

September 2013

Efficiency, Economy, and Social Equity in Online Education at America's Community Colleges

Marco Castillo

Follow this and additional works at: <http://digitalcommons.apus.edu/internetlearning>



Part of the [Higher Education Commons](#), and the [Online and Distance Education Commons](#)

Recommended Citation

Castillo, Marco (2013) "Efficiency, Economy, and Social Equity in Online Education at America's Community Colleges," *Internet Learning*: Vol. 2: Iss. 2, Article 7.

Available at: <http://digitalcommons.apus.edu/internetlearning/vol2/iss2/7>

This Article is brought to you for free and open access by the ePress Journals at DigitalCommons@APUS. It has been accepted for inclusion in Internet Learning by an authorized administrator of DigitalCommons@APUS. For more information, please contact digitalcommons@apus.edu.

Volume 2, Number 2 • Autumn 2013 • Article 6
©2013 Policy Studies Organization

Efficiency, Economy, and Social Equity in Online Education at America's Community Colleges

Marco Castillo



Efficiency, Economy, and Social Equity in Online Education at America's Community Colleges

Marco Castillo

In this paper, I utilize social equity as a guiding administrative value to assess the implications of the expansion of online education in America's community colleges. Online education holds promise for our nation's community colleges and can serve as a useful tool for state and local governments seeking to reduce costs while expanding educational offerings to traditional and non-traditional students. Nevertheless, while the traditional administrative values of efficiency and economy are served by the use of this pedagogical approach, there remain a variety of open questions regarding the social equity implications of an expansion of this instructional modality.

In response to the rapid pace of change in the economy, more people are entering or returning to college to develop the skills necessary to remain competitive in today's workforce (Merrick & Thurow, 2009). While an increasing demand for education may be seen as a positive development for society, this demand is testing the capacity of our nation's publicly funded community colleges. This growing demand has prompted community colleges to find new ways to expand their capacity and educational offerings in the face of stagnant or shrinking budgets. One way they have done this is through the expansion of online education.

In this paper, I utilize social equity as a guiding administrative value to assess the implications of the expansion of online education in America's community colleges. I highlight that online education holds promise for our nation's community colleges and can serve as a useful tool for state and local governments seeking to reduce costs while expanding educational offerings to traditional and non-traditional students (Stumpf, McCrimon, & Davis, 2005). While the traditional administrative values of efficiency and economy are served

by the expansion of this pedagogical approach, there remain questions regarding the social equity implications of expanding online education at America's community colleges. In this paper, I highlight two major problems with the expansion of online education at community colleges that seem to counter the value of social equity. First, I address questions regarding the quality of online education, noting both theoretical and empirical evidence that community college students may in some instances be receiving a product that is not of sufficiently high quality when compared to traditional instruction. Second, I focus upon issues of proper "fit" between community college students and the online education product, noting that vast segments of the community college population may not be well suited for online education, regardless of product quality. Taken together, these problems raise serious questions regarding the wisdom and social equity implications of implementing online education in a wholesale fashion at the community college level. I follow with a discussion on ways that online education may be implemented in a fashion that minimizes these problems, thus reflecting the values of social equity to a greater extent.

While it seems clear that online education holds promise for bringing new efficiencies and added value to community colleges, such benefits are dependent on proper program implementation that takes the aforementioned factors into consideration. Suboptimal implementation that overlooks questions of instructional quality and student fit may result in the opposite of the intended effects, increasing costs for state and local governments as well as community college students, hampering student progress through increased course failures and higher attrition rates, and other unintended negative effects (Feenberg, 1999).

The History and Mission of Community Colleges

America's community colleges are in large part products of early twentieth century progressivism. Along with other social and educational institutions that arose during the Progressive Era, community colleges developed as organizations intended to promote social equality and social mobility through the expansion of access to higher education (Vaughan, 2006). Community colleges (then termed "junior colleges") benefited from an overall increase in public spending in education during this era, as greater investments in K-12 education later resulted in a growing demand for accessible forms of postsecondary education for the growing number of graduates from America's high schools (Cohen, 2003, p. 6). This growing demand was reinforced by a move on the part of research universities to shed the task of teaching college freshmen and sophomores to a new type of educational institution that would occupy a space between the K-12 schools and traditional four-year colleges (Cohen, 2003, p. 6). The result of these con-

verging forces and factors was the formation and expansion of America's community colleges.

Community colleges continued to grow in size and scope throughout the twentieth century and were bolstered by other key developments. Community colleges experienced a boost in enrollment during the Great Depression as they expanded their educational mission to include more applied job training programs to ease the effects of unemployment. After World War II, the passage of the Servicemen's Readjustment Act (i.e., the GI Bill) further aided in the expansion of community colleges as many veterans opted for the shorter, applied, and community-based program of study they offered. The Truman administration boosted the legitimacy of America's community colleges through its formation of Truman's Commission on Higher Education for American Democracy; the commission released the Truman Commission Report which extolled the value of what would come to be known as a community college education. The community colleges would receive yet another boost in the 1960s, as the baby boomer generation increased the demand for all forms of postsecondary education. The resulting passage of the Higher Education Act in 1965 provided additional financial support for all higher education institutions, including community colleges (Community Colleges: The History of Community Colleges). Toward the end of the twentieth century, it was clear that community colleges had grown to become an essential part of higher education. While they remained committed to their mission of providing the first two years of a liberal arts postsecondary education, they would go on to expand their offerings to include professional education, workforce retraining, and community development (Vaughan, 2006, p. 26).

The beginning of the twenty-first century brought with it a host of economic challenges that placed increasing stresses on federal, state, and local governments that affected their ability to fund necessary public services. Threats of terrorism, the exportation of America's manufacturing base, and the bursting of the housing bubble among other factors have placed severe budgetary stresses on both federal and state governments. Public services across the board have suffered and higher education is no exception to this rule. Yet, the demand for community college services is still expanding, prompting elected officials and administrators to find ways to do more with less. One way states and localities have sought to expand the availability of community college education in the face of budgetary crisis is through the expansion of online education.

The Promise of Online Education

It is increasingly evident that a broad array of students is interested in online education. One reason for this is that online education holds the potential to increase the convenience of pursuing education, especially for non-traditional students. Non-traditional students, broadly defined as financially independent working students outside of the 18–23-year-old age bracket, may particularly benefit from online education due to the scheduling flexibilities made possible by this option. Online education may also help non-traditional students with jobs minimize their potentially greater opportunity costs, as their pursuit of an education may require them to forgo a substantial income. Online education can also bring financial benefits to colleges by allowing them to utilize their current capital and labor resources more effectively. In her report titled *Cost Efficiencies in Online*

Higher Education, Katrina A. Meyer of the University of Memphis notes that online education can allow for three cost-saving economic substitutions—capital for labor, lower-cost labor for higher-cost labor, and capital for capital. With the substitution of capital for labor, technology can be utilized to leverage the work of higher-cost, full-time faculty over a broader population of students, creating economies of scale. Through collaborations between full-time faculty and lower-cost part-time faculty and teaching assistants, these efforts can be even further leveraged in the online setting. Capital for capital substitution allows colleges to shift resources from traditional capital expenditures such as buildings and new classrooms to technological expenditures, such as the computer servers, software, and class management systems, which many argue are more cost-effective (Meyer, 2006).

The potential cost savings for community colleges and students are substantial. A Pew Charitable Trust study found that by redesigning courses to take advantage of online technologies, institutions could reduce course-related costs by an average of 37% (Meyer, 2008, p. 60). The potential benefits from online education are many. However, as with all innovations, there are some potential shortcomings to this educational approach that should be noted.

Online Education and Social Equity

Clearly, there is a host of benefits that can be brought to colleges as a result of the expansion of online education. However, we should note that these benefits are primarily related to efficiency and economy in the delivery of education. While efficiency and economy are important factors to consider, they are not the only

important or relevant ones. Indeed, it is easy to make this oversight, particularly in an age of fiscal austerity in the public sector. Public administration scholar George Fredrickson (2010) observed this tendency and proposed adding a third equally important value—social equity—into the study and practice of administering public organizations. He notes:

Social equity values have to do with the fairness of the organization, its management, and its delivery of public services. Social equity asks these questions: For whom is the organization well-managed? For whom is the organization efficient? For whom is the organization economical? For whom are our public services more or less fairly delivered . . . In the pursuit of efficiency, public officials will try to make the entire organization and its delivery of public services efficient or economical, assuming that all of the public served by the organization will benefit, more or less in equal measure, from greater efficiency or economy. [However], [i]t is clearly evident that the public is highly varied—rich and poor, old and young, fortunate and unfortunate, urban and suburban—and that while public services may, in a general sense, be more efficient or economical, in the specific sense, these public services will almost certainly be efficient and economical for some more than others (p. xv).

In the case of the expansion of online education at America's community colleges, it is critical that policymakers consider how this pedagogical approach will specifically affect the diverse community college student population. While online education may be a product that is demanded by an increasing number of students and can pro-

duce cost savings for schools and states, we must ask ourselves—is expanding online education in the best interest of community college students? Is online education a beneficial product for the community college student population? Does online education primarily benefit the budgets of community colleges and their funding states and localities more so than community college students themselves? In fact, do these economic benefits to schools and states come at the expense of some segments of the community college student population?

Theoretical Dilemmas

I will first highlight the theoretical conflicts that may exist between online education as an instructional modality and the major theories of learning. Learning theory is a diverse field, and it is impossible to review the totality of this field in a single research article. Nevertheless, for the purposes of this article, I will summarize the main learning theories with the aim of noting their implications for online learning at community colleges. Learning theories seek to provide us with a variety of views regarding how learning takes place in the individual (Harasim, 2012). While a variety of learning theories abound, they can be basically categorized into three major schools of thought: behaviorism, cognitivism, and most recently constructivism. Each of these schools takes a different perspective on how learning occurs and thus each may have important implications for the quality of instruction delivered via online models.

Behaviorism. The earliest school of thought in learning theory was behaviorism. Behaviorism as a learning theory was derived from the broader psychological school of behaviorism developed by psychologist B.F. Skinner. It emphasized that all human actions and activity, both external actions as

well as internal processes, should be regarded as behaviors; as such, they can be best modified by finding a way to alter individual behavior patterns or changing the environment in order to change behavior patterns (Anderson, 2008, p. 6). Learning would be considered a change in observable behavior under this model, caused by external stimuli in the environment (Skinner, 2011). While this school of thought was influential, critics noted that there were many forms of learning that were not observable through human behavior. As such behaviorist learning theory gradually gave way to cognitivist theories of learning.

Cognitivist Theories. Cognitivist theories of learning arose in response to the shortcomings of behaviorist schools of thought. In response to the criticism that behaviorism had become too dependent on external incidences of behavior to explain learning, cognitivists developed a new theory emphasizing the internal components of learning. Cognitive theories posit that learning involves the use of memory, motivation, and thinking and reflection (Anderson, 2008, p. 7). Cognitivists emphasized that learning was an internal process rather than an external behavior and that one's ability to learn is dependent on factors such as the capacity of the learner, the intensity of effort exerted during the learning process, and the prior knowledge of the learner. For cognitive theorists, learning is an internal mental process and pedagogy needs to be developed around this process.

Constructivism. More recently, educators have moved toward constructivism as a theory of learning and guiding pedagogy. Constructivist learning theory emphasizes that learning is a process by which the individual builds new ideas based on prior knowledge and experience. Under constructivist models, learners interpret data according to their personal reality and this

interpretation is the foundation of learning. The external world is observed, data is processed and interpreted, and then the individual forms his or her understanding of this data which becomes personal knowledge. Learners learn best when new information can be placed in the context of what learners already know and can be applied in a real-world setting so that this data acquires a personal context and meaning for the individual (Anderson, 2008, p. 7).

It is important for us to note that as in other academic areas, there are competing schools of thought about educational theory and no single one should be understood as having the final word on how individuals learn. The important point to note for our purposes is that proponents of online education posit that none of these theories are inherently incompatible with online learning. Behaviorist, cognitivist, and constructivist schools of thought can all be reflected in properly structured online learning models. In fact, some have highlighted how online learning strategies can be tailored to address specific aspects of each of these frameworks. For instance, online learning can utilize behaviorist strategies by emphasizing the teaching of facts in the online environment. Cognitive learning theory can be reflected in online models by devising assignments and strategies that emphasize critical thinking and learning processes. Finally, constructivist learning theory can be reflected in the online learning environment through the use of assignments that teach higher-order thinking that emphasize "why" questions and help students devise new knowledge that is relevant to them (Janicki & Liegle, 2001).

Yet, critics argue that that online learning is not nearly as compatible with traditional learning theories. For instance, behaviorists hold that responding to and altering the behaviors of learners is essential to

the learning process and that online learning makes this process cumbersome. The lack of a physical presence and a personal relationship between students and instructors makes it difficult to provide feedback to students, hampering the instructor's ability to modify student behaviors in the way necessary for learning to occur (Stephenson, 2001). Other well established learning theories, such as Lev Vygotsky's social development theory, emphasize the need for expert guidance and social interaction in the learning process, both of which may be hindered in the online learning environment. Finally, new learning theories that have been developed to support online learning, such as connectivism, have been derided by some as having weak theoretical foundations and being insufficient substitutes for the traditional learning theories used to justify pedagogical innovations (Kop & Hill, 2008).

Online Education Quality

We should also consider the social equity implications of delivering an educational product that may be of lower quality than traditional instruction to community college students. Proponents of online learning point toward the generally positive findings among broad based studies addressing the quality of online education. One of the earliest of such studies presented in Thomas L. Russell's book *The No Significant Difference Phenomenon* shows that there were no significant differences in student outcomes between online education and education delivered in person (Russell & IDECC Organization, 2001). While Russell's research generally does not find advantages to online learning, it supports the thesis that online learning is no worse than traditional instruction. Other studies go further, noting that online edu-

cation may actually be superior in quality to face-to-face instruction. In 2010, the United States Department of Education conducted a meta-analysis of research studies comparing the effectiveness of online learning to face-to-face instruction. While most of the studies found no significant difference between these modes of instruction, the study did note that when there was a difference, it tended to be positive and in favor of online education. These findings stand alongside other broad based studies presenting a positive outlook for online education. For instance, online education advocacy organizations such as the Sloan Foundation have released a variety of studies illustrating the growth of online education, the diffusion of this instructional method, the relatively high levels of student satisfaction, with this learning modality, and the general sense of enthusiasm expressed for online education on the part of college administrators (Allen & Seaman, 2011).

Despite these generally positive reports, there are some findings within these same studies that give us reason for pause. While the findings of the 2010 meta-analysis of online education conducted by the United States Department of Education were generally positive, the authors accept that multiple explanations may be given for these effects (Means et al., 2009, p. xiv). The authors noted that higher levels of student achievement in online classes may be a product of several factors, including greater attention given to course design, greater time-on-task for students enrolled in hybrid classes (which combine face-to-face and online components), and other pedagogically innovative techniques utilized in, but not exclusive to, online settings. There are also basic methodological shortcomings in this study that qualify its findings. The authors of the study note that, "[A]lthough the types of research designs used by the studies in the

meta-analysis were strong (i.e. experimental or controlled quasi-experimental), many of the studies suffered from weaknesses such as small sample sizes, failure to report retention rates for students in the conditions being contrasted, and, in many cases, potential bias stemming from the authors' dual roles as experimenters and instructors" (Means et al., 2009, p.xviii). Likewise, the Sloan Consortium's 2011 study titled *Going the Distance: Online Education in the United States*, while championing the virtues of online education, does include some problematic findings. For instance, while the number of online programs and courses has grown at colleges nationwide, the acceptance of online learning by faculty has been flat since it was first measured in 2003. The report notes that less than one-third of chief academic officers believe that their faculty accept the value and legitimacy of online education. This is virtually the same percentage as when this statistic was first collected in 2003. Moreover, the report also finds that academic leaders at private for-profit institutions perceive a higher faculty acceptance rate while traditional nonprofit colleges have the lowest, supporting the possibility that some of the support for online education is driven by the financial pressures at smaller private colleges (Allen & Seaman, 2011, p. 13). While these statistics may simply be a product of reactionary opposition to online learning, it is possible that these gaps in support may be indicative of real problems in the substance and/or the implementation of online instruction.

Student Fit

In addition to these theory- and research-based criticisms, there are questions about the aptness of community college students for the highly independent form of learning that is required in online

education. Even if online education can be shown to be of similar quality to traditional face-to-face education, the question remains as to whether this form of learning is suitable for the community college student population. Recent demographic data shows us that community colleges have an increasingly diverse student population. Among this population are a growing number of adult learners—students who have already operated successfully in their various career paths and are seeking educational opportunities to advance in these paths or to shift into others (Chen, 2009). Adult learners, defined as those age 25 or older, have a set of characteristics that distinguish them from traditional age students. They are more likely to work full time, support a family, and take longer to complete their degree requirements than their younger counterparts (American Association of Community Colleges). Moreover, adult learners in community colleges are more likely to perform well on their coursework than their younger counterparts (Knowles, Holton, & Swanson, 2012). It may be reasonable to posit that these adult learners may be better prepared for the independent form of learning required in online instruction. These learners may be more responsible, more academically prepared, and more resilient, allowing them to benefit from the flexibilities of the online educational modality.

Yet, this very same diversity poses a risk for another growing subset of the community college student demographic. Community colleges have long had diverse student populations in terms of race and socioeconomic status. But recent trends show us that that the socioeconomic and racial composition of America's community colleges is becoming more heavily skewed toward minority students, with the majority of black and Hispanic undergraduate students attend-

ing these colleges (American Association of Community Colleges). Moreover, the community college population is changing in terms of socioeconomic status, with community colleges having a shrinking population of students from the highest socioeconomic quarter and a growing population of those from the poorest quarter (Kahlenberg, 2010). Finally, community colleges still serve a significant number of traditional age students with academic deficiencies and in need of developmental education (Mullin, 2012). Taken together, it is clear that community colleges educate a significant number of students with various educational risk factors and needs that may not be met in the online setting.

We need to take into consideration the bifurcated nature of the community college student population as we consider expanding this educational modality. There is reason to believe that online education can be highly valuable and helpful for adult learners and better prepared community college students. But community colleges are also responsible for educating a large subset of students who have graduated from lower performing public schools. These students may enter community colleges with a set of educational deficits that may make them vulnerable in the online environment. The effect of this harm may be compounded when we consider the generally limited financial resources community college students have to spend on education. Taking these factors into consideration could help us form an online education policy that will benefit students who are good candidates for this modality while protecting community college students with greater educational risk factors and needs.

Thus, there are a variety of factors that need to be taken into consideration as we seek to implement online education at America's community colleges. Issues of product

quality stand at the forefront. Online education is still at an early (and some might even say experimental) stage of development and research suggests that there are still serious questions about the quality of online education as a whole. Moreover, even if proper quality can be established, there are still serious questions about the fit of community college students for online education, particularly given the diversity of the community college student population. The degree to which online education contributes to the advancement of social equity in the provision of community college education will depend on the care with which these policies are implemented at the ground level. In the forthcoming section, I propose a set of propositions that can be utilized to help us develop information enabling us to form policies that expand online education in a more socially equitable fashion.

Propositions and Policy Implementation

The key social-equity-based argument against the expansion of online education in community colleges is the proposition that community college students will do worse in online classes than they would in traditional face-to-face classes. If this is true, online education becomes a socially inequitable endeavor that inherently harms the most vulnerable of the higher education student population. Therefore, I offer the following proposition for future investigation:

Proposition 1: Academically at-risk community college students of low socioeconomic status will have a higher course failure rate in wholly online classes than in traditional face-to-face classes.

Establishing this proposition as true would require us to seriously reconsider any wholesale move toward this instructional approach at the community college level. Nevertheless, as I stated previously, there are subpopulations within the community college student body that may benefit from this instructional approach. Therefore, I offer the following proposition to help us learn more about the nuances of the effect of this instructional approach:

Proposition 2: Non-traditional community college students will perform as well in online classes as in traditional face-to-face classes.

If this proposition can be established as true, it would change the practical implications of the prior proposition. While wholesale moves toward online education may result in socially inequitable outcomes, targeted moves that focus on the needs of a smaller subset of community college learners may achieve some of the cost efficiencies desired by administrators while bringing new conveniences and flexibilities to non-traditional community college students. Nontraditional community college students may be able to benefit from online education without suffering the academic harm that traditional community college students may experience, resulting in a net positive benefit for all parties.

Finally, while the evidence suggests that wholly online instruction may not be efficient and/or effective for all community college students, there is evidence that technology can be utilized to achieve some of the aforementioned efficiency and economy benefits while maintaining or even improving the quality of instruction. Therefore, I offer the following proposition:

Proposition 3: Academically at-risk community college students of low socioeconomic status will perform better in hybrid classes than in traditional face-to-face classes and wholly online classes.

A positive finding for this proposition would have important and positive implications for public officials, community college administrators, and students interested in expanding online education. Hybrid education could reduce overhead costs and improve economies of scale for community colleges, allowing them to actualize at least some of the potential cost efficiencies. This could be accomplished while improving the student learning experience due to the utilization of online technologies and the increased focus on course redesign efforts.

Conclusion

Community colleges have a rich history of serving the public. Since their inception in the early part of the twentieth century, community colleges have pursued their mission of bringing education and its benefits to the poor and working class, thus advancing the value of social equity in America. While originally focused on providing a more general form of education, community colleges have since expanded as organizations, now providing a traditional education along with training for a host of specific jobs and technical careers. Community colleges have grown as organizations and as institutions and they are now a critical avenue by which the poor and working class can gain access to higher education and advance socially and economically in society.

Community colleges play an important role in American society, but like many other public institutions, their ability

to fulfill their role is threatened by modern fiscal restraints. Clearly, technological advancements can help bring new efficiencies to community colleges, and it appears that online education can help community colleges meet the growing demand for higher education. But there is equal evidence that this technological and pedagogical innovation needs to be handled carefully in order for it to deliver on its promise. Those charged with implementing online education need to be cognizant of the proper use and the limits of this new instructional approach, lest they find themselves harming the very population they intend to help and protect.

References

Allen, I. E., & Seaman, J. (2011). *Going the distance: Online education in the United States, 2011*. Sloan Consortium. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED529948>

American Association of Community Colleges. (n.d.). *Students at community colleges*. American Association of Community Colleges. Retrieved from <http://www.aacc.nche.edu/AboutCC/Trends/Pages/student-atcommunitycolleges.aspx>

Anderson, T. (2008). *The theory and practice of online learning*. Edmonton: AU Press.

Chen, G. (2009). *Changing student demographics: Rising number of professional students*. *Community College Review*. Retrieved from <http://www.communitycollegereview.com/articles/75>

Cohen, A. (2003). *The American community college (4th ed.)*. San Francisco: Jossey-Bass.

Community colleges: The history of community colleges, the junior college, and the research university. (n.d.). Stateuniversity.com. Retrieved from <http://education.stateuniversity.com/pages/1873/Community-Colleges.html>

Feenberg, A. (1999). *Distance learning: Promise or threat? Education at a Distance*, 12(1). Retrieved from http://www.usdla.org/html/journal/DEC99_Issue/dl.htm

Frederickson, H. G. (2010). *Social equity and public administration: Origins, developments, and applications*. Armonk, NY: M.E. Sharpe.

Harasim, L. M. (2012). *Learning theory and online technologies*. New York: Routledge.

Janicki, T., & Liegle, J. O. (2001). *Development and evaluation of a framework for creating Web-based learning modules: A pedagogical and systems perspective*. *Journal of Asynchronous Learning Networks*, 5(1), 58-84.

Kahlenberg, R. (2010). *The community college summit: Innovations*. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/blogs/innovations/the-community-college-summit/27361>

Knowles, M. S., Holton, E. F., & Swanson, R. A. (2012). *The adult learner: The definitive classic in adult education and human resource development*. London: Routledge.

Kop, R., & Hill, A. (2008). *Connectivism: Learning theory of the future or vestige of the past? The International Review of Research in Open and Distance Learning*, 9(3), 1-13.

Means, B., SRI International Center for Technology in Learning, & United States Department of Education. *Policy and*

Program Studies Service. (2009). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Retrieved from <http://www2.ed.gov/rschstat/eval/tech/evidence-based-practices/finalreport.pdf>

Merrick, A., & Thurow, R. (2009). The jobless go back to school and, they hope, work. *The Wall Street Journal*, p. A14.

Meyer, K. (2008). If higher education is a right, and distance education is the answer, then who will pay? *Journal of Asynchronous Learning Networks*, 12(1), 45-68.

Meyer, K. A. (2006). *Cost-efficiencies in online learning*. New York: Wiley/Jossey-Bass.

Mullin, C. (2012). Why access matters: The community college student body (No. 2012-01PBL). Washington, D.C.: American Association of Community Colleges.

Russell, T. L., & IDECC Organization. (2001). The no significant difference phenomenon: A comparative research annotated bibliography on technology for distance education: As reported in 355 research reports, summaries and papers. [S.l.]: IDECC.

Skinner, B. F. (2011). *About Behaviorism*. New York: Random House Digital.
Stephenson, J. (Ed.). (2001). *Teaching & learning online: New pedagogies for new technologies*. London: Routledge.

Stumpf, A. D., McCrimon, E., & Davis, J. E. (2005). Carpe diem: Overcome misconceptions in community-college distance learning. *Community College Journal of Research and Practice*, 29(5), 357.
doi:10.1080/10668920590921552

Vaughan, G. B. (2006). The community college story. American Association of Community Colleges.