Strategies Used to Evaluate Online Education

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Abstract

Despite all of the research that has shown that there is no significant difference between student outcomes in online education and face-to-face education, online education continues to face greater scrutiny than face-to-face education. In this milieu, online educators (i.e., instructors, instructional designers, administrators) have faced increased pressure to not only evaluate but even improve online education so that it is not only as good as but ultimately even better than face-to-face education. In the following chapter, we describe the various ways that online educators evaluate online education.

Keywords: Evaluation; Quality Assurance; Online Learning; Formative Assessment; Summative Assessment.

Strategies Used to Evaluate Online Education

"Evaluation is a new discipline though an old practice"

--Michael Scriven

Evaluation is the process of determining the merit or worth of something (Gusky, 2000). Evaluation has a long history not only in education in general (Hogan, 2007; Worthen & Sanders, 1973) but also in the practice of instructional design, distance education, and online learning over the years (Ely & Plomp, 1996; Gagne, 1987; Moore & Anderson, 2003; Reiser, 2001; Seels & Richey, 1994). Online educators (i.e., instructors, instructional designers, administrators) in particular have had a specific interest in evaluation because critics have questioned the merit or worth of online education from its inception. Among other things, critics have questioned whether online education is as good as traditional face-to-face education (Allen & Seaman, 2017; Jaschik & Lederman, 2014).) This skepticism sparked 100's of media comparison studies starting in the late 1990s by supporters and critics alike (see Bernard et al., 2004; Means, Toyama, Murphy, & Bakia, 2013; Means, Toyama, Murphy, Bakia, & Jones, 2009; Meyer, 2002, 2004; Phipps & Merisotis, 1999;). These studies sought to compare student outcomes between online and face-to-face courses. The majority of these studies showed that there is no significant difference between online learning and face-to-face learning. Despite this, online educators continue to try to show that online education is as good as face-to-face education (McDonald, 2002). To complicate matters further, during the last decade, there has been an increased focus on accountability at all levels of education (Rasmussen, Davidson-Shivers, & Savenye, 2011). Because of this skepticism and increased need for accountability—as well as a general desire to create high quality learning experiences—online educators have grappled with the best approaches to evaluate online education and in turn create and deliver

high quality online education. In the following chapter, we describe some of the different ways that online educators evaluate online education.

Different Types and Focus of Evaluation

Generally speaking, there are two basic types of evaluation: formative and summative evaluation. Formative evaluation is conducted before a product is complete. According to Belanger and Jordan (1999), "the primary purpose of formative evaluation is to improve the product, service or process as it is being developed" (p. 186). In terms of online education, formative evaluation typically focuses on reviewing online courses at different times while courses are being developed--that is, formative evaluation generally happens before courses are fully implemented and used by instructors and learners (Davidson-Shivers, Rasmussen, & Lowenthal, 2018). While some have argued that formative evaluation is more useful than summative evaluation (cf. Belanger & Jordan, 1999; Oncu & Cakir, 2011), the increased use of course design standards and quality assurance frameworks (discussed later in this chapter) are likely enabling schools, colleges, and universities to conduct less formative evaluations than perhaps in the past.

Summative evaluation, on the other hand, is an evaluation that is conducted after a product--or in the case of online education, a course or program--is developed and implemented (Belanger & Jordan, 1999; Davidson-Shivers, Rasmussen, & Lowenthal, 2018). Summative evaluations are often conducted by external evaluators (i.e., people not directly involved with the project). Summative evaluations are often focused on a course, courses, or programs effectiveness, efficiency and appeal (Davidson-Shivers et al., 2018).

Online educators use formative and summative evaluation in multiple ways. For instance, online educators are increasingly evaluating how well a course is designed (Baldwin, Ching, &

Hsu, 2017; Baldwin & Trespalacios, 2017). For instance, there are standards and quality assurance frameworks (e.g., Quality Matters) that are used to guide course development or to evaluate a course after it has been taught (Baldwin et al., 2017; Frydenberg, 2002). Online teaching is also often evaluated as a way to determine the merit or worth of the online instruction. Online teaching is usually evaluated using end-of-course evaluations (Lowenthal & Bauer, & Chen, 2015; Rovai, Ponton, Derrick, & Davis, 2006; Young, 2006). Finally, online programs are increasingly being evaluated (Rovai, Ponton, & Baker, 2008). Traditionally, online programs--at least at institutions of higher education--were simply evaluated through the general accreditation process that evaluated entire programs or universities as a whole (Rovai, 2003; Rovai et al., 2008). Over time, though, institutions--whether as a part of accreditation or as an independent evaluation--are conducting more extensive program evaluations of their online programs. In the following section, we discuss some of the current standards and quality assurance frameworks used by online educators to conduct formative and/or summative evaluations of online courses, online teaching, and online programs.

Standards and Quality Assurance Frameworks Guiding Evaluation

As enrollments in online courses grew, during the early to mid 2000s, various standards and quality assurance frameworks were developed to help evaluate, monitor, and ultimately improve online education (see Feldman, McElroy, & LaCour, 2000; Frydenberg, 2002; Phipps, & Merisotis, 1999; Southern Regional Education Board, 2006). Over the years, many of these standards and frameworks have been updated and expanded; at the same time, even with the existence of established standards, additional standards and frameworks have since been created to meet the needs of different contexts and organizations. In fact, there are currently dozens of different quality assurance frameworks focused on online learning (see Baldwin, Ching, & Hsu,

2017; Baldwin & Trespalacios, 2017; Hastings & Rasmussen, 2017; for a comparison of some of these different frameworks).

We use the phrase *quality assurance frameworks* in a general way to describe a variety of different quality assurance programs used by different institutions and organizations. Each of these frameworks, discussed in the following paragraphs, began with a set of "benchmarks" or "standards" identifying what quality online education looks like. These standards were then used to create a rubric or checklist that online educators use to create and evaluate online education (Hastings & Rasmussen, 2017; Lowenthal & Hodges, 2015). Phipps and Merisotis (2000) published one of the first lists of benchmarks /standards for online education; their benchmarks focused on the following domains:

- Institutional Support
- Course Development
- Teaching/Learning
- Course Structure
- Student Support
- Faculty Support
- Evaluation and Assessment

Most frameworks are developed for a specific purpose and context. For instance, some standards and frameworks focus only on how an online course is designed (e.g., Quality Matters). Others focus on how an online course is taught / facilitated (e.g., during a given semester). Still other standards and frameworks focus on a combination of course design and teaching (e.g., QOLT), because quality online education depends on both how a course is designed and how it is taught. And yet another group focuses not only on how courses are

designed but also on how programs are managed and delivered (e.g., Quality Scorecard). Most of these frameworks, though, were developed for formal P12 or Higher Education contexts and not specifically for the type of online education used in corporate contexts.

In the following paragraphs, we briefly describe some popular standards and quality assurance frameworks. This review is not meant to be exhaustive or as an endorsement of any one framework, rather it is supposed to provide an overview of standards and the corresponding quality assurance frameworks. Later in this chapter, we will discuss how these standards and frameworks are used to evaluate online course design, online teaching, and online programs.

Rubric for Online Instruction (ROI)

California State University (CSU) Chico developed the "Rubric for Online Instruction" (ROI) in 2002. CSU Chico used the rubric from 2003 – 2014. The entire CSU system now uses a new instrument, called the QOLT evaluation instrument, which is discussed in the next section. The ROI, though, was structured around the following six categories:

1. Learner Support and Resources
2. Online Organization and Design
3. Instructional Design and Delivery
4. Assessment & Evaluation of Student Learning
5. Innovative Teaching with Technology, and
6. Faculty use of Student Feedback. (CSU Chico, n.d.)

Each category has a few criteria under it. For instance the "Online Organization and Design" category focuses on the design of the course and includes things such as:

- "Course is well-organized and easy to navigate. Students can clearly understand all components and structure of the course" (CSU Chico, n.d.).
- "Aesthetic design presents and communicates course information clearly throughout the course." (CSU Chico, n.d.).

Quality Online Learning and Teaching (QOLT)

The California State University system created a new quality assurance framework in 2014 called the Quality Online Learning and Teaching (QOLT) program. The QOLT program centers on the QOLT evaluation instrument. The QOLT instrument was created after reviewing various frameworks (California State University, n.d.). For instance, the creators of QOLT not only reviewed CSU Chico's ROI and Quality Matters rubrics but also other popular frameworks such as the Community of Inquiry (Garrison, Anderson, & Archer, 2000) as well as Chickering and Gamson's (1987) 7 Principles for Good Practice in Undergraduate Education.The QOLT program is based on the following 9 sections (the 10th section is optional).

1. Course Overview and Introduction
2. Assessment and Evaluation of Student Learning
3. Instructional Materials and Resources Utilized
4. Students Interaction and Community
5. Facilitation and Instruction
6. Technology for Teaching and Learning
7. Learner Support and Resources
8. Accessibility and Universal Design
9. Course Summary and Wrap-up

10. Mobile Platform Readiness

Each section of the rubric includes a number of objectives as well as an example for each objective. For instance, Standard 1.1 states: "1.1 Instructor uses course environment to provide clear and detailed instructions for students to begin accessing all course components, such as syllabus, course calendar, assignments, and support files" (QOLT, n.d.).

Quality Scorecard Suite

The Online Learning Consortium (OLC), formerly known as the Sloan Consortium (Sloan-C), was founded in 1999. OLC is an organization focused on advancing quality online learning in higher education. One of the ways that the OLC does this is through their quality assurance framework called the "Quality Scorecard Suite." The Quality Scorecard Suite is a series of rubrics based on the OLC's Five Pillars of Quality Online Education:

1. Learning Effectiveness
2. Faculty Satisfaction
3. Student Satisfaction
4. Scale
5. Access (Online Learning Consortium, n.d.)

The OLC has described each of these pillars of quality online education in detail and has identified effective practices for each. For instance, the Learning Effectiveness pillar states, Effective practices that support learning effectiveness fall into (and can be explored under) the following categories: Course Design, Learning Resources. Faculty Development, Learner Characteristics, Pedagogy, Interaction (e.g., with content, faculty, other students; development of

learning communities, etc.), Assessment, and Learning Outcomes (e.g. student satisfaction, retention, achievement, performance, etc.). (Learning Effectiveness Section, Para 1)

The Quality Scorecard Suite's set of rubrics can be used to improve the quality of not only online courses but also online programs (see Shelton, 2011; Shelton, Saltsman, Holstrom, & Pedersen, 2014). OLC has scorecards/rubrics for the following different areas:

- Administration of Online Programs
- Blended Learning Programs
- Quality Course Teaching & Instructional Practice
- Digital Courseware and Instructional Practice
- Course Design Review

Quality Matters

Quality Matters is a widely used quality assurance framework in the United States. Quality Matters began under a Department of Education Fund for Improvement of Post-Secondary Education (FIPSE) grant in 2003. Quality Matters (QM) is now an international organization focused on improving the quality of online courses at the K-12, Higher Education, and Professional Education levels. QM has over over 800 subscribers (Shattuck, Zimmerman, & Adair, 2014). QM, though, currently only focuses on the quality of how online courses are designed (as opposed to quality teaching or quality programs). QM's quality assurance framework centers around the following eight standards:

1. Course overview and introduction
2. Learning objectives
3. Assessment and measurement

4. Instructional materials
5. Learner interaction and engagement
6. Course technology
7. Learner support
8. Accessibility (Quality Matters, 2014)

Each of these standards has a number of related and more specific sub-standards used to evaluate online course design.

iNACOL's National Quality Standards

Last but not least, the International Association for K-12 Online Learning (iNACOL) is an organization focused on improving competency-based, blended, and online learning at the K-12 level. iNACOL's work, like a number of these other previously mentioned organizations, ranges from policy work, professional development, as well as research and standards development in an effort to improve the quality of online learning. iNACOL has published a number of reports focused on identifying standards and corresponding rubrics to improve online courses, online teaching, and online program development. Currently, iNACOL's Website lists eight resources on national standards. Their popular reports include the following:

- iNACOL National Standards for Quality Online Courses (2011)
- iNACOL National Standards for Quality Online Teaching (2011)
- iNACOL National Standards for Quality Online Programs (2009)

Each report lists standards, which are chunked into different sections (as listed in Table 1), and corresponding rubrics. For instance, the iNACOL National Standards for Quality Online Courses (2011) has a section called student assessment. Under student assessment, there are seven

different standards focused on evaluation strategies, feedback, and assessment resources and materials. The third standard, under this section, states “Ongoing, varied, and frequent assessments are conducted through the course to inform instruction”.

Table 1. ***Overview of iNACOL National Standards for Quality***

Quality Course Design	**Quality Online Teaching**	**Quality Online Programs**
● Content ● Instructional Design ● Student Assessment ● Technology ● Course Evaluation and Support	● Knowledge of Effective Instruction ● Use technology to support learning engagement ● Encourages active learning, application, interaction, participation, and collaboration ● Clear expectations, prompt responses, and regular feedback. ● Models, guides, and encourages legal, ethical, and safe behavior ● Aware of different academic needs and incorporates accommodations ● Creates and implements valid and reliable assessments ● Assesses learning progress by measuring student achievement of learning goals ● Uses data to modify content and guide student learning ● Interacts professionally with others to support students’ success. ● Arranges media / content to help students / teachers effectively transfer knowledge.	● Institutional standards ● Teaching and learning standards ● Support standards ● Evaluation standards

Most quality assurance frameworks, and specifically the standards and rubrics that often go along with them, can be used in a formative or summative manner. For instance, the standards and/or rubrics identify important criteria for example that are needed in well designed online courses. While each set of standards emphasizes some things more than others (see Table 2), you can see some commonalities (at least at the highest level). So for online courses to demonstrate merit and worth and thus be quality online courses, whether being formatively or summatively evaluated, should demonstrate things such as sound organization, good instructional design, a focus on student assessment as well as accessibility to name a few.

Table 2. ***Comparison of Popular Quality Framework Standards***

Rubric for Online Instruction (ROI)	**Quality Online Learning and Teaching (QOLT)**	**Five Pillars of Quality Online Education**	**Quality Matters**	**iNACOL Course Design**

● Learner Support and Resources ● Online Organization and Design ● Instructional Design and Delivery ● Assessment & Evaluation of Student Learning ● Innovative Teaching with Technology ● Faculty use of Student Feedback	● Course Overview and Introduction ● Assessment and Evaluation of Student Learning ● Instructional Materials and Resources Utilized ● Students Interaction and Community ● Facilitation and Instruction ● Technology for Teaching and Learning ● Learner Support and Resources ● Accessibility and Universal Design ● Course Summary and Wrap-up ● Mobile Platform Readiness (optional)	● Learning Effectiveness ● Faculty Satisfaction ● Student Satisfaction ● Scale ● Access	● Course overview and introduction ● Learning objectives ● Assessment and measurement ● Instructional materials ● Learner interaction and engagement ● Course technology ● Learner support ● Accessibility	● Content ● Instructional Design ● Student Assessment ● Technology ● Course Evaluation and Support

Evaluating Online Course Design

Online educators have focused to a larger degree, as evidence in the previously mentioned standards and frameworks, on evaluating online course design. Online educators might choose to evaluate the design of their online courses in both informal and formal ways as well as in both formative and summative ways. For instance, CSU Chico's ROI and QOLT can be used in multiple ways. First, either rubric can be used when developing a new course as a road map or checklist to remind a course designer (whether that be a faculty member or a instructional designer) what should be included in an online course. Each section, for example, of the QOLT rubric provides specifics on what should be include in a well designed online course. Course designers can also use the rubrics to self-evaluate a course after it has been developed (e.g., as a part of a summative evaluation). Finally, the ROI or QOLT rubric can be used as a peer review tool in which another person (either internally or externally) can review a course. In fact, there is an instructor, a peer review, and a student version of the QOLT rubric that others can use to improve their online courses (see: http://courseredesign.csuprojects.org/wp/qualityassurance/qolt-non-award-instruments/). Thus, instructors and/or designers (and really all instructional support members) can design online courses and programs to meet specific standards and therefore use the standards and rubrics in a formative manner to improve the course as it is designed and developed as well as to use the frameworks to conduct more formal reviews as a part of either a summative evaluation or accreditation review.

Quality Matters (QM) is one of the more popular quality assurance frameworks used to evaluate the design of online courses in higher education (cf. Adair & Shattuck, 2015; Legon, 2015; Shattuck, 2007; Swan, Matthews, Bogle, Boles, & Day, 2012). While each subscriber can arguably use QM differently (e.g., as criteria for formative or a summative evaluation), the basic

QM process involves online instructors and/or course designers designing online courses to meet the general standards and substandards. Then once the course is complete and taught for a semester, the design of the course is "reviewed" (i.e., evaluated) by three peer reviewers to see if each standard has been met. While most subscribers conduct informal or institution specific QM course reviews at their respective institutions, QM also has a process where a course can undergo a formal QM review by external reviews, for a fee, and in turn become a QM certified online course.

Regardless of the set of standards or quality assurance framework used, it is becoming common place to use a set of standards to guide the development of online courses and then to conduct some type of summative evaluation once a course has been developed and taught for a semester. Online courses are then usually revised and updated as a result of the feedback received from the evaluation.

Evaluating Online Teaching and Online Instructors

A quality online learning experience needs both a well designed online course and a high quality online instructor. Most of the recent and more popular quality assurance frameworks, though, focus very little, if at all, on online teaching. However, despite this, institutions have used various approaches to evaluate online teaching and online instructors. For instance, most institutions take a proactive or formative type of approach in which they either hire experienced online instructors or train their current teachers to teach online or a more reactive or summative type of approach where they use some type of end-of-course student evaluations to evaluate the quality of the teaching after the course has been offered. However, some also supplement these

other types of evaluation with some form of classroom observation while a course is being taught. Each of these strategies are discussed in more detail below.

Hiring or Training High Quality Instructors

Teaching online involves a different set of skills and abilities than teaching in a face-to-face classroom (Palloff & Pratt, 1999; Salmon, 2000). As such, institutions tend to either try to hire experienced online instructors and/or find ways to train their own instructors on how to teach online. In fact, organizations and institutions often create professional development programs to help prepare instructors to teach online (Chen et al., 2017; Meyer, 2013). Colleges and universities use different approaches to train instructors to teach online. While an increasing number offer some type of "learning to teach online" seminar, where instructors learn the basics of teaching online in an online workshop (Chen et al., 2017; Meyer, 2013), a number of organizations offer online professional development (including complete certificate programs) that instructors or instructional support staff (e.g., instructional designers) can complete from a distance to develop additional expertise with online instruction. A growing number of universities also offer certificates, undergraduate degrees and graduate degrees in instructional design and technology and sometimes specifically in online course design and online teaching. These programs are designed around professional standards. Organizations like the Association for Educational Communications and Technology (AECT), the International Society for Performance Improvement (ISPI), and the International Board of Standards for Training, Performance and Instruction (ibstpi) have all created professional standards to help guide and improve the practice of those involved with online instruction.

The International Board of Standards for Training, Performance and Instruction (Ibstpi) has in fact created standards (which they refer to as competencies) directly focused on online instruction. Ibstipi grew out of early joint task forces between AECT and ISPI (see: Davidson-Shivers & Rasmussen, 2007). They currently have five different sets of competencies:

1. Evaluator Competencies
2. Instructional Designer Competencies
3. Instructor competencies
4. Online learner Competencies
5. Training manager competencies

Each of these sets of competencies can help improve the quality of online instruction. For instance, the Instructor competencies are based on the following five areas:

Professional Foundation

- Planning and Preparation
- Instructional Methods and Strategies
- Assessment and Evaluation
- Management

Ibstipi has created performance indicators for each of these areas. However, one must pay to access the corresponding performance statements for each area. It is important to note though that Ibstpi focuses more on individual competencies than course competencies.

Classroom Observations

Some institutions conduct classroom observations to evaluate online teaching (Bennett & Barp, 2008; Eskey, Roehrich, 2013; Puzziferro-Schnitzer, 2005). Using classroom observations

to evaluate instruction has a long history in K-12 schools, where principals regularly conduct classroom observations to evaluate the teachers in their schools (Blase & Blase, 1999; Cangelosi, 1991), as well in higher education (Braskamp & Ory, 1994). There are two main types of classroom observations taking place in online courses today. The first is an administrator driven type of observation that takes place more at K12 virtual schools and for profit schools. These observations often take place multiple times in any given semester to ensure that the online instructors are regularly logging into the course and interacting with their students. The second type of classroom observations are more instructor driven and peer review in nature; these often take place at public colleges and universities (Bennett & Barp, 2008; McKenzie & Parker, 2011; Swinglehurst, Russell, & Greenhalgh, 2008). These typically take place because an instructor wants to improve how he or she teaches online and as a result asks a colleague to observe and evaluate their teaching. For instance, Penn State developed a Faculty Peer Review of Online Teaching process and form that is freely available for others to use (https://facdev.e-education.psu.edu/evaluate-revise/peerreviewonline).

End-of-course Student Evaluations

End-of-course students evaluations is perhaps the oldest technique used to ensure evaluate instruction (Lowenthal et al., 2015). Colleges and universities have been conducting some form of student evaluations of teaching for decades (Anderson, Cain and Bird 2005; also see Remmers 1928; Smalzried & Remmers 1943). While these evaluations began as a way for instructors to learn about their teaching (Anderson et al., 2005), they have become a way for institutions to evaluate teaching effectiveness (Kogan 2014). Many question though how effective these types of evaluations are at evaluating teaching effectiveness. Research on the

validity of student evaluations of teaching is ultimately mixed. However, one thing appears to be clear, while student evaluations might not effectively measure teaching effectiveness across all contexts, they do appear to be a good measure of student satisfaction (Boring, Ottoboni, & Stark, 2016; Lowenthal et al., 2015), which is an important thing to consider when evaluating online education.

Perhaps one notable drawback to student evaluations, though, is that they are generally conducted in a summative format at the end of the course which is too late to improve the learning experience for students who just finished the course. Regardless, institutions can and do use end-of-course evaluation data to identify which instructors needs more training, if a new instructor should teach a course, as well as to see if a course needs to be revised. Some institutions, though, do offer some type of midterm student evaluation of teaching which enable an instructor to get feedback in a formative manner half way through the course. Finally, other instructors might use a type of feedback survey to gather formative feedback themselves from their students during a given semester (Dobrovolny & Lowenthal, 2011).

Evaluating Online Programs

Finally, online educators, and specifically administrators, often will conduct an evaluation on an entire program or programs. Rovai (2003; Rovai & Downey, 2010; Rovai, Ponton, & Baker, 2008) has written a bit about evaluating distance education programs. In fact, Rovai, Ponton, and Baker (2008) identified some key performance indicators for program evaluation which they grouped in the following:

- Virtual university
- Faculty training

- Content resources
- Interaction resources
- Student enrollment
- Support services
- Engagement
- Peer revaluation
- Student evaluation
- Course adjustments
- Persistence, and
- Student achievement. (p.115)

Rovai and Downey (2010) later identified the following seven factors why programs fail which could also be used as criteria to guide a formative or summative program evaluation:

- Factor #1: Planning
- Factor #2: Marketing and recruitment
- Factor #3: Financial management
- Factor #4: Quality assurance
- Factor #5: Student retention
- Factor #6: Faculty development
- Factor #7: Online course design and pedagogy

However, since that time, OLC and iNACOL have developed their own rubrics or guidelines to guide a program evaluation. For instance, the OLC's "Administration of Online Program"s rubric has various criteria separated under the following categories:

- Institutional Support,

- Technology Support,
- Course Development / Instructional Design,
- Course Structure,
- Teaching and Learning,
- Social and Student Engagement,
- Faculty Support and Student Support, and
- Evaluation and Assessment.

A program can be rated as deficient, developing, accomplished or exemplary on each criteria. Similarly, iNACOL has developed the "National Standards for Quality Online Programs" for the K-12 level. These standards are actually grouped into the following four groups of standards:

- Institutional Standards
- Institutional Standards
- Institutional Standards
- Institutional Standards

Each of these four groups have totaling 19 standards in all.

Regardless of the set of criteria a program uses, standards such as these can be used in formative and summative ways to evaluate an online programs overall effectiveness. As the online marketplace continues to grow and competition increases as well as a need for accountability continue, it will be imperative for online educators to find ways to formatively and summatively evaluate their online programs to ensure they remain appealing, effective, and efficient.

Conclusion

Even though the first online course was offered over 30 years ago, online education is still relatively new. As such, online educators continue to experiment with ways to design, develop, and offer high quality instruction. Formative and summative types of evaluation are conducted by online educators to assess and improve online courses, online instruction, and online programs.

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