of such initiatives.

This study used an explanatory sequential mixed methodology to examine the influence of the APPQMR workshop. The results of a causal-comparative research design revealed no significant difference in faculty perceptions of the QM rubric between groups who had and had not completed the training. However, results of a basic qualitative design demonstrated the possible practical influence of training on faculty skills and perceptions. The QM rubric is rigorous; learning to apply it requires rigorous effort. Faculty need time and institutional support to experience the potential benefits of transformational learning in QM training.

Keywords: adult learning theory, community of inquiry (CoI), distance education, faculty development, instructional design, online education, quality assurance, Quality Matters™, transformative learning theory
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List of Abbreviations

Applying the Quality Matters Rubric (APPQMR)

Community of Inquiry (CoI)

Perceived Usefulness (PU)

Perceived Ease of Use (PE)

Quality Matters (QM)

Technology Acceptance Model (TAM)

Transformative Learning Theory (TLT)

Unified Theory of Acceptance and Use of Technology (UTAUT)
CHAPTER ONE: INTRODUCTION

Introduction and Background

The general purpose of this study was to examine the influence Quality Matters (QM) training may have on community college faculty’s perceptions of the QM rubric and of their ability to apply QM principles to the online and hybrid course development process. This research contributes to the general body of knowledge regarding quality assurance and faculty development in distance education at the community college level.

Moore and Kearsley (2012) defined distance education as “teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization” (p. 2). Distance education dates back to the early 1880s when print correspondence courses began in the United States (Moore & Kearsley, 2012; Taylor, 2001). It has evolved through a series of models as advances in media, technology, and pedagogy have progressed. Most distance learning in higher education today can be classified as what Taylor (2001) called the Flexible Learning Model or the Intelligent Flexible Learning Model because it leverages interactive multimedia, online portals, computer mediated communication, and internet resources. In higher education, this type of learning is commonly referred to as “online learning.” Throughout this study, the term “distance education” encompasses the terms “distance learning,” “online learning,” “online education,” and “hybrid learning.”

Online learning, a form of distance education, is a strategic initiative of many higher education institutions because it expands their reach to students who otherwise might not enroll (Allen, Seaman, Poulin, & Straut, 2016; Allen & Seaman, 2013; Legon & Garrett, 2017). Likewise, hybrid (or blended) learning is another form of distance education characterized by
reduced seat time and the use of web-based technology to deliver instruction (Linder, 2017).
Individuals who work full-time, have children, or are married are more likely to enroll in online
or hybrid programs (Ortagus, 2017); and some institutions seek out student enrollment from new
geographic areas they previously could not serve (Allen et al., 2016). Since 2002, online
enrollment rates have climbed faster than college enrollment rates overall (Allen et al., 2016),
and the number of hybrid courses has also grown in recent years (Linder, 2017). Academic
leaders in higher education expect that enrollment in online and hybrid education will continue to

With this growth, institutions of higher education have been faced with increasing
pressure from accrediting bodies to ensure a high level of quality in their distance education
programs (Herman, 2012, 2013; Ragan & Schroeder, 2014), often at a greater and more rigorous
level than is typically applied to traditional education (Legon & Garrett, 2017). Faculty, likewise,
have concerns about the quality of online and hybrid learning as compared to traditional forms of
higher education, which may impact the success of distance education initiatives at their
institutions (Allen et al., 2016; Wingo, Ivankova, & Moss, 2017). Further, students who take
online or hybrid classes expect a certain level of quality that is equal to or greater than what they
would receive in a classroom experience (Tobin, Mandernach, & Taylor, 2015). Combined, these
factors lead to heightened institutional concern about instructional design (i.e., course design),
faculty professional development, and quality assurance for distance education (U.S.
Government Accountability Office, 2011; Zawacki-Richter, Bäcker, & Vogt, 2009; Zawacki-

The quality of distance education is influenced by many factors, such as design, delivery,
content, technology, resources, support, and faculty and student readiness. Among these
components, course design is of utmost importance because design affects student learning and outcomes (e.g., community, persistence, and grades) (Adair & Shattuck, 2015; Legon & Runyon, 2007). Course design is one element of teaching presence, which is a key construct within the Community of Inquiry (CoI) framework (Garrison, Anderson, & Archer, 2000). The CoI framework is “a process model of online learning…and assumes that effective online instruction requires the development of a course community that supports meaningful inquiry and deep learning” (Bogle, Cook, Day, & Swan, 2009, p. 54). According to Garrison et al. (2000), teaching presence is “the binding element in creating a community of inquiry for educational purposes” (p. 96). Design also affects transactional distance between teachers and students who are physically separated from one another (Moore, 1997; Moore & Kearsley, 2012). Well-designed distance courses reduce transactional distance (defined as the degree of structure and dialogue between teachers and students), thereby increasing persistence and success (Adair & Shattuck, 2015; Moore & Kearsley, 2012). Designing distance education courses appropriately is a skill set that many faculty members do not possess unless they have received specific training in instructional design (Gregory & Martindale, 2017; Johnson, 2015; Moore, 1997; Moore & Kearsley, 2012; Ragan, Bigatel, Kennan, & Dillon, 2012). Many faculty design, develop, and deliver distance education courses following the same models and using the same strategies as they experienced themselves as students in traditional environments (Esterhuizen, Blignaut, & Ellis, 2013; Hixon, Barczyk, Buckenmeyer, & Feldman, 2011; Marek, 2009; Ragan & Schroeder, 2014; Shelton & Saltsman, 2005). However, faculty are ill-prepared for dealing with the unique differences between online and face-to-face environments (Gregory & Martindale, 2017) and need to learn how to design online and hybrid courses in new ways (Mehta, Makani-Lim, Rajan, & Easter, 2017). Models for effective distance education course design and
development are needed. Models have been developed and adopted by higher education institutions, yet the faculty members who design and develop distance courses need to be prepared to apply these course design models through training and professional development (deNoyelles, Cobb, & Lowe, 2012; Reilly, Gallagher-Lepak, & Ralston-Berg, 2012).

**Quality Matters**

Quality Matters is one model that has been adopted for effective online and hybrid course design by institutions of higher education nationwide. Quality Matters began in 2003 as an initiative within MarylandOnline, a consortium of community colleges and other institutions of higher education. Maryland educators recognized the need for a systematic approach to measuring the quality of online and hybrid courses. The group received grant funding until 2006 from the U.S. Department of Education’s Fund for the Improvement of Postsecondary Education (FIPSE) and developed a subscription-based service that provides an array of resources, tools, and research that can be used toward building a system for quality assurance and continuous improvement in distance education. In 2014, QM became an independent, nonprofit organization. Today, there are more than 60,000 members worldwide and nearly 1,000 subscribing higher education institutions (Adair & Shattuck, 2015; MarylandOnline, 2005; Marlos Varonis, 2014; Quality Matters, 2017d). Known for its systematic approach to measuring the quality of online and hybrid course design, QM is both “a course improvement system highlighted by a guiding rubric of best practice standards and a procedure to enable faculty-focused collaboration toward continuous improvement of online course designs” (Shattuck, 2012, p. 191). The QM rubric (see Appendix A) is based on best practices in distance education derived from empirical research (Shattuck, 2015).
Quality Matters offers a variety of faculty professional development options, including the organization’s flagship training course, Applying the Quality Matters Rubric (APPQMR). Through this workshop, participants are introduced to the rubric, course review process, and underlying principles of QM. Among the learning objectives in APPQMR is an emphasis on application of course design best practices, decision-making, and reflection of concepts to the design of participants’ own courses. Reflection and application are key concerns driving this study, as faculty members’ perceptions of the QM rubric’s usefulness and ease of use as a course design tool may be influenced, in part, by their experience in the APPQMR training.

**Problem Statement**

Quality Matters faculty training at the community college level has not been the focus of much research. The problem is that college administrators do not know if faculty participation in formal training – specifically, the nationally recognized APPQMR workshop – could significantly improve faculty’s course design abilities and perceptions of the QM rubric as a design tool. Further description of the influence of the APPQMR training on faculty’s design abilities and perceptions of QM is needed. Faculty training is often one part of an institution’s distance education quality assurance plans (e.g., Gibson & Trump Dunning, 2012). Distance education initiatives will not be successful without faculty buy-in and institutional support for faculty development (Esterhuizen et al., 2013; Hixon et al., 2011; Ragan & Schroeder, 2014; Shelton & Saltsman, 2005; Wingo et al., 2017). Engagement in professional development may influence faculty perceptions and willingness to adopt new teaching practices (Budzick, 2014; McQuiggan, 2012). Faculty who participate in training are more likely to have the skills and mindset to make effective course improvements (McQuiggan, 2012; Roehrs, Wang, & Kendrick, 2013). Further, faculty who are not properly trained may do a poor job assessing quality in peer
reviews of other courses (Roehrs et al., 2013), thereby perpetuating a cycle of low-quality distance education courses. Theory, research, and practice all suggest that training on the QM rubric may be needed to foster transformative learning experiences for the faculty who design and develop online and hybrid courses, ultimately improving their course design ability and overall perceptions of the rubric as a useful and easy-to-use course design tool.

**Purpose Statement**

The purpose of this explanatory sequential mixed methods study (Creswell, 2014) was to examine the influence of the APPQMR workshop on faculty members’ perceptions about the QM design standards and their ability to design and develop distance education courses at the community college level. In phase one, survey data were collected and analyzed from community college faculty. Participants were divided in groups based on whether they completed APPQMR.

The specific training examined in this research was the APPQMR online professional development workshop provided by QM. The independent variable, participation in APPQMR training, was generally defined as a nominal category variable with two faculty groups. This included those who completed the APPQMR workshop within the last five years and those who did not. The dependent variables were perceived usefulness (PU) and perceived ease of use (PE), which were operationally defined in the Quality Matters Rubric Faculty Survey (Appendix B). Perceived usefulness was the mean score of the six usefulness survey items, while perceived ease of use was the mean score of the five ease of use items. The operational definitions herein were adapted from Davis’s (1989) original technology acceptance model (TAM) and informed by the unified theory of acceptance and use of technology (UTAUT) developed by Venkatesh et al. (2003). Perceived usefulness (labeled “performance expectancy” in UTAUT) was defined as “the
degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989, p. 320). Perceived ease of use (labeled “effort expectancy” in UTAUT) was defined as “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989, p. 320). Throughout this paper, the terms “performance expectancy,” “perceived usefulness,” and “usefulness” are used interchangeably. Likewise, “effort expectancy” and “ease of use” are used interchangeably.

In phase two, qualitative data (i.e., interviews) from a subset of faculty who indicated completion of the APPQMR workshop within the last five years was collected. Interviews were used to explain results from the survey, to examine faculty members’ experiences in APPQMR, and to garner further understanding about key aspects of the training that helped or hindered their perceptions of and ability to apply QM principles of the rubric and develop an online or hybrid course. The UTAUT constructs of social influence and facilitating conditions were also explored within this phase. According to Venkatesh et al. (2003), social influence (the degree to which someone thinks that other key people find the system important to use) is directly related to an individual’s behavioral intention. Facilitating conditions, defined as “the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system” (Venkatesh et al., 2003, p. 453) are important because they influence long-term adoption and use of a new technology or system.

In addition to the TAM (Davis, 1989) and UTAUT (Venketesh et al., 2003) models informing the development of the dependent variables and constructs for the study, Mezirow’s (1991) theory of transformational learning, as a derivative of adult learning theory, guides this study, as it posits that adult learners can change their attitudes, beliefs, and performance through experience and critical reflection. Through QM rubric training provided in the APPQMR
workshop, faculty members should critically reflect on their own course design practices, resulting in improved course design and improved perceptions of the QM rubric as a design tool. The training offers them an opportunity to engage in a transformational learning experience, thus leading to the following questions of interest.

Questions

Research questions for this study were:

Research question 1. How does successful completion of the APPQMR professional development training effect participants’ perceptions about the QM rubric?

Research question 2. What is faculty’s experience in APPQMR?

Sub question 2a. What key aspects of the training helped or hindered faculty members’ perceptions of and ability to apply principles from the QM rubric in their online and hybrid course development?

Sub question 2b. What aspects of the training influence course design behaviors?

Research question 3. How do social influence and facilitating conditions at the community college influence long-term adoption and use of the QM rubric as a course design tool?

Null Hypothesis

The null hypothesis for this study was:

Null hypothesis 1. There is no statistically significant difference in faculty perceptions of the QM rubric’s usefulness and ease of use between APPQMR training participants and non-APPQMR training participants.
Questions two and three did not have corresponding hypotheses as data collected and analyzed were qualitative in nature. Qualitative analysis was also used to explain the result of the quantitative study for question one.

**Significance**

It has been estimated that nearly 50% of non-profit institutions of higher education with an active teaching and learning development unit rely on QM to provide professional development for online instructors (Herman, 2012). Throughout the literature, there appears to be a positive association between faculty development and the quality of online programs (Baran & Correia, 2014; Bigatel & Williams, 2015; Gregory & Martindale, 2017; Herman, 2012; Johnson, 2015). However, there is limited research that explores how faculty training on the QM rubric relates to faculty members’ perceptions of the rubric and their ability to apply its principles to the development of online courses. While the literature is replete with various training program evaluations that examine whether faculty perceived an institutional training program to be effective, a research gap exists in terms of faculty perceptions of the QM rubric’s usefulness and ease of use as a course design tool. The research is also limited regarding the APPQMR workshop and community colleges.

This study addresses gaps in the existing knowledge base by determining what influence the APPQMR training has on faculty’s course design ability and related perceptions about the QM rubric’s usefulness and ease of use. The study provides valuable information to community college administrators where QM is used. Specifically, faculty surveys at two institutions provided insight into community college faculty perceptions about the QM rubric’s usefulness and ease of use. Subsequent interviews with a subset of faculty who have completed APPQMR training within the last five years provided a thick, rich description of the participants’
perceptions of the rubric and resulting course design abilities, as well as insight into social influences and facilitating conditions at the community college where the QM rubric is utilized. Results of the study may benefit faculty development professionals and distance learning administrators who subscribe to the QM framework to inform their own faculty development initiatives.

Definition of Terms

**APPQMR.** This is the acronym for the flagship QM workshop, Applying the Quality Matters Rubric. APPQMR is offered in online and face-to-face formats (Quality Matters, 2017a).

**Distance education.** Moore and Kearsley (2012) defined distance education as “teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organization” (p. 2).

**Hybrid learning or hybrid course.** Allen and Seaman (2014) defined this as a “course that blends online and face-to-face delivery. [A] substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings” (p. 6).

**Online learning or online course.** Allen and Seaman (2014) defined an online course as “one in which [at least] 80 percent of the course content is delivered online” (p. 6).

**Quality Matters (QM) rubric.** This term refers to the full set of 43 standards within the Quality Matters Higher Education Rubric, Fifth Edition, a proprietary instrument created by MarylandOnline and available to subscribers (Quality Matters, 2017c).

**Transactional distance.** The term transactional distance has been defined by Moore and Kearsley (2012) as a:
Theory of distance education which describes distance as a pedagogical/andragogical phenomenon having the “macro-factors” of structure and dialogue. Programs can be described as having greater or lesser distance. Course designers determine the appropriate degree of structure and dialogue for a given student population, giving particular attention to its capacity to exercise learner autonomy. (p. 309).
CHAPTER TWO: REVIEW OF THE LITERATURE

Introduction

The purpose of this study was to discover what influence, if any, the APPQMR workshop has on faculty members’ perceptions about the QM rubric and their ability to apply its principles to the design and development of an online or hybrid course in a community college setting. It is situated in the adult learning theory of transformational learning. Following the theoretical context, a review of the literature contextualizes the problem identified in this study. A case is made that the current literature base is lacking sufficient, quantifiable evidence of training’s effect on faculty’s course design ability, and that additional quantitative and descriptive information is needed regarding faculty’s perceptions of the QM rubric. Faculty development and training provides an opportunity for transformational learning among distance education course developers that may result in higher quality courses. Throughout the literature, it is rare to find studies that focus exclusively on either an online course developer or an online course instructor who teaches a course designed by someone else; therefore, the literature reviewed within this chapter uses the terms “course developer” and “online instructor” interchangeably.

Theoretical Context

Malcolm Knowles is credited as the primary theorist for advancing andragogy – defined as the art and science of teaching adults (Knowles, 1980). Though andragogy was introduced to the United States in 1967, Knowles eventually came to recognize it as “simply another model of assumptions about learners” (Knowles, 1980, p. 43). To better understand the differences between pedagogy and andragogy, Knowles contrasted four key assumptions of each model: (a) the role of the learner, (b) the role of learner’s experience, (c) the learner’s readiness to learn, and (d) the learner’s orientation to learning. Knowles saw the distinction between pedagogy and
andragogy as a continuum on which people could fall regardless of physical age. A key
differentiation between the theories lies in their assumptions. Pedagogy assumes that learners are
dependent upon a teacher or other expert for direction, whereas andragogy assumes that learners
are self-directed. Learners’ unique backgrounds are also highly valued within andragogy;
therefore, educators should incorporate adult students’ backgrounds into the learning
environment to foster meaningful learning. The principles of andragogy have been extended and
applied to transformative learning theory.

**Transformative Learning**

Introduced by Mezirow in 1991, transformative learning theory is the “essence of adult
education” (Mezirow, 1997, p. 11). It is the idea that adults – who bring all their prior learning,
experiences, attitudes, and beliefs into the learning environment – can change their deepest
habits of mind by becoming autonomous thinkers through critical thinking. Transformative
learning begins when learners experience a disorienting dilemma and ends when they change
their perspective. Learning can occur progressively through reinforcement of existing
perspectives, establishing new points of view, changing a perspective, or by transforming deeply
held habits of mind through the process of critical reflection (Mezirow, 1997). The three
dimensions of perspective transformation are psychological (autonomous thinking), convictional
(personal belief systems based on experience), and behavioral (change of habits or actions). The
psychological dimension results in individuals who not only think for themselves, but have an
intellectual rationale underpinning their perspectives. Similarly, individuals may also change the
way they feel or what they believe about something because of personal experiences. These are
changes in the convictional dimension. Changes to the behavioral dimension results in a more
overt, observable change in a person’s physical actions. Research studies about faculty
development are commonly grounded in transformative and adult learning theory and may explore one or more of the three dimensions of perspective transformation that results from participation in professional development (deNoyelles et al., 2012; McQuiggan, 2012).

Transformative learning theory’s three dimensions of perspective transformation serve as an impetus for further investigation into the effects of faculty development. Psychological and convictional aspects (what faculty think and believe about online course design quality) can be measured via self-reporting methods, and examples are well documented in the literature (e.g., Barczyk, Buckenmeyer, Feldman, & Hixon, 2011; Budden & Budden, 2013; Horvitz & Beach, 2011; Johnson, 2015; Johnson et al., 2012; McQuiggan, 2012; Redmon, 2012; Rucker, Edwards, & Frass, 2015). However, the behavioral aspect (how a faculty member designs an online course) has not been studied as often. When behavior has been studied, researchers have relied on faculty self-reports to identify behavioral changes (Kearns & Mancilla, 2017; Koepke & O’Brien; McQuiggan, 2012), rather than objective observations of course design quality. Most often, the constructs of perspective transformation are studied together using qualitative methods. Recognizing this gap in the literature, Allen (2017) recently developed and attempted to validate a quantitative instrument to measure a faculty member’s state of transformative learning in relation to his/her experiences with online instruction. She concluded that although further research is needed to refine the scales, the instrument “shows promise for being a valid means of identifying and evening predicting faculty perceptions of transformative learning as faculty gain experience with and professional development in online instruction” (p. 72). While progress is being made in this area of research, the use of self-report along with quantitative measures is still a viable and acceptable means of evaluation.
Transforming a faculty member’s beliefs about teaching and learning is often a central goal of professional development in distance education so that overall teaching practices are subsequently changed, whether online or face-to-face. For example, McQuiggan (2012) conducted an influential study about how faculty development for online teaching can also serve as an impetus for faculty members’ transformative learning, resulting in changes in their “teaching assumptions, beliefs, and face-to-face teaching practices” (p. 29). Through qualitative analysis, McQuiggan found that faculty who engaged in critical self-reflection throughout the professional development program could change their fundamental beliefs about teaching and learning – resulting in true perspective transformation that influences their teaching in every modality. McQuiggan’s study, as others (e.g., Kearns & Mancilla, 2017; Koepke & O’Brien, 2012), relied on faculty self-reports to gauge behavioral changes. Similarly, Johnson (2015) used participant survey data and semi-structured interviews to determine what changes occurred in online teachers’ practices, beliefs, and course design because of their participation in a training program. She found that all six participants felt that the training influenced their course design practices. The present study likewise employs self-report to explore faculty members’ learning experiences in the APPQMR workshop and whether this form of faculty development is influential at the community college level.

Application to Faculty Development

Knowles’s (1980) and Mezirow’s (1997) theories provide practical advice to those responsible for creating and delivering faculty development opportunities in higher education. The development of an individual’s self-identity, the importance of fostering psychological growth and maturation, and the development of critical thinking and transformational learning experiences are emphasized throughout both theories. Regarding the role of experience, one
practical implication Knowles offered was to help adult learners “look at themselves more objectively and free their minds from preconceptions” (p. 51). This advice is similar to McQuiggan’s (2012) research on transformative learning among faculty who learn to teach online. Within the area of readiness to learn, Knowles explained how adults go through an “evolution of social roles” as they age. He provided an example of this in practice – such as a worker getting a new job, advancing through the ranks, and ultimately retiring. Horvitz and Beach’s (2011) study of professional development for master online teachers is based on this idea of a progressive cycle of faculty growth. Their program was also grounded in the adult learning theory principles of co-construction of knowledge between facilitators and learners and on the use of real work experiences.

There are many other applications of adult learning theory and transformative learning theory to faculty development in the literature. In her dissertation, Johnson (2015) studied the influence of a professional development program on the design of an online course. She based this qualitative case study grounded in andragogy, transformative learning theory, and heutegogy (self-directed learning) because faculty undergoing professional development assume the role of the learner. She found that faculty members who completed training experienced a transformational learning experience that resulted in new skills being applied to their online course design and development. Likewise, Johnson et al. (2012) claimed that faculty development programs should be based on Knowles’s adult learning theory – andragogy – and on transfer of learning theory. The study described an institution’s three-day summer “Bootcamps” developed to help faculty members redesign an online course and to overcome anxiety about using technology for their courses. Post-training surveys showed that 100% (N = 24) of the faculty who participated felt more comfortable with creating online course content.
Moreover, the researchers posited that faculty reflection on learning theory and teaching principles was necessary to help them redesign online courses using technology. Johnson et al. felt that the gains made by their training approach would yield more lasting, long-term results in faculty online course design skills than technology-focused training alone.

The key to eliciting lasting change in faculty members’ online course design skills begins with providing transformative learning experiences in which their perceptions and beliefs about quality online design can be challenged and changed. Faculty development and training programs may spur changes in the way faculty design and develop online and hybrid learning experiences for their students, thereby improving the quality of distance education. Research about quality assurance in distance education has evolved over time, though, and has not always focused on the transformational experience of faculty through training. The following literature review explores the progression of distance education quality assurance.

**Literature Review**

The review of literature that follows begins with a brief exploration of research topics pursued within the field of postsecondary distance education. It includes meta-analyses and literature reviews to explain the depth and breadth of research and to uncover some common themes and trends – including quality assurance, the vital role that faculty development plays in that pursuit, and the importance of faculty acceptance of distance education initiatives. When considered together, this literature review reveals a gap in research related to what influence faculty training has on the quality of distance education course design. It also reveals a gap in research related to faculty perceptions about the QM rubric’s usefulness and ease of use as an instructional design tool.
**Distance Education Research**

Moore and Kearsley’s (2012) definition of distance education emphasized the intentional interaction between teachers and students at a distance from each other mediated through technology. Indeed, communication and interaction are central to distance education research. The theory of transactional distance (Moore’s first attempt to define distance education in 1972) described the separation between teachers and learners as a pedagogical phenomenon to be studied, not just a geographic one. As dialogue between learners and instructors increases, the amount of transactional distance decreases (Moore, 1997; Moore & Kearsley, 2012). Likewise, the technology tools and media used to facilitate communication in distance education are also important to study (Moore & Kearsley, 2012). However, not all academics have agreed with the merit of media research, as is evidenced by the “great media debate” between Clark (1994) and Kozma (1991). Both scholars agreed with the importance of research, but fundamentally disagreed about which research questions needed to be answered. As distance education has matured, research has developed in areas other than communications media and technology (Moore, 1997; Moore & Kearsley, 2012).

Various researchers have attempted to synthesize the scholarly literature related specifically to distance education. From these studies, distance education enthusiasts can identify themes over time and opportunities for new or additional research. For instance, Zawacki-Richter, Bäcker, and Vogt (2009) concluded that research published in distance education journals between 2000 and 2008 was dominated by a “focus on interaction and communication patterns in computer-mediated communication, instructional design issues, learner characteristics, and educational technology” (para. 53). They recognized that areas ripe for further research included the role of culture and cultural diversity, comparative studies of
distance learning systems, leadership and change management, infrastructure for student and faculty support, professional development, and quality assurance.

In a more recent and narrowly focused literature review, Zawacki-Richter and Naidu (2016) identified research trends in the field’s oldest academic journal, *Distance Education*, from 1980 through 2014. This resulted in a chronological history of research trends that marked the early 1980s as a time when distance education was becoming recognized and organized as a professional field. It was also a common theme in this earliest period to find articles dealing with institutional and policy issues. The late 1980s saw an increase in focus on instructional design and the use of educational technologies. Concerns with student attrition rates and student success in the early 1990s led to more research focused on improving the quality of distance education. This trend continued throughout the second half of that decade but also brought about an emerging interest in online education, specifically. As online learning became more prevalent in the early 2000s, research interests continued to trend into this area. Evaluating the effectiveness of online education, particularly in relation to traditional formats, became common.

Online educational effectiveness is often measured by comparing student outcomes, attitudes, and retention rates between delivery modes (Bernard et al., 2004; Legon & Garrett, 2017; Russell, 1999). Russell (1999) sparked an ongoing professional discussion with his seminal study that examined 355 studies and found that there was no statistically significant difference in student outcomes between those who were taught in a traditional classroom and those taught at a distance. Rather than attributing any differences found in individual studies to the mode of instruction, Russell argued that the process of course design with a focus on student-centered learning is what makes the greatest difference in outcomes. From a meta-analysis of over 200 empirical studies, Bernard et al. (2004) similarly concluded that, “it is the
characteristics of instructional design, such as the instructional strategies used, the feedback provided, and the degree of learner engagement, that create the conditions within which purposive learning will occur” (Bernard et al., 2004, p. 411). This pivotal study revealed a wide degree of variability among student achievement, attitudes, and retention between delivery modes, suggesting that the design of instruction is of greater importance to student success than the mode of delivery. More recently, the U.S. Department of Education Office of Planning, Evaluation, and Policy Development (2010) examined over a thousand online learning studies published between 1996 and 2008 to contrast online and face-to-face educational environments based on student learning outcomes – discarding effects for student or teacher perceptions (p. xii). Findings of this meta-analysis suggested that “on average, students in online learning conditions performed modestly better than those receiving face-to-face instruction” (p. ix). However, the authors of this study also noted that the modest gains in student outcomes should be attributed to a variety of factors beyond the form of delivery, such as course design.

Understandably, the effectiveness of instruction can be measured by the impact the instruction has on learners in terms of grades, perceived learning, learner experience, etc., and the many studies that have examined these outcomes contributed to the meta-analyses just described. However, quality assurance can also be viewed as a proactive approach to ensure instructional effectiveness. Institutions that adopt the QM rubric as an instructional design tool and as a tool to evaluate the quality of online course design recognize that appropriate instructional design and good pedagogical practices are central to effectiveness, a factor that all three meta-analyses repeatedly suggest. Evidence in favor of employing course design standards to help assure quality in online education far outweighs evidence against it. Furthermore, the importance of course design is made evident by Southard and Mooney’s (2015) comparative
analysis of distance education quality assurance standards. Of the 12 unique sets of standards they identified, over 40% were specifically related to course design. Professional organizations like QM provide instructional design guidelines based upon research and are designed to improve quality and to positively impact student outcomes (Adair & Shattuck, 2015).

One of the most prominent models of online educational inquiry and research throughout the literature is the Community of Inquiry (CoI) framework, introduced in 2000 by Garrison, Anderson, and Archer (Garrison, Anderson, & Archer, 2010; Shea et al., 2010). The CoI framework represents a process of creating deep and meaningful learning through a collaborative and constructivist approach and is comprised of three interdependent constructs: social presence, teaching presence, and cognitive presence (Garrison, Anderson, & Archer, 2000). The elements that contribute to social presence are affective expression, open communication, and group cohesion. Cognitive presence includes four phases and begins with a triggering event and moves through exploration and integration to resolution. Teaching presence includes course design and organization, facilitation of discourse, and direction of cognitive and social processes. An ideal and effective online educational experience is found at the confluence of the three constructs (Bogle et al., 2009; Mehta et al., 2017). Each “presence” represents a different but related type of interaction among those involved in the teaching and learning process (Mehta et al., 2017).

A growing body of research emphasizes the vital role that teaching presence – which includes course design – has on student outcomes (Bogle et al., 2009; Garrison, Anderson, & Archer, 2010; Rockinson-Szapkiw, Wendt, Wighting, & Nisbet, 2016; Swan, Matthews, Bogle, Boles, & Day, 2012). For example, Rockinson-Szapkiw et al. examined the predictive relationship among the CoI framework, perceived learning, and students’ final course grades. The model explained 55.6% of the variance in course points, indicating strong support that CoI
and perceived learning factors could be used to predict online students’ grades. While students with higher indicators of social, cognitive, and teaching presence also had higher grades, the researchers also found that teaching presence was the strongest individual predictor of student grades. The researchers concluded that higher education institutions need to develop well-structured online courses and to train online faculty in online instruction design and delivery.

Through a recent review of the literature, Jaggars and Xu (2016) attempted to establish an empirical link between course design and student performance. They identified four course design quality indicators (course organization and presentation; learning objectives and assessments; interpersonal interaction; and technology) then compared those four indicators to student grades and opinions about course quality. Of the four course design quality indicators identified, they found that interpersonal interaction was the only indicator that could be used to predict student grades. In contrast, however, Hollowell, Brooks, and Anderson (2017) found that student grades significantly increased in courses after an instructor was introduced to and trained on the QM rubric. Students also rated the quality of design and instruction more highly afterwards as well. This finding suggests that changes in course design may directly affect outcomes – and that faculty training in design may also have contributed to student success. Likewise, Bento and White (2010) reported that student grades and course evaluations both improved in the two semesters immediately following a faculty member’s self-assessment and redesign of a graduate accounting course using the QM rubric. Bento and White concluded that faculty perceived improved learning outcome alignment as a key benefit of the QM rubric, whereas students viewed clearer instructions and improved access to course components as a primary benefit.
Researchers from the University of Illinois Springfield have taken a unique look at the combination of QM standards and the CoI framework to ensure quality design and implementation of online and blended programs and courses (Bogle et al., 2009; Swan et al., 2012). The program administration strategically developed this multi-framework focus to take advantage of the explicit guidelines for course design (QM) and for implementation of design principles (CoI) through faculty support and development on both models (Bogle et al., 2009). Looking at one course in the program, Swan et al. (2012) found a statistically significant improvement in student final grades when courses were initially revised using the QM rubric and then iteratively revised over time using student survey feedback based on CoI constructs. The researchers concluded that “taken together, QM and CoI revisions can be linked to improved outcomes” (p. 87) because the two frameworks view online learning from the differing perspectives of design and delivery.

Certain design aspects discussed in research, such as interpersonal interaction and providing clear instructions, could be categorized as either design or delivery; however, it is usually both in practice. In either case, the design of the learning environment is believed to be crucial to student success (Crews, Bordonada, & Wilkinson, 2017; Metha et al., 2017; Moore, 1997). The following section explores the literature related to quality assurance in online education.

**Quality Assurance**

Assuring the quality of distance education programs and individual courses is a consistent concern within the literature (Crews et al., 2017; Moore & Kearsley, 2012; Zawacki-Richter, Bäcker, et al., 2009; Zawacki-Richter & Naidu, 2016). As previously established, quality is often measured in terms of student achievement and student satisfaction (Bernard et al., 2004; Britto,
Ford, & Wise, 2013; Legon & Garrett, 2017; Moore & Kearsely, 2012) or as a comparison of student outcomes and satisfaction rates between traditional classroom instruction and online education (Allen & Seaman, 2013, 2014; Bernard et al., 2004; Britto et al., 2013). Instructor feedback is an opinion-based metric also commonly used in evaluating the effectiveness of online course quality (e.g., Jaggars & Xu, 2016; Parscal & Riemer, 2010; Rucker et al., 2015).

Measurements are often reflective of accreditation requirements placed upon institutions to verify the equivalence of online education with campus-based formats (Britto et al., 2013; C-RAC, 2009; SACSCOC, 2014). Academic leaders in higher education value the good reputation that high-quality courses afford their institutions, and faculty are also concerned with the quality of online education (Seaman, 2009; Tobin et al., 2015). In fact, QM grew out of such faculty concerns (Quality Matters, 2017d). To understand the factors that influence the quality of online education, it is important to first broadly define what quality is in terms of online higher education.

Quality defined. The definition of quality in online education can be explained in terms of an entire program and of a single course. Programmatically, quality in online education is often explained in terms of best practices, standards, or benchmarks (Britto et al., 2013). From a high-level, institutional perspective, there are various programmatic elements that contribute to a high-quality program, including design, delivery, technology, support, and administration (Britto et al., 2013). Professional organizations such as the Online Learning Consortium (OLC, 2017) provide administrators with research-based, collaboratively developed tools such as the OLC Scorecard to identify common elements of quality. The OLC Scorecard is comprised of nine categories: (a) institutional support, (b) technology support, (c) course development/instructional
design, (d) course structure, (e) teaching and learning, (f) social and student engagement, (g) faculty support, (h) student support, and (i) evaluations & assessment.

Best practices and standards are also derived from the oversight of accreditation agencies. For instance, the Guidelines for the Evaluation of Distance Education (On-line Learning) (C-RAC, 2009) speaks to best practices in administration and oversight, such as incorporating online learning initiatives into the regular systems of planning and governance, evaluating how the programs fit within the institution’s mission, and providing adequate resources and support for online students and faculty. According to the guidelines, online courses are expected to be at least equal to traditional, face-to-face courses in terms of rigor and student outcomes. To help achieve this goal, attention is given to course design that facilitates communication between faculty and students (C-RAC, 2009). The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) maintains similar expectations for institutions that offer online and other forms of distance education. According to SACSCOC (2014), an institution’s faculty is responsible for the oversight of distance education and for “ensuring both the rigor of programs and the quality of instruction” (p. 2), and institutions are expected to maintain comparability between distance education and campus-based programs through the assessment of student outcomes, retention, and satisfaction. In sum, high-quality, rigorous online programs are created by following best practices and sustained by systems that support student and faculty needs.

In addition, the quality of individual online courses at the most granular level warrants special attention, for this is where online learners spend most of their time. According to Parscal and Riemer (2010), “High quality online courses are intentionally designed by skilled professionals and guided by best practices and current research in teaching and learning” (para.
In a recent study about student perceptions of an online course designed using QM standards, Crews et al. (2017) found that a strong majority of students (97.25-99.54%) rated the course highly in terms of meeting or exceeding their expectations. They concluded that the QM rubric is a helpful tool to instructors designing an online course. Rather than subscribing to an organization like QM, some institutions have developed or adapted their own standards to govern the quality of online course design at the course level based on their research of best practices published in the literature and that work specifically for their faculty. For example, Clemson University initially used the QM rubric when first building their online presence, but later developed ENCORE, their current course review process, due to faculty resistance to the QM rubric. Development of the ENCORE rubric included a crosswalk back to the QM rubric to assure that the basics of quality assurance were covered from a compliance perspective (personal communication with Melanie Shaw, former director of strategic planning and innovation, October 4, 2017). University of Central Florida (2017) provides similar guidance to course developers and online instructors through its Teach Online web resources. Another well-known institutional example is the Quality Online Learning and Teaching (QOLT) rubric from California State University’s Chico campus (2015). This rubric can be used to evaluate the quality of online and hybrid course design and includes a component to assess online teaching practice. The Open SUNY Center for Online Teaching Excellence (2016) created the OSCQR rubric based on the CoI model to assess course design in the areas of social, cognitive, and teaching presence. Though each rubric is unique in some respects, there are certain course design practices consistent throughout the various sets of standards that are instrumental in assuring quality within online education. Because this study will focus on the quality of instructional
design for online courses using the QM standards, the next section provides an overview of the QM rubric and related research studies.

**Quality Matters (QM).** What started in 2003 as a local, faculty-driven initiative in Maryland has now become a national benchmark for online course design. Quality Matters is widely known for its systematic approach to measuring the quality of online course design. Institutions may engage with QM formally or informally. Formally, subscribers may choose to have individual courses officially reviewed by QM-certified peer reviewers for a fee. Courses that pass an official review are recognized with an QM certification. Informally, subscribers may utilize the QM rubric and the course review management system tool online to conduct in-house course reviews and individual self-reviews for no additional fee and without leading to QM certification.

The QM rubric is a proprietary instrument available to subscribing members and institutions (see [https://www.qualitymatters.org/qa-resources/rubric-standards/higher-ed-rubric](https://www.qualitymatters.org/qa-resources/rubric-standards/higher-ed-rubric)). Presently in its fifth edition, the QM rubric was developed based on research and best practices for instructional design in online and blended learning (Legon, 2015). The purpose of the QM rubric is to serve as a tool to evaluate online course design (Adair, D., & Shattuck, K., 2015; Legon, 2015; Quality Matters, 2017c).

The 2014 QM rubric covers eight general standards comprised of 43 individual standards. Each individual standard has a one- to three-point weight depending on relative importance, totaling 99 points overall. All three-point standards are considered essential (Quality Matters, 2017c). Table 1 summarizes the eight general QM standards and related point values.
Table 1

*General Characteristics of the QM Higher Education Rubric, Fifth Edition, 2014*

<table>
<thead>
<tr>
<th>QM general standard</th>
<th>Description</th>
<th>Number of individual standards</th>
<th>Total points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Course Overview and Introduction</td>
<td>The overall design of the course is made clear to the learner at the beginning of the course.</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>2. Learning Objectives (Competencies)</td>
<td>Learning objectives or competencies describe what learners will be able to do upon completion of the course.</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>3. Assessment and Measurement</td>
<td>Assessments are integral to the learning process and are designed to evaluate learner progress in achieving the stated learning objectives or mastering the competencies.</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>4. Instructional Materials</td>
<td>Instructional materials enable learners to achieve stated learning objectives or competencies.</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>5. Course Activities and Learner Interaction</td>
<td>Course activities facilitate and support learner interaction and engagement.</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>6. Course Technology</td>
<td>Course technologies support learners’ achievement of course objectives or competencies.</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>7. Learner Support</td>
<td>The course facilitates learner access to institutional support services essential to learner success.</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>8. Accessibility and Usability</td>
<td>The course design reflects a commitment to accessibility and usability for all learners.</td>
<td>5</td>
<td>12</td>
</tr>
</tbody>
</table>

*Note.* Permission from Quality Matters to conduct research on the QM rubric is expressed on their website (see [https://www.qualitymatters.org/research](https://www.qualitymatters.org/research)). Subscribing institutions are approved to use the non-annotated standards in publications. B. Burch, Senior Academic Director of Program Services at QM granted permission to include the Standards from the Quality Matters Higher Education Rubric, 5th Edition with point values in this manuscript (personal communication, August 4, 2017).
Legon (2015) attempted to reorganize the individual QM standards into more meaningful clusters: (a) clarity of purpose; (b) ease of use; (c) course alignment; (d) learner engagement; (e) accessibility; (f) knowledge acquisition; (g) compliance; and (h) learner support. To measure the effectiveness of the QM rubric, Legon suggested a study of course design based on pre- and post-scores in each of these clustered areas. More often, educational research associated with the QM rubric includes student learning (i.e., course completion rates and grades); the learner experience/satisfaction; and retention (Adair & Shattuck, 2015; Legon, 2015). There have also been studies on topics such as the impact QM has had on professional development, faculty decisions to make course improvements, faculty self-efficacy designing online courses, and instructor and student perceptions about course quality (Shattuck, 2015). Few quality assurance researchers have considered faculty’s opinions of the QM rubric’s usefulness and ease of use, which may ultimately influence faculty’s intention and actual use of QM, particularly at the community college level (Budzick, 2014; Mercer, 2014). These studies used a variety of methods to quantify and describe the impact of the QM rubric and of QM professional development, but often fail to address the intersecting impact of the two components.

I found only one published study that utilized the QM rubric as a quantitative measure of faculty preparedness to use the QM model for course improvement (Roehrs et al., 2013). It used a mixed-methods descriptive design and involved six university faculty members at a single institution in the U.S. This study was based on a premise that faculty members who learn about QM standards can and will use that knowledge to make improvements to their online courses. The researchers sought to determine if faculty who learned about the QM rubric through various types of training (self, short, and long) would be able to accurately evaluate a course they designed and make improvements to the course based on their training experience. Quantitative
data was collected using the QM rubric at intervals from three perspectives: self-evaluation, peer evaluation (from qualified non-participating faculty), and official QM reviews. Qualitative data was also collected throughout the study in parallel with training and quantitative data collection. The sample size limitation prevented statistical analysis, but possible trends were identified and discussed which revealed that faculty learned through training to accurately apply about two-thirds of the QM standards.

New research by Hollowell et al. (2017) has extended QM research to a design similar in intent to what Legon (2015) proposed, save his clustered areas. In the Hollowell et al. study, QM informal review scores were collected before and after an instructor completed the APPQMR workshop – a formal training focused on the QM rubric. While the course review scores were analyzed in relationship to students’ final exam grades and overall course averages, the course review scores were also analyzed for differences before and after the instructor participated in APPQMR. This study showed that all three variables were statistically significantly higher post-QM faculty training. The Hollowell et al. study was limited to six online course sections taught by a single faculty member. Nonetheless, the results have strong implications on the present research that seeks to inform the knowledge base about the effects QM faculty training has on faculty’s course design abilities. Since course design is considered an essential element of quality assurance in online education and the QM rubric is a tool designed to help ensure high quality course design, it stands to reason that faculty QM training may be considered an indispensable aspect of quality assurance.

**Faculty Training and Development**

It is widely accepted within distance education literature that faculty development is an integral part of quality assurance (Britto et al., 2013; Johnson, 2015; Parscal & Riemer, 2010)
because faculty members serve as the gatekeepers to student success and satisfaction (Gregory & Martindale, 2017). Chen, Lowenthal, Bauer, Heaps, and Nielsen (2017) explained the connection this way: “High quality online courses begin and end with high quality faculty” (p. 85). Thus, training for faculty goes hand in hand with the adoption of quality standards (Legon & Garrett, 2017). The constant advances in media and technology throughout the history of distance education has not only impacted the design and delivery of distance education, but has significantly altered the roles faculty members fill in that process (deNoyelles et al., 2012; Reilly et al., 2012; Gregory & Martindale, 2017; Moore, 1997; Moore & Kearsley, 2012). There is a distinct difference between designing a course and the interactivity between instructors and students while teaching a course (Moore & Kearsley, 2012). The role of instructors is changing as distance education becomes more student-centric (deNoyelles et al., 2012; Reilly et al., 2012). Structuring distance education courses appropriately is a skill set that many faculty members do not possess unless they have received specific training in instructional design (Gregory & Martindale, 2017; Johnson, 2015; Moore, 1997; Moore & Kearsley, 2012; Oblinger & Hawkins, 2006; Ragan et al., 2012).

Faculty development includes training programs as well as ongoing support systems (Parscal & Riemer, 2010) and the importance of faculty development is emphasized in three of the nine C-RAC (2009) guidelines. Furthermore, the institution is responsible for providing adequate training to support the faculty according to SACSCOC (2014) guidelines. There are various types and frequencies of faculty professional development options for online instruction among institutions of higher education. Some research has been done to identify these programs and to uncover related variables such as faculty preferences, motivation, barriers, and challenges (Gregory & Martindale, 2017; Herman, 2012; Meyer & Murrell, 2014). One such training
specific to the QM rubric is APPQMR, which provides an introduction to the rubric and fundamental principles of QM.

**Applying the Quality Matters Rubric (APPQMR).** According to B. Boyd at QM, the underlying adult learning theory behind the APPQMR workshop is the constructivist theory (personal communication, July 11, 2017). Constructivism, a learning theory founded in psychology, explains that people create knowledge and meaning from their experiences (Piaget, 1971). Constructivist theory and transformative theories have many parallel constructs in terms of adult learning, such as the importance of reflection, self-direction of the learner, and the role an individual’s background and experience have on the way knowledge is created (Mezirow, 1997). In constructivist language, this is referred to as a reconciliation of experiences; whereas, within transformative learning, it is called perspective transformation. For transformative learning to occur, Mezirow (1997) stated that learners must be critically aware of their own and others’ assumptions, must practice seeing problems from a different perspective, and must engage in social discourse. In this way, meaning is both constructed and discovered.

The format of the APPQMR workshop aligns well with the theories of adult learning, transformative learning, and constructivism and with the population’s general characteristics. For instance, the workshop is structured, time-bound, and able to be completed independently from a home or office computer. Nine learning modules cover four general goals and six learning objectives. Within each module, the tasks are sequenced logically to build knowledge of the content; however, all modules are always visible and not dependent on completion of previous items. Participant responsibilities within the workshop are outlined in the first module. This listing clearly delineates the participant’s role as an independent learner, responsible for his/her own progress. This design encourages autonomy, which is a principle of transformative learning
and constructivism. While a QM-certified facilitator leads the course, participants are encouraged to ask questions and to engage in dialogue as learning occurs. To do so, they take part in online discussion boards. However, the workshop format goes beyond discussion boards to promote interaction and reflection.

Each module and activity in the workshop contains a clearly communicated set of goals for learners to strive toward, and there are a variety of activities that help participants meet the workshop learning goals and objectives. Included among the workshop goals is an admonition to learners to a) be reflective over concepts and personal ambitions, b) consider the challenges related to online teaching while being exposed to a sample course and the QM rubric, and c) reflect on and relate the QM rubric to a personal course. Assignments, like the learning objectives worksheet in module four and the alignment worksheet review in module five, ask participants not only to answer questions, but to provide rationale that supports their opinions. The workshop provides a sample online course for participants to review, which for some may serve as a “disorienting dilemma” to work through as they engage with the QM rubric and course review process. Table 2 summarizes the workshop’s general learning goals and the types of activities that workshop participants engage in to meet those goals. Only general information has been provided to maintain the proprietary nature of the workshop.
Table 2

*General Learning Goals and Activities of the APPQMR Workshop*

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<thead>
<tr>
<th>General goals</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundational concepts and critical elements of QM</td>
<td>Interactive Reading/Lesson, Quizzes, Discussion</td>
</tr>
<tr>
<td>QM rubric application &amp; decision making</td>
<td>Interactive Reading/Lesson, Quizzes, Discussions, Learning Objective/Competency Assignment, Specific Review Standard Assignment</td>
</tr>
<tr>
<td>Alignment concepts application</td>
<td>Interactive Reading/Lesson, Quizzes, Learning Objective/Competency Assignment, Alignment Assignment</td>
</tr>
<tr>
<td>Drafting helpful recommendations</td>
<td>Interactive Reading/Lesson, Quiz, Discussion, Specific Review Standard Assignment</td>
</tr>
<tr>
<td>Networking</td>
<td>Discussion</td>
</tr>
<tr>
<td>Reflection &amp; Relating of concepts to the participant’s own courses</td>
<td>Discussion</td>
</tr>
</tbody>
</table>

The workshop’s learning experiences are centered around the QM rubric and intentional course design, thus providing excellent opportunities for participants to experience the initial stages of transformative learning by challenging their previously held frames of reference and validating contested beliefs through discourse. The workshop design simultaneously places a high degree of value on learners’ backgrounds and prior experiences, while also strongly promoting critical thinking and reflection. By acting on one’s reflective insight and critically assessing it, participants may progress to the highest stages of transformative learning. According to Allen (2017), this progression begins with the disorienting dilemma and leads to changes in beliefs and behaviors.

**Training Effectiveness Study Methods.** Research studies about the effectiveness of faculty development programs often use self-reporting tools like those used in general quality
assurance studies to gather data. For instance, one previously mentioned study described a small, liberal arts university’s three-day summer “Bootcamp” designed to help faculty redesign an online course and overcome anxiety about using technology (Johnson et al., 2012). The researchers gathered participant feedback in a post-workshop survey about the faculty members’ perceptions of the program’s usefulness and what they learned from it. Results of this study, which were overwhelmingly positive, were reported in terms of how the participants felt about their growth and self-confidence. Horvitz and Beach (2011) also used faculty surveys to evaluate the implementation of a professional development pilot program for experienced online faculty members. Surveys were designed to gather each participant’s sense of self-efficacy before, during, and after completing the program. They concluded that training programs have the potential to positively impact instructional strategies and practice, but that such pedagogical impacts warrant further investigation. In yet another study, Terantino and Agbehonou (2012) used faculty survey data that evaluated the 12-week “Build a Web Course” program they had completed. The program had been offered multiple times over a five-year period, so the survey data over time was analyzed to identify the program’s effectiveness and areas for improvement. Two key aspects of their findings were that faculty needed more help transferring their learning to online instruction and to successfully complete a QM course review. At the University of Wisconsin-La Crosse, Koepke and O’Brien (2012) used faculty surveys and interviews to determine what effect faculty participation in an online instructor training program had on their beliefs about online learning and perceived changes in their pedagogy, both online and face-to-face. Similar to McQuiggan’s (2012) previously mentioned research, Koepke and O’Brien determined (through self-reports) that faculty beliefs and teaching practices were significantly changed as a result of training. They also found a significant increase in the implementation of
pedagogical strategies espoused in the program. Finally, Budden and Budden (2013) conducted interviews of faculty training participants about their impressions of their QM training program’s value. This was a preliminary study of faculty perceptions, and the researchers planned to use the feedback gathered from participants to develop a campus-wide survey about QM knowledge and satisfaction. Providing faculty development for online course design as part of a larger quality assurance program is something Herman (2012) recognized as a common approach among institutions, and measuring the effectiveness of that development through faculty self-report is typical.

Mercer (2014) recognized a need to assess the impact of faculty training using metrics other than faculty self-reports alone. Within her mixed-methods study, she developed a criterion-based instrument, QDoc, to measure what impact the APPQMR workshop had on faculty knowledge of course design, faculty perceptions of their online course quality, and their willingness to use the QM rubric. Building on Mercer’s university-level study, Budzick (2014) conducted a mixed-methods action research study at a community college and used Qdoc as her quantitative instrument. Results of these two studies were contradictory. While Mercer found that participation had a statistically significant effect on faculty knowledge of best practices in course design, Budzick did not. Mercer’s study uniquely extended her research in a second phase in which she evaluated the impact training had on faculty who redesigned courses to meet QM standards. During this phase, she completed pre- and post-reviews of courses from three different faculty members using the QM Rubric before and after their training and redesign work. She found that the average course review score increased approximately 70%, even though none of the courses met the requisite 85% QM score. Chen et al. (2017) also made a case for using a mixed-methods data collection approach for professional development program evaluation to
gain empirical insights beyond the commonly used post-workshop survey. In this study, the researchers looked at faculty perceptions about training as well as changes in their skills and dispositions over time to determine the overall program effectiveness.

Throughout the literature, faculty perceptions about quality assurance, course design, and training in online education have been examined via self-report. Such studies are worthwhile to continue, particularly regarding the performance expectancy and effort expectancy perceptions that faculty hold of the QM rubric as a course design tool. However, very few studies combine the study of faculty’s perceptions with an evaluation of changes in faculty’s course design ability following QM rubric training as this study will do through its explanatory sequential mixed methods design.

**Faculty Perceptions**

The success of online initiatives in higher education is dependent upon faculty acceptance (Esterhuizen et al., 2013; Hixon et al., 2011; Ragan & Schroeder, 2014; Shelton & Saltsman, 2005). According to Shea (2007), faculty acceptance of online teaching was identified as a critical part of quality assurance and program growth. If the faculty do not perceive that online learning is a worthy pursuit, they are less likely to accept and support its success. For example, some faculty members perceive that it takes more time and effort to teach online and to participate in online teaching professional development than it does to teach in brick-and-mortar classrooms (Haber & Mills, 2008; Herman, 2012; Hixon et al., 2011; Ragan & Schroeder, 2014; Shea, 2007; Wingo et al., 2017). This perception is a concern that faculty see as a primary barrier to the success of online education (Seaman, 2009). Faculty members’ perceptions about the value of online learning generally improve with greater experience levels (Ulmer, Watson, &
It is critical that institutions understand faculty perceptions of online teaching and related quality assurance methods (Wingo et al., 2017).

Research specific to faculty perceptions about the QM rubric as an instructional design quality assurance tool is limited, though it has gained some attention in recent years. Budzick (2014) and Mercer (2014) are two dissertation examples previously described. These studies used the same quantitative methods to better understand faculty perceptions of online course quality and their willingness to use the QM rubric after completion of the APPQMR workshop. Once again, the researchers found conflicting results in terms of faculty perceptions. Mercer found that perceptions did not change or improve because of training participation; whereas, Budzick found a statistically significant improvement in perceptions after participation in training. Like Budzik, Kearns and Mancilla (2017) found that faculty participation in APPQMR had a positive effect on the design of online and blended courses; however, this study evaluated the effect of training on course design and delivery and relied only upon faculty perceptions as evidence. There is insufficient quantifiable evidence about the effect QM training has on faculty perceptions of the rubric and on course design ability; yet there is ample research about how the perceptions of a technology or innovation like the QM rubric may influence users’ intentions to adopt the solution. Derived from Davis’s (1989) technology acceptance model (TAM), an instrument to measure the dependent variables of perceived usefulness and perceived ease of use was used within this study. The research was extended via the unified theory of acceptance and use of technology (UTAUT) by Venkatesh et al. (2003) to include descriptive exploration of the constructs of social influence and facilitating conditions. The following section briefly describes TAM-related literature and how this model fits within the current context.
Technology Acceptance Model. Through a review of literature from 1986 to 2013, Marangunić and Granić (2015) found the TAM to be the most influential theory and model for explaining and predicting users’ acceptance of technology based on their perceptions of the technology’s usefulness and ease of use. In a meta-analysis of 88 empirical studies, King and He (2006) found the TAM to be a “powerful and robust predictive model” (p. 751), able to be used in a wide variety of technology use scenarios to predict a user’s behavioral intention. The use of “technology” has been defined and applied broadly throughout the literature. For example, Stewart, Bachman, and Johnson (2010) used a modified version of the TAM to help predict faculty members’ intentions to teach online based on their perceptions about online education’s usefulness and ease of use. The TAM model has also been applied as a theoretical framework to research related to QM as an innovation for course developers. For example, Budzick (2014) used TAM as a theoretical framework to study and understand faculty’s perceived value of the APPQMR workshop and the QM rubric in a fashion similar to the TAM model. Rucker et al. (2015) also used the model as a theoretical framework because “the innovation in this study was the set of QA standards adopted by the university and the review process itself, which requires faculty to go about developing their courses in a different way” (p. 39).

Unified Theory of Acceptance and Use of Technology (UTAUT). There are additional models for researchers interested in the factors that influence technology acceptance and perceptions of technology. Sundaravej (2010) summarized the evolution of models and theories from the pre-TAM era (the theory of reasoned action) through TAM, TAM2, and several others, ultimately leading to the unified theory of acceptance and use of technology model which was developed by Venkatesh, Morris, Davis, and Davis in 2003. According to Venkatesh et al. (2003), the UTAUT has four constructs which can have an impact on behavioral intention:
performance expectancy, effort expectancy, social influence, and facilitating conditions. Within this model, performance expectancy is equated with perceived usefulness and has been found to be the strongest predictor of a user’s intention to adopt a technology or innovation. Effort expectancy is equated with perceived ease of use and has been found to be a significant predictor of user behavior during the period immediately following training. Venkatesh, Thong, Chan, Hu, and Brown (2011) later proposed an extension to the UTAUT model that combines it with expectation-confirmation theory (ECT) and trust, yet the core constructs remained unchanged. All of these models, as well as the technological, pedagogical, and content knowledge (TPACK) method, have been used to explore and explain the perspectives and behaviors of faculty in relation to online instruction and technology acceptance (Allen, 2017) by moving beyond internal perceptions to external factors. Perceptions of usefulness and ease of use, even though renamed at times, have remained constant constructs throughout the various models and have proven to be valid and reliable predictors of adoption. Thus, the original TAM terms of perceived usefulness and ease of use are used interchangeably with the original UTAUT constructs of performance expectancy and effort expectancy for the present study.

Argument

Within the literature, the methods most often used to evaluate the effectiveness of faculty development and distance education course quality are student outcomes, student surveys, and/or self-reported faculty perceptions of course quality. Student-related measures (e.g., student outcomes or learner satisfaction) are used because student success and retention are major goals of the institution and often required for accreditation reporting. It is assumed and expected that faculty who have completed training will put newly learned design, development, and
instructional skills into practice and therefore have a positive impact on student success and engagement. Figure 1 illustrates this connection.

![Diagram: Faculty Development → Course Design → Student Outcomes]

*Figure 1. The connection between faculty development and student outcomes.*

Following the UTAUT model by Venkatesh et al. (2003), it may be possible to predict faculty acceptance of the QM course design standards by examining the underlying constructs of performance and effort expectancy. The level of QM acceptance, and ultimately of faculty course design abilities, may further be influenced by the degree to which others at the institution support QM and by the organization’s infrastructure to support its use after training has been completed. According to Venkatesh et al., gender, age, experience, and voluntariness of use are key moderators between the constructs and a user’s behavior. Measuring these variables via self-report is congruent with data collection methods in professional development.

Using faculty self-reported measures is another frequently used method of data collection to evaluate the effectiveness of professional development programs like the APPQMR workshop. Faculty surveys, post-training evaluations, and interviews are valuable because they provide key information to professional development designers to help make improvements to the programs they offer. However, they could be biased or inaccurate representations of what was taught so they should be used in strategic ways to reduce error and to improve generalizability. Existing faculty development literature reviews provide a “pulse-check” on the types and frequency of programs offered, yet do nothing to evaluate the effectiveness of those programs by determining what effects professional development has on course developer perceptions and their ability to design online or hybrid courses to meet quality standards.
A variety of faculty development opportunities exist for distance education instructors and course developers to help assure high quality course design. Despite the assortment of options, more training is needed specific to the quality standards used to evaluate course design in online and hybrid learning (Rucker et al., 2015; Terantino & Agbehonou, 2012). This is particularly true in cases where faculty serve as peer-evaluators of one another’s courses and formative peer feedback is needed to improve course design skills, as is the case with QM (Schwegler & Altman, 2015). Quality Matters provides their expertly designed APPQMR workshop as one option to fill this need. In APPQMR, course developers receive training specific to the QM rubric, process, and principles that support effective online and hybrid course design.

More research is needed to measure the influence of the APPQMR workshop. Community college faculty who design and develop distance education courses need to perceive the QM course standards as useful and their effort to use the rubric to be relatively easy if they are going to accept and use it as a course design tool. Additional research is needed to better understand what influence QM training has on faculty’s course design abilities. Finally, more research is needed to extend community college administrators’ understanding of the social influences and facilitating conditions that might influence long-term adoption and use of the QM rubric as a course design tool.

Summary

Distance education, and more specifically online and hybrid education, is an integral part of higher education today. It is imperative that online and hybrid courses be designed, developed, and delivered according to best practices in instructional design to ensure quality; such is the goal of QM. Learner success and satisfaction are tied to proper course design; therefore, faculty
development regarding online course design is a crucial first-step to the success of an online program. Throughout the literature, studies have been done to evaluate the quality of online courses and course design using student outcomes and evaluations. Self-reported faculty data have also been used to measure course quality and the effectiveness of in-house faculty professional development programs. There is a gap in the literature regarding the influence training has on faculty’s ability to apply QM principles after participating in QM’s APPQMR workshop. The present study addresses the research gap through analysis and description of faculty perceptions, reported abilities, and course design behaviors. This study also measures faculty perceptions of the QM rubric’s usefulness and ease of use as a course design tool through both quantitative and qualitative measures. Finally, it explores the constructs of social influence and facilitating conditions within the community college setting. Chapter three outlines the study methodology.
CHAPTER THREE: METHODOLOGY

Introduction

This mixed method study examined the influence of the APPQMR training on faculty’s perceptions (i.e., usefulness and ease of use) of the QM rubric and of their ability to apply QM principles to the online and hybrid course development process within a community college setting. The sections that follow describe the study’s design, participant characteristics, and setting. Details about the instrumentation, procedures, and data analysis of the study’s two phases are described next. Chapter three concludes with a discussion of the study subjectivities.

Investigation Plan

As noted, the purpose of the explanatory sequential mixed methods study was to examine the influence of the APPQMR training on faculty’s perceptions about the QM rubric and of their ability to apply QM principles to the design and development of an online course. An explanatory sequential mixed methods study was chosen as the most appropriate design as the intent of the research was to first conduct and analyze quantitative data, then use qualitative methods to help explain the quantitative results in more detail (Creswell, 2015). The study was comprised of two phases. Phase one included quantitative data collection and analysis. Phase two included qualitative data collection and analysis.

Phase One

The quantitative portion of the study employed a causal-comparative research design. A survey was distributed to all faculty at two community colleges. The purpose of the survey was to assess their perceptions of the usefulness and ease of use of the QM rubric. Survey respondents were then grouped by their participation in the APPQMR workshop. The first group consisted of respondents who completed the APPQMR training within the last five years. The
second group consisted of those who had not completed APPQMR in the time specified but may have participated earlier or in their traditional faculty course development training at their institutions. The differences in faculty perceptions based on participation in the APPQMR training were examined.

Causal-comparative designs are used to explore the possible cause and effect relationships between variables that exist (Creswell, 2014). A causal-comparative design is a type of nonexperimental quantitative design often chosen to gain information about a phenomenon about which little is known after it occurred naturally or was already manipulated (Rovai, Baker, & Ponton, 2013). It is exploratory. Because extraneous variables are not controlled for in this design, the results of the research can only suggest that one variable may cause another. A more rigorous, experimental design is needed to verify the results.

**Phase Two**

A basic qualitative design was then employed to a) explain how successful completion of APPQMR affected participants’ perceptions of the QM rubric, b) describe faculty’s experiences in this professional development training, and c) explore faculty’s perceptions of social influences and facilitating conditions at their community colleges. From among the survey participants in phase one, I selected eight individuals who had completed the APPQMR workshop within the last five years for follow-up interviews. Interviews were recorded, transcribed, coded, and analyzed.

A basic qualitative research design was chosen as it is commonly used in educational research to investigate how people interpret experience, construct their worlds, and attribute meaning to their experiences (Merriam & Tisdale, 2016). Further, basic qualitative designs offer
ways of learning about what people think, know, feel, and do through observation, interaction, and analysis (Patton, 2015). The following section describes the study’s participants.

**Participants**

The population of this study included full-time and adjunct faculty members at two community colleges in the southeastern United States that subscribe to QM for internal quality control initiatives. Phase one of the study was limited by time and based on the use of intact faculty groups. Thus, convenience sampling (Rovai, Baker, & Ponton, 2013) was used to recruit participants from the available and accessible pool of faculty at the participating institutions.

**Phase One**

The study’s total sample size was not predetermined because of the nature of survey dissemination, voluntary participation, and convenience sampling. The survey requests were emailed to approximately 470 full-time and part-time faculty members among the two participating institutions. Forty-six responses were returned, for an overall response rate of 9.78 percent. Seven invalid returned responses had to be eliminated before data analysis, resulting in a final sample size of 39.

Demographic data of respondents were collected during the survey. The participants were heterogeneous in age, gender, faculty status, years of service, and experience level developing distance education courses (see Table 3). Participants also represented a variety of academic disciplines, such as applied arts; social and behavioral sciences; business, computer and technology related fields; humanities; mathematics; and natural sciences. All participants were white except one African American. All participants held a master’s degree or higher – which is consistent with the standard educational requirement to teach at the community college level.
(SACSCOC, 2006). The college names provided here and used throughout the manuscript are pseudonyms to protect the anonymity of the research sites.

Table 3

Phase One Sample Participant Characteristics as a Percentage, Disaggregated by Group

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>APPQMR Training Group</th>
<th>Non APPQMR Training Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 17)</td>
<td>(n = 22)</td>
</tr>
<tr>
<td>Institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Town</td>
<td>29.4</td>
<td>81.8</td>
</tr>
<tr>
<td>Sterling</td>
<td>70.6</td>
<td>18.2</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>64.7</td>
<td>45.5</td>
</tr>
<tr>
<td>Male</td>
<td>35.3</td>
<td>54.5</td>
</tr>
<tr>
<td>Faculty Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjunct Instructor</td>
<td>5.9</td>
<td>0</td>
</tr>
<tr>
<td>Instructor</td>
<td>5.9</td>
<td>45.5</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>23.5</td>
<td>22.7</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>29.4</td>
<td>27.3</td>
</tr>
<tr>
<td>Professor</td>
<td>35.3</td>
<td>4.5</td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-39</td>
<td>17.7</td>
<td>27.2</td>
</tr>
<tr>
<td>40-49</td>
<td>41.2</td>
<td>9.1</td>
</tr>
<tr>
<td>50-59</td>
<td>29.4</td>
<td>36.4</td>
</tr>
<tr>
<td>60 and over</td>
<td>11.8</td>
<td>27.3</td>
</tr>
<tr>
<td>Experience Developing Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>11.8</td>
<td>50.0</td>
</tr>
<tr>
<td>One to two courses</td>
<td>41.2</td>
<td>9.1</td>
</tr>
<tr>
<td>Three or more courses</td>
<td>47.1</td>
<td>40.9</td>
</tr>
<tr>
<td>Years at Institution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 years</td>
<td>17.6</td>
<td>40.9</td>
</tr>
<tr>
<td>6-10 years</td>
<td>29.4</td>
<td>18.2</td>
</tr>
<tr>
<td>11-15 years</td>
<td>35.3</td>
<td>13.6</td>
</tr>
<tr>
<td>16 or more years</td>
<td>17.6</td>
<td>27.3</td>
</tr>
</tbody>
</table>

Phase Two

At the completion of phase one, purposeful sampling was used to identify and solicit faculty to participate in phase two (Rovai et al., 2013). A total of eight survey participants who indicated that they had completed APPQMR training within the last five years were invited to
participate in an interview. To ensure maximum variation among participants, individuals were selected based on college affiliation, general demographic information, and experience level. Specifically, individuals from both colleges were sought to provide broader generalizability of the study results. Within the two institutions, interviewees were selected who reported both positive and negative perceptions and based on age, gender, and experience level teaching and developing distance education courses. According to Venkatesh et al. (2003), gender, age, and experience are key mediating variables when exploring users’ acceptance of an innovation. Table 4 summarizes the participant characteristics and perception scores from phase one of the study.

Table 4

<table>
<thead>
<tr>
<th>Case</th>
<th>Institution</th>
<th>Age (Yrs.)</th>
<th>Gender</th>
<th>Faculty Status</th>
<th>Yrs. Exp.</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrew</td>
<td>Sterling</td>
<td>55-59</td>
<td>Male</td>
<td>Professor</td>
<td>16-20</td>
<td>48</td>
</tr>
<tr>
<td>Vaughn</td>
<td>Central Town</td>
<td>45-49</td>
<td>Female</td>
<td>Asst. Prof.</td>
<td>6-10</td>
<td>28</td>
</tr>
<tr>
<td>Michelle</td>
<td>Sterling</td>
<td>40-44</td>
<td>Female</td>
<td>Asst. Prof.</td>
<td>0-5</td>
<td>47</td>
</tr>
<tr>
<td>Lora</td>
<td>Sterling</td>
<td>60-64</td>
<td>Female</td>
<td>Assoc. Prof.</td>
<td>16-20</td>
<td>55</td>
</tr>
<tr>
<td>Sheila</td>
<td>Central Town</td>
<td>30-34</td>
<td>Female</td>
<td>Asst. Prof.</td>
<td>6-10</td>
<td>25</td>
</tr>
<tr>
<td>Dwayne</td>
<td>Sterling</td>
<td>55-59</td>
<td>Male</td>
<td>Assoc. Prof.</td>
<td>11-15</td>
<td>38</td>
</tr>
<tr>
<td>Rachel</td>
<td>Central Town</td>
<td>45-49</td>
<td>Female</td>
<td>Professor</td>
<td>6-10</td>
<td>29</td>
</tr>
<tr>
<td>Linda</td>
<td>Sterling</td>
<td>45-49</td>
<td>Female</td>
<td>Professor</td>
<td>11-15</td>
<td>31</td>
</tr>
</tbody>
</table>

Note. a Each participant is listed by an assigned pseudonym.

b The terms assistant and associate professor have been abbreviated as Asst. Prof. and Assoc. Prof, respectively.
c The combined PU and PE score range is 11-55.

Setting

The Community Colleges

Faculty participating in this study were from two community colleges accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award associate degrees, certificates, and continuing education. The institutions, Central Town Community College (Central Town) and Sterling Community College (Sterling), are located in the southeastern United States. Both institutions are basic QM subscribers. That is, both
institutions have a basic subscription, an annual membership option for institutions interested in improving course design through internal reviews using the QM rubric. Each college utilized the QM rubric as a course design tool for online and hybrid education for more than five years but has not sought official QM course reviews for certification. Both institutions mandate that distance education courses meet QM standards as outlined in the rubric. Both colleges have a distance education department, although the number of staff members varies between them. The staff in these departments provide support to faculty who are responsible for the design and development of online and hybrid courses. The two schools’ settings vary in their approach to QM training and support for course developers. Additional details are provided in the following paragraphs.

Central Town Community College. Central Town has an approximately 5,000 full-time equivalency (FTE) rate and about 300 full and part-time faculty members who received the invitation to participate in this study. Only one adjunct professor responded to the survey. The distance education staff at Central Town includes four staff positions: an instructional support specialist, an instructional design specialist, a director, and a coordinator. A faculty committee advises distance education. At Central Town, QM was introduced as part of a grant that ended approximately five years ago. While the grant was in place, several faculty members completed the APPQMR online workshop. After grant funding expired, QM training was moved in-house. Current training includes a copy of the QM workbook and a meeting with the instructional design specialist or distance learning director. Training consists of reviewing the workbook together and guided practice in writing objectives. The distance learning staff are also available to provide feedback to faculty who are preparing courses for a QM review. Before an online or hybrid course may be added to the schedule, it must pass an internal QM review by three faculty
members. Peer QM evaluations are not compensated. Current administration believes that there may be a lack of faculty buy-in and acceptance of QM in general; however, the administration also believes the atmosphere is improving. A number of course developers have started making course design improvements following QM standards. Without funding for external training such as APPQMR, the distance learning office is considering development of a series of in-house workshops to teach QM principles of course design.

**Sterling Community College.** Sterling has an approximately 4,000 full-time equivalency (FTE) rate, about 170 full-time faculty members, and approximately 210 adjunct faculty members. Although it was requested that all full- and part-time faculty receive the invitation to participate in the study, Sterling administration chose to send it to only full-time faculty. The distance education staff at Sterling includes a dean, five professional staff (*e.g.*, instructional designers and trainers), and three faculty members with instructional design expertise. Sterling introduced QM to the faculty six years ago under the leadership of a senior faculty member with part-time responsibility for instructional design and distance education administration. Faculty are encouraged to complete APPQMR, followed by two additional QM workshops: the peer reviewer course (PRC) and designing your online course (DYOC). Academic Affairs and the distance education department pay for any QM workshops a faculty member takes. However, faculty are currently not required to complete training before developing a distance education course. Faculty support is provided in the form of instructional design assistance and a written set of guidelines for converting traditional courses to distance education formats. Additional support includes an annual summer institute, technology workshops, and online learning faculty mentors. Every semester, APPQMR is offered to new hires via email. All instructional design staff also complete APPQMR to help prepare them for consulting with course developers. To
date, approximately 41 percent \((n = 70)\) of full-time faculty at Sterling have completed the APPQMR workshop.

All distance education courses at Sterling are reviewed for compliance with QM standards through a systematic five-year cycle. Each academic year, academic deans and the distance education dean collaboratively select courses from two academic divisions for internal QM peer review. Only faculty who have completed QM training may serve as peer reviewers, and they receive a financial stipend for their work on the review team. Distance education administration believes that the adoption and implementation of the QM rubric by faculty – and the accompanying professional development provided – has resulted in a largely positively reception among the faculty.

**Setting for Data Collection**

The survey for phase one of the study was hosted via an online platform, and a link to it was distributed via email to each faculty member’s college account by an appointed institutional liaison. This allowed for participation from anywhere the individuals had Internet access. For phase two, interviews were conducted online using web-conferencing technology hosted by the researcher. In the following sections, the instrumentation, data collection, and analysis of the two phases are sequentially described in greater detail.

**Phase One: Quantitative Method**

**Instrumentation**

The first research question asked: How does successful completion of the APPQMR professional development training effect participants’ perceptions about the QM rubric? The independent variable was participation in the APPQMR workshop within the last five years. Faculty’s perceptions of the QM rubric’s usefulness and ease of use were the two dependent
variables. An instrument derived from Davis’s (1989) technology acceptance model (TAM) and informed by the unified theory of acceptance and use of technology (UTAUT) developed by Venkatesh et al. (2003) was used to measure how useful and easy to use the QM rubric was perceived to be (Gibson, Harris & Colaric, 2008). Both perceived ease of use and perceived usefulness reflect faculty perspectives about the QM rubric (Rucker et al., 2015).

**Definition of Variables.** Table 5 lists the theoretical and empirical rational for inclusion of the variables, their narrative definitions, operational definitions, and levels and unit of analysis.

Table 5

<table>
<thead>
<tr>
<th>Study Variables</th>
<th>Theoretical or empirical rationale for inclusion of the variable</th>
<th>(Question) Variable</th>
<th>Narrative definition</th>
<th>Operational definition</th>
<th>Level and unit of analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformative Learning Theory (TLT), Mezirow (1991); Adult Learning Theory (ALT), Knowles (1967); Rucker et al., 2015</td>
<td>(1) Independent variable: community college faculty participation in APPQMR</td>
<td>TLT, Mezirow (1991); ALT, Knowles (1967); Budzick, 2014; Gibson et al., 2008; Huang, Deggs, Jabor, &amp; Machmes, 2011; King &amp; He (2006); Rucker et al., 2015</td>
<td>A nominal category of faculty members who either completed or did not complete APPQMR training</td>
<td>Quality MattersRubricFaculty Survey PU items 1-6</td>
<td>Ordinal Level with a 5-point Likert scale: strongly agree to strongly disagree*</td>
</tr>
<tr>
<td></td>
<td>(1) Dependent variable: perceived usefulness (PU)</td>
<td></td>
<td>The “degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989, p. 320).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theoretical or empirical rationale for inclusion of the variable</td>
<td>(Question) Variable</td>
<td>Narrative definition</td>
<td>Operational definition</td>
<td>Level and unit of analysis</td>
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<td>---------------------------------------------------------------</td>
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</tr>
<tr>
<td>same as above</td>
<td>(1) Dependent variable: perceived ease of use (PE)</td>
<td>The “degree to which a person believes that using a particular system would be free of effort” (Davis, 1989, p. 320).</td>
<td>Quality Matters Rubric Faculty Survey PE items 1-5</td>
<td>same as above</td>
<td></td>
</tr>
</tbody>
</table>

*Note. As is common in educational research, the ordinal scale ratings for survey questions were calculated to produce a number. Thus, a parametric analysis was used to analyze the data.*

**Instrument Development.** Faculty’s perceptions of the QM rubric’s usefulness and ease of use were the variables assessed by the Quality Matters Rubric Faculty Survey. Davis’s (1989) Technology Acceptance Model (TAM) provides a valid framework and instrument to evaluate the constructs of perceived usefulness and perceived ease of use of information technology innovations. According to the TAM model, these constructs determine user acceptance of the innovation. Davis’s original instrument that assessed usefulness and perceived ease of use contained two subscales and a total of 12 survey items: six survey items related to perceived usefulness and six items related to perceived ease of use. Each statement was responded to using a seven-point Likert scale range from extremely unlikely (one point) to extremely likely (seven points), resulting in a single subscale range of seven to 30. Rather than on interpreting scores on the individual scales, research involving the TAM has historically measured the effect perceived ease of use has on perceived usefulness, and it has measured the effect of each of these variables on a user’s behavioral intention (Marangunić & Granić, 2015). It can therefore be argued that a higher perceived ease of use subscale score means a user is more likely to find the technology/innovation useful, and a higher perceived usefulness score means a user is more likely to adopt the technology or innovation. Validation of the TAM instrument scales
demonstrates strong evidence that perceived usefulness and perceived ease of use are determinants of user behavior (Davis, 1989; King & He, 2006; Schepers & Wetzels, 2007). In other words, individuals who perceive that a tool or innovation will help them in their work and that is relatively easy to use are more likely to adopt it. The formulation of the more recent UTAUT model by Venkatesh et al. (2003) further supported these findings, showing that performance expectancy and effort expectancy are reliable indicators of users’ acceptance of a technology innovation.

Development of the original TAM scale and refinement of it followed a rigorous process across multiple studies to refine the instrument and to ensure high reliability and validity. In the originally developed scale, “Cronbach alpha reliability for perceived usefulness was .97 in Study 1 and .98 in Study 2. Reliability for ease of use was .91 in Study 1 and .94 in Study 2” (Davis, 1989, p. 333). Using Cronbach’s alpha, King and He (2006) calculated an average reliability of 0.873 for perceived ease of use (n = 76) and 0.895 for perceived usefulness (n = 77). Internal consistency reliability measures for the development of UTAUT scale, which measures performance expectancy and effort expectancy, were all greater than 0.70 (Venkatesh et al., 2003). Later studies have also confirmed high reliability of the performance and effort expectancy constructs (e.g., Sundaravej, 2010) where PE = 0.90 and EE = 0.92, n = 262).

For the present study, I adapted the TAM and UTAUT instruments, drawing mainly from the original TAM instrument (Davis, 1989), to create a similar set of questions. I changed the name of the specific technology from “CHART-MASTER” to “QM Rubric” and added some clarifying language about its use by faculty working as online or hybrid course designers. For example, the original perceived usefulness item “Using CHART-MASTER in my job would increase my productivity” (Davis, 1989, p. 340) was changed to “Using the QM rubric would
increase my productivity as an online/hybrid course designer.” I also eliminated one item in the perceived ease of use subscale, reducing the section from six statements to five. These changes are minor and do not invalidate the reliability of the instrument. During data analysis, I calculated Cronbach’s alpha to determine reliability with the sample population \((n = 39)\). The coefficient alpha for perceived usefulness was 0.944; the coefficient alpha for perceived ease of use was 0.936. Following the UTAUT scale as an example (Venkatesh et al., 2003), I used a 5-point Likert range from strongly disagree to strongly agree, where 1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, and 5 = strongly agree. Scores on the instrument ranged from 11 to 55, with higher scores indicating strong perceived agreement that the QM rubric is both useful and easy to use. See Appendix B for the final instrument entitled “Quality Matters Rubric Faculty Survey,” which was administered online.

**Procedures**

After obtaining University of Memphis Institutional Review Board (IRB) approval (Appendix C) to conduct this study, I submitted and received IRB approval at the two community colleges where the research was conducted. I then scheduled the dissemination and collection of the participant recruitment message (Appendix D) and survey through the appointed liaisons. I requested that two reminder emails be sent during the collection period to encourage participation; however, both institutions chose to send the message only twice – once for the initial request and one reminder. They noted concern for sending too many messages to faculty distribution lists. Participants completed an informed consent (Appendix E) online, then proceeded to the survey questions. Consent and responses to the survey were collected in an online survey system, extracted to Microsoft® Excel for Mac (version 15.32), then formatted for statistical analysis in IBM® SPSS Statistics (version 24) software.
Phase one of the study lasted three weeks during January 2018. The survey was open to faculty for two weeks, followed by one week for data analysis of the hypothesis. A description of the data analysis procedures follows.

**Analysis of the Null Hypothesis**

The hypothesis for the first research question asserted that there is no statistically significant difference in faculty’s perceptions of the QM rubric’s usefulness and ease of use between training participants and non-training participants. A multivariate analysis of variance (MANOVA) was initially planned to examine the difference in the linear combination of the two dependent variables between groups. Prior to conducting the MANOVA, the assumption of multicollinearity, which indicates the presence of redundant dependent variables and decreases statistical efficiency, was examined through bivariate correlation analysis. Perceived usefulness and perceived ease of use were significantly correlated \( (p = 0.01) \), with a correlation coefficient of 0.811. Davis’s (1989) original discussion indicated a statistically significant correlation between both perceived usefulness and ease of use and self-reported adoption, though perceived usefulness resulted in a much stronger correlation than perceived ease of use. King and He (2006) supported this finding as well, noting that “the influence of perceived usefulness on behavioral intention is profound, capturing much of the influence of perceived ease of use” (p. 751). While Venkatesh et al. (2003) found performance expectancy, effort expectancy, and social influence as direct determinants of intention and did not note a significant correlation between the constructs, they did find that the effects of effort expectancy decreased with experience. Likewise, they concluded that performance expectancy appeared to be the strongest determinant of intention. According to Rovai et al. (2013), “one should avoid variables with a bivariate correlation of greater than 0.70 in tests where absence of multicollinearity is an assumption” (p.
Thus, the two variables (PU and PE) were combined into one and an independent samples $t$-test was used to analyze the difference between mean perception scores comparing the group that completed APPQMR training and the group that did not complete it. The assumption of normality was analyzed through examination of histograms and Shapiro-Wilks values produced in SPSS. Boxplots were used to examine the assumption of no extreme outliers. Homogeneity of variance was analyzed using Levene’s test. A $p$ value of .05 was set to determine statistical significance and to make a decision about the rejection of the null hypothesis, which is conventional in educational research (Gall, Gall, & Borg, 2007; Lane, 2013). The data from phase one and the analysis of quantitative data informed the qualitative research conducted in phase two of the study, including the selection of participants and refinement of the interview questions as described further in the following section.

**Phase Two: Qualitative Method**

**Instrumentation**

The second research question asked: What is faculty’s experience in QM professional development? What key aspects of the training helped or hindered faculty’s perceptions of and ability to apply principles from the QM rubric and develop an online course? What aspects influence course design behaviors? The third research question asked: How do social influence and facilitating conditions at the community college influence long-term adoption and use of the QM rubric as a course design tool? This line of questioning invokes a need to better understand the influence training had on faculty and their perception of the QM standards’ importance at their institutions. These types of phenomena cannot be fully described through quantitative methods alone. Therefore, this second phase of the study utilized a basic qualitative research
design to gain further descriptive insights into faculty’s perceptions about QM, their experiences in APPQMR, and their design abilities. Individual interviews were employed to gather data.

The second instrument used for data collection in this study was a protocol for semi-structured interviews (Appendix F). This allowed for flexibility and responsiveness to the individual while using the interview protocol as a general guide (Merriam & Tisdale, 2016). Preliminary lead and stem questions were created based on the research questions and adjusted based on the results of the quantitative data analysis – as is standard in an explanatory sequential mixed methods study (Creswell, 2015). For example, the first interview question related to the first research question and was designed to explain survey results. The lead question directly targeted faculty impressions of the QM rubric: “Describe for me your impressions about the QM rubric now, after training, in comparison to any impressions about the rubric you held before the training.” Following the survey analysis in phase one, this question was eliminated in favor of the first probing question because the combined perceptions score already gave me an indicator of their impressions about the rubric. Potential probing questions were written to rephrase and extend the lead question as needed during the interview. Utilizing alternative probing questions prompted a more natural response and description from participants. The following three potential probes helped reframe the original question about faculty perceptions. I used the additional questions with discretion to gain further insights from the interviewee:

A. How do you currently feel about using the Quality Matters rubric to design and evaluate online courses? How has that changed since you participated in training, if at all?

B. On a scale of 1-10 with 1 being terrible and 10 being amazing, how would you rate the QM rubric as a course design tool, and why?
C. How did your impressions of the QM rubric change as a result of your participation in training, if at all?

Additional questions were developed to address research questions two and three, such as: “Describe your experience in the QM training” and “What topics or aspects of the QM workshop were most helpful to you as an online course developer?”

Procedures

Phase two began in February 2018, immediately following phase one, and continued for five weeks. Responses to the online survey from phase one were used to determine eligibility to participate. Thirty-nine valid responses to the online survey were received. From this sampling pool, purposive sampling was used to identify participants.

After identifying qualified phase two participants, I contacted individuals through their self-reported email addresses to request and schedule web-based interviews (see Appendix G). I then collected signed interview informed consent forms (Appendix H) through email. Interviews, which lasted from 30 and 45 minutes each, were conducted and recorded via a web-conferencing system. To protect their anonymity, participants were assigned pseudonyms for the collection of all study data. Written transcripts were generated from the interviews via the web-conferencing system, transferred to Microsoft® Word for Mac (version 15.32), and compared to the audio files to ensure accuracy. To establish trustworthiness further, I emailed each participant a copy of the transcript to review and approve for accuracy. Data was then analyzed in accordance with the procedures described below. A debriefing statement (Appendix I) was also sent via email to thank interview participants for their involvement in the study and to provide a summary of the preliminary findings. As a member-checking procedure standard in qualitative studies (Creswell,
2013), the debriefing statement also included an invitation to confirm or clarify findings by a specified date.

**Analysis**

**Coding.** Following Corbin and Strauss’s (2015) framework of grounded theory procedures, interview transcripts were analyzed through a) open coding for concept identification, b) coding for concept development and elaboration, and c) coding for context, process, and integration (pp. 322-323). To prepare the data for coding, I transcribed the interviews using the web-conferencing tool then compared audio files to the transcripts using Microsoft Word. I was careful during transcription to separate sentences and paragraphs with natural breaks in the dialogue. This second encounter with the interview gave me an opportunity to review and reflect on the entire experience before beginning to code or analyze the data. The full interview transcripts were then put into the online application Saturate (Sillito, 2013), and I began open coding.

Corbin and Strauss (2015) defined coding as the “denoting of concepts to stand for data” (p. 85). Merriam and Tisdale (2016) described open coding as a first step in the process of inductive data analysis. Open coding is being open to anything that might be useful to help answer the research questions. In lieu of line-by-line coding, I reflected on what I thought was the main idea in each section and used the process of open coding to explore the data as it presented itself. In many cases, this led to the identification of multiple codes within a participant’s statements. Figure 2 shows an example of a participant’s partially coded transcript within Saturate.
After each interview, I exported the list of codes from Saturate to Excel. This allowed me to code for concept development and elaboration as I referenced the developing list of codes. I also began the process of making constant comparisons between participants. Making constant comparisons, which Corbin and Strauss (2015) defined as “the analytic process of comparing different pieces of data against each other for similarities and differences” (p. 85), is a common process within qualitative analysis. I also quickly realized that many of my codes were forming natural groups or categories. With the second transcript, I began applying codes and their corresponding categories simultaneously following the constant comparison method. Analysis focused on the key concepts within the research questions, such as APPQMR and QM perceptions, to formulate initial categories. Between analysis of each transcript, I continually
reviewed and refined the code list and categories to combine like ideas. Figure 3 depicts a screenshot sampling of the codes by category within Saturate.

<table>
<thead>
<tr>
<th>Category</th>
<th>Codes in category</th>
</tr>
</thead>
<tbody>
<tr>
<td>appqmr</td>
<td>accessibility 1x</td>
</tr>
<tr>
<td>9 codes applied to 34 paragraphs</td>
<td>general experience 1x</td>
</tr>
<tr>
<td></td>
<td>importance of an open–mind 5x</td>
</tr>
<tr>
<td></td>
<td>pre–training perceptions 2x</td>
</tr>
<tr>
<td></td>
<td>rigorous 1x</td>
</tr>
<tr>
<td></td>
<td>time–intensive 9x</td>
</tr>
<tr>
<td></td>
<td>transformative experience 3x</td>
</tr>
<tr>
<td></td>
<td>value for all instructors 8x</td>
</tr>
<tr>
<td></td>
<td>well–structured 8x</td>
</tr>
<tr>
<td>appqmr negative perceptions</td>
<td>busy–work 2x</td>
</tr>
<tr>
<td>2 codes applied to 3 paragraphs</td>
<td>too idealistic or not practical 1x</td>
</tr>
<tr>
<td>appqmr negatives</td>
<td>cumbersome time waster 2x</td>
</tr>
<tr>
<td>5 codes applied to 7 paragraphs</td>
<td>discussions 1x</td>
</tr>
<tr>
<td></td>
<td>not focused on important things for students 3x</td>
</tr>
<tr>
<td></td>
<td>poor f2f experience 1x</td>
</tr>
<tr>
<td></td>
<td>too much to remember 1x</td>
</tr>
</tbody>
</table>

*Figure 3. Screenshot within Saturate showing a few codes grouped by category.*

For the next phase of analysis, I exported a final list of codes and categories to Excel. Each code and its category were combined into a single cell and listed on a separate line for each time they were used. Figure 4 shows a screenshot of the initial data in this format. The final file contained 376 lines with 108 unique codes grouped by 22 categories.
Within this workbook, I began to organize categories into separate worksheets. I refined the list of codes and categories through a process of constant comparison between participant responses. I reduced the number of categories from 22 to 11 and sorted them by research question. During this process, I focused on coding data for context, process, and integration with one another and with the research questions. I began to identify potential themes within data sets and listed them directly in the worksheets. Patton (2015) labeled this strategy “inductive analysis and creative synthesis” (p. 47) and defined the strategy as follows:

Analysis begins with immersion in the details and specifics of the inquiry to discover important patterns, themes, and interrelationships; exploration and attention to what emerges is followed by confirmatory inquiry; analysis from the particular to the general is guided by analytical principles rather than by rules, and it ends with a creative synthesis. (p. 47)

Figure 5 provides an example of this final stage of coding from my workbook with an emerging theme grouped in column A. As I coded and analyzed data, I also utilized memo
writing to capture my thoughts on the process and emerging themes. The following section describes the process of memo writing.

**Figure 5.** Screenshot of Excel worksheet showing revised codes and emerging thematic analysis.

**Memoing.** During data collection and analysis, I created reflective memos. Birks et al. (2008) described how memoing improves the researcher’s engagement with the data and provides numerous benefits at multiple points in the process of research, not just analysis. For example, memos can be used to clarify one’s thinking, to articulate assumptions and perspectives, and to preserve thoughts, musings, and ideas that may later prove significant to the study (Birks et al., 2008, p. 69). Corbin and Strauss (2015) encouraged the use of memos to foster creative and analytic thinking during data analysis (p. 122). Memoing provided a useful way for me to record my interactions, thoughts, and decisions about the data as I collected information and later coded and compared one interview transcript to others. The following is an excerpt from my reflective memoing regarding the first interview participant:

*Friday, February 2*

*I’m looking forward to my first interview. From the survey, I see that Andrew’s perceptions of the rubric are all positive. Even though he is in the 55-59 age range and has been at the college a long time (16-20 years), he completed his doctorate within the last five years. He’s a full professor in a technology discipline. These facts about him make me think he is a lifelong learner who is open to new ideas and ways of doing things.*
His APPQMR was completed 5 years ago, but since then he has also completed two other QM trainings to become a certified peer reviewer. He has created and taught three or more courses following the QM rubric.

I kept some hand-written notes on the interview protocol. General reflections/takeaways on the interview:

- Perceives QM to be a good tool for establishing a baseline for quality assurance.
- Importance of an open-mind when training - may be challenged to change the way you think or do things.
- He didn’t have any preconceived ideas (for or against) QM prior to training, but only has positive takeaways from the experience. Has nothing negative to say about the training’s content or delivery.
- Mentioned a need to learn more about how to meet certain standards efficiently - such as building learner interaction within the LMS and accessibility of instructional materials for students with disabilities.
- Frustrations voiced related to the LMS and accessibility compliance.
- Feels there are pockets of QM supporters and of those who “couldn’t care less” but those are probably in the minority. Still others who comply begrudgingly because courses will not be approved without meeting standards.
- Knows there is ID support available, but has never utilized this resource.

Upon saturation and identification of themes, I reviewed my reflective memos again. This process allowed for additional reflection upon the findings and helped to ensure that the concepts were adequately described in chapter four. It also helped me formulate my thoughts for discussion of the findings in chapter five. I also came across this memo noting how I was engaging with the research, further illustrating the value and complimentary nature of simultaneous memoing and coding/analysis.

Tuesday, February 20
As I think about my research questions, I’m not yet seeing a lot of codes about R1: “How does successful completion of QM professional development effect participants’ perceptions about the QM rubric?” From memory, I know there is information in there, but I may have to reorganize to see it surface in direct response to the question. I think I’m not seeing the forest for the trees here. So far, I’ve sorted out pros, cons, and design changes as a result of PD. I know I have a few specific responses to this question, too, so I’ll need to look for those to see if I’ve coded and categorized them correctly. I’m also thinking (at least right now) that this may really get into the polarized differences between the two schools - the ones with the most negative reports also have the poorest perception scores and are all from the same school (and vice-versa). It seems like more fodder for chapter 5 than results specific in chapter 4, but we’ll see.
**Trustworthiness.** Lincoln and Guba’s (1985) evaluative criteria for establishing trustworthiness was employed in the design of this study. Credibility and dependability has been established by member checking of a summary and interpretation of findings and advisory auditing of both the process and product. Transferability was addressed through thick, rich descriptions of procedures and findings. Finally, confirmability was established through an audit trail and comparison of the study data between two institutions. While the methods employed allow for some generalizability and rich description, there are certain limitations discussed in chapter five that may limit broad generalizations. My personal and professional experiences in distance education have contributed to my perceived need for faculty training and the proposed study, therefore a description of subjectivities concludes chapter three.

**Subjectivities**

It is my belief, based on my personal and professional experiences in distance education and upon the literature, that institutions should provide professional development for online course designers and for online teachers. I believe these are two unique roles that need to be supported to help ensure quality in online education. Efforts have been made to mitigate potential researcher biases through the design of the study and its methodology.

As a researcher, I am intrigued by how faculty experience professional development and transfer those experiences into professional practice. Transformative learning theory is philosophically grounded in constructivism. It was Mezirow (1997) who said that, “The sequence of transformative learning activities…should be understood as sequential moments of meaning becoming clarified” (p. 193). I believe ample empirical and theoretical evidence supports the idea that participation in faculty development can positively influence the quality of online course design, so my motivation for this study is to extend this line of research to a more
diverse understanding of how community college faculty perceptions and course design abilities change because of participation in training. This information provides great value to the participating institutions and to my own institution’s professional development initiatives with course developers to ensure quality in their online offerings. The following chapter describes the results of this study.
CHAPTER FOUR: RESULTS

Introduction

The purpose of this study was to determine what influence the APPQMR training may have on community college faculty’s perceptions of the QM rubric and their ability to apply the rubric’s principles during course design and development. Chapter four presents the results of this research. Results are presented sequentially, beginning with the quantitative results of phase one, followed by the qualitative results of phase two. The description of qualitative results includes supporting evidence from the interviews conducted. The chapter concludes with a summary of both quantitative and qualitative findings. Interpretation and discussion of the results will be provided in chapter five.

Results

Phase One: Causal-comparative Research Design

Research question 1. How does successful completion of the APPQMR professional development training effect participants’ perceptions about the QM rubric? To address this question, a causal-comparative research design was used to examine the influence of APPQMR training on faculty’s perceptions of the QM rubric. Perceptions were captured in the Quality Matters Rubric Faculty Survey, then comparisons were made between groups who completed the APPQMR workshop and those who did not. An independent samples t-test was used to test the null hypothesis that there is no statistically significant difference in faculty perceptions of the QM rubric’s usefulness and ease of use between APPQMR training participants and those who did not receive training.

Sample size. Thirty-nine valid survey responses were used for the data analysis. I used a power of .80, a p value of .05, and a small (.25) to moderate (.50) effect size within G*Power 3.
(version 3.1.9.3) software (Heinrich-Heine-University, 2017) to identify an appropriate sample size for the statistical analysis. The resulting minimum sample size range was 128 to 506 (64 to 253 per group). Using a power table with a power of .80, a $p$ value of .05, and a moderate effect size, the resulting sample size recommended was lower at 64 (32 per group). Creswell (2015) suggested that at least 15 participants are needed per group for statistical comparison between groups. Results of the survey indicated that 22 respondents (56.4%) had not participated in APPQMR training in the last five years while 17 respondents (43.6%) had completed the training in that time frame. Though low, sufficient group sizes were established for the study according to Creswell’s minimum guidelines for the chosen research design. A higher sample size would lead to improved generalizability of the results and better power.

**Assumption testing.** Prior to conducting the $t$-test, assumption testing was conducted to determine if a parametric analysis was appropriate using the combined dependent variable (PU and PE). The assumption of normality was examined by creating a histogram and by normality testing. For normality to be assumed on a histogram, there must be a symmetrical, bell-shaped curve present (Rovai et al., 2013). Analysis of normality for perceptions resulted in a slightly negatively skewed curve for the APPQMR training group and a nearly bell-shaped curve for the non-APPQMR training group. The histograms indicated minor violation of normality for both groups, and normality tests demonstrated similar results. Normality was also examined using the Shapiro-Wilk normality test, which is commonly used for a sample size less than 50 (Rovai et al.). Non-significant results (a significance level greater than .05) indicate tenability of the assumption. Results for the APPQMR training group were non-significant at $p = 0.465$, while results for the non-APPQMR training group were significant at $p = 0.025$, indicating a violation of normality for the non-training group. Boxplots were examined to determine if any outliers
were present in either group. There were no outliers in the training group; however, there were three mild outliers and one extreme outlier present in the non-training group. Rovai et al. stated that the presence of extreme outliers normally poses a threat to the validity of parametric tests. Rovai et al. also suggested that parametric analysis is still a robust and appropriate choice when violations of normality assumptions are minor. However, a nonparametric analysis can be conducted to verify the results of the parametric analysis. Finally, the assumption of homogeneity of variance was evaluated using Levene’s test for equality of variance. Results demonstrated equal variances ($p = 0.334$) as the significance level was greater than .05, thus the assumption was tenable (Rovai et al., 2013).

**Results.** The independent $t$-test indicated that the difference in perceptions was not significant between groups that completed APPQMR training ($M = 40.0, SD = 11.25$) and groups that did not complete the training ($M = 36.09, SD = 9.75$), $t(37) = 1.16, p = .25, d = 0.375$. Since the $p$ value is greater than .05, I failed to reject the null hypothesis that stated that there is no statistically significant difference in faculty’s perceptions of the QM rubric’s usefulness and ease of use between training participants and non-training participants. Given the assumption violations previously described, a Mann-Whitney $U$ test was also run to verify the results of the parametric analysis. This is a nonparametric procedure usable as an alternative for determining difference between two independent group means when the assumptions of an independent $t$-test are not tenable (Rovai et al., 2013). The results of the Mann-Whitney test also indicated that there was no statistically significant difference in perceptions between groups that completed APPQMR training ($Md = 22.71$) and groups that did not complete the training ($Md = 17.91$), $U = 141.00, p = 0.191$. 
Given the UTAUT literature by Venkatesh et al. (2003), three potential confounding variables (i.e., gender, age, and experience level) were examined to determine if they influenced the findings. The chi-square test of independence indicated that there was no difference in the proportion of age groups across training participants and non-training participants, \( \chi^2 (n = 39) = 6.43, p = .16 \). Another chi-square test for independence with the Yates Continuity Correction indicated no significant difference in the proportion of males and females across the training participants and non-training participants, \( \chi^2 (1, n = 39) = 1.43, p = .232 \). Thus, these variables were not considered confounding. However, an additional chi-square test of independence indicated that there was a significant difference in the experience levels of faculty across the training and non-training group who did and did not participate in the training, \( p = .01 \). Given that each cell did not have five cases, Fisher’s exact test was also examined. Results were significant, \( p = .01 \). Therefore, an analysis of variance (ANOVA) was used to investigate if the level of experience influenced faculty’s perceived usefulness and ease of use composite score. Results of the analysis indicated faculty’s perceptions differed based on their experience, \( F (2,36) = 3.27, p = .049 \). Pairwise comparisons demonstrated that experienced faculty scored significantly higher than those with no experience \( (p = .01) \). However, there were no other significant differences between other pairwise comparisons. Given the fact that this variable could influence the final results, an analysis of covariance (ANCOVA) was run to compare faculty’s perceptions of the QM rubric’s usefulness and ease of use between training participants and non-training participants, while controlling for faculty experience. The results of the ANCOVA indicated that controlling for the potentially confounding variable of experience did not influence the study findings, \( F (2,36) = .63, p = .551 \). There was no statistically significant
difference in faculty’s perceptions of the QM rubric’s usefulness and ease of use based upon whether they did or did not participate in APPQMR training.

Summary. The first research question asked how successful completion of the QM professional development workshop APPQMR effected faculty’s perceptions of the QM rubric’s usefulness and ease of use. Statistical analysis in phase one indicated that between QM training participants and non-QM training participants, there was no significant difference in participants’ perceptions about the QM rubric’s usefulness and ease of use. While the statistical results provided some information comparing perceptions of usefulness and usability between groups, further questions remained about the influence QM professional development may have on participants’ perceptions of the rubric. Therefore, a basic qualitative research design was used to help explore and describe training participants’ perceptions of the QM rubric’s usefulness and ease of use. The design was also used to explore the second and third research questions pertaining to faculty’s experiences in QM professional development and the constructs of social influence and facilitating conditions at the community college level, which may influence long-term use of the rubric as a course design tool. The following section describes the results of this qualitative analysis.

Phase Two: Basic Qualitative Research Design

Phase two was a basic qualitative design used to help explain the results of phase one from the perspective of faculty who completed QM training and to explore the second and third research questions. Eight faculty from two community colleges who responded to the survey in phase one were interviewed. Interview transcripts were transcribed, coded, and analyzed. The following sections present the results of this analysis organized by research question.
Research question 1. How does successful completion of the APPQMR professional development training effect participants’ perceptions about the QM rubric? To begin exploring training participants’ current perceptions of the QM rubric’s usefulness and ease of use, I asked how they felt about using the rubric to design and evaluate courses. I also asked them to rate the QM rubric as a course design tool on a scale of one to 10, with one being terrible and 10 being amazing. Analysis of their individual and collective responses to this line of questioning revealed that most training participants saw the rubric as a useful framework for course design. The following section describes this theme in greater detail with supporting evidence from interview transcripts.

Theme one – training and provision of the QM rubric provided faculty with a useful, but not perfect, framework for course design. Most faculty interviewed perceived the QM rubric as a usable and helpful guide for the design of online and hybrid courses. Dwayne, for instance, described his perception of the QM rubric as very positive, calling it a “wonderful blueprint for designing an online course” and the best design tool that he has found. Even Sheila, who had the lowest composite perception score out of all faculty interviewed (25 out of 55 points), said “I think it’s a helpful guide. It helps me to do a checklist to ensure that I’m using high standards…” As a new faculty member, training and provision of the rubric provided Michelle with a framework for designing a course which otherwise could have been an overwhelming process:

I like it. I am a relatively new professor…and I am in the process of designing my first online course. I think it’s extremely helpful, because I wouldn’t have known to put in a lot of things or wouldn’t have thought of those things and also at the same time, it’s just kind of like a step-by-step guide…I’d say it’s a 10.
Overall, six of the eight interview participants expressed a positive perception of the rubric’s usefulness for course design. Most faculty perceived the QM rubric as a useful tool for improving course design and organization from a student perspective. Regarding course organization and structure, Andrew described course flow as “probably the best thing that comes out of the Quality Matters rubric as far as course development is concerned.” Likewise, Lora described how viewing course navigation from a student perspective revolutionized the way she designs classes. Dwayne explained how QM helped him improve his course design by chunking material into modules, aligning assessments with those modules, and focusing on student learning outcomes. Linda also talked about the importance of student-centered design. About the QM rubric, she stated that “My overall impression is that I wish everybody would use it because we would have online courses that were a whole lot more organized and well thought out.” Both Michelle and Lora expressed a similar belief, noting that the principles espoused within the QM rubric may also be applicable to other forms of teaching.

Although many faculty viewed the QM rubric favorably as a course design tool, a number of faculty posited that it could be improved. Even those with mostly positive perceptions, such as Andrew and Linda who had the two highest perception scores on the survey (48 and 55, respectively out of 55 points), stated that “there’s always room for improvement.” Further, Vaughn and Rachel expressed specific concerns about the rubric’s usefulness, such as an inherent subjectivity, a failure to evaluate the quality of content, and an inability to focus on what is best for students.

Vaughn stated that the more she uses the QM rubric, the less she cares for it. This helps explain her combined perception score, which was 28 out of 55 points, or approximately 51%. This score indicates a sense of being undecided about the rubric’s usefulness and ease of use.
While recognizing the value of objectives from an educator’s perspective, Vaughn described the rubric as a good starting point for course design. However, she does not feel that the rubric is as inclusive as it should be, nor does it ensure a good course. She explained:

> It’s very subjective in my opinion….I do think there needs to be more. I think the delivery – I think was my biggest problem with the process is that the delivery truly isn’t measured and I’ve seen some courses that…may have been able to pass QM, but they really aren’t beneficial to students at all.

Vaughn also described the QM rubric as being too static as it applies to her discipline area which is constantly changing to keep up with industry standards. Again, she labeled the rubric static in terms of online education, citing a cheating problem which causes instructors to frequently rewrite tests. In this case, she does not feel that the QM process allows for such changes. Other limitations Vaughn mentioned included a failure to evaluate the type or quality of content and a failure to check for working links in a course. The following statement illustrates how Vaughn views the QM process as a game to be played:

> So, I have designed something that has no problem passing QM. I wouldn’t run that course for anything. It was just to get a stamp of approval so we could put it on the schedule for next semester, knowing I would have to make changes to make it where I wanted it later. It’s the game. I mean, of course we all have to play at work.

Rachel, whose perception score was 29, expressed an even more negative perspective on the QM rubric’s usefulness. Like Vaughn, Rachel believes the rubric omits some important components such as the quality of content and assessments. However, she also feels as though following the rubric requires an excessive amount of “stuff” that complicates courses unnecessarily for students and causes them confusion. She stated that having a consistent
framework for building courses is needed, but that she does not often feel like she is making courses better by utilizing the QM standards or the review process. While Rachel did not find the rubric or training difficult, she questioned its usefulness. She felt that understanding, using, and following the rubric was not hard to do. About ease of use, Rachel stated that “…it’s completely usable. I’m just not one hundred percent sure if it – if everything in it – is to the best interests of my students.” Although she has made some minor edits to the course she inherited as a developer, she disagrees with the appropriateness of her current course’s design. Rachel explained that the design she employs does not benefit her students:

I edit it, but I don’t change the overall…Like the module-based approach does not meet well with the way our course is offered. It just doesn’t work really well. And so, I have these five modules that don’t coincide to tests. Nothing really makes sense, but we did what we had to do. But if I were a student, I’d be like “What's a module? Why do I have a module?” But you know we designed it the way we’re supposed to design it. It’s not necessarily in the best interest of the students, but, you know, students do fine in the class.

Despite the fervent objectives to the QM rubric’s usefulness expressed by Vaughn and Rachel, most faculty interviewed had favorable views of using the instrument as a course design tool. Thus, training seemed to have a positive influence on most faculty’s perceptions of the rubric’s usefulness and ease of use as a course design tool. Analysis of interviews also revealed mixed perceptions about how easy it is to learn to apply the QM rubric, as briefly mentioned in Rachel’s case above. This concept was examined further by the second research question about faculty’s experience in the APPQMR training.
Research question 2. What is faculty’s experience in APPQMR? This question was designed to provide a rich description of faculty’s experiences in QM training to better understand its value. Sub-questions were also developed to identify key training content that either helped or hindered their perceptions of the QM rubric and which topics influenced their course design abilities and behaviors. Analysis revealed that learning to apply QM standards and applying them to course design is a rigorous and time-consuming process, albeit frustrating, that results in acquisition of knowledge and confidence to plan and make a change.

Theme two – faculty experienced that learning to apply QM principles and applying them to course design is rigorous and time-consuming. Applying QM standards to course design, and learning how to do so, is a time-intensive, rigorous process. Training participants perceived the rubric as a rigorous course design tool; it is not easy to apply. This was the second theme that emerged.

Faculty members who completed the APPQMR workshop, like Andrew, described it as a rigorous, well-structured, professional development experience that required a significant time-commitment to complete. Participants such as Michelle explained how using the rubric can feel overwhelming because of the level of detail and number of standards covered. Yet, Michelle also described the APPQMR training as “very easy to follow.” Likewise, Lora believed that the training was user-friendly and “modeled the principles of Quality Matters in the course design.” Throughout this phase of the research, I reflected upon how faculty’s experiences in the workshop may have shaped their perceptions of the QM rubric. The following excerpt from my research journal, written prior to Dwayne’s interview about his low perceived ease of use score, illustrates my reflections upon how some faculty’s perceptions were mixed about learning to use the QM rubric.
Dwayne’s perceptions were mixed...Regarding ease of use, Dwayne agreed that the rubric is flexible to interact with. While he agreed that learning to apply the rubric to course design was easy, he disagreed that actually applying it was easy. He did not feel that it was easy for him to become skillful at using the rubric. He also did not agree that it is easy to use overall. These results may indicate a lack of confidence in applying the rubric. Further questioning about this section during the interview will be important.

Dwayne’s interview response illuminated the results of his survey score and clarified my interpretation thereof. His perception was that learning to skillfully apply the QM standards and doing so during course design is a rigorous and important one. Dwayne described the professional rigor of the APPQMR workshop and of QM as follows:

Now for me, when I logged in and started taking the QM course – and I think this goes back to your survey that I took – a couple of your questions. I think you said “was it easy to apply the QM standard?” Or “was it easy to kind of use the QM standard?” And I said “no.” And the reason I said no is because the QM standard is rigorous. I have created a course, and I’ve done course reviews, and I wouldn’t call it easy. I think it’s professional. I think it’s the best I’ve seen. Absolutely, I’m committed to it…but I don't think doing a course review is easy. Have they [QM] laid it out as best they can and they give you plenty of detail? Are the two-week online courses challenging and are they complete? Absolutely. But I guess – I guess when you asked in your survey “is it easy?” - it kind of threw me off because my first response is, no. And I tell it to faculty. I say, “Listen you’ve got to schedule these two weeks when you’ve got some slow time.”

Dwayne’s final comment included above about scheduling training during a slow time was a sentiment shared by most faculty who completed the online APPQMR workshop. They noted that the time commitment to complete training was significant for them. Quality Matters has estimated that it should take participants approximately seven to eight hours per week for two weeks to complete the training. However, in this study, faculty indicated that more time was
needed than expected. For example, Lora said it took her about twice as long to complete the requirements than she had anticipated based on the QM standard.

Faculty expressed diverse opinions on how they felt about the amount of time required to complete training. For instance, Dwayne remarked that the time commitment to complete some learning activities was “a bit overrated.” Likewise, Vaughn called it “overkill.” These individuals felt that some elements of the course were a waste of their time. However, not all faculty shared this sentiment. Some, like Michelle, believed that the amount of time invested in the course was beneficial to her learning. Sheila also found value in the workshop’s activities and described her experience thusly:

There were moments where I felt like it was cumbersome and a little bit of a time waster. And I’m being honest. But at the same time, doing it through QM helped me know what QM is, what are the expectations, how to do at least the basic level for a good QM review – without having other peoples’ perceptions bias me in one direction or another towards QM.

The rigor and time commitment for the QM course and application of QM, individuals like Lora explained, can deter some faculty from participating and making needed changes in their courses. Rachel’s case, previously mentioned, illustrated this:

I didn’t build my online course that I currently am in charge of. I just sort of got it dumped on me when somebody retired, and I was already in charge of [the subject] anyway. So then suddenly I’m in charge of [the web version]. And so, I had nothing to do with the design of it. I know it was designed under QM. There are things that I’ve gone in and changed. It’s passed review since I’ve been in charge of it, but to me it is so much
stuff for the students to read, and I feel like it could be streamlined. But I don’t do that because a) I don’t have time and b) I don’t want to suddenly make it not QM worthy.

While the issue of time to complete training and to apply QM standards to course design was noted as a challenge, the rigor of QM training seemed to provide an opportunity for faculty to encounter a transformative learning experience. In APPQMR training, participants were presented with knowledge, questions, and feedback that exposed the limitations of their current course design knowledge, a disorienting dilemma, which resulted in changes in how they designed their courses. This was the third theme that emerged.

**Theme three – faculty experienced that learning to apply the QM rubric through training provided a disorienting dilemma that resulted in the acquisition of knowledge and confidence to plan and make a change.** Most of the faculty who participated in QM professional development experienced a disorienting dilemma that challenged their thinking and changed the way they understood and perceived the QM rubric. Their experience in training improved their understanding of QM principles and their ability to apply them to the design of courses. Lora, for instance, described APPQMR as “a course to familiarize you with the standards and to get you started to think about…how can you apply those standards to your course.” Even participants with low composite perception scores found that training had an impact on their understanding of the QM principles. Vaughn, for example, reported that completing the annotation assignments challenged her to “think as to how to apply things a little bit and kind of think outside the box.” Or Sheila, for instance, said that she felt an increased sense of confidence using the rubric by knowing its background and the intentions behind it.

As mentioned in chapter two, transformative learning begins when learners experience a disorienting dilemma and can progress through various changes in perspective and behavior
(Mezirow, 1997). The disorienting dilemmas that participants described in the present study indicated an opportunity to experience transformational learning during the APPQMR workshop, which further supports this theme. In fact, the APPQMR workshop has the potential to be a transformative experience for all educators, not just those who develop and teach in distance learning formats, but traditional formats as well, according to half of the participants interviewed. Andrew described the applicability of QM to traditional educational formats this way:

I believe if you take the training seriously, I think you’re going to learn something. And I think what you’ll learn is not necessarily just related to web or even hybrid courses. I think there’s a lot of content in all of these Quality Matters courses that could help an instructor build some useful content inside of the course management system…and I think by going through the Quality Matters training – even if you’re not teaching online courses or developing online courses – I think that there are some lessons there to be learned by everyone and that includes these teachers that are not teaching anything except in the traditional [classroom].

The faculty who experienced a transformation in their perceptions and course design behaviors displayed a desire to share their experiences with others. About her own experience in QM training Lora said, “After I took it, I spoke to the entire faculty about my experience…and I told them what a transformative experience it was for me.” She also described training as “almost like a religious experience” for faculty who have completed it. Dwayne described the benefit of his transformational change as follows:

The QM forced me to kind of back off and look at everything that I was doing from the standpoint of as an educator. Not just online, and this is another point I make to faculty.
You’ll be a better teacher doing the QM rubric, whether you ever teach online or not…It changed pretty much everything from the first time I tried to a decade later using the QM. The quality of the product – you couldn’t even compare the two courses.

Like Dwayne who completely redesigned his online course to meet QM standards, QM training influenced five other participants to make notable design changes to their distance education courses. As Michelle began designing her first online course, she immediately put her new knowledge to use by establishing an alignment map. Andrew recounted making structural changes to all of his courses by organizing them into weekly modules. Sheila explained that she improved the accessibility of her course materials after the training. Linda made design changes to her course assessment strategy, restructured the course orientation, and added module objectives. Lora described a major shift in how she viewed her course design from a student perspective instead of an instructor-oriented one. By changing her perspective, she was able to make course design changes to immediately benefit her students:

I was in the middle of a [subject omitted] course….We had a break in the summer, and I re-did the rest of the class for Quality Matters. And the students came back after the break and said, “What happened? This is so much better.”

**Sub-question 2a.** What key aspects of the training helped or hindered faculty perceptions of and ability to apply principles from the QM rubric in their online and hybrid course development?

**Sub-question 2b.** What aspects of the training influenced course design behaviors?

The evidence thus far suggests that faculty’s experience in the APPQMR workshop and application of the QM rubric to course design is a rigorous process. Further, faculty who participated in the training were exposed to a disorienting dilemma that led to transformative
learning and changes in course design. To better understand what aspects of the training had an influence on their learning and perceptions of the rubric, I asked participants to identify which parts of the workshop had the greatest impact on their perceptions of the rubric. I also asked them to identify which training topics were most and least helpful to the development of their course design skills. The issues of accessibility and alignment were two content areas most frequently cited by participants. This was done to address the two research sub-questions and led to the fourth and fifth themes explained below.

**Theme four – accessibility was the most troublesome aspect of training.** The aspect of QM professional development that seemed to hinder most faculty perceptions of the rubric was accessibility. Interview participants recognized the importance of accessibility in course design, yet they expressed major concerns about their limited knowledge and skills in successfully applying this guideline to their courses. For example, Andrew purported that he lacked the skills and knowledge to make necessary changes to make his course accessible. Both Michelle and Andrew, while noting the importance of accessibility, lamented over time it takes to do it. Michelle stated “[Publisher PowerPoint slides] are not accessible and I don’t have enough time in the day to make them accessible.” Sheila explained how a lack of technology skills hindered her ability to make course content accessible:

> I would say I don’t know how to check HTML for accessibility. I teach [subject omitted]. I love teaching [subject omitted], but I’m not a computer programmer. And they said, “Well, just do your best.” And my response to that was, I don’t feel like I can abide by the rubric and simply do my best, because I feel I am not able to do what is actually intended by the rubric by simply doing my best.
Many explained that issues of accessibility resulted in the elimination of learning objects, such as visual illustrations, charts, graphs, videos, etc. For example, Sheila explained:

Whenever it was difficult to say, okay, how am I going to make this accessible? What am I going to do? Sometimes it led to me just saying, you know what, I don’t have time so we’re just going to take it out and run without it because it’s not essential.

However, as Andrew noted, elimination of instructional material due to accessibility challenges may be detrimental to student learning. Many faculty believed too little time and content was focused on accessibility in the APPQMR workshop. They wanted to learn more about technologies and ways to efficiently make their courses accessible. Instead, some felt that too much time and content was focused on learning objective alignment. This was the fifth theme that emerged.

**Theme five – learning objective alignment was the most influential yet controversial aspect of training.** The APPQMR training focused heavily on learning objective alignment, which helped faculty understand and apply central QM principles. The concept of learning objective alignment throughout a course is a foundational aspect of the QM rubric. Nine of the 43 individual standards directly address the issue of alignment and must be met for a course to pass a QM review. Six participants – Vaughn, Michelle, Lora, Sheila, Dwayne, and Linda – each affirmed the value of QM’s focus on learning objectives and alignment of objectives to course activities and assessments. For example, Lora described that, “it makes you question yourself when you start to put something in a course…[You ask yourself:] Does that align with the syllabus and the course objectives?” Other participants agreed that the training challenged them to think critically about the alignment of their course objectives with activities, assessments and instructional materials. Even Vaughn, who expressed some frustration with QM’s focus on
objectives, described how training helped her realize how important it is for assessments and course materials to be aligned with objectives. She noted, “as an educator designing a course, the objectives really are a crucial element as far as knowing what you’re trying to teach and kind of giving you the outline of what needs to be done and covered.”

Yet, not all participants shared this sentiment. Some, like Vaughn, believe that the QM rubric and APPQMR training places too much emphasis on learning objectives and alignment. They have concluded that this focus on alignment of objectives is educator-oriented rather than student-oriented. Vaughn explained her concern this way:

Our students are students. They’re not educators. And the biggest complaint I have from students, and the biggest problem I have from students, is they don’t understand what objectives are. They have no idea why they’re in there. I had a student literally this semester say than me, “Are these more homework questions I have to answer?” They just don’t get the educator speak that the rubric requires you to put in there.

Rachel expressed a similar grievance. She felt that too much of training was used to learn about issues deemed important by QM but had nothing to do with her students’ learning. Specifically, she described a focus on learning to write measurable learning objectives:

But the idea of design – spending that much time to put in the right word so that I can measure it when the student is not even going to read that anyway and use that in any way toward their learning…I’m not sure that that makes my course the best course possible.

Some faculty, like Rachel and Vaughn, may fail to see the full value and relevancy in this content. Notwithstanding, this aspect of training had a noticeable impact on most participants.
despite their varied opinions about the subject. Discussion of what this may imply about QM training is included in chapter five.

Summary. Analysis of interview transcripts provided thick, rich descriptions of faculty’s experiences in the APPQMR professional development workshop. Four themes emerged to answer primary and secondary research questions about faculty experiences in training, including specific topics that helped or hindered their perceptions and course design behaviors. First, faculty experienced that learning to apply the QM rubric is both rigorous and time-consuming. Second, participants in training have an opportunity to experience transformational learning through a disorienting dilemma that can result in changed perceptions and course behaviors. Third, the topic of accessibility was the most troublesome for participants to master. Fourth, learning objective alignment was the most influential aspect of training even though not all faculty agreed with the value of this content. The next section will explore the constructs of social influence and facilitating conditions at the participating institutions and how they have influenced faculty’s perceptions of QM.

Research question 3. How do social influence and facilitating conditions at the community college influence long-term adoption and use of the QM rubric as a course design tool? To explore the constructs of social influence and facilitating conditions at the community college, I asked two questions during the interview. The first question was “How important is it to others in your institution that the QM rubric be followed for course design?” This approach gathered faculty’s perceptions of social influences at their institution. To explore the construct of facilitating conditions, I also asked participants “What type of support exists at your institution to help you make use of the QM rubric during course design?” Thematic analysis revealed that
when QM is mandated, social influences and facilitating conditions both play a significant role in the development of faculty perceptions and use of the QM rubric.

*Theme six – when QM is mandated, social influences and facilitating conditions significantly influence how faculty perceive and use the QM rubric.* Social influence is the extent to which a person believes that a new system is deemed important to use by other key people, and facilitating conditions is what a person believes about the internal support system in place to help them use a system (Venkatesh et al., 2003). Results of this study show that both are powerful constructs when the use of the QM rubric is mandated for distance education course design, as was the case at both Sterling and Central Town. Faculty’s beliefs about social influences and facilitating conditions to support their adoption and use of QM have been influenced at both community colleges, but in different ways. The following sections support and explain this phenomenon, first in terms of social influence at each institution and concluding with a comparison of facilitating conditions between the two colleges.

*Social influence.* The faculty at Sterling held a mostly positive sense of social influence throughout their institution. Four of the five interview participants from Sterling have been at the college more than 10 years, and each of them named a specific faculty member who was instrumental in the initial adoption and implementation of QM standards. While they perceived that a strong degree of administrative support exists for the use of QM standards, interview participants made it clear that the QM initiative was initially and continues to be led by faculty members involved in distance education. Dwayne summarized how QM was implemented at Sterling and how it has been supported by administration and adopted among faculty:

The [faculty member] who ran distance ed was the guy who kind of pushed for us to adopt this as the standard so that we would have a standard…And he wanted third-party
expertise to back him when he went to administration and said, you know, “Here’s the way our online instruction should look.” And he has – he received support up and down the ranks from administration. Faculty, well you know, faculty are faculty and QM is work. I’ve only ever heard one person here say, “well, I didn’t get that much out of it.” Everybody else says it’s…an instruction changing experience to go through the QM course if you’ve been an online instructor before.

Dwayne and Lora are QM advocates at Sterling, actively providing workshops and training opportunities for their peers in distance education. Both spoke of a potential administrative mandate that all distance education instructors be required to complete QM professional development, but noted that this decision was still under consideration. Their current practice is to strongly encourage others to enroll in the APPQMR workshop through local training events and peer-to-peer interactions.

Whereas social influences are mostly positive at Sterling regarding QM, some faculty members remain either unaware or uninvolved with the initiative. According to Linda, “[QM is] important to the ones that do anything online…but otherwise, I don’t know that people would know what it is.” Andrew believes there to be three groups of faculty – those who choose to ignore QM, those who believe that the QM rubric has value, and those who begrudgingly comply due to the course review mandate in place at the college. Below, Michelle described her impression of similar sects of social influences at Sterling from her perspective as a new online instructor.

My dean said, “…I want you to do this workshop within your first year.” The instructional design groups – their first suggestion to anything related to course design was “take this workshop because while it’s online based, these are good things to address
even in a traditional setting and that will help you with your course design traditionally, as well.” So, I think [QM is] very important probably to the institute as a whole. But I don’t know like when you get down to the individual level, … maybe there’s, … instances where like I mentioned before they’re like, yeah, that’s just busy work. I’m going to design my course the way I design my course, and they’re not too worried about focusing on that…There’s one particular person, I mean, one or two people that I could think of that would probably just disregard it.

Social influence to utilize the QM rubric at Central Town was also strong; however, the faculty’s perceptions were more negative due to a lack of faculty understanding and buy-in. In contrast to Sterling, the faculty at Central Town complied with QM because it was a mandate. Rather than viewing the rubric a valuable tool to improve courses, they sensed QM was forced upon them by the administration and had been used punitively in the past. Vaughn, who spoke at length about the history of QM’s implementation at Central Town, perceived the implementation as contentious and challenging. Rachel’s comment that faculty “roll their eyes at the process of review” suggests that she shares Vaughn’s sentiment about a lack of faculty buy-in for QM:

    Most are just kind of put off by it to be honest with you. It just seems like one more block to check….But it’s been used as…a control tool for a while. So, it doesn’t have that “hey, this is a great thing we can do. This is something that’s going to help our courses.”

    Vaughn went on to describe how the QM rubric and review process had previously been used “almost as a weapon” by a person in administrative power to dissuade the development of online courses at the institution. Faculty, like Rachel, saw no other option except compulsory compliance with the QM initiative and called it a “burden” to have to participate:
Well, we definitely have to do it, because as soon as the course is designed it goes through a review. It has to follow it, and it has to pass it. So, if a course doesn’t get through, it’s not going to pass. But we all do it because…it’s the mandate for the institution.

Despite the challenges, Vaughn believes that recent administrative changes at Central Town have started to improve faculty’s negative perceptions of the institution’s quality control initiatives and of QM. Sheila seemed to agree, stating that QM is “considered absolutely vital” to online instructors and to online learning administrators. However, Sheila also described a different problem with social influences that she experienced and how QM training helped resolve the issue for her. In this case, she felt misinformed about the QM standards by others at her college:

They were mostly positive perceptions. There were some negative [comments like]: “it’s a headache; it’s a hardship.”…whenever I actually did the QM training directly through QM, I was able to see “oh, our institution said this, but QM is actually saying this.” And I realized that sometimes what things were told to us as recommended was actually required, or what was required was actually recommended. And so, I was able to say “Okay, here’s what QM actually wants compared to someone else’s interpretation to me of what they wanted.”

The two institutional cases provided herein offer strong support that faculty’s perceptions of QM and their intentions to use it for course design are socially influenced. Sterling Community College provided an example where social influence contributed positively to the formation of faculty’s perspectives. This was accomplished through a faculty-led quality assurance initiative. Central Town Community College presented a contrasting case whereby
faculty’s perspectives had been negatively influenced by social influence via a top-down administrative mandate. The construct of facilitating conditions is closely related to social influences, for it looks at what people believe about the support infrastructure surrounding the initiative.

Facilitating Conditions. At Sterling, faculty reported a strong training and design support network. This included financial incentives, free QM professional development workshops (e.g., APPQMR, Designing Your Online Course, etc.), webinars, technology, in-house training options, and a supportive instructional design team. This team is comprised of professional staff and full-time faculty members. Experienced online instructors serve as peer mentors and provide one-to-one assistance. About the abundance of design support, Dwayne surmised:

I would be surprised that anybody here would feel like they didn’t have support. With the instructional design department…There are [also] faculty members around who people know that are tied to that department that you can go to for help. So, if a faculty member said, “I’m trying to develop an online class and I’m not getting support,” I’d be quite surprised.

Counter to faculty’s perceptions of a robust support system at Sterling, the faculty from Central Town ascribed their frustrations about QM to insufficient support. They expressed concerns about a lack of QM training and inadequate instructional design support. Many of the sentiments about social influences were repeated in the participants’ responses about facilitating conditions at the college. As Vaughn previously noted, Sheila also remarked how recent administrative changes are changing the culture around QM. However, there is still a perceived need for training and professional development:
We have an office of online learning that has recently been redeveloped and redesigned. And the support for using [QM] is growing. For the last 2 to 3 years, there’s been little, if any support. It’s been if you want to do courses on it [then] go online and take courses [through QM] – without training actually being at [Central Town] with someone leading it. I feel like the emphasis on [QM] is present, but the training and professional development is lacking.

Additionally, Central Town faculty described frustrations with the current level of instructional design support available to them from the distance learning office. Prior to the institution’s internal course review process, a course designer may request a cursory course review to look for potential problems. The support person provides recommendations for design changes to allow for updates before the course is formally reviewed. While the faculty seemed to appreciate this opportunity for personalized course design support, some, like Rachel, felt that the recommendations could prove detrimental to the course:

I think we have decent support on campus if we have questions during the review process. Our QM person ran through [a colleague’s course] before it entered the review process and went [through] it point-by-point to give him feedback on every, single thing so that this class had as much of a chance of passing the review as possible. And he knew the things that they suggested, some of them…definitely made it better. But some of them were honestly weakening the course.

As with social influence, faculty’s perceptions of QM are also influenced in part by the facilitating conditions present. When faculty perceive that ample support exists to support their implementation of QM principles, such as at Sterling, overall perceptions of the QM rubric are generally higher. On the contrary, overall QM perceptions tend to be lower when faculty
perceive a lack of training and support. This is evidenced by the faculty from Central Town. The following section provides a summary of this study’s research findings.

**Summary**

The purpose of this explanatory sequential mixed methods study was to examine the influence of the APPQMR workshop on faculty’s perceptions about the QM design standards and their ability to design and develop distance education courses at the community college level. A causal-comparative research design was employed to examine the first research question quantitatively. During phase one of the study, 39 community college faculty members from two institutions responded to the Quality Matters Rubric Faculty Survey. This was followed by a basic qualitative design. Eight individuals who had completed the APPQMR training were interviewed during phase two to explore further and explain the quantitative results of phase one and to explore questions two and three. Figure 6 provides a visual representation of the entire analysis process and summary of the results.

*Figure 6. Flowchart depicting data analysis process and results.*
Results of an independent $t$-test during phase one showed no significant difference in participants’ perceptions about the QM rubric’s usefulness and ease of use between QM training participants and non-QM training participants. Additional statistical analyses were run to test for the possible influence of confounding variables, and a Mann-Whitney $U$ test was run as a nonparametric alternative. Results of the additional analyses also indicated that there was no statistically significant difference in perceptions between groups. However, qualitative analysis during phase two revealed a practical significance that training and provision of the QM rubric provided training most participants with a useful, but not perfect framework for course design. Perceptions of the QM rubric’s usefulness and ease of use were mixed. Some faculty perceived it as easy to use, but not useful as a course design tool. On the contrary, other faculty perceived it as extremely useful as a course design tool while finding application of the standards to be challenging. Qualitative analysis also answered questions about faculty’s experience in APPQMR training. Faculty experienced that learning to apply QM standards and applying them to course design is both rigorous and time-consuming. They also found that learning to apply the QM rubric through training provided a disorienting dilemma that resulted in the acquisition of knowledge and confidence to plan and make a change. Finally, this research questioned how social influence and facilitating conditions at the community college might influence use of the QM rubric over time. The cases presented showed that when QM is mandated, social influences and facilitating conditions significantly influence how faculty perceive and use the QM rubric. Inquiring about these constructs provided somewhat contrasting examples of QM initiatives between the two participating institutions, which will be discussed in chapter five.
CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

Introduction

This explanatory sequential mixed methods study was conducted to explore how
community college faculty participation in the APPQMR training may have influenced their
perceptions about the QM rubric and their ability to design and develop distance education
courses. Two design methods were employed to investigate three research questions. During
phase one, a causal-comparative research design was utilized. Thirty-nine faculty members from
two community colleges responded to a survey measuring their perceptions of the QM rubric’s
usefulness and ease of use. Respondents were grouped based on their participation (or non-
participation) in the APPQMR workshop within the last five years. Statistical analysis
demonstrated no significant difference in faculty perceptions between groups who had and had
not completed the QM training. During phase two, a basic qualitative design was used to a)
further explore how the training influenced their perceptions of the rubric, b) describe faculty’s
experience in training, and c) investigate what social influences and facilitating conditions might
exist to support the use of QM as a design tool at the community college level. Through
purposive sampling and maximum variation, eight faculty members who met the criteria of
recent APPQMR training participation were selected and interviewed. Analysis of interview
transcripts revealed six themes. Though the quantitative results indicated no significant
difference in faculty’s perceptions based on training participation, qualitative results suggest that
training on the QM rubric provided a useful, but imperfect, course design framework. Faculty
experienced that QM training and applying the standards is both rigorous and time-consuming.
In training, many experienced a disorienting dilemma that led to the acquisition of knowledge
and confidence to improve course design. Certain content within the APPQMR training impacted
faculty’s training experience and perceptions of QM. Specifically, many felt that accessibility was the most troublesome aspect of training. At the same time, learning objective alignment had the greatest influence on faculty’s perceptions of QM. Most, but not all, faculty viewed the subject of learning objective alignment favorably. This chapter discusses the results and implications of the study, recommendations for future research, and the delimitations, limitations, and ethical issues involved in the study.

Discussion

APPQMR’s Effect on Participants’ Perceptions

Results of the statistical analysis indicated that there was no significant difference in faculty’s perceptions of the QM rubric between those who completed the APPQMR training and those who did not. This finding aligns with Mercer’s (2014) findings; she found that APPQMR participation had no effect on faculty’s perceptions of online course quality. In contrast, other researchers, such as Budzick (2014), have found that APPQMR participation resulted in statistically significant improvements in faculty’s perceptions of QM. Setting was a key difference between these studies. Mercer’s study was situated at a large research university while Budzick’s was conducted at a large community college. However, professional development on QM was not mandatory in all three studies. Theory and research suggest that faculty experience level and demographics may provide explanation for the ambiguous results found in the literature and for the non-significant results found in this study. Venkatesh et al. (2003) found that the effects of performance expectancy (i.e., perceived usefulness) was more salient for men and younger workers. Of the 39 respondents in this study, only eight (20.5%) were under the age of 35 and 10 participants (25.6%) were between the ages of 35 and 49. In Mercer’s study, 68% of respondents were aged 35 to 49; no participants were under the age of 35. There were also
slightly more females \((n = 21, 53.8\%)\) than males \((n = 18, 46.2\%)\) in this study, as compared to Mercer’s which had noticeably more females \((n = 21, 84\%)\) than males \((n = 4, 16\%)\). The lack of statistical significance may be attributed to these demographic factors. Moreover, it is significant to note that QM was introduced to faculty in this study over five years ago, and perception data from its earliest adopters at the onset of implementation was not gathered. The majority of respondents with QM training \((n = 12, 70.6\%)\) completed APPQMR four or five years ago. Many of the survey participants \((n = 17, 43.6\%)\) have designed three or more distance education courses, indicating a high level of experience. Further, Venkatesh et al. (2003) suggested that the effects of effort expectancy \((i.e., \text{perceived ease of use})\) on behavioral intention decrease with experience over time. As faculty’s experience levels have increased, exposure to QM and course design principles may have also increased over time. The colleges offer a variety of professional development and support that may contribute to faculty’s perceptions of the QM rubric, thus explaining the non-significant findings.

Though there is no statistically significant difference in faculty’s perceptions of the QM rubric between those who completed APPQMR and those who did not, the interview data demonstrated that those who participated in training found it useful in changing their perceptions and behaviors. These qualitative findings are consistent with the findings of previous research. For example, Roehrs et al. (2013) found that training on the QM rubric led to faculty’s ability to more accurately apply many of the standards. Budzick (2014) and Mercer (2014) concluded that participation in the APPQMR training resulted in a statistically significant increase in faculty’s knowledge of best practices in online course design, and that their new knowledge led to changes in course design. Thus, APPQMR is one form of training that can positively affect faculty’s
course design knowledge and skills. Previous research also suggests that APPQMR provides additional benefits.

For instance, Hollowell et al. (2017) found that students’ final exam grades, overall course averages, and QM course review scores were all statistically significantly higher after faculty completed the APPQMR workshop. Faculty professional development on course design has also been shown to improve student success throughout the literature (e.g., Bento & White, 2010; Hollowell et al., 2017; Rockinson-Szapkiw et al. 2016). Though factors such as student outcomes and course design scores were not included in the present study, the literature suggests that training faculty on QM standards may support improvements in these areas.

McQuiggan (2012) and others (e.g., Horvitz & Beach, 2011; Koepke & O’Brien, 2012) have found that participation in professional development provides an opportunity to change faculty’s beliefs about teaching and learning and their instructional strategies. Changes in one’s views and beliefs about the nature of education and how QM does or does not support instructional design are also indicative of training’s practical influence. According to Mezirow’s (1997) transformative learning theory, these types of changes are evidence of perspective transformation’s convivial dimension.

Results of the basic qualitative research conducted in phase two provided some explanation about how participation in the training influenced faculty’s perceptions of the QM rubric’s usefulness and ease of use and of their course design abilities. It also illuminated additional reasons for potentially insignificant results – including mixed QM experiences. Results may be explained in part due to varying social influences and facilitating conditions between faculty at two community colleges. Two distinct themes emerged from this analysis which implies practical significance of training. First, most faculty who participated in the
APPQMR training found the QM rubric to be a useable and helpful guide as they design distance education courses. Second, most trained faculty believe that applying QM standards to their course design is a rigorous process. Institutions that are considering APPQMR as a form of training for course designers will benefit from the following discussion of faculty experiences in the workshop.

**Faculty’s Experience in APPQMR**

As described in chapter four, analysis of community college faculty interviews revealed the following themes related to their experiences in the APPQMR training:

- The APPQMR workshop provides a rigorous experience.
- Learning objective alignment was the most influential, yet controversial, aspect of training.
- Accessibility was the most troublesome aspect of training.
- The APPQMR workshop has the potential to be a transformative experience.
- Participation in APPQMR can result in changed course design behaviors.

Taken together, these insights provide institutions with helpful descriptions from the faculty perspective about the influence training had on them. The following sections describe the training’s impact on faculty’s perceptions and course design behaviors and discusses how these findings relate to other literature.

**QM rigor.** The results of this study indicated that learning to apply the QM rubric through the APPQMR workshop was a rigorous and time-consuming experience for faculty. Participants described the training as easy to follow, yet arduous to complete due to the amount of work and interaction required. Many participants, like Dwayne, Lora, and Rachel, felt that using the QM rubric to design and develop a course takes time and effort. Some faculty members may be deterred from using the QM rubric because of the time involved. In fact, Rachel’s case
provided an example of this decision to avoid making design changes based on QM because of the time involved. The theme of “lack of time” is repeated throughout the literature on QM. For example, Roehrs et al. (2013) mentioned that time was a challenge for faculty learning to use the QM rubric during training. The faculty remarked that they could have made better improvements to their courses if they had more time. Dempsey and Liu (2017) found that most faculty understand the value of instructional design (i.e., QM standards) but don’t have the time to apply it to their courses. In their study, 40 percent of faculty who completed one QM training cited time as the biggest challenge to implementing QM into their courses.

Some faculty called attention to specific training activities or content areas that, in their opinion, wasted their time. Nevertheless, many felt that the time they invested in those aspects of the course were beneficial to their learning. Participants, like Dwayne and Michelle, lamented about the amount of work required in the workshop. However, they noted that the content and learning experience were valuable overall. Perhaps this is because APPQMR was designed based on the tenants of andragogy and constructivism, which take into account relevancy and meaning for adult learners. These theories provide explanation for how adults will persist and change through rigorous learning experiences.

The tenants of andragogy (Knowles, 1980) suggest that adult training should incorporate learners’ backgrounds to cultivate a meaningful learning experience. Constructivism is also based on the idea that people create knowledge and meaning from their experiences (Piaget, 1971). As explained in chapter two, the APPQMR workshop was built on constructivist theory and was designed to engage participants in reflection and interaction. Learners are encouraged to reflect on the content, their personal goals, their own course design experiences, and the unique challenges inherent with online teaching and design. Participants are required to engage in online
discussions about the content and their own experiences. Additionally, they must complete specific learning activities and assignments, such as reviewing parts of an online course, drafting helpful recommendations, completing interactive reading lessons, and taking quizzes. These activities must be completed within a two-week period in the online APPQMR workshop. The amount of work required may help explain how faculty in this study felt challenged by the workshop’s rigor and the amount of time required to complete the training. Results of the study provided additional insights into faculty’s perceptions and experiences with specific training content.

**APPQMR content.** A primary goal within the APPQMR professional development workshop is to understand and apply the foundational concept of learning objective alignment. It is not surprising then that the learning objective alignment content was found to be the most influential aspect of training. All but one of the interviewed participants discussed learning objectives and alignment. Some discussed it in a positive light while others discussed it in a negative light. Most of the participants expressed that the content challenged them to think critically about their course design choices. As educators, they felt that the focus on alignment of learning objectives to course materials, activities, and assessments provided them with a useful outline to build a course from. Budzick (2014) found that faculty expressed the same sentiments about the concepts of learning objectives and alignment in APPQMR. Faculty purported to gain new knowledge about the content that changed the way they think about course design. Likewise, the faculty in Mercer’s (2014) study identified alignment between learning objectives and assessment as their biggest “takeaway” (p. 152). However, the faculty in Mercer’s study also found the subject of learning objective alignment to be the most challenging. A few faculty in this study expressed similar sentiments. Some faculty members failed to recognize the value and
relevancy of learning objectives and alignment, arguing that the content is too educator-oriented. However, the majority of faculty did not express concerns about the learning objective and alignment content. Rather, they acknowledged that designing course materials to be accessible to all students is a worthy and important goal for distance education. Yet they felt ill-prepared to do so after training. They cited a lack of technology skills and resources to effectively and efficiently apply accessibility principles to their course design, and they expressed a desire to improve their skills in this area.

Best practices in faculty professional development highlights that effective professional development includes ongoing support; thus, APPQMR may be most successful if course developers are supported by college instructional designers when applying the QM rubric (Roehrs et al., 2013). Budzick (2014) as well as Mercer (2014), support this recommendation. Dempsey and Liu (2017) also recommended providing faculty support with certain aspects of the QM rubric implementation, especially with technology and accessibility.

To summarize, the faculty who completed the APPQMR workshop had mixed perceptions about the QM content. Some faculty did not see the value in the extensive focus on learning objective alignment. Some faculty would have preferred less training about learning objectives and alignment, while other faculty would have preferred more training about accessibility. Thus, it may be important for administration in institutions offering or requiring APPQMR training to acknowledge that the training is designed to be an introduction to the standards and underlying principles not an exhaustive training on every aspect of the rubric (Budzick, 2014; Quality Matters, 2017a). Faculty may also be made aware that QM offers a separate two-week training dedicated to addressing accessibility and usability as required by general standard eight on the current rubric.
Results, therefore, provide greater insight into faculty’s experience with specific aspects of the APPQMR workshop. As discussed, the results of the present study suggest that faculty discovered learning to apply the QM rubric through training provided a disorienting dilemma that resulted in the acquisition of knowledge and confidence to plan and make a change. This theme leads to the following discussion of transformative learning.

**Transformative learning.** There needs to be a disorienting dilemma that challenges one’s thinking, social discourse, reflective engagement, and perspective change for transformative learning to occur in an individual (Mezirow, 1997). Many participants in the APPQMR workshop described an experience where their previously held assumptions and beliefs were challenged. Their perspectives began to change through engagement with the course activities, other workshop participants, and the QM facilitator. Through reflection and critical evaluation, these participants ultimately experienced behavioral changes in the way they design and develop courses. For instance, faculty incorporated learning objectives into their courses and aligned course materials and assessments to the learning objectives. They also added or enhanced course orientation materials and added structure to the content to improve the student experience. Some faculty were also able to implement improvements to the accessibility of their course materials. Similarly, Kearns and Mancilla (2017) found that faculty participation in the APPQMR training had a positive effect on design practices for both online and face-to-face classes. Faculty most commonly reported an increased attention to the alignment of learning objectives to course components, but also indicated improvements to course introductory materials, navigation, and accessibility.

Many faculty who completed the APPQMR training began to design their courses from a student perspective. Participants claimed that their course design practices had become student-
centered, which helped them to make improvements. According to Russell (1999), this shift toward student-centered learning has a tremendously positive impact on student outcomes. Kearns and Mancilla (2017) supported this finding, which indicates a shift in faculty’s perspective from an instructor-centered approach to teaching and learning to a student-centered approach.

Allen (2017) suggested that faculty development is most useful when individuals are in the earliest stages of transformative learning – that is, nearest the moment of a disorienting dilemma. Allen also found that higher stages (such as reflection) appear to be related to higher levels of online experience. With less than five years of teaching experience, Michelle was the newest faculty member in the present study. It was interesting to hear Michelle describe how the APPQMR training helped her design her first online course. According to Allen’s model, Michelle’s lack of experience could have influenced her enthusiasm and acceptance of the training differently than more experienced faculty members. In comparison, Andrew and Lora would be more likely to experience transformational learning from their training experiences because they had more experience with distance education. This phenomenon held true as measured by their composite perception scores, which were the two highest of all interviewed participants. It was also Lora who called her training a “transformative experience.” While these examples support the thematic conclusion that the APPQMR workshop can be a transformative experience for participants that results in changes to their perceptions and course design behaviors, it is possible that not everyone who completes this form of training will experience transformative learning.

For transformative learning to occur, Knowles (1980) suggested that adult learners need to be able to reflect objectively on their beliefs and to think without being influenced by
preconceived ideas. Participants in this study agreed with Knowles’s suggestion. They recognized that the faculty who are most likely to experience transformative learning while in QM training share similar characteristics, such as having an open mind and a willingness to learn and apply new instructional methods. Not all participants shared such a mindset.

The two faculty members interviewed who had the lowest composite perception scores also expressed the most negativity about QM. Interestingly, they conveyed a strong sense of self-efficacy in their course design abilities and an unwillingness to change how they design courses. Horvitz and Beach (2011) found that an advanced training program that targeted experienced instructors had the potential to positively impact their self-efficacy and instructional practice. Ulmer, Watson, and Derby (2007) also found that experience level can influence faculty’s perceptions and acceptance of online learning in general. These literature findings suggest that this phenomenon could imply that the APPQMR training was not advanced enough to positively influence the self-efficacy and design behaviors of some participants. However, the experience levels of the two faculty members mentioned were each in the six to 10-year range, much lower than many other interview participants who professed improvements to their course design skills and abilities. Although self-efficacy was not a focus of this study, it is interesting to note that Wright (2011) found a statistically significant increase in faculty self-efficacy after QM training.

In sum, the APPQMR workshop offers willing participants a challenging, transformational learning experience to help improve course design skills. Many, but not all, faculty members in this study described how training significantly improved their course design knowledge and skills. Research suggests that designing online and hybrid courses effectively is a learned skill that many faculty have not acquired absent intentional training (Gregory & Martindale, 2017; Johnson, 2015; Moore, 1997; Moore & Kearsley, 2012; Ragan, Bigatel,
Kennan, & Dillon, 2012). A consideration of how social influences and facilitating conditions have influenced faculty perceptions of QM is discussed next.

**Social Influences and Facilitating Conditions**

Qualitative results of this study indicated that when QM is mandated, both social influence and facilitating conditions play a significant role in the development of faculty perceptions of the QM rubric. Research by Venkatesh et al. (2003) and Sundaravej (2010) found that social influence had a statistically significant effect on perceptions and behavioral intentions, particularly in settings where adoption was mandatory. Social influences also change over time. Venkatesh et al. posited the importance of contextual analysis when developing organizational strategies for new initiatives. Using an instrument like TAM or UTAUT alone may prove insufficient to understanding the context of faculty’s perceptions and whether training had an influence on developing those perceptions. Thus, a qualitative approach to better understand and explain the social influences and facilitating conditions surrounding QM training and use was warranted. Results of the present research are congruent with prior research regarding these constructs, though explored qualitatively rather than through quantitative means. Figure 7 illustrates the nature of relationship between social influence, facilitating conditions, perceptions and behaviors.

![Figure 7. The relationship between SI, FC and a user’s perceptions and behaviors.](image)

Social influence was not measured statistically within this study; rather, it was explored as it relates to faculty’s intentions to use the QM standards in their design of online and hybrid
courses. Both community colleges represented in this study require that distance education
courses meet QM standards. According to Venkatesh et al., this mandatory compliance makes
social influence a significant factor in predicting faculty acceptance of the QM rubric. Schepers
and Wetzels (2007) concurred that subjective norm (i.e., social influence) has a significant effect
on perceived usefulness and behavioral intention. Interview participants from both institutions
described key players who influenced their perceptions of QM, though from opposing angles. At
Central Town, there appeared to have been a more “top-down” approach where participants felt
forced to comply with QM standards. In contrast, participants from Sterling described a “bottom-
up” approach to QM that was a faculty-driven process. The differing approaches may have had
more of an impact on faculty perceptions of QM than the APPQMR training, as was the case
documented by Allen (2017). In Allen’s study, faculty resented “the feeling of being thrown
headlong into online instruction” (p. 38). Further investigation is needed to support this
assumption.

Venkatesh et al. (2003) further found that social influences are “more likely to be salient
to older workers, particularly women, and even during the early stages of experience/adoPTION”
(p. 469). Five participants mentioned Sterling’s faculty-led QM initiative. Two males and one
female were the oldest of the participants (aged 55 or over) interviewed at Sterling. Each of these
older participants described how a certain faculty member at their institution individually
approached and encouraged him or her to become involved in distance education through QM
training. Each one agreed because of this person’s direct and personal influence. The fifth
interviewee from Sterling was influenced by her dean who encouraged early training
participation. There was not enough variation in participant demographics at Central Town to
draw conclusions about this aspect of social influence. However, all three females described
social influences that have negatively affected their perceptions of QM. At the same time, the faculty from Central Town noted that changes are beginning to occur in how key people are treating the current QM processes – leading to improved facilitating conditions.

As noted, Venkatesh et al. (2003) also found that facilitating conditions are important because they influence long-term adoption and use of the innovation. Allen (2017) also documented through the literature that faculty’s poor perceptions of online instruction stemmed from their lack of training and preparation, further suggesting that what faculty believe about support is critical. Professional development and training is one form of support, yet what faculty members believe about their institution’s support is another matter. While examining factors related to faculty self-efficacy to learn new technologies, Buchanan, Sainter, and Saunders (2013) concluded that training alone is insufficient to technology adoption. In their view, structural factors such as support and resources are also necessary. Because the QM rubric is being considered an innovation for course design in the present study, it stands to reason that structural factors need to also be present. Faculty participation in APPQMR was provided at both institutions when QM was adopted. While some form of training is currently still available at both community colleges, there are notable differences in the APPQMR participation rates between the two institutions. Analysis of the demographic frequencies by group from the survey showed a much higher percentage of faculty from Sterling ($n = 12, 75.0\%$) had completed the APPQMR workshop than faculty from Central Town ($n = 5, 21.7\%$). Types of training also differed.

About five years ago, Central Town brought QM training in-house due to a loss of grant funding for the QM workshop. Those who want to participate in APPQMR can do so, but at their own expense. The Central Town distance education department now provides in-house training
on an individual basis to course designers. The results of the study indicated that faculty may lack awareness about this in-house training. Interview participants from Central Town described a lack of training and expressed a need for additional support; however, they also talked about the instructional design assistance they have available from the distance education department. Course developers can consult with someone from distance education prior to having their course undergo a QM review.

In contrast, interview participants from Sterling described a more robust training and support infrastructure for course designers. Faculty participation in the APPQMR training and other QM workshops is paid for by the departments of distance education and academic affairs. College administrators strongly encourage new faculty members to complete the APPQMR training. Experienced faculty members serve as online learning mentors, in-house workshop facilitators, and advocates for QM among their peers. The distance education department at Sterling also provides design consultations with course developers prior to a QM course review. Though different, the training and support at each institution has influenced faculty’s perceptions of the QM rubric. Social influence and facilitating conditions are closely related. Research shows that college faculty often look to administration to provide leadership and support (Mercer, 2014). Altogether, consideration of the findings leads to several important implications for practice.

**Implications**

Findings of this study illustrate that faculty’s perceptions of the QM rubric’s usefulness and ease of use can be influenced, in part, through participation in the APPQMR training. However, findings also suggest that faculty’s perceptions are also impacted by social influences and facilitating conditions within the local setting where faculty engage with distance education.
quality assurance initiatives. Therefore, higher education institutions may need to develop a comprehensive plan that addresses the many aspects of quality assurance, including, but not limited to, faculty professional development, course design support, and evaluation of online course delivery. The studies previously described by Bogle et al. (2009) and Swan et al. (2012) at the University of Illinois Springfield serve as excellent examples of combining QM design standards with Garrison, Anderson, and Archer’s (2000) community of inquiry (CoI) framework to ensure the quality of course delivery. In their model, both frameworks were leveraged to combine the benefit of QM’s explicit course design guidelines with the CoI constructs of social presence, teaching presence, and cognitive presence during the redesign of a program’s core courses. The university provided professional development and support for both frameworks and demonstrated significant improvements in student outcomes. The combination of training, social influences (including a QM expert and an instructional designer), and facilitating conditions (in the form of ongoing, individualized support) can serve as essential elements within an institution’s quality assurance initiative for distance education. Additional research in this area is also warranted.

Findings also reveal that college faculty have limited amounts of time to participate in professional development and to design and develop distance education courses. Faculty want their time in training and design activities to be both efficient and practical. deNoyelles et al. (2012) agreed and contended that faculty time spent in training should be “active, relevant, and practical to [their] needs” (p. 96). Quality Matters may consider improving the APPQMR workshop by integrating facilitator and peer evaluation of participants’ own course design elements to improve practical relevance from their perspective.
Interview participants in this study noted that the APPQMR workshop provided a rigorous experience that required significant time and effort to complete successfully. Faculty members who are signing up for the workshop should be advised within their institutions to consider a time in their schedule when sufficient time is available to complete the training. Further, faculty should be made aware of the extensive time involved with designing and developing courses that meet QM standards. Institutions should also consider issues of compensation (e.g., release time, financial stipends) to accommodate faculty for their investment of time in training, course development, and quality assurance work.

Findings also illuminated that faculty held mixed perceptions about the appropriateness and effectiveness of some APPQMR content, such as alignment of learning objectives and accessibility. This could be attributed, in part, to varying levels of teaching experience and comfort levels with the content (deNoyelles et al., 2012). Therefore, QM may want to allow participants some options about which aspects of the rubric they want to focus on after the essential standards are introduced in training. Allowing choice and raising participants’ levels of autonomy would strengthen the workshop’s alignment with adult learning theory and constructivism. Quality Matters may also need to more clearly explain to workshop participants the value of learning objectives and alignment using evidence-based research and exemplars. Faculty who do not have a background in educational philosophies and practices, such as the principles of instructional design, need to understand the relevance of this information. They also need to see how course design learning to further establish its usefulness and relevance to them and their students. In addition to QM workshop changes, institutions that promote APPQMR participation could improve their internal training and support initiatives before and after official QM training.
Institutions should also consider what measures could be taken before, during, and after APPQMR training to further train and support faculty in key content areas. Institutions can implement several strategies to scaffold the learning experience provided to APPQMR participants. Before training, faculty mentors who have already completed training and demonstrated competency in course design could introduce the QM rubric and concept of learning objective alignment to new course designers. Mentors could use their own courses as exemplars for their fellow faculty members. During QM’s two-week, online APPQMR training, mentors or other distance education professionals could offer support sessions for individuals or small-groups. After training, faculty could continue to work with an instructional designer or mentor on the design of their course. By providing options for ongoing expert support, faculty are more likely to adopt QM principles in their course design. Professional support services such as closed-captioning, audio transcription, and instructional material formatting throughout the course development process might ease faculty’s burden of accessibility. Finally, additional in-house training opportunities or communities of practice might further improve faculty’s perceptions and adoption of the QM rubric over time. If QM compliance is mandated, as was true for Sterling and Central Town, these additional forms of training and support are even more critical.

Perhaps the greatest implication I see is the need for effective communication with faculty throughout whatever process of quality assurance is adopted. As faculty from Budzik’s (2014) study explained, there needs to be extended internal and external communication about QM if the institution is committed to it. Rather than simply hearing about QM, faculty want it to be explained and supported. Moreover, it seems that a faculty-led initiative may be the more desirable approach to implementing distance education quality assurance plans. This was the
case at Sterling, and faculty perceptions of the QM rubric were noticeably higher than at Central Town. Distance learning quality assurance initiatives will not be effective without faculty buy-in (Esterhuizen et al., 2013; Hixon et al., 2011; Ragan & Schroeder, 2014; Shelton & Saltsman, 2005; Wingo et al., 2017), and high quality courses begin with high quality faculty to design and deliver them (Chen, 2017). This research has shown that faculty buy-in can be influenced, at least in part, through participation in training and development. As faculty members are faced with a disorienting dilemma through the knowledge, feedback, and interaction which training affords, they are challenged to reflect on their own pedagogical beliefs and practices and make behavioral changes. However, not all faculty who participate in training will experience this level of transformative learning, nor will their perceptions be influenced. Thus, additional research is needed. The following section describes recommendations for future research.

**Limitations and Recommendations for Future Research**

The study was limited to faculty from two community colleges in the southeastern U.S. where the QM rubric has been institutionally adopted for internal use as a quality assurance design tool. The population also lacked diversity. Due to the limited focus and sample size, the results may not be generalizable to other institutions. However, the findings may help inform community college administrators about the influence nationally-provided training has on trainee’s perceptions about the QM rubric and their resulting ability to apply QM principles to course design and development. Replication of the study across a more diverse population would improve generalizability. Additional research across states and types of institutions may also provide broader generalizability of the present findings.

This was an investigative study limited to a single form of faculty professional development because of QM’s widespread use (Herman, 2012; Kearns & Mancilla, 2017). More
studies that look at the impact of this form of QM training would be beneficial, especially in the areas of student learning outcomes and student learning experiences. For instance, future research could examine student success rates in distance education courses designed and developed by faculty who completed APPQMR as compared to courses designed by faculty who have not received this form of training. Should a significant difference be found, this information may persuade reluctant faculty to invest their time and effort in the training.

Prior research has shown that faculty members’ acceptance of distance education initiatives vary (Allen et al., 2016), which could be influenced by their prior experiences as learners and educators. The role of prior experience is central to transformative learning theory and adult learning theory. Quality Matters purports that their flagship workshop values prior experience and background of their learners. Faculty experience level with online and hybrid teaching and course design was a consideration in this study as it related to experience in the QM workshop and perceptions of the QM rubric. However, additional studies that specifically consider the role of prior faculty online teaching and learning experiences could provide useful insights for instructional designers and those who are responsible for providing faculty professional development.

The causal-comparative design employed within the study does not utilize randomization nor allow for manipulation or control over research variables. The comparison of homogeneous groups was demonstrated to improve the reliability of the results (Lunenburg & Irby, 2008). Further, the purpose of a causal-comparative design is to allow for comparison of dependent variables between two or more groups in terms of the independent variable that occurred in the past (Creswell, 2014). However, to improve reliability a more robust experimental design could be employed that allowed for randomization and more control over the variables.
Venkatesh et al. (2003) noted a gap in research exists that addresses the link between user acceptance and individual or organizational usage outcomes. It is assumed that usage or adoption of an innovation such as the QM rubric will result in positive outcomes. Research has, and should continue, to also explore the relationship between courses designed to meet QM standards and student outcomes. Further, there is limited research using objective methods that explore how faculty training on the QM rubric relates to the measurable quality of course design. In research cases where QM rubric training has been provided to faculty members (e.g., Gibson & Trump Dunning, 2012; Johnson, 2015), researchers commonly used measures such as faculty self-reports, student course evaluations, or changes in student outcomes. While student outcomes may be considered an objective assessment of course quality, outcomes alone do not indicate whether the design of an online course meets quality standards. Thus, additional objective forms of assessment are needed to determine the effect training has on course design quality.

Finally, a review of survey responses in phase one seemed to indicate a difference in faculty perceptions based on the research location between the two community colleges included in this study. This was unexpected. I noticed during the purposive sampling process that faculty from Central Town who qualified for being interviewed held lower composite perception scores than the faculty at Sterling who qualified for interviews. The potentially significant difference could be examined through statistical analysis but is beyond the scope of the present research. The findings may indicate an opportunity for future study regarding the implementation of QM initiatives and faculty perceptions.

**Conclusion**

Faculty perceptions of an initiative like QM are important, because perceptions impact their intention to adopt and support the initiative (Davis, 1989; Venkatesh et al., 2003).
Institutional initiatives must have faculty support if they are to be successful (Esterhuizen et al., 2013; Hixon et al., 2011; Ragan & Schroeder, 2014; Shelton & Saltsman, 2005; Wingo et al., 2017). The goal of this explanatory sequential mixed methods study was to examine the influence of the APPQMR workshop on faculty’s perceptions about the QM design standards and their ability to design and develop distance education courses at the community college level. No statistically significant difference in perceptions was found between faculty who participated in APPQMR training and those who did not. However, several themes emerged through qualitative analysis of interviews that indicate participation in the workshop can be significant and influential for faculty learning how to apply the QM rubric to the design of their online and hybrid courses. The rigor of the training and of the QM rubric challenged faculty, but also provided them with a usable (but not perfect) framework for course design. Moreover, participants can experience a transformative learning experience through training that results in changed perceptions and course design skills. Results of the study provided descriptive information about faculty’s experience in the APPQMR workshop, including illuminations of the most influential and troublesome aspects of the workshop – which were alignment of learning objectives and accessibility, respectively. It also provided some contextual explanation of the influence social influence and facilitating conditions have on faculty perceptions of QM. Both factors played a significant role in the formation of faculty perceptions of QM at the institutions where QM compliance was mandated.

Community colleges considering adoption of QM might benefit from the results of this study. Particularly, some insight into two differing approaches to QM adoption and ongoing faculty professional development may prove useful to administrators and instructional designers as implementation and support plans are developed. The APPQMR workshop is one form of
training, but not the only one available. College administrators can learn how creating a culture of support for online course developers – including various forms of training and development – will affect some faculty’s perceptions. This point is important because institutional culture can influence faculty perceptions and buy-in for the process of distance education quality assurance.
References


Herman, J. H. (2012). Faculty development programs: The frequency and variety of professional development programs available to online instructors. Journal of Asynchronous Learning Networks, 16(5), 87-106.


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## APPENDIX A

Standards from the Quality Matters Education Rubric, Fifth Edition

<table>
<thead>
<tr>
<th>Standard</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Instructions make clear how to get started and where to find various course components.</td>
<td>3</td>
</tr>
<tr>
<td>1.2 Learners are introduced to the purpose and structure of the course.</td>
<td>3</td>
</tr>
<tr>
<td>1.3 Etiquette expectations (sometimes called “netiquette”) for online discussions, email, and other forms of communication are clearly stated.</td>
<td>2</td>
</tr>
<tr>
<td>1.4 Course and/or institutional policies with which the learner is expected to comply are clearly stated, or a link to current policies is provided.</td>
<td>2</td>
</tr>
<tr>
<td>1.5 Minimum technology requirements are clearly stated and instructions for use provided.</td>
<td>2</td>
</tr>
<tr>
<td>1.6 Prerequisite knowledge in the discipline and/or any required competencies are clearly stated.</td>
<td>1</td>
</tr>
<tr>
<td>1.7 Minimum technical skills expected of the learner are clearly stated.</td>
<td>1</td>
</tr>
<tr>
<td>1.8 The self-introduction by the instructor is appropriate and is available online.</td>
<td>1</td>
</tr>
<tr>
<td>1.9 Learners are asked to introduce themselves to the class.</td>
<td>1</td>
</tr>
<tr>
<td>2.1 The course learning objectives, or course/program competencies, describe outcomes that are measurable.</td>
<td>3</td>
</tr>
<tr>
<td>2.2 The module/unit learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.</td>
<td>3</td>
</tr>
<tr>
<td>2.3 All learning objectives or competencies are stated clearly and written from the learner’s perspective.</td>
<td>3</td>
</tr>
<tr>
<td>2.4 The relationship between learning objectives or competencies and course activities is clearly stated.</td>
<td>3</td>
</tr>
<tr>
<td>2.5 The learning objectives or competencies are suited to the level of the course.</td>
<td>3</td>
</tr>
<tr>
<td>3.1 The assessments measure the stated learning objectives or competencies.</td>
<td>3</td>
</tr>
<tr>
<td>3.2 The course grading policy is stated clearly.</td>
<td>3</td>
</tr>
<tr>
<td>3.3 Specific and descriptive criteria are provided for the evaluation of learners’ work and are tied to the course grading policy.</td>
<td>3</td>
</tr>
<tr>
<td>3.4 The assessment instruments selected are sequenced, varied, and suited to the learner work being assessed.</td>
<td>2</td>
</tr>
<tr>
<td>3.5 The course provides learners with multiple opportunities to track their learning progress.</td>
<td>2</td>
</tr>
<tr>
<td>4.1 The instructional materials contribute to the achievement of the stated course and module/unit learning objectives or competencies.</td>
<td>3</td>
</tr>
<tr>
<td>4.2 Both the purpose of instructional materials and how the materials are to be used for learning activities are clearly explained.</td>
<td>3</td>
</tr>
<tr>
<td>4.3 All instructional materials used in the course are appropriately cited.</td>
<td>2</td>
</tr>
<tr>
<td>4.4 The instructional materials are current.</td>
<td>2</td>
</tr>
<tr>
<td>4.5 A variety of instructional materials is used in the course.</td>
<td>2</td>
</tr>
<tr>
<td>4.6 The distinction between required and optional materials is clearly explained.</td>
<td>1</td>
</tr>
<tr>
<td>Standard</td>
<td>Points</td>
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<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>5.1 The learning activities promote the achievement of the stated learning objectives or competencies.</td>
<td>3</td>
</tr>
<tr>
<td>5.2 Learning activities provide opportunities for interaction that support active learning.</td>
<td>3</td>
</tr>
<tr>
<td>5.3 The instructor’s plan for classroom response time and feedback on assignments is clearly stated.</td>
<td>3</td>
</tr>
<tr>
<td>5.4 The requirements for learner interaction are clearly stated.</td>
<td>2</td>
</tr>
<tr>
<td>6.1 The tools used in the course support the learning objectives and competencies.</td>
<td>3</td>
</tr>
<tr>
<td>6.2 Course tools promote learner engagement and active learning.</td>
<td>3</td>
</tr>
<tr>
<td>6.3 Technologies required in the course are readily obtainable.</td>
<td>2</td>
</tr>
<tr>
<td>6.4 The course technologies are current.</td>
<td>1</td>
</tr>
<tr>
<td>6.5 Links are provided to privacy policies for all external tools required in the course.</td>
<td>1</td>
</tr>
<tr>
<td>7.1 The course instructions articulate or link to a clear description of the technical support offered and how to obtain it.</td>
<td>3</td>
</tr>
<tr>
<td>7.2 Course instructions articulate or link to the institution’s accessibility policies and services.</td>
<td>3</td>
</tr>
<tr>
<td>7.3 Course instructions articulate or link to an explanation of how the institution’s academic support services and resources can help learners succeed in the course and how learners can obtain them.</td>
<td>2</td>
</tr>
<tr>
<td>7.4 Course instructions articulate or link to an explanation of how the institution’s student services and resources can help learners succeed and how learners can obtain them.</td>
<td>1</td>
</tr>
<tr>
<td>8.1 Course navigation facilitates ease of use.</td>
<td>3</td>
</tr>
<tr>
<td>8.2 Information is provided about the accessibility of all technologies required in the course.</td>
<td>3</td>
</tr>
<tr>
<td>8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.</td>
<td>2</td>
</tr>
<tr>
<td>8.4 The course design facilitates readability.</td>
<td>2</td>
</tr>
<tr>
<td>8.5 Course multimedia facilitate ease of use.</td>
<td>2</td>
</tr>
</tbody>
</table>
APPENDIX B

Quality Matters Rubric Faculty Survey

Part 1. Demographics

1. What is your highest degree? [Select from: Associate, Bachelors, Masters, Doctorate, Professional (e.g. M.D., J.D., etc.), Other]
2. How many years has it been since you completed your highest degree? [Select from: 0-5, 6-10, 11-15, 16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 45+] 
3. Which institution do you currently work for? [Choose from: XXXXX Community College; XXXXX Community College; Choose Not to Reply]
4. What is your current primary faculty status at the institution? [Choose from: adjunct instructor; instructor; assistant professor, associate professor; professor; emeritus professor]
5. How many years have you served at this institution? [Select from: 0-5, 6-10, 11-15, 16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 45+] 
7. What is your gender? [Select from: Male, Female, Other, Choose Not to Reply]
8. What is your approximate age? [Select from: 20-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65 or over, Choose Not to Reply]
9. What is your ethnicity: [Select from: Hispanic/Latino, American Indian or Alaskan Native, Asian, Black or African American, White, Two or More Races, Choose Not to Reply]

Part 2. Training & Experience

The rest of this survey refers to hybrid and online courses. Refer to the following definitions as needed for these terms:

*Hybrid course* - Allen and Seaman (2014) defined this as a “course that blends online and face-to-face delivery. [A] substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings” (p. 6).

*Online course* - Allen and Seaman (2014) defined an online course as “one in which [at least] 80 percent of the course content is delivered online” (p. 6).

1. Within the last five years, have you completed the “Applying the Quality Matters Rubric (APPQMR)” workshop? [Yes/No]
   a. [If yes] What date (month and year) did you complete APPQMR? Format your answer as MM/YYYY. [text entry field]
2. Within the last five years, have you completed any other formal training (besides APPQMR) on how to design, develop, or teach online or hybrid courses? [Select Yes/No]
a. [If yes] Please list what training you have completed, including the month and year completed. Format the month and year as MM/YYYY. [text entry field]

3. Approximately how many online or hybrid courses have you designed and developed? [Choose from the following ranges: N/A, I've never created an online or hybrid course before; One to Two Courses; Three or More Courses]

4. Approximately how many online or hybrid courses have you created using Quality Matters? [Choose from the following ranges: N/A, I've never created an online or hybrid course before using Quality Matters; One to Two Courses; Three or More Courses]

5. Approximately how many semesters have you taught an online or hybrid course? [Choose from the following ranges: N/A, I've never taught an online or hybrid course before; One to Two Semesters; Three or More Semesters]

6. Are the online or hybrid courses you have taught developed by you or by others? [Choose from: Self-developed; Developed by a team I was a part of; Developed by another faculty member or group; None of the above]

Part 3. QM Rubric Usefulness and Ease of Use

**Directions:** Think about what you currently know about Quality Matters, the QM Rubric, and designing online and hybrid courses. Base your answers below on your current perceptions of the QM Rubric when applying it to the design and development of online and hybrid courses. Mark each statement with Strongly Agree, Agree, Disagree, Strongly Disagree, or Not sure.

**Perceived Usefulness**

1. Using the QM Rubric enables me to accomplish online/hybrid course design tasks more quickly.
2. Using the QM Rubric for course design improves my ability to teach online and/or hybrid courses.
3. Using the QM Rubric increases my productivity as an online/hybrid course designer.
4. Using the QM Rubric enhances the effectiveness of my online/hybrid course.
5. Using the QM Rubric makes it easier to design my online/hybrid courses.
6. I find the QM Rubric useful for designing online/hybrid courses.

**Perceived Ease of Use**

1. Learning to apply the QM Rubric to the design and development of online/hybrid courses has been easy for me.
2. I find it easy to apply the QM Rubric to the design and development of online/hybrid courses.
3. It has been easy for me to become skillful at using the QM Rubric.
4. I find the QM Rubric flexible to interact with and to use.
5. I find the QM Rubric easy to use.
APPENDIX C

University of Memphis IRB Approval

Institutional Review Board
Office of Sponsored Programs
University of Memphis
315 Admin Bldg
Memphis, TN 38152-3370

Jan 8, 2018

PI Name: Rhonda Gregory
Co-Investigators:
Advisor and/or Co-PI: Amanda Rockinson-Szapkiw
Submission Type: Initial
Title: Influence of Quality Matters™ Professional Development on Faculty Perceptions of Design Standards and the Online Course Development Process
IRB ID: #PRO-FY2018-329

Expedited Approval: Jan 8, 2018
Expiration: Jan 8, 2019

Approval of this project is given with the following obligations:

1. This IRB approval has an expiration date, an approved renewal must be in effect to continue the project prior to that date. If approval is not obtained, the human consent form(s) and recruiting material(s) are no longer valid and any research activities involving human subjects must stop.

2. When the project is finished or terminated, a completion form must be submitted.

3. No change may be made in the approved protocol without prior board approval.

Thank you,
James P. Whelan, Ph.D.
Institutional Review Board Chair
The University of Memphis.
APPENDIX D

Participant Recruitment Message
(sent via email by participating institution’s research office)

Dear faculty, because your institution is a community college subscriber to Quality Matters, I would appreciate your help with the following study.

**Invitation to Participate**

**Volunteers Wanted for a Research Study**

Study Title: Influence of Quality Matters™ Professional Development on Faculty Perceptions of Design Standards and the Online Course Development Process

**Purpose and Study Procedures**

As part of a research investigation examining the influence of Quality Matters (QM) professional development, I am asking that you complete a brief survey that will take approximately 10 minutes to complete.

Your participation in this study offers valuable information and extends our understanding of how – or if – QM training might influence faculty perceptions of the QM rubric and online course development process.

To complete the survey, please go to {link to informed consent and survey}

At the end of the survey, you will be asked to provide your name and contact information for a possible follow-up interview. Interviews, should you choose to participate, will be completely confidential and scheduled at a time and location convenient to you. The interview will take approximately 30-45 minutes of your time.

**Benefit to Participants**

Compensation will not be provided for participation in this study. However, everyone who completes the survey by (stipulated date) and enters their name and email address will automatically be entered into a drawing for a $25 Amazon.com gift card.

**Confidentiality**

Your contact information, should you choose to provide it for the drawing and follow-up interview, will only be visible to me. I will keep all information, in paper and digital format, confidential and secure. You will not be personally identified in any written or published materials resulting from this study. I will only report data in aggregate for scholarly purposes.

All data, recorded and written, will be identified and organized using a pseudonym assigned to you rather than your name. No real names will be used in the reporting of the data. Only me, my dissertation chair, and research assistants will have access to the study data. The information will only be used for the purposes described in the study.
Eligibility

All full- and part-time faculty members at participating QM subscribing community colleges are eligible to participate in the survey. Faculty members who have completed QM training within the last five (5) years are eligible to be interviewed; however, only about six to eight participants will be selected for interviews.

Researcher Information

This study is being completed by Rhonda Gregory in pursuit of the doctoral degree in instructional design and technology at the University of Memphis. To learn more about this research, contact Rhonda by phone at (618) 339-0647 or by email at rlgrgory@memphis.edu.

Thank you for your time and consideration.
APPENDIX E

Survey Informed Consent Form
Consent to Participate in a Research Study

Study Title: Influence of Quality Matters™ Professional Development on Faculty Perceptions of Design Standards and the Online Course Development Process

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?
You are being invited to take part in this research study because your institution is a community college subscriber to Quality Matters.

WHO IS DOING THE STUDY?
The person in charge of this study is Rhonda Gregory, who is conducting this study as part of her doctoral degree requirements within the University of Memphis’s Department of Instruction and Curriculum Leadership. She is being guided in this research by Dr. Amanda Rockinson-Szapkiw.

WHAT IS THE PURPOSE OF THIS STUDY?
The purpose of this study is to examine the influence of Quality Matters (QM) training on faculty’s perceptions about design standards and of the online course development process. You do not have to have completed any training to quality for participation in the survey – Phase I of this study.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?
The only reason you should not participate in phase 1 of this study is if you do not work at a QM subscribing community college.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?
Phase 1 of the study is an online survey developed and hosted in the online survey tool Qualtrics. In Qualtrics, I will set the survey not to collect ISP addresses. It will take approximately 10 minutes to complete the survey.

Phase two of the study is a 30-45 minute follow-up interview to be scheduled at a time and location convenient to you. Should you choose to participate in Phase two, a separate informed consent form will be provided for you to complete at a later date.

WHAT WILL YOU BE ASKED TO DO?
In the online survey, you will be asked to provide your general demographic information, training and teaching background information, and general perceptions of the Quality Matters (QM) rubric. You will also be asked to provide your name and contact information for entry into the prize drawing and for possible participation in a follow-up interview.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?
The study entails no more risk of harm than you would experience in everyday life.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?
There are no potential benefits to subjects for participation in the study. Willingness to take part may, in the future, help researchers and distance education administrators better understand this research topic.

**DO YOU HAVE TO TAKE PART IN THE STUDY?**
If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering. Your decision to participate and participation will have no influence on your relationship with the researcher or your institution.

**IF YOU DON’T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?**
If you do not want to be in the study, there are no other choices except not to take part in the study.

**WHAT WILL IT COST YOU TO PARTICIPATE?**
There are no costs associated with taking part in the study.

**WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?**
Compensation will not be provided for your participation in this study. However, all survey participants who provide their name and contact information by the stipulated date will automatically be entered into a drawing for a $25 Amazon.com gift card.

**WHO WILL SEE THE INFORMATION THAT YOU GIVE?**
I will make every effort to keep private all research records that identify you to the extent allowed by law. Only I will have access to your name and contact information, and this information will only be used to administer the prize drawing and to establish interviews. Once the prize drawing and interviews are complete, your name and contact information will be permanently deleted from all records. All interviewees will be identified, in paper and digital format, only by a pseudonym I assign.

Only my dissertation chair and I will have access to the survey data. When information is shared with the dissertation chair, information will be encrypted and shared via the web on a university secure site (i.e., https) or private, password-protected account.

Your information will be combined with information from other people taking part in the study. When I write about the study, I will write about the combined information I have gathered. The combined data analysis may be shared with your institution. You will not be personally identified in these written materials. I may publish the results of this study; however, I will keep your name and all other identifying information private.

All materials will be permanently destroyed after a 3-year period.

**CAN YOUR TAKING PART IN THE STUDY END EARLY?**
If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. Should you decide to end your participation early, simply close your internet browser.
WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?
Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Rhonda Gregory at 618-339-0647 or her advisor, Dr. Amanda Rockinson-Szapkiw, at 901-678-1432.

If you have any questions about your rights as a volunteer in this research, you may contact the University of Memphis Institutional Review Board Administrator at 315 Admin Bldg., Memphis, TN 38152-3370, via email to irb@memphis.edu, or by phone at 901-678-2705.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent:

I have read and understood the above information. I have asked questions and have received answers. By selecting YES and clicking the NEXT button below, I acknowledge that I meet the aforementioned criteria for participation:

I am employed as a faculty member at a community college which subscribes to Quality Matters and I consent to participate in this study.

Yes

No
APPENDIX F

Interview Protocol

Intro:

My initial questions are about the Quality Matters rubric. Try to think of the rubric, specifically, not the QM workshop. We’ll talk about the training in a few minutes.

Research Question 1:
How does successful completion of QM professional development effect participants’ perceptions about the QM rubric?

Lead Question 1. Describe for me your impressions about the QM rubric now, after training, in comparison to any impressions about the rubric you held before the training.

Potential probes:

A. How do you currently feel about using the Quality Matters rubric to design and evaluate online courses? How has that changed since you participated in training, if at all?
B. On a scale of 1-10 with 1 being terrible and 10 being amazing, how would you rate the QM rubric as a course design tool, and why?
C. How did your impressions of the QM rubric change as a result of your participation in training, if at all?

Bridge:
The remaining questions are about your experiences in the QM workshop and to your opinions about that training as an online or hybrid course developer.

Background questions:
1. When did you complete QM training?
2. Did you successfully complete the QM training such that you earned a certificate of completion? If not, how much of the course were you able to complete?

Research Question 2:
What is faculty’s experience in QM professional development? What key aspects of the training helped or hindered faculty perceptions of and ability to apply principles from the QM rubric and develop an online course?

Research sub-question 1: What is faculty’s experience in QM professional development?

Lead Question 2. Describe your experience in the QM training.

Potential probes:

A. What did the training entail?
B. How would you describe your experience in the QM workshop to another faculty member?
C. What makes you feel this way about your experience?
D. How did your experience in this training compare to any other formal online course design training experiences you’ve participated in over the last five years?

Lead Question 3. Describe any changes you made to the design of your course after participating in the workshop.

Potential probes:
A. How have you changed the way you design courses, if at all?
B. Do you feel as though participating in the workshop helped you improve your instructional design skills? Why or why not?
C. Do you feel as though participating in the workshop helped you improve the design of your course? Why or why not?
D. Did participation in the training help you feel better prepared for a QM review?

Research sub-question 2: What key aspects of the training helped or hindered faculty ability to apply principles from the QM rubric and develop an online course?

Lead Question 4. What topics or aspects of the QM workshop were *most* helpful to you as an online course developer?

Potential probes:
A. How are those things helpful to you?
B. What was the most useful part of the training in learning how to understand and apply the QM standards?
C. What are your biggest takeaways from the training?

Lead Question 5. What topics or aspects of the QM workshop were *least* helpful to you as an online course developer?

Potential probes:
A. What parts of the training were least useful for your course design?
B. Was there anything in the workshop that you didn’t understand or that caused you confusion about the QM standards and review process? If so, tell me about that.

Research sub-question 3: What key aspects of the training helped or hindered faculty perceptions of QM principles?

Lead Question 6. Which parts of the QM workshop had the greatest impact on your perception of the QM rubric and its underlying principles, and why?

Potential probes:
A. Did anything in the workshop stand out to you as an “Aha!” moment? If so, what was your epiphany and what do you think helped you come to this idea?
B. Did the workshop change your opinion of the QM rubric in any way – for the good or the bad? If so, tell me how your opinions changed and what part of the workshop led to that change.

Lead Question 7. Which parts of the QM workshop had the least amount of influence on your perceptions of the rubric and principles of QM, and why?
Potential probes:
A. Did anything in the workshop stand out to you as a “Good grief!” moment? If so, what was your concern at that point and where do you think it came from?
B. What changes or suggestions for improvement, if any, would like to see implemented in the workshop?

Research Question 3:
How do social influence and facilitating conditions at the community college influence long-term adoption and use of the QM rubric as a course design tool?

Lead Question 8. Within your institution, how important is it to others that the QM rubric be followed when designing an online or hybrid course?

Potential probes:
A. Does it seem that using and following the QM rubric for course design is important and valued by the college administration?
B. How do you think other faculty feel about using the QM rubric as a course design tool?

Lead Question 9. What type of support exists at your institution to help you make use of the QM rubric during course design?
Appendix G

Invitation to Interview Email

Dear Professor Last Name,

Thank you for responding to my survey about Quality Matters recently! I know your time is valuable, and I appreciate the fact that you shared your time and insights with me.

I would like to schedule a follow-up interview with you within the next two weeks. The interview should last no longer than 45 minutes. We can meet “online” using my Zoom account or by phone, whichever is more comfortable and convenient for you. You indicated that your best available times are XXX. With that in mind, can we meet on XXX at XXX Central time?

I look forward to confirming the appointment and to talking with you soon.

Sincerely,

Rhonda Gregory
Doctoral Candidate, University of Memphis
rlgrgory@memphis.edu
Cell: (618) 339-0647
APPENDIX H

Interview Informed Consent Form
Consent to Participate in a Research Study: Phase Two

Study Title: Influence of Quality Matters™ Professional Development on Faculty Perceptions of Design Standards and the Online Course Development Process

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?
You are being invited to take part in this research study because your institution is a community college subscriber to Quality Matters and because you indicated in Phase one of the study that you completed QM training within the last five years.

WHO IS DOING THE STUDY?
The person in charge of this study is Rhonda Gregory, who is conducting this study as part of her doctoral degree requirements within the University of Memphis’s Department of Instruction and Curriculum Leadership. She is being guided in this research by Dr. Amanda Rockinson-Szapkiw.

WHAT IS THE PURPOSE OF THIS STUDY?
The purpose of this study is to examine the influence of Quality Matters (QM) training on faculty’s perceptions about design standards and of the online course development process.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?
The only reason you should not participate in this study is if you do not work at a QM subscribing community college or if you have not completed QM training within the last five years.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?
1 of the study was an online survey. Phase two of the study, which this consent is for, will be a 30-45 minute follow-up interview to be scheduled at a time and location convenient to you.

WHAT WILL YOU BE ASKED TO DO?
During a confidential interview, you will be asked to answer questions about your experience in QM training. You will also be asked about key aspects of the training that either helped or hindered your perceptions of QM standards and of your ability to apply QM principles to the online course development process. The interview may be held in a private campus office, online, or via telephone and will be recorded using either a voice recorder or a virtual conferencing tool (e.g., Zoom).

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?
The study entails no more risk of harm than you would experience in everyday life.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?
There are no potential benefits to subjects for participation in the study. Willingness to take part may, in the future, help researchers and distance education administrators better understand this research topic.
DO YOU HAVE TO TAKE PART IN THE STUDY?
If you decide to take part in the study, it should be because you really want to volunteer. You
will not lose any benefits or rights you would normally have if you choose not to volunteer. You
can stop at any time during the study and still keep the benefits and rights you had before
volunteering. Your decision to participate and participation will have no influence on your
relationship with the researcher or your institution.

IF YOU DON’T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER
CHOICES?
If you do not want to be in the study, there are no other choices except not to take part in the
study.

WHAT WILL IT COST YOU TO PARTICIPATE?
There are no costs associated with taking part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?
Compensation will not be provided for your participation in this study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?
I will make every effort to keep private all research records that identify you to the extent
allowed by law.

Your information will be combined with information from other people taking part in the study.
When I write about the study, I will write about the combined information I have gathered. The
combined data analysis may be shared with your institution. You will not be personally
identified in these written materials. I may publish the results of this study; however, I will keep
your name and all other identifying information private. Each interview participant and
participating institution will be assigned a pseudonym by me. All data, recorded and written, will
be identified and organized using pseudonyms rather than names. No real names will be used in
the reporting of the data.

Only my dissertation chair, trained research assistants, and I will have access to the data.
Research assistants will sign a confidentiality agreement before they are given access to data.
When information is shared with the dissertation chair or research assistants, information will be
shared via the web on a university secure site (i.e., https) or private, password-protected account.
However, information will not be shared until participants have been given pseudonyms.

All materials will be destroyed after a 3-year period.

CAN YOUR TAKING PART IN THE STUDY END EARLY?
If you decide to take part in the study you still have the right to decide at any time that you no
longer want to continue. Should you decide to withdraw early, notify the researcher of your
request.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR
COMPLAINTS?
Before you decide whether to accept this invitation to take part in this phase of the study, please
ask any questions that might come to mind now. Later, if you have questions, suggestions,
concerns, or complaints about the study, you can contact the investigator, Rhonda Gregory at 618-339-0647 or her advisor, Dr. Amanda Rockinson-Szapkiw, at 901-678-1432.

If you have any questions about your rights as a volunteer in this research, you may contact the University of Memphis Institutional Review Board Administrator at 315 Admin Bldg., Memphis, TN 38152-3370, via email to irb@memphis.edu, or by phone at 901-678-2705.

WHAT IF NEW INFORMATION IS LEARNED DURING THE STUDY THAT MIGHT AFFECT YOUR DECISION TO PARTICIPATE?
If the researcher learns of new information in regards to this study, and it might change your willingness to stay in this study, the information will be provided to you. You may be asked to sign a new informed consent form if the information is provided to you after you have joined the study.

Please notify the researcher if you would like a copy of this information for your records.

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers.

By signing below, I acknowledge that I meet the aforementioned criteria for participation:

- I am employed as a faculty member at a community college which subscribes to Quality Matters, and
- I have completed QM training within the last 5 years.

and I consent to participate in this study.

__________________________________________
Printed Name

__________________________________________
Participant’s Signature Date
Dear Participant,

Thank you for your willingness to participate in this study examining the influence of Quality Matters (QM) training on faculty’s perceptions about design standards and the online course development process.

I have finished collecting and analyzing the data and attached you will find a summary of my findings for you to review. Please take some time to review the findings generated in part from your participation in this study. As a form of member checking – a process that is customary in qualitative research – I welcome any feedback, thoughts, impressions, or suggestions you have related to the findings as currently presented. You are welcome to place your comments directly on the document using the Track Changes function in Microsoft Word, or you may simply reply to this email by leaving your feedback in the body of an email.

As indicated in the informed consent for this study, my intention is to publish and present the findings from this study. I will be sure to let you know when findings from this study are published.

Again, I wish to thank you for your participation in this research study. I am deeply appreciative of your time and willingness to share your experiences related to the topic of study.

With gratitude,

Rhonda Gregory
(618) 339-0647
rlgrgory@memphis.edu