

# **Accountability, Quality, and Student Success in Online Education: A Literature Review of Empirical Studies**

Michael Porter  
Florida International University, USA

**Abstract:** This paper examines empirical studies on accountability, quality, and student success in online education. It advances that accountability and quality are critical components for student success in online education. It concludes that there is a lack of empirical studies that examine the effects of these measures on student success.

There is a lack of empirical studies that examine the effects of accountability measures on student achievement in higher education (McLendon, Hearn, & Deaton, 2006; Rutherford & Rabovsky, 2014). One of the reasons for the existence of few empirical studies on this subject is that there is difficulty in attempting to analyze the effects of accountability mechanisms, particularly in relation to student achievement (Hanushek & Raymond, 2004). Thus, there are gaps in the empirical understanding of the way in which accountability mechanisms in education are related to student achievement (Rabovsky, 2012). In order to understand the effects of newly introduced accountability systems upon student achievement, consideration must be given to the range of factors that influence student achievement (Hanushek & Raymond, 2004). It must be also recognized that along with the range of interacting factors to consider, many accountability systems undergo systematic changes, which may overlap with previous accountability mechanisms, thus making the effects from the new accountability mechanisms even more difficult to analyze. In the few instances where empirical studies of these accountability measures have been conducted, the impact of accountability on higher education institutional performance and behavior has been determined to be relatively small, at best (Orosz, 2012). The majority of the studies conclude that the accountability effects on performance are either marginal or insignificant (Orosz, 2012; Rabovsky, 2012; Shin, 2010; Volkwein & Tandberg, 2008).

## **Empirical Studies on Accountability**

Performance funding is an accountability measure that has become widespread in accountability regimes (McLendon et al., 2006; Orosz, 2012). In this type of accountability measure, institutions that have demonstrated the attainment of specific goals or targets set by the principal (state, the federal government, etc.) receive a specified amount of funding. Although most of the studies around performance funding in higher education institutions, including colleges and universities offering online education, show that student learning outcomes are not significantly improved by these accountability measures, Hanushek and Raymond (2004) have argued that student achievement growth is generally much higher with the introduction of new accountability measures than without them. Hanushek and Raymond's (2004) assertion appears valid at the elementary and middle schools levels but studies focused beyond the middle school level conclude that the achievement growth resulting from accountability measures is less than significant.

Shin's (2010) study analyzing the impact of states' new accountability standards on changes in institutional performance in higher education indicated there was no noticeable increase in institutional performance by universities that had adopted new state accountability

measures. Using hierarchical linear modeling to analyze graduation rate (dependent variable) for 467 higher education institutions (HEI) and research productivity (external research funding as the second dependent variable) for 123 HEIs, the study showed that accountability measures by the state accounted for only 15% of the variance in the institution's graduation rate and approximately 6% of the variance in research funding. Shin (2010) determined that the new performance-based accountability standards did not contribute significantly to the variance in either graduation rate or research funding; instead, 76% of the variance in graduation rate is explained by institutional characteristics, such as the institutional mission, freshmen's academic background, cost of in-state tuition, and dorm facilities. Shin (2010) concluded that the institutional performance was more linked to internal institutional characteristics than the external accountability measures. Shin (2010) then drew upon resource dependence and neo-institutional theories to explain the failure of state performance based accountability to translate to significant changes in higher education institutional performance.

Volkwein and Tandberg (2008) studied the association between states' accountability practices and the performance of higher education institutions by analyzing a large cross sectional data set from 2000 to 2006. The researchers concluded that there is no statistically significant relationship between accountability and institutional performance as it relates to enhanced student learning outcomes. Therefore, according to Volkwein and Tandberg (2008), the accountability movement through performance funding policies has generated no significant improvement in student learning, and thus it can be classified as ineffective.

Similarly, a quantitative study by Rabovsky (2012) exploring whether adoption of state accountability mechanism augmented institutional performance concluded that accountability measures in higher education systems have not been positively correlated with enhanced institutional performance. However, Rabovsky (2012) took his analysis further by arguing that similar research focusing on the adoption of the accountability mechanism have failed to examine all of the steps in the causal chain. Therefore, conclusions about the effects of accountability on improving institutional performance have limitations.

### **Quality in Online Distance Education**

Quality in online education is a subset of a broader focus on educational quality (Latchem & Jung, 2012). In measuring or introducing initiatives to enhance quality in universities and colleges, particularly those that have a strong focus on online education, there must be an understanding of the dimensions, parameters, and factors that affect the quality (Zaki & Rashidi, 2013). Scholars contend that the quality in higher education is influenced by a wide range of factors which must be closely examined in order to determine the impact made on quality. Consequently, research efforts to measure quality have been challenging because of the various dimensions and intangible constructs of quality that exist (McGorry, 2003; Parker, 2012).

McGorry (2003) developed a 60-item questionnaire to obtain a summary of indicators for measuring quality in online programs. These indicators were then organized into a model comprising seven constructs (flexibility, responsiveness and student support, perceived learning [self-reported by students], interaction, technological usefulness [perceived] and user friendliness, technical support, and student satisfaction). McGorry's (2003) 60-item questionnaire showed internal inconsistency with 12 items. These 12 items exhibited low correlation loadings and were subsequently eliminated. The reliability of this revised instrument comprising 48 items was 0.96, which is a strong reliability coefficient. Beside the high reliability coefficient, McGorry's (2003) instrument is well-supported as evidence by variants of

these seven constructs found in the literature on quality in online education (Hirner & Kochtanek, 2012; Hirumi, 2009; Monroe, 2011).

### **Accrediting Standards**

The practice of “applying QA (quality assurance) and accreditation processes to open and distance learning is a relatively new phenomenon” (Latchem & Jung, 2012, p. 13). The practice is considered new in the sense that QA and accreditation processes were historically applied to traditional learning. Evaluations of the quality in online distance education must emphasize student learning while including other variables that serve as indicators of quality learning in an online environment (Meyer, 2002). These variables or measures of quality have been articulated by accreditors as benchmarks or quality standards that institutions or their programs must satisfy.

Dickison, Hostler, Platt, and Wang (2006) in a study examining the relationship between accredited paramedic education programs and students’ achievement of a passing score (minimum of 70%) on a national exam for paramedics concluded that students’ enrollment into accredited parametric education programs was associated with attaining a passing score. Using multivariate logistic regression, the researchers determined that enrollment into an accredited program was independently and positively correlated with a passing score, even after controlling for possible confounding variables such as age, sex, race, education level, level of experience, and number of attempts at passing the exam. According to this study, students were much more likely to be successful in programs that were accredited compared to unaccredited programs.

An analysis of Dickison et al.’s (2006) study would allow one to conclude that accredited programs reflect a greater amount of accountability than unaccredited programs by submitting to the process of accreditation, which is a form of external quality assurance and accountability. This conclusion is further supported by the assumption that “accreditation standards imply an organizational intervention for change” (Rivera & Huertas, 2008, p. 2). By voluntarily subscribing its program to accreditation, the institution signaled that it was prepared to adhere to the threshold accrediting standards set for paramedic education and enhance the preparation of its graduates for success on the national paramedic exam. The analysis of the data on the success of students on the national exam for both accredited and unaccredited parametric education programs should also lead to continuous improvement, which is a form of accountability.

As a form of accountability, in 2001, eight U.S. accrediting bodies developed the “Statement of Commitment for the Evaluation of Electronically Offered Degree and Certificate Programs” that affirmed their commitment to assuring the quality of distance learning programs (Council for Regional Accrediting Commissions, 2001). This commitment was expressed by the following seven values:

- (a) education is best experienced within a community of learning where competent professionals are actively and cooperatively involved with creating, providing, and improving the instructional program;
- (b) learning is dynamic and interactive, regardless of the setting in which it occurs;
- (c) instructional programs leading to degrees having integrity are organized around substantive and coherent curricula which define expected learning outcomes;
- (d) institutions accept the obligation to address student needs related to, and to provide the resources necessary for, their academic success;
- (e) institutions are responsible for the education provided in their name;
- (f) institutions undertake the assessment and improvement of their quality, giving particular emphasis to student learning; and
- (g) institutions subject themselves, voluntarily, to peer review. (C-RAC, 2001, pp. ii-iii)

According to the Council for Regional Accrediting Commissions (2001), these seven values underpinning quality standards encapsulate the essence of a flexible framework for evaluating distance education, and they are regarded as important for catering to learning across both upgraded campus-based electronic programs and new types of delivery in distance education. However, the appropriateness of this framework to evaluate various forms of distance learning is questionable, given that accreditors have been cited for using standards designed for traditional learning and applying them to learning that takes place online (Eaton, 2000).

In 2012, the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), one of the six regional accrediting bodies in the U.S., approved its *Guidelines for Addressing Distance and Correspondence Education*. These guidelines addressed nine standards for distance education: (a) mission, (b) organization structure, (c) institutional effectiveness, (d) curriculum and instruction, (e) faculty, (f) library/learning resources, (g) student support services, (h) facilities and finances, and (i) federal requirements. Most of the accrediting standards for online education developed by other regional accrediting bodies reflect C-RAC's guidelines and seven values and the SACSCOC's nine standards. Since the development of these guidelines, standards, and values for online education, researchers have conducted numerous studies on online education that focus on the growth of online education and its quality (Allen & Seaman, 2013; Hirner & Kochtanek, 2012; Latchem & Jung, 2012).

### **Student Success**

There is no single factor that can be attributed to student success. However, various approaches to online distance education may result in different outcomes for student success. For example, the achievement of higher levels of student learning in online distance learning is most likely to occur when students are significantly engaged in their education and seek out opportunities for analyzing as well as applying materials presented in a variety of settings (Kuh, Kinzie, Schuh, & Whitt, 2010). Because there are neither geographical nor time bound restrictions in the online environment, multiple opportunities exist for students to become intensely involved in interacting with other students, faculty, and subject content. Consequently, the level of collaboration and engagement demonstrated by the student including employing multiple skills becomes vital for enhancing the student's chance of being successful.

Measures of student success include GPA, final course grade, and student retention (Kerr, Rynearson, & Kerr, 2006; Kruger-Ross & Waters, 2013). Several models exist for predicting student success, such as Schrum and Hong's (2002) student characteristic model, Marks, Sibley, and Arbaugh's (2005) structural equation model, Kerr, Rynearson, and Kerr's (2006) test of online learning success (TOOLS), and Kruger-Ross and Waters' (2013) situational theory of publics. Proponents of these studies contend that their model represents a valid predictor of student success in online education. Moore and Kearsley's (2012) comprehensive study cast doubt on the aforementioned models by concluding that educational background is one of the best predictors of student success in distance education. Moore and Kearsley (2012) argued that higher levels of formal education are associated with increased likelihood of completing a distance education course or program, whereas personal characteristics of students, though important, are less reliable predictors of student success. On the contrary, Yukselturk and Bulnut (2007) argued that the level of a student's educational background as a predictor of student success in distance education has not been sufficiently demonstrated in the literature around student success. Instead, Yukselturk and Bulnut (2007) in their model of student success concluded that a student's self-regulation (cognitive strategy use and self-motivation) is a more valid predictor of student success.

Wilson and Allen (2011) found that grade point average (GPA) was the greatest predictor of success regardless of the type of learning environment. Wilson and Allen (2011) examined success rates across two groups of learners in terms of completion and withdrawal while also considering background variables such as GPA and gender. The researchers concluded that there was a significant difference in student success rates between online education and traditional education, with student withdrawal rates and failures being significantly higher in online education classes. Other studies have reported that face-to-face education has lower non-completion rates than online education (Allen & Seaman, 2013; Latchem & Jung, 2012; Parker, 2012).

One of the strengths of Wilson and Allen's (2011) study was the profile of the different groups of learners with the characteristics of online learners being portrayed as generally female, older, and having earned more credit hours than traditional learners. In addition, several statistical techniques—*t*-tests, ANOVA, and multiple regression—were used to analyze the data. However, a few weaknesses existed in Wilson and Allen's (2011) study. The study was limited to a small sample size of only 100 students enrolled across two online courses and two face-to-face courses, which were all taught by different professors. There was neither randomized sample selection nor a control group. As a result, the research design was potentially vulnerable to confounding variables beside the learning environment and GPA.

In a study on student success in online distance education, Yukelturk and Bulnut (2007) examined the relationship between 13 predictor variables (gender, age, level of education, locus of control, dominant learning style, intrinsic goal orientation, extrinsic goal orientation, control beliefs, task value, self-efficacy, test anxiety, cognitive strategy use, and self-regulation) and student success in an online course. The authors found that of the 13 variables, only self-regulation was a statistically significant predictor of student success in online distance learning. One of the strengths of the study was its significance in offering valuable insight into student characteristics and how they relate to success in online education so that administrators and faculty could understand how best to advise and support students who select online courses. One of the notable weaknesses of this study was a small sample size of 80 students enrolled in one online course at one university, which had implications for the study's generalizability.

Student retention, one measure of student success, was found to be much lower at institutions that provide solely online education than at institutions providing face-to-face instruction (Latchem & Jung, 2012). Additional studies support Latchem and Jung's (2012) finding by reporting higher student retention rates in traditional learning than in online learning (Allen & Seaman, 2013; Parker, 2012). Low retention rate in online distance education has been frequently cited in the literature (Kruger-Ross & Waters, 2013; Latchem & Jung, 2012; Parker, 2012; Rovai & Downey, 2010). Reasons offered by researchers for these low retention rates in online education include students' feelings of isolation and disconnection, inadequate technological support, poor course instructional design, faculty underpreparedness to teach online, limited student-instructor interaction, low student motivation, and lack of self-discipline. Planners of effective online distance education will be cognizant of these factors when designing and delivering online courses in order to mitigate high attrition and promote student success.

### **Empirical Studies on Quality in Online Education**

Studies that simply compare student outcomes in online learning to student outcomes in traditional learning are prone to incomplete analysis and are poorly designed (Meyer, 2002), as studies having this design generally tend to ignore interacting factors and confounding variables, and oftentimes these studies present the classic *no significant difference* phenomenon. The

distance education literature is replete with studies addressing the difference between online learning and traditional learning. Russell (1999) presented a comprehensive comparative review of 355 research reports that supported the no significant difference phenomenon. In light of this conclusion, this section emphasizes empirical studies that went beyond the comparative no significant difference design.

Gaytan and McEwen (2007) conducted a descriptive research study that surveyed a sample of 85 faculty members and 1,963 students, and found that four main strategies contributed to maintaining online instructional quality: (a) open communication lines, (b) similar course rigor to traditional instruction, (c) multiple instructional techniques, and (d) group work. According to Gaytan and McEwen (2007), integrating these strategies into the design of online courses would enhance student achievement.

Clawson (2007) examined instructional design quality standards for online education and developed a taxonomy for online course quality that included 18 standards and 109 sub-standards. Some of the 18 instructional design standards such as instructional strategies, student/instructor support, course progress, assessment, and course material appear in other studies found in the literature. A correlation analysis together with the Mann-Whitney test was used to answer Clawson's (2007) research question about the extent to which instructional design quality standards in online courses were predictive of student satisfaction with the online learning experience. Clawson (2007) found that of the 18 quality standards, only instructional strategy standard was predictive of student satisfaction with the overall online learning experience. Gaytan and McEwen's (2007) findings on strategies associated with maintaining online instructional quality support Clawson's (2007) results. However, Clawson (2007) concluded that possible explanations for 17 of the quality standards not being statistically significant were the small sample size of selected courses (12), or that many of these standards do not affect student satisfaction.

### **Conclusion**

In light of the significant growth of online education over the past two decades and findings about its higher attrition rates compared to face-to-face education, there have been calls for greater accountability for online education. However, there are a few empirical studies that examine the relationship between accountability measures, including accrediting standards, and performance funding, and student success in online education. There have been mixed findings regarding the association between accountability practices and institutional performance, particularly student learning outcomes. The majority of studies have concluded that the correlation between these variables is weak but that instructor-student interaction is critical to student success.

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