2018

Meeting the challenges of massive open online courses in higher education

Douglas Scott May

Pepperdine University

Graduate School of Education and Psychology

MEETING THE CHALLENGES OF MASSIVE OPEN ONLINE COURSES IN HIGHER EDUCATION

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Education in Organizational Leadership

by

Douglas Scott May

July, 2018

Farzin Madjidi, Ed.D. – Dissertation Chairperson

This dissertation, written by

Douglas Scott May

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Doctoral Committee:

Farzin Madjidi, Ed.D., Chairperson

Lani Fraizer, Ed.D.

Gabriella Miramontes, Ed.D.

TABLE OF CONTENTS

Page

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

DEDICATION

To all educators who strive to provide the best resources to students to help them reach their true potential and become enlightened citizens and leaders for future generations. To my beautiful, amazing wife, Leticia, who has served as an inspiration to me throughout this doctoral journey and as a guiding light of support and encouragement even during the most challenging of times. Also, to my parents, who have always motivated me to pursue my dreams, no matter how daunting, and to put faith in myself and God to aspire to excellence in all endeavors—and most importantly, never give up.

"Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did do, so throw off the bowlines, sail away from safe harbor, catch the trade winds in your sails. Explore, Dream, Discover." —Mark Twain

ACKNOWLEDGEMENTS

I would like to thank everyone who made this dissertation mission possible, from my wife and family to my professors at Pepperdine University, whose guidance and support were instrumental in the completion of this research project.

Special thanks to my Dissertation Committee, Dr. Farzin Madjidi, Dr. Lani Fraizer, and Dr. Gabriella Miramontes for their inspiring leadership and tireless commitment to student success during this dissertation course. Their patience, guidance, and feedback were invaluable throughout the program, and their insight and generosity of spirit greatly encouraged my development through the dissertation process. It was a privilege to be part of this *Dissertation Excellence* experience. Many thanks also to Dr. Kathleen Plinske, who first introduced our class to Massive Open Online Courses during my first semester at Pepperdine University, providing insight to this mammoth new medium that would dramatically change the face of online education in subsequent years.

I would also like to thank the participants of this research study who so generously contributed to the project, offering their individual thoughts and expertise on the subject of Massive Open Online Courses to provide insightful data for analysis. I thank them for sharing their valuable time and experiences with me, which greatly helped broaden the depth, scope, and significance of the study.

Much love and thanks to my wife, Leticia, and family, who have been so essential to this dissertation journey. Without the love, patience, and support they provided the last five years, this project would not have been possible.

VITA

EDUCATION

2018	Doctor of Education (Ed.D) Organizational Leadership	Pepperdine University Los Angeles, CA
2010	Masters of Business Administration (M.B.A) Business Administration	University of Phoenix Pasadena, CA
1979	Bachelors of English (B.A.) English Literature	Villanova University Philadelphia, PA

PROFESSIONAL HISTORY

2016 to Present	Senior Copywriter Q-See Digital Solutions, Anaheim, CA
2010 to 2016	Adjunct Professor/Online Course Developer ICDC College, Culver City, CA
2014 to 2016	APA Reviewer, Writing Support; Lead Editor, Dissertation Excellence Program Pepperdine University, Los Angeles, CA
2010 to 2013	Professor Bryan University, Los Angeles, CA
2008 to 2010	E.S.L./Citizenship Instructor Los Angeles Unified School District, CA
2007 to 2008	Staff Writer Law Crossing, Pasadena, CA

PRESENTATIONS

Author/Presenter: 2018 CABE LA Conference, Irvine, California

Author/Presenter: 2016 IOSSBR San Antonio Conference, San Antonio, Texas.
Author/Presenter: 2016 Third International Center Global Leadership Conference, Placencia, Belize

ABSTRACT

The purpose of this research study is to analyze the impact that Massive Open Online Courses (MOOCs) have had on institutions of higher learning and explore successful strategies implemented by educational leaders in meeting the challenges of these new learning platforms. As online learning has exploded in recent years—with MOOCs representing the latest evolution of that process—traditional educational methods at brick and mortar colleges and universities have been challenged by the scope and reach of virtual scholarship. With this rapid development of online learning, and MOOCs specifically, educators must learn to adapt and embrace these new cyber-driven educational venues to stay relevant in today's ever-changing, global learning environment. The insights garnered from this research project can shed light on actions taken by higher education leaders who have addressed the recent massive, evolving shift to virtual learning while still managing to retain the essence of the traditional college experience at their campuses. It is the researcher's hope that the findings of this study will empower college educators to gain a deeper understanding of the impact of MOOCs on higher learning institutions, and to help them strategize ways to successfully incorporate these virtual learning venues into traditional educational programs at their schools.

This qualitative, phenomenological research study encompasses the lived experiences of 12 higher education leaders who have had involvement with Massive Open Online Courses at their learning institutions as articulated through data collected from 12 semi-structured Interview Questions, framed by 4 overarching Research Questions. The findings of the research project have significant implications for individuals planning to implement and develop Massive Open Online Courses at their learning institutions.

Chapter 1: Introduction

The breathtaking advance of online learning technology in recent years has dramatically altered the notion of traditional education, and many brick and mortar colleges and universities must increasingly adapt to this new phenomenon not only to retain student populations, but also to appeal to newer generations of college applicants. Educational disciplines that individuals choose in subsequent years will increasingly be on their own terms, not standards arbitrarily set out by scholarly institutions, as online learning platforms begin to offer more timely, up-to-date, and available-on-demand versatility that modern society often requires. This massive paradigm shift to online education in recent years reflects a rigorous adoption of cyber-generated learning resources by colleges and universities in efforts to broaden educational reach and scope, but it also indicates the possible endemic failure of traditional colleges to meet the needs of many of today's more tech-savvy student populations (Cobb, 2010; Frey, 2013, Reif, 2014). Online education empowers students with flexible schedules and virtual communication, thereby giving them more control over their lives, and it is inevitable that online learning will indelibly shape the college experience as time moves forward (Frey, 2013; Sataline, 2013; Vaughn, 2007). Signifying the phenomenal growth of online education in recent times, 64% of colleges offered online degree programs in 2012, which is in stark contrast to the 32.5% offered in 2002 (Britt, 2015). This evolvement of additional learning opportunities offered through progressively sophisticated online platforms has opened up a whole new vista to individuals aspiring to obtain professional degrees, including doctoral-level advancement (Allen & Seaman, 2006; Britt, 2015; McKeown, 2012). From *flipped classrooms* to virtual discussion boards and lectures—all of which incorporate the vast expanse of the Internet—online education offers a plethora of opportunities for a more expansive learning experience than the traditional classroom model. As Reif (2014) notes, by 2025, technological advancements will have reshaped the concept of education in ways that we cannot yet predict (Frey, 2013; Reif, 2014; Sataline, 2013). These online learning venues offer individuals who may be juggling full-time jobs, busy schedules, and

family responsibilities the chance to further their educational goals for professional or personal improvement, often from the comfort of their own homes (Daly, 2013; Vaughn, 2007). Ivy Tech Community College President Tom Snyder (2013) stresses the importance of lifelong learning by asserting that in today's job market, workers have the ability to remain competitive by taking advantage of online educational opportunities, and often they do not even have to take time off from work to participate in these more flexible courses. Snyder's position underscores the vast transformation of traditional methods of learning that online education represents.

Online education's prodigious development has prompted many graduate schools to incorporate virtual platforms into their traditional onsite curricular programs (Allen & Seaman, 2003; Flanagan, 2012). Van der Werf and Sabatier (2009) assert that the classical model of college is changing dramatically, emphasizing that "students' *convenience* is the future" (p. 3). Van der Werf and Sabatier maintain that students will increasingly opt for more balance between their study time and free time, and online study often allows for this greater sense of autonomy; students may want to study part-time, take classes from multiple educational institutions, and be free from the constraints of rigid class schedules. The generally lower cost of online education is also an enticement for many individuals (Anderson & McGreal, 2012; Frey, 2013; McKeown, 2012), and the growing student demand for online courses is reflected in alarming statistical evidence that shows that the number of enrollees in online-education courses between 2000 and 2007 nearly quadrupled from 3,077,000 to 12,153,000 (Allen & Seaman, 2007; Van der Werf & Sabatier, 2009). As previously noted, more recent statistical evidence supports the fact that online education is expanding exponentially, as 62.4% of colleges offered online degree programs at the end of 2012, signifying a dramatic rise in the availability of online learning programs by 32.5% since 2002 (Britt, 2015; Sheehy, 2013). Furthermore, Frey (2013) cites additional data that illustrates the growing demand for online courses: In less than six years, Apple's iTunes U attained the *one billion course download threshold*; in less than one year since its founding, online behemoth Coursera passed the 3.2

million registered mark; and Udemy, another massive online learning venue, now hosts more than 8,000 courses for its base of 800,000-plus student population. Online education is a burgeoning industry, and the flexibility factor alone that virtual learning can provide is a major draw to many individuals attempting to acquire additional academic degrees to further their professional skills; often, it is this scheduling dexterity that gives them the ability to excel in their studies and successfully finish school (Haynie, 2013, McKeown, 2012).

Although generally stigmatized for many years as an inferior method of education (Huss, Sela, Eastep, 2015), distance learning has achieved greater notoriety and status as a viable solution to creating additional educational and professional opportunities to almost anyone in possession of a computer with Internet access (Britt, 2015; Cook, 2013, Harasim, 2000). Colombaro and Monaghan (2008), for instance, argue that many employers' initial misconceptions concerning online education during its early days of inception included apprehensions about the lack of rigor, lack of face-to-face interaction, potential for academic dishonesty, and *diploma-mill* mentality when coming into contact with newly minted grads from online programs. Colombaro and Monaghan counter, however, that more recent literature supports employer acceptance of online degree programs based on the name recognition of the institution, the status of the school's accreditation, the perception that online graduates may have a high degree of self-direction and discipline, and the potential candidate's work experience during schooling. Newer and younger business managers have begun to embrace job-seeking alumni from such online universities as Walden University, Ashford University, Capella University, or any number of other schools that offer either wholly online instruction, or a blended online and/or onsite curriculum that includes virtual instruction and capabilities in the course design (Featured Online Colleges, 2016; Ripley, 2012). Many of these business leaders hiring online graduates are well aware of the tremendous enhancement that technology can bring to the educational experience, both in and outside the classroom, and as the old stigma of distance education begins to fade (Garrison, 2009; Ripley, 2012), they welcome the new tech-

savvy graduates who are more adept at navigating their way around on a computer—often *because* of their online experience and training (Cook, 2013; Everitt, 2014; Murphy, 2015).

These developments coincide with the notion that most of modern society is increasingly involved with work and leisurely activities (Aiken, Vanjani, Ray, & Martin, 2003; Wellman & Haythornthwaite, 2008); therefore, these online educational offerings are representative of a natural inclination toward more virtual mediums as time progresses, as they generally provide high levels of social connectivity, time management, and convenience (Intelligence Debates, 2014) Although many supporters of *college by Internet* cite the fact that online learning is flexible, economical, and convenient, skeptics of this view maintain that attending school online is at best a weak substitute for actual in-person exchanges between instructors and peers inside a classroom environment (Asif, 2013; Intelligence Debates, 2014). Frederik Obasi (2015), Co-Founder at *studysearch.com*, believes that although practical learning can be achieved in both the online and on-campus environment, there is an element of the educational experience that is not easily replaceable in the online setting. Asif (2013) furthers the notion, maintaining that many employers still prefer to hire individuals who have obtained their degrees through traditional means as opposed to online learning platforms. Asif cites polling results released by *Public Agenda* (2013) after surveying more than 600 human resources staff members in Los Angeles, Detroit, Philadelphia, and the El Paso-Las Cruces metropolitan area, indicating the following:

- Employers generally prefer job applicants that have traditional degrees from average schools versus ones with online degrees from top universities
- Community college students generally agree that online courses require more discipline to complete, “but they are split on whether they teach students the same or less than in-person classes” (p. 1)
- Many community college students taking online courses would like to take fewer ones than they currently take.

Obasi (2015) further implies that for most people, the traditional college experience is usually a very memorable one, and beyond the learning aspect of educational development and achievement, there is a social component at brick and mortar schools that is unique to itself. Obasi (2015) and McKeown (2013) enumerate various advantages to traditional methods of higher education versus the online experience, some of which include the benefits of interacting with people on a physical basis, the ability to interpret body language, the shared learning experience with other classmates, and the subconscious—or sometimes conscious—competition between colleagues. Obasi adds to this list the ability to build up networks of friends that one can get to know outside of coursework duties, the wide variety of clubs and societies that are available to join, the excitement of college sports and social events, and the physical memories that one may have of the college experience long after graduation (2015). Many of these important experiences are generally excluded from the purely online learning environment, and they are critical elements to creating not only an educated, but well-rounded citizenry (Appiah, 2015; Asif, 2013; Daly, 2013; McKeown, 2013; Obasi, 2015). Still, many observers sense the impending mass failure of traditional colleges, and most certainly, the evolution of an entirely new and unpredictable educational era that may be unfolding (Cobb, 2010; Frey, 2015; Reif, 2014, Ripley, 2012). A 2012 poll sponsored by Time and Carnegie Corporation of New York revealed that "80% of the 1000 U.S. adults surveyed said that at many colleges, the education students receive is not worth what they pay for it. And 41% of the 540 college presidents and senior administrators survey agreed with them" (Ripley, 2012, p. 2). This staggering statistical evidence reveals a perceived failure of traditional educational methods among educators and students alike, supporting the notion that great change may be on its way.

Background

The rapid evolvement of online education has recently added yet another dimension to virtual learning technology that may have a significant impact on traditional educational

institutions: The Massive Open Online Course, better known as the *MOOC* (Brahimi & Sarirete, 2015; Harris & Urrutia, 2015; Hollands & Tirthali, 2014; Porter, 2015). This newer, more mammoth educational experience has greatly altered the online landscape (Carr, 2012; Daly, 2013; Hollands & Tirthali, 2014; Voss, 2013a), and the more than two billion potential learners around the globe, "70% who cannot afford college degrees" (Bersin, 2013, p. 1), are beginning to take notice of its potential. Additionally, even greater numbers of post-secondary students and professionals will take advantage of MOOCs' maturing certification market (Bersin, 2013), increasing the overall credibility of course study in the MOOC system. As these individuals find more and more benefits to online educational capabilities, many large companies are increasingly announcing partnerships with MOOCs, and schools and colleges aligned with them (Bersin, 2013; Holland & Tirthali, 2014; Hoy, 2014; Kolowich, 2013). Linkedin, for example, recently announced partnerships with MOOC giants Coursera, edX, Udacity, and Udemy, enabling professionals to expand their online achievements from courses taken (mostly for free) in their Linkedin profile (Bersin, 2013; Kolowich, 2013; Skiba, 2012). Business organizations such as these see the value of MOOC capabilities and are using MOOC courses and offerings as vehicles for corporate training. Coursera, Udacity, Udemy, and edX have begun to license their online courses and platforms to businesses and for-profit educational companies and institutions, and this practice will most likely continue to increase (Bersin, 2013, Kolowich, 2013).

Other companies that have begun to partner with MOOCs include Bank of America, Yahoo, Google, and several major government ministries (even with the inclusion of The World Bank and the International Money Fund), which are licensing MOOC content and technologies for training and educational purposes (Bersin, 2013, Radford, Robles, Cataylo, Horn, Thornton, & Whitfield, 2014), and as stated by Vaidyula Al-Khaledi, and Al-Otaibi (2015), "The benefits of MOOCs are simply too great to ignore," having "immense potential of vastly improving the process of workforce learning and knowledge growth" (para. 1). The MOOC structure is a big

draw for students and working professionals alike who appreciate the global aspect that enables participants to gain perspective on a broad array of topics and share ideas with participants from not only all walks of life, but from many parts of the world. Many students in MOOC programs generally find the well-chosen reading materials and videos provided as being most helpful, the engaging multimedia-based resources to be particularly useful, assignments and quizzes to be more streamlined and interactive, and video lectures by often renowned instructors and professors to be highly impressive (LeCounte & Johnson, 2015; Liu et al., 2014). These enhanced virtual aspects of MOOCs and their comparatively low cost give them a competitive edge in both worlds of higher education and business.

College administrators will most likely have to stay vigilant in altering curricular design so as to compete with the presence of massive open online courses, as there is mounting evidence that online education—MOOCs specifically—may pose a threat to traditional American higher education in the coming years (Carr, 2012; Hollands & Tirthali, 2014; Voss, 2013b). The following developments outline a significant trend:

- The Minerva Project put forth a proposition for a premiere for-profit university that caters to students from different campuses worldwide, giving them access to top professors streaming online courses via seminar (Lucas, 2013).
- Georgia Institute of Technology now offers an online master's degree in Computer Science utilizing MOOC platforms that are co-joined with Udacity and AT&T (Georgia Tech College of Computing, n.d.).
- Coursera, a major provider of massive open online courses, has recently formed partnerships with ten state universities, signifying its importance in the current upheaval of traditional higher education (Kolowich, 2013).
- Non-profit organization Generation Rwanda is attempting to create a university based entirely on the basis of MOOC venues of instruction, and the establishment of Kepler University (Raney, n.d.), which has established a

blended learning system that includes MOOCs, is the first step in the achievement of this goal (Bartholet, 2013).

Additionally, many administrators encounter faculty members who are resistant to these transformational changes, and who would rather avoid embracing the online experience for a variety of reasons (Britt, 2015; Frey 2013; Reif, 2014). Some professors are reluctant to move their courses online (Dennis, 2013), as the format seems disorienting and the technical aspects daunting. As online and MOOC capabilities progress, enrollment managers, recruiters, and career counselors will also have to make adjustments, making the development of altered administrative structures necessary (Frey, 2013). International students, for example, who cannot travel abroad to take classes will have the opportunity to conduct their studies from home, while simultaneously being in the company of students from all over the globe (Dennis, 2013; Frey, 2013; Harasim, 2000; H. Johnson, 2015). The development of MOOCs will also undoubtedly affect current recruitment practices and international strategic plans of colleges and universities. It is still unknown whether schools attempting to offer MOOC platforms internationally will be successful in expanding their organizations' international reach, thereby growing overall enrollment—or, by contrast, only derail their organization's efforts to draw students from a global population, as students participating in MOOCs will be able to avoid the cost and inconvenience of uprooting themselves to a new country while having even greater access to online educational opportunities (Dennis, 2013; Frey, 2013).

Emerging MOOCs. Although in the beginning stages of development, MOOCs are not only shaking up the world of higher education, but they are also providing a platform for lifelong learners who may merely want to take courses for enjoyment in the comfort of their own homes (Harris, 2015; Kolowich, 2013). Since Stanford professor Sebastian Thrun posted his *Artificial Intelligence* class online in 2011 (Lecount et al., 2015)—thereby opening the graduate-level course to any student, anywhere—these types of free online classes have been hailed as being not only radically innovative, but more pointedly, "the single most important experiment that will

democratize higher education and end the era of overpriced colleges" (Webley, 2012, p. 1). Indeed, with a roster that originally boasted 160,000 students from 190 countries at the time, Thrun's Artificial Intelligence class may prove to have been the spark that ignited revolutionary change to the world of education (Bersin, 2013; LeCount et al., 2015; Webley, 2012). In a keynote address at the Sloan Consortium Conference, Thrun extolled the virtues of the online class, maintaining that his Stanford students preferred the online format mainly because quiz-taking was a better learning method than lecture-driven instruction and was always accessible (Skiba, 2012). Thrun's speech highlighted the opportunities that MOOCs present to non-traditional learners, maintaining that even with thousands of fellow students in an online MOOC class, they could still have an intimate, one-on-one learning experience (Kay, Reimann, Diebold, & Kummerfeld, 2013; Skiba, 2012).

This increasing demand for online educational opportunities is creating a quandary for higher education administrators, and the proliferation of online programs in K-12 schools will only heighten this demand as students who are already familiar with online courses begin enrolling in universities (Carr, 2012; Flanagan, 2012, Frey, 2013). There will undoubtedly be an expectation from these new undergrads to have access to online programs which they have already become accustomed to, and which offer the convenience and flexibility that they desire (Scott, 2009). MOOCs may pose an even greater problem for higher education leaders as students decide to opt out of the restraints and generally higher costs of traditional college education for the global accessibility and tuition-free aspect of these massive gateways to educational opportunity (Allen & Seaman, 2014; Schneckenberg, 2009). The statistical data of MOOC success is staggering: Coursera data alone indicates that more than 2 million students from hundreds of countries around the globe have signed up for courses in just a few short years (Dennis, 2013), and as these numbers increase, traditional modes of learning need to be adapted and enhanced to remain viable (Carr, 2012; Harris, 2015).

Statement of the Problem

During the late 1990s, online education was beginning to catch people's interest; however, many online classes were substandard as this method of learning was at the beginning stages of development, and many offerings were dry, uninspired, and clunky at best (Ripley, 2012; Skiba, 2012). Technological glitches, sound quality issues, and connectivity problems were all common during the early years of online education; nonetheless, as technology improved and web-enhanced courses with interactive video became the norm, online learning has achieved vast improvements in recent times to become a much more reliable, expansive conduit for educational purposes (Hannay & Newvine, 2006; Keengwe & Kidd, 2010). These technological advances have made many online opportunities competitive to what brick and mortar schools offer, and with the increased virtual capabilities that these online learning platforms provide, Internet-based learning has begun to outpace traditional methods of classroom learning in both scope and context (Cobb, 2010, Frey, 2013). This notion is strongly supported by a 2011 national report on online education in the United States that verifies that online courses surpass the growth rate of general higher education courses 10:1, and it is now estimated that between 32% and 70% of all students across all disciplines are currently enrolled in online courses (Allan & Seaman,2013; Van der Werf & Sebatier, 2009). To be sure, elite, established Top-50 universities across the nation such as Georgetown and USC will probably always draw potential students' interest whether they offer online or onsite opportunities, as "there's a magic that goes on inside a university campus that, if you can afford to live inside that bubble, is wonderful" (Ripley, 2012, p. 6). However, as Ripley (2012) counters, young Americans now owe in excess of $914 billion in student loans, and the lure of virtually free online courses offered through MOOCs has become highly attractive.

The recent success of MOOCs has come in stark contrast to often uneven educational opportunities—sometimes offered at absurd prices—at many traditional colleges and universities (Oliff, Palacios, Johnson, & Leachman, 2013; Ripley, 2012). The high cost of

obtaining college and postgraduate degrees at most traditional schools has skyrocketed, and with a teetering economy (Mahoney, 2015; Salvatore, 2016), the prospect of going into thousands of dollars of student loan debt to pay for college degrees that may prove useless in the job market has jettisoned many prospective students' plans to invest in expensive and inconvenient education programs (Ripley, 2012, Sandeen, 2015). While the expense of higher education to students has risen (largely due to the reduction of traditional funding sources), many of these individuals are strapped with student-loan debt, and escalating default rates on these loans are on the rise (Sandeen, 2015; Vardi, 2012). Even at the more inexpensive learning institutions, college costs can run as much as $20,000 a year, and average student debt is in excess of $30,000 as of last year (Rausch, 2015). MOOCs are often offered free of cost, or at very low cost, and as they have the capacity to connect many thousands of students to virtual learning platforms that offer myriad educational opportunities, they may not only make education more affordable and global in scope, they may ultimately reinvent it (Mazou, 2013; Reif, 2014). These learning models provide massive global student engagement, limitless participation, and open access across the Internet, utilizing a blend of social networking and video conferencing sessions while attracting tens of thousands of individuals from varying nationalities, backgrounds, educational levels, and interests (Brahimi & Sarirete, 2015). Many people are seeking alternatives to the traditional college experience, and online education—especially MOOCs—have begun filling that void (Oliff et al., 2013; Taylor, Fry, & Oates, 2014).

Purpose Statement

The daunting global footprint of MOOCs is impressive, and university leaders must stay abreast of both the rapidly evolving nature and exponential growth of this new form of virtual education to remain competitive. Considerations include the need to better equip faculty to teach in an online structure, adjust the administrative framework to incorporate online education more effectively, and most of all, implement the inclusion of MOOCs into the curriculum (as they are only likely to become more pronounced and sophisticated as they evolve) so as not to

become overtaken by them (Harris, 2015; Hollands & Tirthali, 2014). The tectonic shift in online scholarship of recent years is transforming education at an astounding pace, and educators must vigorously embrace the advent of the MOOC as one would embrace any new technological advancement that could bring about such sweeping change (Lewin, 2012).

Indeed, many institutional leaders have begun to acknowledge the impending developments of MOOCs and are now not only beginning to incorporate them into their programming but are also working with outside companies in efforts to broaden the scale, scope, and global capacity of MOOC-driven educational networks (Carr, 2012; Voss, 2013a). As findings by the Sloan Consortium/Pearson study presented by the Babson Survey Research Group in 2013 indicate (Allen & Seaman, 2013), more than half (50.2%) of the institutions that offer MOOC capabilities (or which plan to offer them) are in the beginning stages of partnering with outside organizations to develop MOOC-structured programs, and "when examined by Carnegie classification, it is the research universities (Doctoral/Research institutions) that are in the lead. [These institutions] are almost twice as likely to be offering MOOCs or planning to offer MOOCs" (Allen & Seaman, 2013, p. 8).

In light of the overwhelming evidence that indicates the impending global impact of MOOCs, many higher educational leaders may have to adjust their world view to embrace this new phenomenon. As institutions of higher learning move forward to offer MOOC-inclusive curriculum in their programs, there will likely be obstacles to overcome—much of them unforeseen—and they may not yet have the technological capabilities or theoretical framework to make this critical adjustment a reality (H. Johnson, 2015; Voss, 2013a). Accordingly, the goal of this investigative project was to determine the overall impact of MOOCs on traditional higher educational institutions and ascertain successful strategies that college administrators have implemented (and may yet implement) to broaden their schools' curricular design to embrace MOOCs in meeting this coming challenge.

Research Questions

The following research questions guided the course of this study:

- RQ 1: What challenges have you encountered in making the transition to MOOCs?
- RQ 2: What strategies have you implemented to meet the changes brought on by Massive Online Open Courses?
- RQ 3: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation?
- RQ 4: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ?

Significance of the Study

To survive the technological boom of recent years that has brought sweeping change to educational methods, traditional colleges and universities need to restructure their business models (Cobb, 2010). MOOCs have the potential to significantly alter business practices in many higher educational institutions by lowering the cost of education, increasing graduation rates, and enhancing graduates' abilities to secure suitable employment after graduation (Hollands & Tirthali, 2014; Flanagan, 2012; H. Johnson, 2015). Since MOOCs have the ability to bring students together on a global basis and significantly reduce cost for college courses (Anderson & McGreal, 2012; Ripley, 2012), there is a likelihood that they may revolutionize the way that higher education is structured and delivered (Carr, 2012; Dennis, 2013). MOOCs, therefore, may have the potential to completely disrupt higher education and send brick-and-mortar institutions to their early demise (Billington & Fronmueller, 2013). Technological advances have reshaped business practices in higher education, and Lucas (2013) points out several options that higher education administrators can implement to help stem the oncoming tide of MOOCs and increase their chances to successfully compete with this new virtual threat, some of which are listed here:

- Create a sense of urgency by developing methods to meet the challenges of technology-driven learning.
- Create an associate provost position responsible for crafting together blended and online learning throughout the curriculum.
- Develop incentives that encourage faculty members to transition to blended and online formats.
- Offer new online degree programs.
- Create and offer MOOCs to build the school's brand.
- Offer degrees through MOOCs.
- Encourage efficiency and reduce costs for overhead.
- Cut costs by eliminating unused campus buildings.
- Hire faculty who are adept at online instructional practices.
- Act "boldly, decisively, and imaginatively." (p. 8).

Indeed, implementation of these types of ideas may offer administrators some valuable options to stem the exodus from traditional methods of education and maintain high student retention despite the encroachment of MOOCs (Carr 2012; Flanagan, 2012; Sandeen, 2013), enabling them to incorporate the most beneficial aspects of these massive educational platforms into their own school curriculum. More importantly, as Lucas (2013) asserts, administrators must act swiftly and decisively; in the intense world of digital education, higher education leaders do not have the luxury of making gradual adjustments on an incremental basis. Lucas encourages school leaders to fully understand the broad implications of online education—including the encroachment of MOOCs—and envision scenarios as to how their institutions may function in light of these impending changes.

Hopefully, this study has proven beneficial to pioneering practitioners and professionals in the education field who are seeking ways to incorporate MOOC learning platforms into their curricular design. The findings have revealed important information as to the breadth and scope

of MOOC capabilities, offering a clearer analysis of obstacles that need to be overcome as changes are made to accommodate this new medium (Harris, 2015; H. Johnson, 2015). The inclusion of MOOCs to existing blended or online college learning venues will entail many alterations to the design and structure of these programs, presenting challenges to learners, instructors, and administrators alike (Anderson & McGreal, 2012; Cheal, 2013; Finkle & Masters, 2014). Advances in technology will force college and university leaders to rethink their role in education as students increasingly demand more flexible, mobile-enabled learning programs that keep them engaged in a compelling manner (H. Johnson, 2015; Schneckenberg, 2009). As educators strive to create user-friendly learning settings that provide the tools, training, and resources for a transition to MOOCs, they need to have a clear understanding of the audience, purpose, and objectives for each step of the process for the inclusion of these courses to their structural design (Helmi, 2002). The study's findings are aimed at assisting education practitioners and consultants in all of these areas by adding new knowledge and perspective to the development of the MOOC learning phenomenon, and as these education professionals revise curriculum, design courses, and create training programs in the implementation of this new approach to learning, it is hoped that the study has shed new light on the overall potential benefits of MOOCs and the advantages that they can offer to individuals hoping to advance their college studies or professional careers.

Limitations and Assumptions

Key assumptions. This research project explored the contrasting elements of traditional and online methods (and particularly, MOOCs) of education, guided by the correlation between the two entities, to determine the methods used by higher educational leaders in the successful transition to include MOOCs into their institution's curriculum.

1. Sample size: The study assumed that the sample size and makeup chosen presented an accurate representation of the affected population and provided valuable and reliable data.

2. Data collection: The researcher assumed truthful and accurate responses from participants involved in the study to on-site and/or online surveys and questionnaires.
3. Personal bias (Participants): The researcher trusted that participants chosen for the study exercised the utmost integrity and discarded any personal bias in their responses to interviews, questionnaires, surveys, etc. involved in the research.
4. Personal bias (Researcher): The researcher provided an objective analysis of MOOCs and their impact on traditional educational institutions as perceived through both the available literature on the subject and the perspectives of the participants involved in the study.

Limitations to the study. Researchers who conduct qualitative phenomenological studies such as this particular one must determine if the project is worthy of study. The researcher of this study asserts that educational organizations may indeed be facing perilous conditions in light of the rapid entrenchment of this new paradigm, and the aim of the research was to both assess the implications of such a possible appropriation by MOOCs, and also attempt to recognize methods that administrators and educators could employ to better serve student populations while making the necessary changes to adapt to this new phenomenon. The author saw this as a highly relevant study that could help administrators and educational leaders become aware of the approaching changes that MOOCs may bring and seek ways to not only adapt curriculum to include MOOCs and online courses into their programs, but also to find ways to revolutionize their business plans so that all levels, including staff and faculty, are enjoined in the process. The boundaries of the study—the number of participants, the time frame, and scope—were not overly cumbersome, and it was the author's belief that the inclusion of ideas from members of not only different educational institutions, but different types of schools, would offer a wide perspective on the topic.

The one overarching possible limit to the study is the rapid pace of technology and the incumbent changes that come with it. Online education, and the advent of MOOCs, is a relatively new phenomenon, and the shifts to newer and more effective methods of delivery offered by these platforms changes on a rapid basis (Cooper, 2013; Hollands & Tirthali, 2014). The researcher felt that the impending challenges that regularly face higher education institutions by the overwhelming development and volume of virtual capabilities may have become obsolete by the time the writing of this dissertation was completed; or, by contrast, the entire nature of the current landscape that online education presents could be transformed into something completely unrecognizable at any moment. It was the author's belief, however, that the topic was, and would be, important enough for such study, and that regardless of how online education might mutate in coming months or years, it would always be imperative for higher education leaders to continually stay informed of new learning capabilities to remain competitive in the global market.

Definition of Terms

The following list of terms is defined for reference to this study. All are derived from Malamed (2016):

- Asynchronous learning—learners who participate in online learning sessions at different times of day or night, and from different locations, participate in asynchronous learning.
- Blended learning—an instructional platform that combines elements of online and in-person instruction.
- Distance education—students and instructors in different geographic locations participate in an online learning process that takes place on any type of electronic device.
- eLearning—extensive term that references all types of digital training, education, and instruction.

- Interactive media—electronic media that enables learners to participate in online learning by delivering input and receiving feedback.
- Online learning—broad term that describes any type of learning managed through electronic devices, typically on a computer, through the Internet.
- Self-paced learning—a type of learning that enables learner to control the pace and succession of course materials.
- Synchronous learning—occurs when online learners are in different locations, but participating in coursework simultaneously, enabling learners to interact with the instructor and other class participants.
- Virtual classroom—the digital classroom learning environment that generally occurs over the Internet through multimedia, typically implemented through software that allows for instructor-participant interaction.

Chapter Summary

The future of MOOCs is still unclear, but with each passing year, these innovative learning platforms are rapidly becoming a more established online presence (Billington & Fronmueller, 2013; Cheal, 2013; Hollands & Tirthali, 2014; Perna et al., 2014; Sandeen, 2013). MOOCs leverage the capabilities of world-class instructors, taking full advantage of video capabilities, global collaboration, e-learning, and simulation to offer platforms focused on delivering a unique, innovative learning experience (Bersin, 2013; Cooper, 2013; Kay, 2013). However, there are still many who prefer the traditional route—an onsite classroom that enables students to have contact with colleagues and teachers on a live, not virtual, basis (Appiah, 2015; Asif, 2013; Obasi, 2015).

There is no denying the fact that online education is an expanding industry (Harris, 2015; Hoy, 2014; Sandeen, 2013) presenting seemingly limitless opportunities at an accelerated speed, and while the MOOC prodigy is still in its embryonic stages, there is a huge demand for what it has to offer; it will most likely continue to expand even more rapidly in the coming years

(Billington & Fronmueller, 2013; Hollands & Tirthali, 2014). Since the expansion of online education is not expected to abate at any time soon, this study reveals important information as to how educational leaders in higher education can approach this phenomenon and provide guidance and support to staff and faculty members at their institutions as they adjust to this *brave new world* (Allen & Seaman, 2013, 2014; Hollands & Tirthali 2014; Mazoue, 2013). Many articles have been written on the advent of MOOCs and online education, in general (Liyanagunawardena, Adams, & Williams, 2013), but the researcher believes that further qualitative study may serve as an important contribution to the literature on this subject, further enhancing educational leaders' abilities to successfully transition to these new online learning forums. Many unique observations and inferences were conveyed by participants of the study, and important insight was discovered as to the urgency of blending the traditional and online educational experience while also embracing the community of MOOCs.

Chapter 2: Review of the Literature

Massive open online courses (MOOCs) have the potential to alter the way that higher education is delivered, and as the global capability of MOOCs increases and the affordability of these courses becomes more widely known, MOOCs may prove to be the catalyst that sends traditional higher education institutions into obsolescence unless changes are made at these organizations (Flanagan, 2012; Mazoue, 2013; Sanders, 2013). As the advent of the Internet has fueled an explosive adoption of online learning capabilities, campus-directed education has in many ways taken a backseat to blended or completely online courses, and MOOCs may be leading the way to the next iteration of virtual communication (Carr, 2012; Harasim, 2000; Young, 2012). With major launches in 2012 (Adams, 2012; Bull, 2012; Young, 2012) and led by alliances of many leading business and educational institutions including Harvard, MIT, and Stanford (Mehlenbacher, 2012; Radford et al., 2014; Yuan & Powell, 2013), MOOCs are becoming an established learning platform in mainstream online education. In a major move to further consolidate the presence of this format, MIT has recently embedded a series of newly created massive online courses that makes extended use of MOOC technology with plans for certification (Daly, 2013; Harris, 2015; Yuan & Powell, 2013). And even though the long-term financial viability of online courses—MOOCs in particular—is still being determined, Moody's Investor Services calls MOOCs a "pivotal development" (Marklein, 2012, pp. 1-2), and envisions several revenue opportunities, including advertising and licensing, naming the big financial winners to be the "brand name" (pp. 1-2) colleges and universities that seize the upon the opportunities that MOOCs have to offer. Furthermore, Kohli (2015) asserts that the MOOC model is attracting huge sums of money from investors, while Shah (2015) announces Udacity to be the first MOOC provider to become profitable.

Conversely, the MOOC design that is reminiscent of a high-tech extension of the old-style university lecture hall with hundreds, if not thousands, of students in attendance is largely an unproven financial model and perhaps a drawback to this medium, and there may still be

challenges remaining for MOOCs in the university environment as they still may not be able to duplicate the traditional college experience (Daly, 2013; Marklein, 2012). Despite ongoing controversy of MOOCs, they may have already been accepted to the curricular design of many higher educational institutions, meeting little of the resistance that some portions of the literature on the topic assert, and as Tamas (n.d.) notes, they may eventually be absorbed into *multi-sourced learning programs* that can be utilized by both academic and business institutions. It was, therefore, the aim of this study to gain a deeper perspective as to the current state of MOOCs and ascertain a more refined perspective on their impact on higher education, determining the direction that this new uniquely designed medium may take educational development, not only enhancing online learning as we know it, but revolutionizing it in ways we cannot yet imagine. The current model of MOOCs already enables learners from all walks of life and education levels to participate in numerous courses without the inconvenience of having to physically attend colleges and universities, and administrators and educators must find ways to embrace the MOOC phenomenon to the benefit of their own institutions, and higher education as well.

MOOCs origins lie in the desire to utilize technology for the development of learning platforms specifically designed for increased access, collaboration, and engagement. One feature of MOOC courses that has increased their popularity is the altered curriculum structure that many of them provide that allows for the continuous testing of students as they progress through courses, thereby ensuring higher retention of information while utilizing a more streamlined course model to accelerate student progress throughout the program (Cooper, 2013; H. Johnson, 2015; Toven-Lindsay, Rhoads, & Lozano, 2014). Additionally, MOOC course refinement offers a broader, more panoramic spectrum of diverse capabilities as students are able to communicate with classmates on a global scale, utilizing the boundless power of the Internet in their online classroom environment to connect with colleagues from vastly different cultures and backgrounds. As previously noted, there are drawbacks to the MOOC concept

presently, but this educational system is rapidly becoming a viable alternative to traditional methods of education, with its cheaper cost and increasing accreditation possibilities (Brahimi & Sarirete, 2015; Cheal, 2013; Finkle & Masters, 2014). The focus of this Literature Review was on both the benefits and drawbacks of the new curriculum design that MOOCs offer, providing an insight as to what may lie ahead for traditional educational institutions as they meet the challenges of this new phenomenon.

Online education has increasingly become a preferred way to enhance knowledge, increase skill levels, and gain valuable professional degrees from accredited colleges and universities—all from the comfort of one's home, and on one's own time schedule. As the unprecedented demand for virtual courses has skyrocketed since the early inception of online education during the 1990s (Cobb, 2010; Flanagan, 2012; McKeown, 2012), the MOOC serves to extend the promise of the Internet's ability to provide the broad democratization of education, "making the accumulated knowledge of mankind available to everyone" (Hoy, 2014, p. 85). In line with this analogy, massive open online courses are classes that anyone, anywhere, can engage in, often for free, as MOOCs are available to anyone with computer access. Classes often have tens of thousands of participants (Brahimi & Sarirete, 2015; Ripley, 2012; Yuan & Powell, 2013), and MOOCs provide an extensive global platform with easy access to streamlined class sessions, which are generally "a combination of short video lectures and computer-generated quizzes and tests, reinforced by online forums where class members can share thoughts or request assistance" (Hoy, 2014, p. 86). As stated by McAuley, Stewart, Siemens, and Cormier (2010), "A MOOC integrates the connectivity of social networking, the facilitation of an acknowledged expert in a field of study, and a collection of freely accessible online resources" (p. 4). More importantly, McAuley et al. maintain that MOOCs encourage "the active engagement of several hundred to several thousand students who self-organize their participation according to learning goals, prior knowledge and skills, and common interests" (p. 4). Even though the format has some similarities to some of the conventions of an ordinary

course (such as a pre-determined timeline and defined course of study), a MOOC is generally free of charge, and requires no prerequisites (besides Internet access, and an enduring interest), no predefined obligations for course participation, and no required accreditation (McAuley et al., 2014; Toven-Lindsey et al., 2015).

The Relevance of Online Education

Online education is an outgrowth of distance learning (Britt, 2015; Mason, 2000; Perreault, Waldman, Alexander, & Zhao, 2002), a concept formed in the early 1900s as the U.S. Postal System became more firmly established. The postal service enabled universities to deliver lessons beyond the scope of their campuses, and the educational system seemed on the verge of a new technological breakthrough. Just as anyone with a computer can participate in online learning nowadays, a hundred years ago, anyone with a mailbox could enroll in a college course. At the time, many schools believed this development to be a vital way of spreading education and disseminating knowledge to even the remotest sections of the country, and by the 1920s, postal courses had become highly popular. Many educators hailed this new method of correspondence being used to create an enlightened citizenry as revolutionary in scope, and some even believed that postal courses would be superior to traditional on-campus instruction because assignments and assessments could be designed specifically for each student (Carr, 2012). Carr (2012) maintains that a strikingly similar claim is being made today as another innovative communication network—the Internet—becomes a driving force in revolutionizing the world of education.

Online education has indeed revolutionized traditional learning methodology, as in an online classroom, there are limitless opportunities to the experiential use of the technologies available (Britt, 2015; Keengwe & Kidd, 2010; Sataline, 2013, Young & Lewis, 2008). During the early years of online development, as computer networks flourished, educators realized that cyberspace could be utilized for educational and research purposes. Further advances in online education led to groundbreaking new approaches for networked collaboration (Noble, 2016;

Mason, 2000; Willingham, 2010), and since the 1980s, these new methods of computer conferencing in educational settings have inspired the origination of a dynamic new system of learning: online collaborative learning (Harasim, 2000). Online education has increasingly offered an improved quality of learning (Mason, 2000; Noble, 2016; Willingham, 2010), and it has broadened the educational experience to include the following:

- Enhanced models of educational delivery
- Enhanced learning specializations
- New foundations of learning
- Enhanced learning techniques and results
- Emerging educational roles and functions (Harasim, 2000)

The new learning domain of online education is characterized by five attributes that distinguish methods of communication in the online forum which provide a theoretical basis designed to guide the implementation of online courses, and these five attributes are listed in detail below:

- Group interaction
  - Ability to work through issues with peers
  - Opportunity for animated exchange in a rich information setting
  - Opportunity for the articulation of diverse perspectives
  - Ability to contrast, discuss, modify, or replace ideas and beliefs
  - Opportunity to address differences and reach intellectual convergence
- Location Independence
  - Availability of the vast wealth of Internet sources (as well as colleagues, and experts)
  - The expression of shared interests, not just shared locations, among participants
- Time Independence; asynchronicity
  - The availability of 24-hour engagement: Participants can log in to their classes and complete coursework according to their own schedules

    - Ongoing student participation; therefore, continuous knowledge-building capabilities are enhanced
    - Participants empowered through the asynchronous process; they can attend classes and complete assignments at their best *learning-readiness* times
    - Opportunity for independent articulation and expression of ideas
    - A focus on message, rather than messenger (reduced possible discrimination and other negative factors)
    - Opportunities for the clear expression of opinions/perspectives
    - Rich databases of ideas and information provided to draw upon
- Computer-driven messaging
    - Searchable, transmissible, and modifiable archived databases made available to enhance lesson materials and resources
    - Enhanced opportunities for computer-generated discourse
    - Building tools provided in the exchange and organization of ideas to support collaborative learning
    - The creation of templates, scaffolds, and educational resources for advanced pedagogy
    - Customized learning venues designed to accommodate all disciplines and pedagogies (Harasim, 2000)

These five elements combine to create enhanced learning venues that can augment cognitive abilities and offer virtually unlimited ways to design and present online courses. Harasim (2000) maintains that computer conferencing "is the *heart and soul* of online education" (p. 51), and that conferencing systems were fundamental to instructional formation during the evolving stages of online learning in the 1980s and '90s. As Harasim notes, computer conferencing provides a *discourse focus*, which underscores the basic elements of education: interaction, conceptual change, and collaborative convergence.

Recent studies have indicated that students want to be effectively involved when participating in online classes (Allen & Seaman, 2013, Keengwe, & Kidd, 2010), and Dixson (2010) states that the online experience must be as engaging as a face-to-face class to remain competitive. Similar to distance education, online learning platforms are generally accessed any place, any time, and are generally text-based (Dixson, 2010). A crucial differentiating factor to online education, however, is its group communication capability, which makes it more similar to face-to-face, seminar-driven instruction (Dixson, 2010). Dixson's research incorporates the findings of Maki and Maki (2007), which note that online studies are sometimes more rigorous than traditional classroom courses, as students often must do more independent work in the online instructional environment and have a stronger sense of discipline in completing tasks while keeping up with the pace of the coursework. Maki and Maki also conclude that a typical online class' instructional design requires strong methodology and the incorporation of increased opportunities for students to interact with one another and their instructor. Britt (2015) suggests that there must be a compelling instructor presence in the online classroom, and since online schooling is becoming a practicable format for learning, faculty members must stay abreast of the latest online methodology, enabling them to deliver compelling and relevant enhancements to this educational form (Howell et al., 2004; Kotter & Schlesinger, 2008; Schneckenberg, 2016).

Herbold's (2012) research also notes that as adults, higher education students enjoy the strategies of an "independent or online classroom study; a socially networked study; theoretical or applied activities; recorded discussions or lectures; discussion boards; [and] selection of their own activities" (pp. 120, 123). Herbold recommends employing adult learning concepts such as these when constructing online classes while also adhering to adult learning theories in the overall design of such courses. Britt (2015) reinforces this notion by citing the importance of theorist Malcolm Knowles' notion of *andragogy* as it relates to higher education and adult learners, some of which are enumerated as follows:

- Adults are generally more motivated when involved in their own pursuits in education.
- Their learning is often strongly influenced by their individual life experiences.
- Experience is the premiere frame of reference for adults; therefore, the principal methodology of adult education is often drawn from life's situations.
- Adults are generally self-directed; therefore, "the role of the teacher is to engage in a process of mutual inquiry, instead of knowledge transmission" (p. 400).
- Individual differences among people generally become more pronounced with age; therefore, adult educators must accommodate the varied levels of education among students, as well as "differences in style, time, place, and pace of learning" (p. 400).

Furthermore, Knowles, Holton, and Swanson (2005) draw a distinction between pedagogy, which can be classified as "the art and science of teaching children" (p. 68), and andragogy, which is more aligned with the teaching of adults and which provides a climate whereby "learners feel more respected, trusted, unthreatened, and cared about by exposing them to the need to know before instructing them, by giving them some responsibility in choosing methods and resources, and by involving them in sharing responsibility for evaluating their learning" (pp. 68-69). The classification of andragogy notably clarifies the conceptual framework of adult learning, which is further illustrated in Knowles' assertion that adults have a need to know the reason for learning something, to take responsibility for their own decisions, and to enter the educational forum from the perspective of having vast life experience (Knowles et al., 2005). This vaunted accumulation of knowledge greatly equips adult learners with a readiness and eagerness to learn vital concepts that will help them cope with their everyday situations; therefore, adults are life-centered in their orientation to learning, and adults are more responsive to internal motivators than external motivators (Knowles et al., 2012).

Citing Jonassen (2004), Britt asserts that e-learning instructional designers must "rethink standard pedagogical practices to coordinate the balance between cognitive and educational psychology, and educational technology, into every learning experience" (Britt, 2015, p. 3). More clearly stated, instructors can use creative and adaptive learning strategies to develop authentic learning through the use of e-learning technology, rather than being hampered by it (Britt, 2015; Schneckenberg, 2016). Britt states that instructors can draw from their powers of creativity and imagination in creating compelling content to fit the overall design of the course (2015). Adaptable and versatile learning strategies can be implemented in creating this authentic learning experience, which usually includes real-world scenarios, role-playing experiences, case studies, and problem-centered activities (Donovan, Bransford, & Pellegrino, 1999; Howell et al., 2004; Keengwe & Kidd, 2010). As Britt (2015) suggests, this type of experiential learning process helps students realize the highest rung of Bloom's Taxonomy, whereby individuals engage in higher forms of thinking in educational settings with the ultimate goal of evaluating and creating, rather than just memorizing facts (Shephard, 2008). Britt (2015) notes that as difficult as it is to design experimental exercises that demand collaboration and communication between students in an online classroom, robust features of virtual learning systems can be used to engage students in authentic learning experiences (Harris, 2015; Willingham, 2010). To achieve this end, Britt (2015) suggests specific adaptable instructional components that can be utilized in the online environment:

- Real-world relevance – Authentic activities that are designed to reflect real-world tasks of a professional work environment, characterizing the "ordinary practices of the disciplinary culture" (p. 3).
- Problem-driven scenarios – Authentic assignments "which may be intentionally vague in definition, requiring students to use their own independent judgment to identify tasks to solve problems" (p. 401).

- Sustained investigation – Authentic activities that may be completed during a sustained time period, requiring students to delve deeper into their intellectual and instinctual capabilities to solve tasks.
- Multiple sources and perspectives – Authentic activities designed to afford the opportunity for students to analyze tasks from a wide range of theoretical and practical perspectives, drawing from a varied selection of resources to ascertain the most effective ways to solve problems.
- Collaboration – Authentic activities that enable sustained collaboration between students to solve problematic scenarios, "both within the course, and in the real world." (p. 4).
- Reflection – Authentic situations that require participants "to reflect on their acquisition of knowledge to contemplate decision-making choices, either individually or within teams" (p. 402).
- Interdisciplinary approach – Authentic activities which may cut across "different domains of specialization, which can encourage learners to adopt diverse roles and think in interdisciplinary terms" (p. 402).
- Integrated valuation – Real world evaluation processes which are incorporated into authentic activities, enabling students to assess outcomes of problematic scenarios from a wider perspective.
- Conclusive findings – Well-designed authentic activities which encourage students to find "sound solutions to real-world problems" (p. 402).
- Numerous interpretations and results – Authentic activities that encourage differing interpretations and solutions to real-world problems, "reinforcing the notion of collaborative problem-solving and teamwork" (p. 402).

Online education can be a significantly superior learning platform if there is a good balance of instructor creativity and technical capability provided, which supports authentic learning through the implementation of actual experiences (Allan & Seamans, 2013; Howell et

al., 2004; Reif, 2014). These types of authentic activities help learners develop critical-thinking and collaborative skills that can be applied to work-related environments and real-world scenarios, serving to better equip them for post-graduate employment opportunities and to develop habits of lifelong learning (Dykman & Davis, 2008). We may be just beginning to see the potential of new educational technologies (Hannay & Newvine, 2006, Willingham, 2010); through the heightened "use of data analysis and machine learning techniques," and learning platforms will progress through several levels of adaptability, "each offering greater personalization through more advanced automation" (Carr, 2012, p. 38).

The full college experience. Many institutions of higher learning tout the fact that the traditional university setting is far superior to online modes of education; however, with the tuition costs of traditional colleges spiraling higher each year (Frey, 2013; McKeown, 2012) and educational technology advancing at increasing rates, online learning venues and degree programs are becoming more numerous, and often, more in-demand (Cobb, 2010; Flanagan, 2012). McKeown (2012) states that the leaders of established traditional schools are often comfortable in the belief that their individual institution provides a unique *full college experience* that will continue to draw students despite the lower costs and/or the flexibility of online schools. This assumption, however, may not be as grounded in reality as it may have been 5 or 10 years ago, before the rapid expansion of online learning. Increasingly, the online experience is developing ways to match aspects of the traditional college experience beyond mere academics; for many individuals, online schooling now offers extracurricular features that may be considered to be superior to the old-style, *pomp and circumstance* atmosphere of traditional universities (Britt, 2015; Keengwe & Kidd, 2010; Reif, 2014). The traditional college experience generally entails three broad components: educational, social, and extracurricular. These are explained as follows:

- Education Components

    - A recent Pew Research report states that 47% of the public generally maintains that the overall purpose of higher education is the attainment of specific skills and knowledge that can be applied to the workplace (Taylor et al., 2011).
    - Students who may still be undecided on a career may attend college with the aim of increasing their earning potential.
- Social Components
    - The full college experience is not only about intellectual development, but social awareness as well.
    - College is interpreted by many individuals as a time for spiritual development when students discover their passions and are exposed to a great diversity of ethnicities, cultures, beliefs, and ideas, and develop critical-thinking skills which can broaden their perspectives.
    - Lifelong relationships are often established at college, generating bonds and friendships that often last far beyond the scope of time spent at school.
    - For many individuals, college represents a time when they are forced to leave their home environment and must learn to live with other people for the first time in their lives.
- Extracurricular Components
    - Social activities and various other extracurricular events and endeavors are generally believed to be central to the traditional college experience.
    - Campus life often offers numerous opportunities to participate in extracurricular activities, including the following: student government; multicultural activities; professional, religious, political, or other interest organizations; theater, music, or other cultural events; sports teams; social clubs; or even study abroad (McKeown, 2012).

These educational and extracurricular activities form the broad basis of opportunities available at traditional universities that enable students to form lifelong friendships and networks, and to become more broad-minded and well-rounded individuals.

Online education, by contrast, was originally targeted largely to students seeking entrance or advancement in a specific profession or discipline, or working professionals for whom college was not a viable solution, either for economic or practical reasons (Garrison, 2009; Hannay & Newvine, 2006). Online studies are attractive to many as they enable individuals to enroll in coursework on their own schedules, at their own convenience, and often at much lower cost. Some argue that online education does not compete well with traditional classroom learning and question the capacity of online venues to match educational goals and content beyond the attainment of a degree (Asif, 2013; Obasi, 2015). Evidence shows, however, that online classes often provide a compelling learning environment that is conducive to competitive intellectual stimulation in much the same way that traditional class offerings do (Howell, Lindsay, & Williams, 2004; Keengwe & Kidd, 2010), and a 2008 National Survey of Student Engagement (NSSE) determined that,

> Compared with their counterparts in traditional classrooms, online students were more likely to very often participate in course activities that challenged them intellectually; very often participate in discussions that enhanced their understanding of different cultures; very often discuss topics of importance to their major; and very often participate in discussions that enhanced their understanding of social responsibility. (p. 16)

The NSSE also noted in 2011 that online students generally maintained higher levels of independence in their studies, using a broader range of studying strategies, supporting the notion that online learning speaks to a more modern approach to instruction, whereby the teacher acts as more of a guide than a traditional-style professor (Dykman & Davis, 2008; Perreault, Waldman, & Alexander, 2002). Another educational advantage of online education is the technological capability that enables instructors to tailor materials and activities to individual

students in ways that would not be possible in the traditional classroom setting (Howell et al., 2004; Mason, 2000). The Khan Academy, for instance, provides free online lectures to high school-age students and has designed methods to track student progress in the early stages of their programs, enabling instructors to give individualized guidance to those who may need assistance and guide them towards more successful final results (Butler, 2012; Thompson, 2011). McKeown (2012) asserts that online education is as engaging as campus-based instruction, as instructors can adjust online classes to minister to different learning levels and styles, utilizing levels of flexibility and customization that are generally not available in a typical campus classroom. McKeown also notes that the more informal setting offered in online classes is sometimes more inviting to students and serves to increase interaction on a higher level, as new technology enables them to communicate with one another in a *chat box* during class lectures and activities.

There are also social components of online education that are attractive to many individuals who gravitate more toward the online experience. The flexibility of online studies allows students to live wherever they want and attend school on their own time schedules (McKeown, 2012; Ripley, 2012). Economic indicators show that, until recently, the economy has been extremely sluggish and job growth below par, and a 2009 survey reported that 58.5% of college students planned to live at home throughout their college years, compared to the 49.1% who chose to live at home just two years prior (Grannis, 2009); more recent studies show that as wages have plunged for the average young man from 2000 to 2014, many students strapped with college loan debt and bleak employment prospects live with their parents (Associated Press, 2016). These statistics reveal the stark fact that the dream of a traditional college experience has evaporated for many young people, since more than half of them will be living at home during their college years. As McKeown (2012) states, attending college online may also address other areas of concern for students who have trepidations about leaving home for the first time. Online learning may help alleviate situations that involve peer pressures

and social challenges which may be prove to be problematic on traditional campuses, and some students may find the isolation of college life depressing, avoiding social activities altogether as a result. Depression and mental illness are increasingly becoming more common in university settings, and campus life can increase levels of stress for some individuals (McKeown, 2012; Peterson, 2002). The combined effect of living away from home, missing family and friends, feeling isolated, facing often overwhelming school work, and stressing over finances can compound feelings of loneliness and depression and serve to profoundly denigrate the traditional college experience (Kreijns, Kirschner & Jochems, 2003; Peterson, 2002). For all the celebration that fraternity life offers, it can also have negative effects on college students as members can often be resistant to the notion of diversity, and alcohol abuse and alcohol-related crimes can lead to early expulsion, or worse (Higher Education Center for Alcohol and Other Drug Abuse and Violence Prevention, 2008). Therefore, for those individuals who would rather not participate in college excesses such as binge-drinking and the problems associated with it, online learning can prove to be a less stressful and more conducive option. McKeown (2012) also stresses that online education may instill a stronger sense of social continuity than brick and mortar schools, as the online environment enables students to "integrate the college experience more seamlessly into the social networks and connections of life as a whole" (p. 9) now that the connectivity of the Internet is so pervasive. However, faculty members should not assume that social interaction is a given because of the easy access that technology allows; often students can feel a great sense of isolation and loneliness when engaged in their online programs (Kreijns et al., 2003).

McKeown (2012) asserts that extracurricular activities such as working on a school newspaper or participating in such projects as a chess club or reading group can be performed through online resources, as well. She maintains that students of various online institutions may soon have the ability to work together in virtual ways to create local and regional meetings, and

other activities. McKeown also points out other ways that the online environment may be conducive to extracurricular involvement:

- Online schools can offer for-credit service learning courses that benefit the wider community, “a practice that has increased student participation at non-residential colleges” (McKeown, 2012, p. 15).
- Online students can support teams with which they have no geographic affiliation, or support teams that are unconnected with their own particular college.
- Online students desiring more community involvement can join community league sports teams, or become involved in athletics in other ways, perhaps as coaches or managers of teams.
- Online students may have wider options when studying abroad, as they can participate in their regular online classes from any location, at any time.
- Online students generally come into contact with people from a wide range of cultures and backgrounds through their virtual studies, as opposed to their counterparts at traditional universities (McKeown, 2012).

Many students and professionals are increasingly considering online education to further educational and/or career goals as it can achieve wider reach and higher levels of sustainability and sophistication, while more traditional schools become less feasible in financial terms and other areas (Cobb, 2010; Dykman & Davis, 2008; Frey, 2013). An overwhelming factor for these individuals as they consider online venues is their belief that virtual schooling can produce an experience that not only matches the academic richness of brick and mortar schools, but also includes the social and extracurricular elements that these students find to be desirable. Increasingly, students choosing fully online programs are imbued with a greater sense of control over their own educational destiny and extracurricular activities, and they often find that online learning institutions can provide most of what is considered to be a full college experience offered at traditional campuses (Dykman & Davis, 2008; Herbold, 2012; McKeown, 2012; Reif,

2014). Online education is therefore likely to alter what is known as the full college experience, as students "take advantage of the flexibility it offers or its ability to link them with other students and leaders in their fields with whom they otherwise might never have connected" (McKeown, 2012, p. 12).

The Advancement of Technology

Technology has vastly transformed education throughout the years (Dykman & Davis, 2008; Mason, 2000; Young & Lewis, 2008), and as noted at the beginning of this study, distance learning sprung from the ability of universities to take advantage of the newly established U.S. Postal Service, enabling home-study for tens of thousands of people (Hoy, 2014). Since the early 2000s, the Internet has revolutionized learning, modernizing both the format and delivery of knowledge and expanding social communication on a global level (Keengwe & Kidd, 2010, McKeown, 2012). However, as online education developed throughout its early inception, it became evident that although powerful new learning opportunities were emerging, the networking technology necessary for educational application was inferior (Britt, 2015; Harasim, 2000; Mason, 2000). Many administrative, organizational, and pedagogical issues and costs arose as administrators and instructors attempted to transform traditional classroom settings into virtual learning environments. Generic networking tools were not yet sophisticated enough to support educational classroom activities in an asynchronous communication environment (Carr, 2012; Lewin, 2012; Schneckenberg, 2009). As Harasim (2000) notes, customized network learning platforms were urgently needed to make the transition to online courses, which were designed to achieve the following:

- Offer easy access and navigation.
- Enable instructors to design curriculum tailored to online learning.
- Manage courses, including the ability to upload and download of media files, calendars, grade books, and so forth.
- Support cognitive activities.

- Create group and personal workspaces

Harasim (2000) maintains that collaborative learning is the foundation of online networked learning since it addresses the substantial "socio-affective and cognitive power of Web-based knowledge" (p. 53). She asserts that "the Web's asynchronous nature both enables and requires collaborative learning: collaboration provides the social glue of a community that engages learners and motivates them to participate" (p. 53). Continuing this line of thought, Harasim believes that lifelong education bonds people together by the principle of *access* as it strengthens the connectivity that links us all together, and by transcending traditional geographical barriers, online education expands such access—so much so that by the 1990s, even many rural areas of many Third World regions began participating in this new technological phenomenon. The 24/7 access that the flexibility of online education provides enables even those with family or employment commitments to participate in virtual coursework, join forums for discussion and reflection, voice opinions, overcome geographic obstacles, and even sidestep traditional discrimination elements such as racism and sexism (Dykman & Davis, 2008; Harasim, 2000; H. Johnson, 2015). The online environment has universalized and democratized education by its structure, availability, and reach.

The proliferation of social media has also driven online educational development in recent years, and younger individuals who have become early adopters of such communication methods have begun to expect the same kind of rapid networking abilities in the classroom. For members of the *always connected* generation—the Millennial generation that came of age in the early 2000s, whose members seem to all be connected, all the time—multitasking with hand-held technical devices such as ipads and iphones is a continuous obsession in the need to keep up with instant communication and information (Bull, 2010; Gladfelter & Friedman, 2014). A recent Pew Foundation study indicates that "more than 80% of millennials sleep with a cell phone by the bed poised to disgorge texts, phone calls, e-mails, songs, news, videos, games, and wake-up jingles" (Bull, 2010, p. 1). This statistical evidence highlights the fact that younger

people are not only well-versed in digital technology and social media, but demand that this technology be available for their social and educational needs. Developments noted in the 2014 NMC Horizon Report (New Media Consortium, 2014) identify some *Key Trends Accelerating Higher Education Technology Adoption* which the NMC board believes will be increasingly implemented in the coming years, and are listed as follows:

The increasing omnipresence of social media. The NMC Report asserts that social media presence spans all demographic groups. The Report states that more people are engrossed in social media of some form these days than those who watch television or engage in other popular mediums from the past. NMC cites YouTube, for example, stating that it broadcasts to more U.S. adults in the 18-34 age category than any other cable venues do, and Reuter's reports that being engaged social media platforms is the most popular activity of Internet users. Social media enables two-way communication between students, instructors, and groups of individuals aligned with similar interests who may be enrolled in the same course, and as these networks continue to flourish, educators can take advantage of their connective power and use them as "professional communities of practice, as learning communities, and as [platforms] to share interesting stories about topics students are studying in class" (New Media Consortium, 2014, p. 8). Leveraging social media for social learning endeavors is a critical skill for instructors and should be included in any type of teacher training.

MOOSL—Massive Open Online Social Learning. *Massive Open Online Social Learning* has become a buzz word associated with the emergence of Web 2.0 technologies which include such modern-day innovations as YouTube, Podcasting, Blogs, and Wikis, to name only a few, and it is representative of a shifting pedagogical paradigm in the education industry (Duffy, 2008; McLoughlin & Lee, 2008). Today's students expect greater control of their learning processes and demand the inclusion of technologies to help them meet their educational needs. Prensky (2001) distinguishes these individuals as "digital natives" who have "spent their entire lives surrounded by and using computers, videogames, digital music players,

video cams, cell phones, and all the other toys and tools of the digital age" (2001, p. 1). These individuals are highly adept at navigating the World Wide Web—so much so that they no longer are passive consumers of information, but often, active creators of knowledge (Klamma, Cao, & Spaniol, 2007). Prensky maintains that today's virtual environment has greatly altered young people's thinking processes, as the sheer volume of their interaction in the digital realm has served to fundamentally change their approach to learning—and education—overall. The dizzying proliferation of technology in recent years has greatly ramped up the speed and access of communication, enabling young people to receive information quickly, process information rapidly, multi-task effortlessly, engage in active rather than passive learning, "and rely heavily on communication technologies to carry out social and professional interactions" (McCarthy, 2010, p. 730). They operate at what Prensky refers to as *twitch speed*, expecting instant results and feedback. They prefer "random 'on-demand' access to media, expect to be in constant communication with their friends, and [have] ease of access in the creation of their own content" (Duffy, 2008, p. 119). These young learners "blog, play games in immersive 3-D worlds, listen to podcasts, instant message friends, listen to music, author their own videos for [YouTube], and collaborate on the creation of 'digital stories' for their ePortfolio" (p. 119).

College students have become accustomed to a world immersed in social media, and as an educational tool, this new prodigy can enrich the learning experience, enabling students and instructors to exchange ideas, engage in collaboration and discussion, and interact in a classroom environment using emerging social media venues (Duffy, 2008; Guy, 2012). The availability of these new tools and technologies has greatly enhanced the educational spectrum, opening up vast possibilities for new modes of community-based sharing and content creation as applied to the more formal learning settings of higher learning institutions. As McLoughlin and Lee (2008) maintain, if used appropriately, tools such as blogs, wikis, media-sharing applications, and social networking sites can spur knowledge-sharing, giving learners access to a greater range of information and connectivity while establishing a much more enhanced

learner-centered model of education. Social software technology can be effectively incorporated into both face-to-face and online learning environments, allowing students to interact with peers, instructors, and the greater community in the creation and sharing ideas. (McCarthy, 2010; McLoughlin & Lee, 2008).

To stay relevant, educators need to become familiar with, and actively engage in the virtual world that most students have become so accustomed to. College courses need to integrate technologies and course tasks which are meaningful and pertinent to the demands of today's networked younger generation. The connectivist model, "which describes learning as a process of creating a network of personal knowledge, a view that is congruent with the ways in which people engage in socialization and interaction in the Web 2.0 world" (McLoughlin & Lee, 2008, p. 2), and which is so closely related to the MOOC learning model, has evolved into an approach known as *Pedagogy 2.0*—a process which promotes personalization, collaboration, and creativity with the aim of knowledge creation. Pedagogy 2.0 stresses the following educational components:

- Content: Information that enhances critical thinking and cognition processes by offering diverse perspectives and representations to learners.
- Curriculum: Course offerings that are not static, but dynamic, open to negotiation and learner input, and designed in smaller, more manageable quantities, blending formal and informal learning.
- Communication: Open, peer-to-peer, multifaceted communication achieved through multiple media venues to enhance relevance and clarity.
- Process: The encouragement of reflective, integrated thinking processes which are supported and measured through inquiry and performance.
- Resources: The use of multiple sources rich in media and global reach.

- Scaffolds: Support for students which is based in a network of peers, teachers, experts, and community members.
- Learning tasks: Authentic and personalized leaner-driven and leaner-designed experiential tasks that enable learners to create content (McLoughlin & Lee, 2008).

The distinguishing feature of the Pedagogy 2.0 model is that learners use social software tools to interact on a deeper level with peers, instructors, subject matter experts, and community members. Podcasts, for example, can improve upon current student-centered approaches such as peer mentoring or tutoring by enabling "students to express themselves through different modalities, to acquire digital literacy skills, and to exercise a greater degree of personal autonomy" (McLoughlin & Lee, 2008, p. 3). This capability is a departure from prepackaged learning materials often offered through traditional pedagogies as it allows for greater personalization, and students can utilize these tools to craft their own personalized content with the inclusion of their peers, connecting their learning experience to a wider, sometimes global, audience.

Many argue that social media can greatly increase student engagement and help build communication skills. Media giant *Facebook* was used in both 2008 and 2009 studies using the *Imaging Our World* college course as a platform for the introduction of online learning in the hopes of utilizing the collaborative learning tool to help students engage with their peers and gain a stronger sense of belonging within the learning community (McCarthy, 2010). As McCarthy (2010) states, "Students were able to develop academic relationships freed from the constraints of the classroom and their own inhibitions, and over the semester discussions evolved from formal academic critiques to informal social interactions" (p. 732). The *Facebook* experiment seemed to help first-year students initiate fledgling connections amongst themselves, many of whom were reluctant to make friends with strangers, and the incorporation of *Facebook*'s online discussion component into the physical classroom proved to be vital in

both the development of peer relationships and academic growth. In the 2009 study, *Facebook*'s popularity caused it to become even more integrated into the course, and a 2009 survey indicated that "61% of students logged onto Facebook at least once a day, compared to 35% in 2008" (p. 734). *Facebook* was seen as "the perfect host for such an environment due to its intuitive interface, existing popularity, and ease of use" (p. 738). As McCarthy notes, the 2009 study indicated that the blending of the classroom and virtual environments served to significantly increase peer interaction and academic engagement, two key components of a positive experience for first-year students.

Critics maintain that there may be serious risks to using social media in the classroom, and many educators and instructional designers feel that social media technologies may not always be appropriate platforms for teaching and learning activities (Anderson & Rainie, 2012; Guy, 2012). Some cite negative effects, including a need for instant gratification and loss of patience, and suggest that social media can serve as a distraction, as sites such as *Facebook* and *Twitter* can draw students' attention away from the classroom and ultimately disrupt the learning process. Guy (2012) also maintains that while social media can be an effective vehicle for students and instructors to connect, there is a possibility of cyberbullying, which can be used for malicious purposes. Social media can also create even greater levels of isolation, as face-to-face communication is lost to virtual, cyberspace interaction, and as Guy asserts, students may miss valuable lessons in real-world social exchange. Other challenges include a possible lack of trust in peer feedback, ownership matters regarding public and collaborative spaces, and the suitability and appropriateness of injecting social media technologies into curriculum.

Nonetheless, social networking has made an indelible imprint on today's youth, and many faculty members and instructional designers have successfully implemented social media technologies into academic programs to incorporate collaborative, inquiry-based, and reflective learning, heightening student interaction through the use of blogging, document sharing, networking, tweeting, and myriad other virtual tools. As the ongoing debate concerning the role

of social media in education continues, advocates of this new phenomenon cite increased student engagement, enriched learning experiences, and enhanced communication capabilities as motives to incorporate social learning technologies into the learning environment (Anderson & Rainie, 2012; Guy, 2012). MOOCs capitalize on the virtues of social media and networking on a colossal scale, offering global connectivity that is increasing exponentially with each passing day. Previously harnessed by textbooks and old methods of pedagogy, this new technology is transformational as it "can include new areas of learning, computational thinking, problem solving, visualization and learning, and supercomputing" (Guy, 2012, p. 21).

The fusion of online, hybrid, and collaborative learning. As educational capabilities develop, online learning—which now often includes blended and hybrid learning models—is becoming more pronounced, and its popularity among students is increasing at astonishing rates. An aggregate number of educational institutions are developing online components for courses of all types, and this addition of Web-induced capability is creating more dynamic and engaging class content while also making it accessible to more students. The NMC Report states that many educators find online learning platforms to be useful in facilitating group problem-solving and sharpening communication skills, while also serving to advance students' knowledge of subject matter. A study at Ohio State University, for instance, requested that educators in the Department of Statistics use their technical knowledge to construct a *HyFlex* model of learning, which "incorporates online interactive polling, lecture recording, and a backchannel for synchronous communication" (New Media Consortium, 2014, p. 10). The exploratory model was embraced by students, as they were given a choice of how they wanted to attend lectures—from the comfort of home, or in a face-to-face, classroom setting. The study's results indicate that students felt that the instructional technology enhanced their interest in the subject matter, helped increase their understanding of the material, and encouraged them to participate in the backchannel (New Media Consortium, 2014).

The increasing use of data-driven assessment. The growing interest among educators in utilizing data banks to analyze the learning experience and performance evaluations of students has led to "learning-analytics experiments and demonstration projects" (New Media Consortium, 2014, p. 12) that examine ways to use this data for the modification of learning strategies and purposes. As learners navigate through online programs, their trail of analytics data can be examined for insights, and as they generate more data information, tools and algorithms can be developed which reveal patterns that can be applied to the improvement of the overall instructional system. Dashboards, for example, have become a common feature of many learning management programs which can provide both instructors and students an overview of such data, and these and other analytical tools are being employed at many universities in efforts to improve student retention numbers and help actualize the learning experience. As the NMC Horizon Report (New Media Consortium, 2014) asserts, these types of tools can track student progress and help instructors identify students who may be falling behind so as to deploy the necessary assistance and services before the student fails the course.

The changing role of students. Across the spectrum of disciplines, there is an increasing trend in higher learning for students to participate in more content creation and design, rather than just be consumers of educational resources. As the NMC Horizon Report (New Media Consortium, 2014) states, "More colleges, universities, and libraries are developing environments and facilitating opportunities to harness this creativity and building physical spaces where students can learn and create together, integrating content- and product-centered activities as part of their instruction" (p. 14). Students are encouraged to *learn by doing* as they engage in design and content and/or product development as part of their coursework. New ways for funding also open up new methods for such creativity to be brought to fruition, giving university students increased control over the advancement of their research than had been available in previous times (New Media Consortium, 2014).

Experimental approaches to change. The creative environment found at many technology startups has inspired educational leaders to begin experimenting with approaches to teaching and learning based on these models that "stimulate top-down change and can be implemented across a broad range of institutional settings" (New Media Consortium, 2014, p. 16). Experimental programs are being designed with the goal of improving teaching methods and organizational structure to more effectively nurture a more entrepreneurial spirit among both students and faculty. Many higher learning institutions are designing curriculum to give students more real-world experience in their studies so as to meet the demands of employers who expect college graduates to have some sense of the employment environment when they enter the workforce. Rice University, for instance, recently launched a "business planning competition" (New Media Consortium, 2014, p. 16) that required students to present strategies for entrepreneurial success. Many institutions are also creating mentorship programs for students to inspire within them a spirit of innovation and entrepreneurship.

The evolution of online learning. As previously noted in this study, a 2013 study by the Babson Survey Research Group revealed that "more than 6.7 million students—32% of total higher enrollment in the U.S.—took at least one online course in the Fall 2011, an increase of more than half a million students from the prior year" (New Media Consortium, 2014, p. 11). Online learning is expanding at a dizzying rate, and as interest in online studies increases, higher education organizations are not only streamlining curriculum to include online components, but are also developing additional online courses to meet the increasing demand. Course design is a critical component in attracting students to these programs, and in order for these courses to retain student interest, they must encompass interactive elements and foster a compelling learning environment that is supported by a substantial instructor presence. Tools for video and audio communications such as Skype, iTunes, Google Hangouts, and Adobe Connect are all examples of interactive features that support the success of these courses (New Media Consortium, 2014).

The NMC Horizon Report (New Media Consortium, 2014) indicates some additional recent developments in educational technology that will likely affect higher education in the short-term, which are listed below:

- The Flipped Classroom – the flipped classroom is a mode of learning that *flips* the way time is used both inside and outside of the classroom to switch the "ownership of learning from the educators to the students" (New Media Consortium, 2014, p. 36) This method "overlaps with blended learning, inquiry-based learning, and other instructional approaches and tools that are meant to be flexible, active, and more engaging for students" (New Media Consortium, 2014, p. 36).
- Learning Analytics – learning analytics is a way to collect data from student activities that may include everything from assignments and exams, to discussion boards and online interactions. This tool can help boost student engagement while providing a more student-centered experience for participants.
- 3D Printing – This method refers to technology that is able to "construct physical objects from three-dimensional digital content such as 3D modeling software, computer-aided design (CAD) tools, computer-aided tomography (CAT), and X-ray crystallography" (New Media Consortium, 2014, p. 40). Universities may adopt 3D printing into curriculum in subjects such as engineering, architecture, and the physical sciences.
- Games and gamification – the games culture has flourished with the advent of technology, and as tablets and smartphones have populated our everyday lives, "desktop and laptop computers, television sets, and gaming consoles are no longer the only way to connect with other players online, making game-play a portable activity that can happen in a diverse array of settings" (New Media Consortium, 2014, p. 42). Game-based learning can stimulate productivity and creativity among learners, and educators have recognized that effectively designed games can enhance the learning process in

such areas as communication, collaboration, critical thinking, and problem solving (New Media Consortium, 2014).

Despite the immense advances mentioned here that are transforming the educational landscape so dramatically, there are those who feel that *technocrats* have hijacked the field of education for their own personal worth (Devaney, 2015; H. Johnson, 2015; Noble, 1998). They blame the commercialization of the media and maintain that it is the merchants of this mass commercialization—Apple, Bell, IBM, Microsoft, among others, and publishers such as Disney, Simon and Schuster, and Prentice-Hall—which are the main promoters of this transformation, not only to education, but to our entire society (Noble, 1998). Noble (1998) cites the vast increases in costs for all of the technical wizardry that goes into creating online learning venues and feels a certain cynicism towards administrators who push for rapid change to online programs, often at the expense of the students and teachers. He maintains that computer-based teaching, with its unending burden upon an instructor's time and vastly increased overhead requirements— "equipment, upgrades, maintenance, and technical and administrative support" (p. 359)—is generally costlier than traditional education as it often requires outside funding and significant technological restructuring and implementation. As he states, it is no wonder that teachers and students are often reluctant to welcome this new paradigm; "their hesitation reflects not fear, but wisdom" (p. 359).

Higher costs to schools, and reduced salaries for instructors, which invariably ends up being a liability for students when teachers either leave or are let go because of limited funding—these are some of the problems that such rapid technological change can bring if executed too quickly or in a haphazard fashion (Anderson & McGreal, 2012; Hansen, 2016; Henderson, 2001). Noble (1998) asserts that often administrators erroneously view computer-based instruction as a way to reduce direct labor and overhead costs—thus creating fewer teachers and lesser number of classrooms—while "at the same time, undermining the autonomy and independence of faculty" (p. 360). Noble (1998) also blames administrators and tech

department managers who have become “ubiquitous techno-zealots” (p. 360), who are so enthralled with computers and gadgetry they simply cannot live without them, for the rush to technical saturation of curriculum. With the confidence they receive from their university patrons, “they forge ahead, without support for their pedagogical claims about the alleged enhancement of education, without any real evidence of productivity improvement” (p. 360).

As is evident from the advancement of all of these technological breakthroughs in recent years, however, future learning systems will continue to offer more exciting changes to the world of education, generally improving functionary roles of universities and making them more effective, relevant, and able to make a significant impact on human society (Britt, 2015; Mason, 2000; McKeown, 2012; Reif, 2014). Certainly, a balance must be maintained so as to retain pedagogical integrity in the face of massive technical encroachment so as to avoid creating digital diploma mills (Noble, 1998), and administrators must realize that there are often not only overhead and labor costs, but human costs, when transforming educational systems to accommodate the online model: teachers and students are negatively affected if instructor labor hours and jobs are cut in the name of progress. However, progress is an ongoing process, and as the field of education undergoes profound transformation on an increasing basis in coming years, demand for technological abundance and efficiency will continue to surge as students become more tech-savvy and mobile than ever before. As H. Johnson (2015) states, “Technology will transform higher education from being a privilege of the few to being a right for all” (p. 3), and he further maintains, “The spread of technology will ultimately bring education and academic studies to every corner of the world” (p. 3).

The Development and Expansion of MOOCs

Massive Open Online Courses are considered to be a new learning venue; however, they are both an evolutionary and revolutionary phenomenon (Cheal, 2013). Evolving from five decades of educational technology and theory, they are becoming a pivotal—and potentially disruptive—component of higher education (Cheal, 2013; Finkle & Masters, 2014; Flynn, 2013;

McKeown, 2012). The term MOOC was initially used to describe a course created at the University of Manitoba by George Siemens and Stephen Downes titled, “Connectivism and Connective Knowledge” (Margaryan, Bianco, & Littlejohn, 2014, p. 77). At the time, the course included over 2,200 participants from all over the globe, and it was initiated as pilot approach to the *collectivist* aspect of learning, “whereby learning is perceived to take place through making connections to knowledge resources and people in the network” (Siemens, as cited in Margaryan et al., 2014, p. 77). According to Margaryan et al., MOOCs remained relatively obscure until 2011, when several leading universities began to offer MOOCs as part of their curriculum through emerging commercial platforms such as Coursera and Udacity. Since 2012, the daunting presence of MOOCs has quickly evolved, and as increasing numbers of universities and corporate entities have begun offering MOOCs worldwide as a core element in their curriculum and training programs, public and academic discourse concerning MOOCs has become more pronounced (Allen & Seaman, 2006; Carr, 2012; H. Johnson, 2015).

The recent emergence of MOOCs can be seen in stark contrast to the early beginnings of online education. As noted earlier in this study, the proliferation of online education had a much slower start from its infancy, and many offerings were substandard. Nowadays, technological advances have enabled online programs to become competitive with traditional methods of education, often surpassing the classroom capabilities found at many established institutions (Carr, 2012; Sandeen, 2013; Voss, 2013b). As online venues have become increasingly interactive with myriad virtual capabilities, Internet-based learning has begun to overshadow former methods of classroom instruction (Cobb, 2010, Frey, 2013, Ripley, 2012). In fact, during recent times, both MOOC course offerings and student enrollments within these programs have rapidly expanded (Allen & Seamans, 2014; Cheal, 2013; Hollands & Tirthali, 2014). To gain a broader understanding of the enormous expansion of online programs since the early 2000s, one need only note the blatant contrast between the Sloane Consortium’s data concerning online learning in 2002 (Allen & Seaman, 2003) as opposed to 2013 (Allen &

Seaman, 2013). The first survey, *Sizing the Opportunity: The Quality and Extent of Online Education in the United States, 2002-2003*, indicated the following:

- "More than 1.6 million students took at least one online course" (pp. 17-18) in the Fall 2002 semester.
- More than one-third of these students were enrolled solely in online courses.
- Among the totality of U.S. higher education students during the Fall, 2002, "11% took at least one online course" (pp. 17-18).

The second survey taken a decade later, titled "Changing Course: Ten Years of Tracking Online Learning in the United States" by Allen and Seaman (2013) reported the following results:

- More than "6.7 million students" (pp. 17-18) took at least one course online.
- "Thirty-two percent of higher education students" presently enroll in "at least one course online" (pp. 17-18).
- "Seventy-seven percent of academic leaders" now view the learning capabilities in online studies "as the same, or superior, to those in traditional classrooms" (pp. 17-18).

Such evidence indicates that growth rates of online courses have flourished, as in the 2001-2002 academic year, course registrations numbered approximately 64,000 individual enrollments, whereas in 2010-11, 97,000 individual enrollments were calculated (Allen & Seaman, 2013). To put this all into perspective, the 2013 Sloan Consortium Report indicates the following:

> The increase from 1.6 million students taking at least one online course in fall 2002 to the 6.7 million for fall 2011 represents a compound annual growth rate of 17.3 percent. For comparison, the overall higher education student body has grown at an annual rate of 2.6 percent during this same period – from 16.6 million in fall 2002 to 21.0 million for fall 2013. (p. 18)

This increasing relevance of online education is further evidenced in data collected over the 10-year period by the Sloan Consortium, as the 2013 report states that at the inception of the

program in 2002, less than one-half of all higher educational institutional leaders felt that online education was a critical component to educational development. That number in 2013 was closer to seventy percent (Allan & Seaman, 2013).

Many chief academic officers at universities agree that MOOCs represent a crucial way for institutions to interpret online pedagogy (Allan & Seaman, 2013), and the combination of vast Internet technology, engaging class sessions, and the availability low- or no-cost courses has enabled the MOOC to become a powerful force in higher education (Carr, 2012; H. Johnson, 2015). A significant contributing factor to the MOOC phenomenon came about because of the innovative work of Salmon Khan in 2006 (Billington & Fronmueller, 2013). Khan's postings of his lectures for friends and relatives concerning mathematical concepts became so popular that he began to produce hundreds of videos for their enjoyment and edification. The key defining disruptive element that Khan introduced to online education was the removal of the *talking head* (the class lecturer), and the implementation of short videos that presented mathematical concepts that were easy to view, with step-by-step tutoring guided by voice-over delivery (Clark, 2013). Khan's new methodology was both revolutionary and instrumental in turning the corner in MOOC-style development of virtual learning.

Andrew Ng (2013), co-founder of MOOC giant Coursera and faculty member at Stanford University, believes that MOOCs are the *Wild West* of online education, and he interprets the changes that this new learning venue is creating from both the instructor and student perspectives:

> Throughout the entire MOOC creation process, educators must constantly be student-focused, figuring out what is the most useful content for their students to experience next…. Through today's technological advancements, online courses are very much alive. They are part of an ecosystem that, if nurtured through community discussion forums, meetups, e-mails, and social media (like Google+ hangouts), can flourish and grow. This allows each class's community to take on a life of its own, with a distinct

> culture that's defined at least as much by the students as the instruction.... Nearly every instructor that I've spoken to has been surprised by the deep desire of students to connect with each other as well as with the teaching staff and professor. (pp. 2-3)

Ng's articulation of the MOOC phenomenon presents both the revolutionary and experimental aspects of this new format, which reflects the tremendous change that this dynamic new educational structure is bringing to the world of higher education.

The success of MOOCs. MOOCs have opened up a *Pandora's Box* of both opportunities and threats to traditional methods of education, and there is a significant reason to believe that the dismantling of institutional knowledge and credentialing from established educational institutions is not only becoming more pronounced, but perhaps, is inevitable (Cheal, 2013; Cooper, 2013; Gaebel, 2013; Perna, Ruby, Boruch, Wang, Scull, Ahmad & Evans, 2014). Peter Stokes' notion that "the fusion of the core elements of land-based education (faculty, curriculum, credentials) is no longer inseparably tied to a single institution" (Mazoue, 2013, p. 2) is increasingly becoming reality. Mazoue (2013) maintains that the evolution of MOOCs as "an alternative to location-bound, proprietary forms of campus-based learning and portals like edX, Coursera**,** and Udacity that host them undermines the individually crafted course model that sustains the college credit monopoly" (p. 2) that has existed until recently. The signs of change are everywhere (Cheal, 2013; Finkle & Masters, 2014; Flynn, 2013; Ripley, 2012), and as Ripley (2012) states, so are the signs of panic, as cash-strapped schools sense the impending impact of MOOCs. In efforts to align themselves with the latest trends, schools such as Harvard and MIT have invested millions of dollars into non-profit MOOCs, offering newly designed courses that enable students to learn more, for less money (Kohli, 2015; Shah, 2015). MOOCs are blazing the trail for free or lower-cost learning by offering increased and accelerated delivery of educational materials through virtual platforms and social networking media across the Internet (Blake, 2014; Bull, 2012; Porter, 2015). The appeal of MOOCs is becoming global, "with no time boundaries, as there are perpetual or

repeated cycle presentations…. No age, nationality, educational or professional prerequisites exist…the only requirement is that the learner has access to the Internet" (Gore, 2013, p. 2).

According to Mazoue (2013), MOOCs speak to the major obstacles facing higher education organizations: access and cost. "MOOC-based degree programs would not only democratize education, but their scalability would help end the unsustainable trajectory of tuition" (p. 2), and therefore serve as a conduit to derail the "cost disease" (p. 2) plaguing most institutions in higher education. Even as MOOCs reduce overall student costs and expand access to education, they are often considered inferior in quality to traditional class settings (Kalman, 2014; Margaryan et al., 2014). This additional challenge identified by Mazoue has been debated by practitioners and scholars alike, but as he states, "Given the pioneering research of Benjamin Bloom and his colleagues…of the three learning conditions – tutoring, mastery learning, and conventional classroom instruction – the least effective was classroom-based instruction" (p. 2). Unlike conventional classrooms, intelligent tutoring and instructional systems such as MOOCs can provide customized feedback and targeted guidance on a more regular basis, and "cognitive tutors and feedback loops can incrementally guide each learner on a personal path toward progressively greater understanding and mastery" (p. 3). Bloom (1968) concluded that the most effective method of instruction "was a combination of one-to-one tutoring and mastery learning, [estimating] that about 90% of students receiving tutoring and corrective feedback can perform at two standard deviations above the average student taught by conventional group instruction" (p. 1). Because MOOCs are digital platforms that personalize learning, they can serve as "educational positioning systems that precisely [help to] navigate students through their curriculum along individual pathways and routes to maximize student success" (Baer & Campbell, 2012, p. 63). MOOCs can be designed, therefore, as "early prototypes of optimized learning environments that continuously improve educational practice through application of the learning sciences" (Mazoue, 2013, p. 3). The structural design of MOOCs would systematically reinforce research-based principles and practices to create

conditions that may be more conducive to student learning than traditional methods. Evidence of the innovation of this new learning platform is realized in the boundless number of courses that have been created or developed since MOOCs burst onto the online scene; for example, *MOOC.list* currently allocates approximately 1,700 courses (MOOC-list.com, 2016). As Hollands and Tirthali (2014) affirm, MOOC design has inspired institutions and faculty members to become more engaged in new curricular activities, which include newer structural schemes such as more frequent assessments, and shorter lectures infused with more focused question-and-answer sessions to ensure heightened student involvement. Leading-edge MOOC development could therefore serve as a motivational force for transitioning from the current archaic model of instruction to more precision-based instructional design. More streamlined and lower-cost MOOCs may also assist in helping to negate the outsized price of higher education, which has skyrocketed 360% above inflationary levels in the U.S. since 1986 (Anderson & McGreal, 2012; Archibald & Feldman, 2010).

MOOC curriculum. A distinguishing feature of MOOCs is the more rigorous structure of the many classes they offer. Students more used to the traditional *lecture and test* method implemented at most colleges and universities are finding a different framework displayed in many MOOC courses (Phan et al., 2015; Toven-Lindsey et al., 2014). As previously mentioned, most of these courses test students as they proceed through the course on an ongoing basis—they are quizzed often, and within very short increments of time (Gore, 2013). This method offers immediate feedback, a feature common with online video games and programs that many college-aged people have not only grown accustomed to, but find attractive (Carr, 2012; Daniel, 2012; Harris, 2015, Ripley, 2012). Researchers have studied different ways the brain learns, and recently many have discovered that the old methods of teaching may not be getting through as effectively to students as they should, perhaps because of the introduction of so many technological devices of recent years that have surely altered the studying habits, and perhaps

even thinking patterns, of younger people. As Ripley states, students have "memorized the information, but they haven't learned it – much to their teachers' surprise" (Ripley, 2012, p. 3).

Student engagement is seen by many, including *Artificial Intelligence* creator Sebastian Thrun, as the secret to the MOOC platform, and up until recently, Internet classes have largely been composed of videotaped lectures, a format that Thrun views as being deficient on many levels (Carr, 2012). Originally, the MOOC structure was based on four major types of activity: (a) students engage in courses through lectures from professors and experts and content derived from the Web; (b) students communicate thoughts on what they are learning via blogs, discussion boards, and online chat; (c) students create original ideas and knowledge; and (d) students publish their ideas, sharing knowledge, through blogs or other online platforms (Davis, 2016). The MOOC classroom, therefore, provides a much more open and connected format that has an emphasis on student-centered learning (Carr, 2012; Gore, 2012), and courses offer more modernized learning techniques as students have the opportunity to pause, play back, skip, and repeat activities so as to be more conducive to their own learning styles, capabilities, and schedules (Cooper, 2013; Pursel, Zhang, Jablokow, Choi, & Velegol, 2016). Quizzes and multiple-choice questions can be administered in the privacy of their own home environment without any judgement from peers, and as Gore states, "Multiple attempts allow the learner the ability to develop [his or her] own knowledge by using the instant feedback given upon the selection of an incorrect answer to assist in deepening [his or her] understanding and ultimately selecting the correct answer" (Gore, 2013. p. 3). Thrun's highly successful *Artificial Intelligence* was built on this structure, inspiring him to establish his own educational startup, Udacity (Carr, 2012). Coursera's pedagogy "is built on a connectivist architecture emphasizing peer-to-peer learning structures," devising a "peer-grading system with thousands of students reviewing and assessing other [students'] work" (Flynn, 2013, p. 153). As previously mentioned, MOOCs have also been instrumental in the development of the flipped classroom, which gives students the opportunity to both access web lectures and become engaged in activities with peers in an

online classroom setting, generally before attending class. Instead of the traditional model of the classroom experience, "where the teacher serves as the repository and transmitter of knowledge" (Brahimi & Sarirete, 2015, p. 604), the learner interacts with other students and peers, and "has flexible access to all information and resources around him [or her] before coming to the classroom" (p. 604). As Brahimi and Sarirete (2015) point out, considering the enormous amount of online educational material now available on the Internet, this method has become a valuable and beneficial way of teaching. The notion of the flipped classroom experience that has given MOOCs an edge over other methods of learning was reinforced by co-founder and CEO of Microsoft, Bill Gates, who praise the method while speaking at the Association of Community College Trustees' leadership meeting in Seattle in October, 2013. Gates also noted that while MOOCs are currently undergoing a period of experimentation, we can learn about their enormous capabilities and potential if people just "jump in and engage" (Bill and Melinda Gates Foundation, as cited in Brahimi & Sarirete, 2015, p. 604).

The advent of Sebastian Thrun's *Artificial Intelligence* class in 2011 was a foundational phenomenon that embraced a newer style of learning and captivated students from afar, signifying the emerging global reach of MOOCs (Gaebel, 2013; Ripley, 2012; Sandeen, 2013). Thrun's plan was to create something groundbreaking; his goal was to have students solve problems by doing, not listening, in a more student-focused, student-centered learning environment (Ripley, 2012). This new design drew more than 160,000 students, and surprisingly, on both the midterm and final tests, students generally scored "a full letter grade higher on average than students had in previous years" (Ripley, 2012, p. 5), and seemed to be learning more effectively when taking the course online in the MOOC format (Carr, 2012, Hoy, 2014; Pursel et al., 2016). Thrun quickly recognized the power of the MOOC phenomenon, and left Stanford to create "his own private educational MOOC called Udacity, with the stated goal of democratizing education by offering it at no cost to students" (Flynn, 2013, p. 153). Udacity, like many MOOC institutions, does not itself offer degrees, but even this may be changing as a

movement has begun to offer for-credit MOOC courses by institutions of higher learning. Coursera's 2013 announcement "that five of its MOOCs had been evaluated by the American Council on Education's College Credit Recommendation Service (ACE CREDIT)" (Gore, 2013, p. 8), recommending it for credit, started the rush to accreditation for MOOCs. The development of MOOC capabilities is, therefore, increasingly becoming an alternative for economically challenged students to find ways to achieve goals in higher education by successfully avoiding the heightened costs of many four-year colleges and universities, while being able to obtain professional degrees from newly accredited institutions. This new iteration of online classes may revolutionize the world of higher education as these courses offer venues that are available to the masses and taught by professors at prestigious universities at low, or often, no cost (Gore, 2013; Sandeen, 2013). MOOC innovation offers a platform that enables individuals "the ability to learn, interact, and collaborate not only locally and globally, but also universally, from anywhere and at any time" (Brahimi & Sarirete, 2015, p. 604); these massive courses offer global reach, limitless participation, and accessibility across the Internet "through a combination of social networking and video podcasts, attracting [an enormous] variety of students of different ages, nationalities, backgrounds, abilities, and interests" (p. 604). As Flynn (2013) states, Coursera has estimated that 60-67% of the students enrolled in their courses are generally from international locations, "opening up a whole new range of possibilities for offering education to the most needy and least served populations in the world" (p. 154). MOOCs can be seen by many, therefore, as being extremely beneficial, especially by people located in faraway countries and/or who may be from disadvantaged economic backgrounds (Barak, Watted, & Haick, 2015; Toven-Lindsey, 2014).

With MOOC providers located in the USA (Coursera, Edx, Udacity), Europe (France Universite Numerique [FUN], Iversity), the UK (Futurelearn), the Middle East (Rwaq, Edraak), and Australia (Open2study), online learners are not tied to any one location, and they are able to complete classroom assignments and projects at their own pace, applying what they have

learned in their studies (Brahimi & Sarirete, 2015). As Brahimi and Sarirete (2015) mention, students have the ability to choose their own courses taught by distinguished instructors from the some of the best universities in the world. This transformative change has greatly affected the landscape of learning modalities and is revolutionizing the ways that academic institutions operate worldwide. According to Brahimi and Sarirete, as of May 2014, Coursera had the largest and greatest range of courses—664 Coursera courses in all categories (Science, Math, Reading, Writing, etc.), working with 109 partners—compared to MOOCs in other parts of the world, and these numbers serve as an indication of both the burgeoning growth of Coursera and other MOOCs scattered across the globe, and the astounding success of the MOOC learning model during the last few years (Young, 2012).

Pedagogical considerations. Advocates of online education, and MOOCs specifically, maintain that open online platforms serve to enhance higher education "by increasing access to educational materials previously reserved for a limited number of enrolled students and by improving instruction through shared materials and the feedback among educators and learners" (Toven-Lindsey, Lozano, & Rhoads, 2014, p. 2). Daniel (2012) maintains that MOOCs can be an essential tool in developing new pedagogy, as courses can be drawn from a pool of open educational resources (OER) available on the World Wide Web, providing students with highly sophisticated and enhanced materials that individual instructors could not create themselves. The MOOC originally emerged with the goal of using a technology-enhanced educational model designed to create a venue for greater accessibility, collaboration, and involvement in the learning process while significantly cutting costs for students and enthusiasts. The pedagogical model that served as the initial basis of MOOCs emphasized the importance of learner control, synchronous sessions with a course facilitator, and the provision of a platform of course activities (i.e., participant blogs, posts, online discussions, external resources, etc.) that could develop a unique and dynamic educational setting focused on participant engagement and collaboration (Toven-Lindsey et al., 2014). A substantial number of

administrators and faculty members, however, remain distrustful that MOOCs are what they are purported to be, and have little confidence that they provide a viable alternative to the traditional campus classroom experience (or even recognized online education platforms) in regard to instruction, student engagement, and access to meaningful learning processes (Schneckenberg, 2009; Toven-Lindsey et al., 2014; Voss, 2013b). Toven-Lindsey et al. (2014) assert that observational research on teaching strategies and learning outcomes is still evolving, yet studies such as Garrison, Anderson, and Archer's 2010 Model for a *Community of Inquiry* in the digital realm of online learning has articulated the need for "social presence, cognitive presence, and teaching presence to facilitate critical inquiry and collaborative learning" (p. 3). This model asserts that online learning should be structured to promote "meaning making and authentic personal interactions" (Toven-Lindsey et al., 2014, p. 3).

The challenge of MOOCs lies in designing curriculum that keeps students motivated to learn and creating a connective environment that enables them to deepen their understanding of course subjects while learning from each other (Barak et al., 2015; Phan et al., 2015; Toven-Lindsey, 2014). MOOC designers can work collaboratively to provide diverse communication platforms "for the 'networkers,' who desire to be part of a community of people with similar interests…[and] for the 'problem-solvers,' who seek to find a solution to a specific [problem], …or [they] can design open assignments that present real-world problems" (Barak et al., 2015, p. 59). Some ways that MOOCs are expected create improvements to educational outcomes include the following provisions:

- Instant feedback generally available to course participants
- Adaptive learning, personalization, or mastery-based learning
- Flipped classrooms with MOOC-designed content
- Motivation for instructors to rethink and adapt pedagogy
- Redesigned traditional courses that include MOOC strategies
- Use of MOOCs in K-12 schools to better prepare students for college

- Refinement of instructional materials (Hollands & Tirthali, 2014)

While the development of effective teaching strategies for MOOCs is essential, this new format presents new challenges for designers, instructors, and students. Therefore, a "critical analysis of the pedagogical practices used in MOOCs is both timely and instructive," and as current research has shown, "ongoing evaluation, feedback from users" (Toven-Lindsey et al., 2014, p. 3), and attention to pedagogical strategies is crucial to the continued development of open online education.

Complications. MOOCs are not without shortcomings; most notably, among the numerous students who sign up for MOOC classes, only about 10% finish them, on average (Brahimi & Sarirete, 2015; Konnikova, 2014; Margaryan et al., 2014). Many never even begin the course after registering, and as Hoy (2014) claims, even if students do complete their work, they may not have effectively mastered the material. San Jose State University recently curtailed its MOOC initiative after it was realized that most of the students enrolled in the courses failed their final exams. The stark reality of online education, and MOOCs in particular (due their sizeable student populations), is that students must stay highly motivated and persevere to complete their studies; often this dedication wanes with the absence of a live instructor or an actual classroom.

There is also no way for professors to be sure that the student whom he or she is grading is the person who is actually completing the work (Gore, 2013; Piech, Huang, Chen, Do, Ng, & Koller, 2013; Ripley, 2012). Plagiarism is therefore a major problem (as is the possibility of cheating), and in response to this, Coursera has added an *honor code* in efforts to cut down on both plagiarism and cheating (Coursera, 2016). Additionally, many people discount the actual learning taking place in MOOC courses, when often it is students' peers rather than their professors who are grading the assignments (Webley, 2012). With declining retention and completion rates and an inability to accurately assess student learning, MOOCs still have design problems that need to be addressed to avoid certain pitfalls, but as Kirschner states,

“You have to live under a rock not to know that crushing student debt, declining state support and disruptive technologies have made it imperative to look at new models for teaching” (Skiba, 2012, p. 3).

Even now, many universities do not grant credit for completion of MOOCs (Billington & Fronmueller, 2013; Porter, 2015). Often, the certificates given for course completion may or may not come from the university offering the course. As previously noted, some Coursera courses provide certificates from various universities, and The American Council on Education (ACE) has reviewed five MOOC courses for credit- worthiness (Coursera, 2016). As previously stated, Coursera recently announced that 10 universities will incorporate MOOCs in on-campus and online courses; however, Billington and Fronmueller (2013) report that a number of faculty from elite and prestigious universities have serious reservations about the use of MOOCs. As Massive Open Online Courses are being touted as a new form of online learning, MOOC designers should adhere to the First Principles of Instruction to ensure that the following components are included when creating classes as summarized subsequently:

- *Acquisition*. Learning is enhanced when students acquire skills in the context of real-world problems and scenarios.
- *Activation*. Learners must activate existing knowledge as a foundation for the development of new skills.
- *Demonstration*. Learning is enhanced when students are able to observe the demonstration of a new skill to be learned.
- *Application*. Learners acquire a deeper understanding of concepts when encouraged to apply their newly learned skills to solve real-world problems.
- *Integration*. Learners gain broader perspectives on the learning process by reflecting on, discussing, and defending their newly acquired skills (Merril, as cited in Margaryan et al., 2014).

Merril's (2002, 2013) meta-review speaks to the importance of including these elemental principles in all contemporary instructional and educational design models and theories, as the instructional design model of MOOC courses is a key component of the overall quality and pedagogical effectiveness of the learning experience. By providing a compelling, relevant curriculum model and environment (Carr, 2012; Harris, 2015; Toven-Lindsey, 2014), MOOCs have the potential to be groundbreaking in their educational value, and would benefit from the inclusion of these instructional design principles.

Resistance to innovation. Many administrators and faculty alike are resistant to change, and the advent of online education has often created push-back from education professionals who either are intimidated by new technical innovations, or unconvinced of their far-reaching capabilities (Howell, Saba, Lindsay, & Williams, 2004; Schneckenberg, 2009; Voss, 2013b). Schneckenberg (2009) states that it is incumbent upon educational leaders at universities and colleges to motivate faculty members to become actively involved in institutional innovation. Academic staff members now face new pedagogical challenges as they initiate learning environments that address the changing needs of tech-savvy students. Many faculty members are slow to adopt e-Learning competencies and, as Schneckenberg asserts, "a critical mass of academic teachers still lacks the competence that enables them to know and to judge why, when and how to use ICT [Information and Communication Technology] in education" (p. 413). Technological trends are disruptively altering teaching and learning methods, and as is often the case with rapid advancements, time is of the essence, as those who do not act quickly are often left behind. Faculty members must understand the power and scope of online learning and its possibilities as a new approach to pedagogy (Howell et al., 2004; Mazoue, 2013). Academic administrators, including chairs, deans, provosts, and presidents, must recognize the coming changes and condone a proactive response (Voss, 2013a). As Voss (2013a) implies, much of what has been accomplished through technological means in higher education has simply been to use these new advancements to streamline methods to deliver online courses;

however, these new advancements are now not only shaping the learning process itself, but re-engineering it. Voss asserts that the true challenge facing educational institutions today is this reorganization of the learning process and structural changes driven by rapid technological advancement, and the emergence of MOOCs has only accelerated that challenge. As Vice President and CIO at the University of Maryland's flagship campus in College Park, Voss shares the following perspectives:

- "It will take a significant investment in 'humanware' over the rest of this decade to transform the way teaching is delivered—either blended, totally online, or somewhere in between" (p. 7). Many people from other departments will be required to provide support, from course designers to media specialists.
- Educational organizations must lead the change. Provosts, deans, chairs, and faculty members must all adapt to the changes that online learning will bring; the alterations to course curriculum cannot be viewed as an "IT" (p. 7) problem, but must be dealt with on a campus-wide basis.
- Whether or not online learning and MOOCs actually improve learning outcomes, Voss maintains that this discussion is purely academic—and not relevant. What's important is that faculty and administration members work together to provide a relevant and modernized curriculum that offers state-of-the-art educational learning platforms.

Voss also recommends that leaders of these organizations consider several more pressing actions, including the following:

- Become thoroughly engaged in the development of MOOC programs, adaptive learning systems, and emerging technologies so as to ascertain a long-term strategy for curriculum design and degree programs.
- Become familiar with and "analyze business models for revenue-generating, free, and partnered courses" (p. 8) while also acknowledging and including costs for campus services and learning systems.

- Provide material and monetary support for online course production, including "instructional design, media development, assessment, and analytics" (p. 8)
- Ensure "IT readiness" (p. 8) to implement updated and modernized educational software that is effectively connected to campus information systems, and compliant with campus procedures.

Voss (2013a) warns that "no magical wand can be waved that will make all this change easy and quick" (p. 9). He maintains that the process must be *resource-intensive*, meaning that not only will investments in IT and infrastructure be necessary, but also investments in human capital—the people across all strata of the university setting who must all help in guiding the transition. Voss emphasizes that "there will be a direct, proportional relationship between the investment in human capital resources and the quantity and speed of change at an institution" (p. 9). He believes that it is naïve to think that any of this can be done quickly or cheaply, and if an institution is considering making the transition to online and MOOC courses, it should carefully weigh the circumstances that are incumbent, including examining the investments that others are making in the transition to online learning platforms. This may involve millions of dollars and thousands of man-hours to accomplish. Voss poses some important questions to consider if the decision is made to go forward with changes to online venues, which include the following:

- What types of online experiences will be important to consider when crafting together adaptations to current models, or creating new ones?
- What will the scale for these new courses be? Will there be a focus on massive courses as opposed to normally-scaled ones? How will these courses be offered—as whole programs, or with a course-level focus? Will they be for-credit and fee courses, or non-credit and free courses?

- What objectives must be addressed to achieve online curriculum and programming? What must be implemented "strategically, tactically, and operationally" (p. 9) to attain success?
- What types of partners might make this change possible, effective, and swift?
- How soon can these changes be implemented? What obstacles stand in the way of rapid development of these online programs?
- Should this project be placed under the leadership of a central leader—perhaps "a vice provost or special assistant to the president" (p. 9)?
- What may be "the ramifications of a more central approach to IT infrastructure and services" (p. 9)? To what extent can staff members assist faculty "in the redesign or reengineering of pedagogy" (p. 9)?

Effective Leadership and Change Strategies

Effective leaders have been found not only to be responsive to change, but to proactively drive change: a quality that usually involves continuous creativity (Puccio, Mance, & Murdoch, 2011). Many people are resistant to change, as they would rather deal with the status quo than face the unpredictability that change often brings, with its inherent challenges and opportunities (Kotter & Schlesinger, 1979; Rivera, 2011). To address problems and seize on advantageous opportunities, leaders must embrace change by employing their creative skills in finding alternative solutions to pressing problems. Attributes of some top leaders include "an insatiable appetite to develop new insights, explore new ideas, and entertain new challenges, while continuously pushing the boundaries of their own self-knowledge" (Puccio et al., 2011, p7).

Such sweeping change that programs such as MOOCs invite often require strategic thinking and innovative leadership, and Mumford, Zaccaro, Harding, Jacobs, and Fleishman (2000) conclude that creative problem-solving skills are of vital importance to leadership effectiveness. Sternberg (as cited in Puccio et al., 2011,) states that creative intelligence

"allows leaders to form a vision—to decide where they wish to lead others" (p. 17), and Mumford et al. fortify that notion by maintaining that the main bulwark of leadership is to solve problems. Leaders need to take a proactive approach to problem solving by acting on new opportunities and devising methods to continuously improve existing situations and, as Puccio et al. (2011) maintain, using creative ideas as a means to support forward thinking. Creativity means having the ability to be open-minded, and leaders who use their creative thinking skills to perceive *the big picture* develop visionary qualities that often lead to great success. When predicaments and opportunities arise, effective leaders must visualize solutions, a process which is greatly realized through the purposive application of creative thinking. Cohen (1971) and Presseisen (2001) outline four complex thinking processes that are often used by those who intend to lead creative change: problem solving, decision making, critical assessment, and creative thinking (Cohen, as cited in Puccio et al., 2011). According to Puccio et al., creative leaders generally use these four capabilities to craft together strategic plans for the betterment of their organizations. By employing these four analytical processes, leaders can remain open to new ideas, *paint on a broader canvas*, and discard criticism of original ideas until they are more fully developed.

Culture plays a strong role in shaping ways that employees regard their company environment and the work that they perform in the following ways: in influencing their perceptions of actions taken by others, especially superiors; in dealing with expectations they have regarding any alterations in their work duties; and in defining their appetency to lead, be productive, and choose the best course of action for daily job-related tasks and activities (Mgbere, 2009; Schein, 1990). Positive cultures generally create workplace environments that encourage employees to make ethical decisions for the good of the company and its customers. Organizational culture is representative of the commitment of an organization's members to the institution and assumes acceptance of its goals and values and the exertion of a conscientious

effort by employees on behalf of the organization, while retaining a strong desire to remain members of it (Mowday, Steers, & Porter, 1979).

University leaders have quickly realized that online education is becoming a force to be reckoned with, and the inclusion of online programs, which often involves additional cost, training, and technological capability, eventually has to be addressed (Anderson & McGreal, 2012; Britt, 2015; Sheehy, 2013). Organizational leaders will often utilize a variety of tools or programs to assess their individual company's ability to successfully meet shifting trends or threats, and one of these methods is a process known as *environmental scanning*. Environmental scanning "is a process that systematically surveys and interprets relevant data to identify external opportunities and threats" (Society for Human Resource Management, 2012, p. 1), whereby an organization essentially collects information about the external surroundings, its competitors, and itself. Through careful observation of an organization's internal and external composition, business leaders can identify early signs of both opportunities and threats which may help direct their current and future plans. By focusing on competitors, trends, external threats, and internal strengths and weaknesses, organizational leaders can sharpen their perspective on the state the company is in currently, and where it aims to be five or ten years hence. Because of the rapidity of change in today's marketplace and innovative emerging business practices, organizations can fall behind if their members do not stay informed of changing technology and regulations, or recent trends (Albright, 2004). Environmental scanning can greatly reduce the chance of being blindsided by such emerging trends, and in rapidly shifting environments, one good rule of thumb applies – *if one doesn't adapt, one doesn't endure* (Dalton, 2011).

The SPELIT Power Matrix method of environmental scanning encompasses the social, political, economic, legal, intercultural, and technological aspects of organizations (as the acronym implies), and is applied in attempts to analyze the varying factors that affect a company's overall sustainability in the competitive marketplace (Schmieder-Ramirez, & Mallette,

2015). Questions that may be addressed may include the following: Who are your leading competitors? What are their products and services, and how do they compare to what your company offers? What market segment are you targeting? What are your competitors' strengths and weaknesses? What are your own? What economic or technological trends may affect your business (Schmieder-Ramirez, & Mallete, 2015)? The starting place, of course, for the thorough analysis of the organization in question is to ascertain the current state of the business, and to become aware of the coming trends and developments that may benefit or negatively affect the company. SPELIT involves an exhaustive retrospect of six categories affecting a business's affairs, and can be stated as such: the social environment, which involves people-to-people interactions; the political environment, which revolves around power; the economic environment, which examines production and consumption of resources; the legal environment, which involves contracts and law-related matters; intercultural issues, which consider factors of collaboration in global environments; and finally, the technological environment, which explains the advancements of the scientific revolution (Schmieder-Ramirez, & Mallete, 2015).

First and foremost, the university leadership must adapt to the changing technological environment to stay apprised of its competition in higher education (Helmi, 2002; Keengwe & Kidd, 2010; Noble, 2016). As was noted earlier in this study, enrollment in online college courses has exploded in recent years, as "more than 6.7 million students—32 percent of total higher ed enrollment—took at least one online course through a university during fall 2011, up from roughly 6.1 million students the year prior" (Sheehy, 2013, p. 1). The rapid expansion of online learning supports the need for quality, adaptive educational programs "that meet the needs of our 21st-century workforce" (p. 1), says Todd Hitchcock, senior vice president of online solutions at Pearson Learning Solutions, and schools are responding to that demand overwhelmingly. As studies indicate, colleges and universities that wish to stay competitive must embrace the tremendous educational shift that online learning presents, and anticipate the

coming change so as to stay relevant (Hollands & Tirthali, 2014; Keengwe & Kidd, 2010; Noble, 2016).

The *social* analysis of SPELIT, or the study of people's behavior in various group settings, is articulated in the relationship between faculty members themselves, and between faculty members and administrators of the university as it pertains to the implementation of new organizational changes (Schmieder-Ramirez, & Mallete, 2015). As faculty members embrace the possible integration of online courses at their learning institutions, it is possible that some of them have already had experience teaching them (McCauley et al., 2010). For those who have already taught virtual classes, the incorporation of online learning is most likely a welcome change and one that they believe can be easily accomplished, especially as it can be included with on-site classes to offer a more dynamic and broadened experience for students. Many technology enthusiasts who have been experimenting on their own, delving into online learning programs and entering MOOC materials into their courses with the belief that online capabilities greatly increase student interest, often provide to the educational experience added vitality and reach that the brick and mortar institution alone cannot deliver (Hollands & Tirthali, 2014; McCauley et al., 2010).

Of course, the alternative of this argument signifies that there are many professors who, for a variety of reasons, are not receptive to the online transition (Schneckenberg, 2009; Voss, 2013a). Some are older and do not feel as at home on a computer as some of their younger colleagues, and the thought of teaching an online course is daunting and disorienting. Some of these professors feel that the classroom experience is diminished by the online format, at once cheapening it, and shortchanging students who miss out on the opportunities of attending an actual class with classmates and instructors who are present in-person. Many professors also maintain that the learning experience is plagued by less accountability, and tasks such as test-taking and essay-writing become an exercise in futility as students can easily cheat or dodge responsibilities by taking advantage of the virtual environment (Covington, Petherbridge,&

Warren, 2005; Furco & Moely, 2012; Maguire, 2005). Salary cuts are also an issue, as online instructors are often seen as part-time workers, and paid as such, and the prestige and respect that is generally allotted education professionals sometimes dissipates (Mitchell, Palacios, & Leachman, 2014). The cultural aspect of organizational relations would therefore need some attention to ensure that instructors who are mistrustful or fearful of such change are provided the necessary training and guidance for the transition, and not subject to reduced hours or salaries as a consequence of the new online presence.

The *economic* component of the SPELIT model takes into account an organization's production capabilities and consumption of resources (Schmieder-Ramirez, & Mallete, 2015). With the rising influx of fully online colleges and universities, traditional schools that do not include an online component may face increasing pressure to do so (Cobb, 2010; Frey, 2013; Miah, 2015). Often, the technological hurdle of implementing an online component can be substantial, as it may involve new training and greater computer access for instructors, and cost for laptops—not to mention the hiring of course developers and web designers (Britt, 2015; Helmi, 2002). IT Departments are generally established for the inclusion of online programs with greater capabilities, and the infusion of personnel who would be able to offer 24-hour assistance to students for their online needs. Transitioning to online venues could also add additional obstacles and costs; older, more established professors who may not embrace the online environment might resign, and younger, more tech-friendly instructors would be needed to be hired as replacements (Covington, Petherbridge,& Warren, 2005; Furco & Moely, 2012; Maguire, 2005).

Colleges and universities must be well-informed of developments that enhance educational opportunities, and as difficult as it may be to stay current with all of the recent technological advancements, it is critical that educational leaders strive to offer the best and most up-to-date learning methods to an ever-changing student population (Britt, 2015; Van Der Werf, & Sabatier, 2009). Analytical tools such as the SPELIT Power Matrix Model can be used

to determine environmental issues that may have a positive or negative effect on efforts to achieve this strategic change, and analysis of organizational learning, communication, and culture as viewed through the SPELIT prism can provide a deeper understanding of the issues involved. Inspirational leaders who feel passionately about the vision and mission of an organization can create a more compelling future by building strong personal relationships, cultivating individual talents, facilitating team success, and finding the unique value of each individual. Educational leaders who strive to adapt and modernize their learning institutions must ensure that all members of the organization are included in the strategies to achieve such change.

Approaches to change. Of course, one of the major sticking points of organizational change is resistance to that change, which is a common phenomenon that can afflict both individuals and organizations (Cheal, 2012; Finkle & Masters, 2014; Schneckenberg, 2009). A number of common reasons for this resistance can include many variables, including a lack of trust in the organization or its leaders, a belief that change is unnecessary, economic threats, perceived costs, loss of status or power, or even a fear of failure (Covington et al., 2005; Schneckenberg, 2009). Stages in the change process are put forth in Lewin's Force-field Model, which states that the change process is generally divided into three phases: "unfreezing, changing, and refreezing" (Yukl, 2006, pp. 285-6). *Unfreezing* signifies that people face the reality that old methods of doing things are no longer working, the *changing* phase occurs when people search for new ways of doing things and choose the most promising approach, and the *refreezing* stage comes about when the new approach is tested and becomes established if proven effective. Lewin asserts that all three phases are important if successful change is to occur (Yukl, 2006).

Types of changes invariably involve some or all of the following: change in roles, change in attitudes, changes in technology, and changes in competitive strategy and/or internal changes, both economic and organizational (Yukl, 2006). To move forward, learning institutions

must embrace all of these change strategies in attempts to adopt the Force-field Model that Lewin suggests. To streamline operations, it may also be wise to implement Kotter's Eight Step Plan for Implementing Change that specifically states ways to successfully restructure business methods when organizations go through metamorphosis (Robbins & Judge, 2007). Kotter's Plan outlines essential tools to strengthen management practices and implement change, which are listed as follows:

- Create a sense of urgency by emphasizing a compelling need for change.
- Form a powerful coalition to lead change.
- Adopt a new vision and strategy to drive change.
- Communicate the Change Vision
- Encourage others to act by supporting risk-taking and creative problem-solving activities while simultaneously removing obstacles to change
- Generate short-term wins
- Consolidate change and produce more change
- Anchor new approaches in the culture (Robbins & Judge, 2007).

A critical component of organizational change is trust in the leadership (Kotter & Schlesinger, 1979; Voss, 2013a). By invoking a measure of trust and openness from the top rung of the administration, school leaders can effect change on a significant level and avoid some of the grumbling among employees that disruptive change can bring. Through the implementation of frequent training sessions, meetings, guidance from department heads, and cross-functional teamwork, administrators can keep communication between departments open, and thereby reduce the fears that employees and instructors may have (Howell et al., 2004; McCauley et al., 2010). Recruitment of a team of specialists who could quickly upgrade existing systems of operations to include a functioning online platform would also help support the necessary expansion (Voss, 2013a). Training sessions, and department support and guidance could greatly help increase computer knowledge and skill levels, thereby allaying fears while

encouraging instructors and professors to embrace the new change to online instruction. Regular meetings to assess progress on achieving this transition would also be highly recommended (Howell et al., 2004; Voss, 2013a). Instead of resisting the onslaught of modern technology in the classroom, teachers would, by contrast, most likely feel a sense of empowerment as these new skills would increase their level of competency while adding a virtual dimension to their instruction. Some motivating factors would include higher student enrollment, lower dropout rates, more availability of classes to teach, and greater job security, since the university's online expansion would enhance its status and sustainability. As there is a growing need for flexibility of educational options, different educational environments must be established to suit the diversity of today's student base (Howell et al., 2004; Hollands & Tirthali, 2014).

MOOCs: Friend or Foe of Higher Education?

According to Flynn (2013), MOOCs are representative of a classic phenomenon—*disruptive education*—and may prove to be a threat to higher education, or conversely, go the way of other educational relics and simply disappear. Cheal (2013) maintains that some educators fear that the MOOC model is so revolutionary that it may change the current system of higher education in its entirety. MOOCs, however, may serve to simply offer an educational alternative to traditional methods of learning by opening up a whole new realm of opportunity, making education available to masses of people who would never have attended college, either because of cost or location. As Cheal implies, creating MOOCs and MOOC-related materials for credit has expanded the scope of higher education to include improved online course pedagogies while opening up learning to a much wider audience (2013). Universities will now have a greater responsibility to investigate new educational models brought about by advances in technology, disruptive as they perhaps are. Miller maintains that disruptive technological innovation "has the power to change civilization's culture and its institutions, including higher education" (Miller, as cited in Flynn, 2013, p. 150); therefore, it is no wonder that university

leaders view this new change with trepidation, as it is likely that the MOOC will be a key player in the restructuring of higher education.

What may this reorganization look like? A recent study by Columbia University states that "MOOCs will not fundamentally reshape higher education, nor will they disappear altogether" (Kolowich, 2014, p. 1). The Columbia researchers feel that more likely, MOOCs will "evolve to more closely resemble regular online courses, with some elements—such as one-on-one tutoring, estimable credentials, and qualitative feedback on assignments—available at a price" (Kolowich, 2014, p. 1). As Garrison (2009) implies, "technological advances are the basis of modern distance education methodologies" (p. 96), and computers provide a unique opportunity for relevant interactions between members of a collective learning experience, serving to enrich both the class experience and the overall environment. Despite what some believe, MOOCs may not prove to be the leviathan that many higher education leaders believe they are; for instance, at the present time, as Salerno posits, many MOOCs have a fatal flaw in their design—the terms *Massive* and *Open* "are not always compatible with selectivity, which is what fuels quality" (Salerno, 2012, p. 1). According to Salerno, accredited and degreed educational institutions generally have tremendous quality controls built into their programs (2012). Nonetheless, he says that the collectivist nature of MOOCs will strongly affect future considerations in curriculum design, and as higher education assimilates the influence of social media and other available technological advancements into its learning platforms, we will undoubtedly notice changes in the way that students are educated, with a movement directed toward a more connectivist approach to curricular design (Salerno, 2012).

Consternation concerning MOOCs among higher education leaders may abate if colleges and universities become more imaginative in their strategies to deal with them (Covington et al., 2005; Howell, 2004; Voss, 2013a). For example, Finkle and Masters state that some schools may decide to invest in more online and/or hybrid classes, enabling them to compete with MOOCs while also reinforcing their organization's core competencies (Finkle &

Masters, 2014). Others "may want to develop deep educational alliances with other institutions, [whereby] schools can share curriculums, either physically or virtually" (Finkle & Masters, 2014, p. 8). Some schools may find it necessary to formulate cost-reduction strategies which could serve to attract students on a greater basis. Colleges and universities could also form strategic alliances with industry. For instance, Murray State University has created alliances with local businesses to "focus on retooling their engineering programs" (Finkle & Masters, 2014, p. 9). Finkle and Masters also point out the fact that education models in subsequent years may be based on competency exams, and competency-based education often has a positive impact on people who may not be able to afford a four-year degree, but who can find alternative forms of education for free, or at a reduced price through MOOCs (2014). MOOCs can also be viewed as a potential source for revenue for cash-strapped universities, despite the costs to implement them. Hollands and Tirthali (2014) outline some of these revenue streams below, which may include the following:

- Granting credit for MOOC completion while charging tuition.
- Establishing new fee-driven courses and programs.
- Including MOOC participants in existing, full-tuition programs.
- Increasing class sizes.
- Charging "licensing fees for use of MOOC materials or data by other institutions" (p. 10).
- Charging "fees for additional services offered to MOOC participants" (p. 10).
- Obtaining increased grant revenues.
- Providing training for employers.

MOOCs are often advertised as being low cost, or in some instances, free of cost; however, that may be changing (Marklein, 2012; Young, 2012). As MOOC platforms are not inexpensive to initiate, colleges and universities may begin charging for these types of courses and, as noted above, there are ways that schools can begin earning a revenue stream through

the offering of these courses. At the University of Oklahoma, for example, "[Twenty] credit-bearing, online courses have been developed with on-campus students as the primary audience in a flipped classroom model. These courses carry the same credits as the university's traditional courses and charge the same tuition" (Hollands & Tirthali, 2014, p. 10). Administrators at universities and colleges should work with faculty members and their unions to strategize ways to incorporate MOOC engagement into curriculum for the benefit of both the schools and the student population.

Summary

As available literature shows, student access to education will only further expand in light of recent technological advances. MOOCs are an integral part of that expansion, and they can "be a benefit for all of society as not only do students receive top of the line instruction at a fraction of the cost, but the whole world has access to some of the best educators" (Finkle & Masters, 2014, p. 9). Finkle and Masters maintain that traditional in-person methods of instruction at higher education institutions will not necessarily disappear altogether, and MOOCs will most likely "only complement the existing traditional model of higher education" (p. 9). Others maintain that MOOCs may spell the demise of traditional methods of education by their very design, which outpaces the campus classroom model and offers an expansive network of possibilities as vast as the Internet (Carr, 2012; Cheal, 2013; Flynn, 2013). As is noted throughout this chapter, the development of MOOCs has had a substantial impact on higher education, and it has become abundantly clear that college and university leaders must work diligently to stay current on technological advancements and trends that can deliver the latest and best learning methods in the advancement of education. The MOOC design and structure use the most advanced and innovative educational technology to create global learning platforms that minister to today's increasingly tech-savvy population of students and young professionals. Some methods to streamline existing online learning platforms to include MOOCs that are outlined in this chapter can certainly be of help to administrative and faculty

members, and visionary educational leaders who are adept at anticipating impending change by altering and improving curricular and virtual design have an increased ability to meet the challenges of technological and andragogical advancement that MOOCs represent from a more enlightened vantage point.

Even if MOOCs are only a passing phenomenon, they give us an indication of where the future of higher education might be headed. Digital communication is changing our world more rapidly than any other innovation in recent history, providing significant educational and training opportunities that were non-existent a mere decade ago. The changes in higher education that emerge from iterations of online communication capabilities will probably involve a wide variety of forms, but as MOOCs demonstrate, “disruptive innovation is becoming – or perhaps has become – the new normal” (Flynn, 2013, p. 161). Higher education leaders must therefore adapt to this new prodigy, or traditional institutions of higher learning may lose their relevance and suffer the consequences as the online technological boom moves forward.

Chapter 3: Research Design and Methodology

The overall aim of this study was to explore the impact of the MOOC phenomenon on traditional higher education institutions and assess ways that college leaders can adapt to this coming trend of immersive, virtual education by both including MOOCs into their curriculum, and making these courses more accessible to their students. This chapter describes the methodology, overall research design, and procedures implemented to collect data and explore personal insights that were obtained during the course of this study. This section outlines an introduction to the problems addressed and an understanding of the desired outcomes of the study while also articulating the nature of the study, participant selection methods, and interview and data- collection procedures. In addition, personal biases of the study are addressed, and data analysis used to interpret results of the study is also defined. The overall plan of this investigation is outlined in subsequent pages and summarized at the end of this chapter, emphasizing the methods that were implemented to successfully answer the research questions posed, and complete the purpose of this study.

Re-Statement of Research Questions

The study was designed to ascertain answers to the following research questions:

- RQ 1: What challenges have you encountered in making the transition to MOOCs?
- RQ 2: What strategies have you implemented to meet the changes brought on by Massive Online Open Courses?
- RQ 3: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation?
- RQ 4: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ?

Nature of the Study

Creswell (2013) notes that the term "research design" (pp. 49-50) refers to the overall procedure for conducting a particular study, and outlines five methods to performing qualitative research: narrative research, phenomenology, grounded theory, ethnography, and case studies. Narrative research focuses on the exploration of the life of an individual; phenomenological study attempts to understand the essence of a shared experience among individuals; grounded theory places emphasis on data collected in the field to formulate assumptions; ethnography interprets information as it affects a culture-sharing group, and case study focuses on creating an in-depth analysis of a case, or multiple cases. As Carnaghan (2013) implies, researchers who conduct any kind of studies that adopt qualitative methods should be sure to contemplate philosophical assumptions as well as interpretive frameworks. Carnaghan asserts that investigators who undertake qualitative study are "in effect agreeing to its underlying philosophical assumptions, while bringing to the study their own worldviews that end up shaping the direction of their research" (p. 1). This common thread provided by a philosophical overview is also embedded within interpretive frameworks that qualitative investigators use in their studies (Creswell, 2013). The four philosophical assumptions that support qualitative study are as such: (a) ontological, as researchers embrace the nature of reality, and report on this reality through the exploration of evidence and individuals' perspectives; (b) epistemological, as researchers examine the subjective experiences of people to enhance knowledge; (c) axiological, as the investigator brings values to a particular study, but as a qualitative researcher, he or she makes those values, and any biases, known; and (d) methodology, which describes the actual method (inductive, emerging, etc.) used in the research project as it is shaped by the investigator's experience obtaining and analyzing data (Carnaghan, 2013; Creswell, 2013). The interpretive frameworks are characterized by Carnaghan as being "a basic set of beliefs that guide action" (p. 1), and can be defined as the following: (a) positivism, or utilizing a social science theoretical lens; (b) social constructivism, whereby the researcher

seeks a wide range of viewpoints from which to gather knowledge; (c) transformative, emphasizing the experience of marginal groups of people, and recommending an action plan that may help these people in some way; (d) postmodernism, a concept that implies that negative conditions can be unearthed in the presence of hierarchies, power, and control by individuals, and through the use of language, which must be deconstructed to arrive at true meaning; (e) pragmatism, a concept that emphasizes the use of methods that are effective in a variety of circumstances; and (f) critical race/feminist/queer/disability theories, or a focus concerned with the empowerment of individuals to transcend societal constraints placed upon them (Carnaghan, 2013, Creswell, 2013). Creswell maintains that these interpretive frameworks may draw from social science theories (leadership, attribution, political influence and control, etc.) in shaping the investigator's theoretical outlook in research study, or may be more closely aligned with social justice theories, which often attempt to forge change or address social issues as the study is conducted (Carnaghan, 2013).

Creswell (2013) highlights the strengths of qualitative research by stating, "We conduct qualitative research when we want to empower individuals to share their stories, hear their voices, and minimize the power relationships that often exist between a researcher and participants in a study" (p. 48). He maintains that the best qualitative studies "present themes in terms of exploring the shadow side or unusual angles" (p. 54), signifying that this type of inquiry can help researchers delve deeper into topics because of their understanding of people's personal shared experiences of a particular phenomenon, creating a richer context than mere data alone can provide.

Qualitative research has also been noted to have some possible deficiencies. As Norris (1997) states, "Researchers are fallible. They make mistakes and get things wrong. There is no paradigm solution to the elimination of error and bias…. Different forms of research may be prone to different sources of error, but clearly none are immune" (p. 173). Norris expands on

this notion by listing the following shortcomings of qualitative research and possible bias to this type of inquiry, some of which are stated below:

- The researcher can be reactive in biased ways towards providers and consumers of information.
- There can be selection bias that affects the researcher's choice of times, places, people, etc., and interpretation of what is important, and what is mundane.
- There can be a disconnect between the availability and reliability of sources and types of data.
- The aspect of the relationship between the investigator with certain types of people, and his or her affinity with data, concepts, theories, or explanations can cause possible bias.
- The personal strengths and weaknesses of the researcher as pertains to his or her "knowledge, skills, methodological strengths, [and] capacity for imagination" (p. 174) can become an issue.
- The personal makeup of the researcher, including his or her "capacity for concentration and patience; tolerance of boredom and ambiguity; [and] need for resolution, conclusion and certainty" (p. 174) can possibly alter results.

Creswell (2013) also identifies certain biases that a researcher must try to avoid, one such being that a person's viewpoint can be skewed as he or she recounts a personal story for use in a qualitative study. Creswell (2013), however, outlines many of the strengths that can be attributed to qualitative study, and notes elements of "good" qualitative design below:

- The researcher ensures that rigorous data collection procedures are in place.
- The investigator "frames the study within the assumptions and characteristics of the qualitative approach to research" (p. 53).

- The researcher utilizes one of the five approaches to qualitative inquiry previously noted: narrative research, phenomenology, grounded theory, ethnography, or case studies.
- The researcher maintains a single focus or concept in the exploration of a particular topic.
- The study "includes detailed methods" (p. 54) and a "rigorous approach to data collection, data analysis, and report writing" (p. 54).
- The documentation is clear, concise, engaging, and original.
- The study is reflective of the researcher's own "history, culture, and personal experiences" (p. 54), as all of these aspects help to shape the overall design of the project.
- The study is ethical in nature and execution.

So as to gain a clearer understanding of the advent and impact of MOOCs on higher education in recent years, the researcher chose a phenomenological research design (Butin, 2009; Creswell, 2014; Roberts, 2010), which incorporated qualitative data while considering historical perspectives concerning these more advanced learning forums in efforts to pinpoint the most current trends and possible impending threats that MOOCs may present to traditional and online education. The phenomenological framework can more thoroughly outline the "human experience" (Creswell, 2013, p. 76) of administrative and faculty members who are currently adapting to the arrival of MOOCs, with a focus on "what" (p. 76) they have experienced, and "how" (p. 76) they have experienced it, to gain an understanding of ways that MOOCs can be accepted and effectively incorporated into course curriculum throughout higher education institutions.

The qualitative aspect of the study, therefore, highlights the *lived experiences* of administrators and faculty members at traditional higher education facilities—more specifically through a phenomenological lens—and historical data informs the study of the most recent

developments of MOOC activity in the online learning environment overall. As noted by Creswell (2014), researchers can use data found through qualitative methods to assess emerging methods and trends through the use of open-ended questions and data culled from interviews, observations, documents, and audiovisual sources, all of which can be further used to interpret overall patterns and themes to the study. The researcher conducted the study largely through a "pragmatic" (Creswell, 2014, p. 11) worldview, which stresses the notion that "truth is what works at the time" (p. 11). This overview seemed to be the wisest choice, considering the highly unpredictable world of online education—MOOCs, in particular—and its rapidly shifting fluctuations and trends. This pragmatic worldview was interpreted through a constructivist lens, which emphasizes the study of interactions among individuals through a phenomenological framework, to inductively generate "a theory or pattern of meaning" (Creswell, 2014, p. 8) derived from the shared experiences of the participants involved in the study as obtained through interviews and information-sharing documentation. By assessing the interpretations of individuals working in higher education who have experienced the phenomenon of online education and MOOCs, the researcher hoped to gain a broader understanding of the impact that MOOCs have, and will have had, on traditional learning methods at these organizations.

The qualitative design that allows for individual participant interviewing and document analysis and review was well-suited to this particular research study, as this layered approach enabled the researcher to more thoroughly track reactions and responses to MOOCs by both faculty and administration members in the higher education environment. Qualitative methodology is an effective method of obtaining the detailed analysis of a particular occurrence or phenomenon from varied perspectives, and as King (1998) states, the qualitative research interview is most appropriately used in the following situations:

- When the study focuses upon a particular phenomenon, affecting a sample of a larger population.

- When “individual perceptions of processes within the social unit are to be studied prospectively” (p. 17), employing a series of interviews.
- When individual perceptions pertaining to a particular phenomenon and its historical development are being studied.
- When “exploratory work” (p. 17) is necessary before a quantitative section of a case can be determined.
- When qualitative results can speak to the quantitative data collected (or, in this case, historical perspective), thereby supporting and validating findings gained through other means of research.

The combination of historical context, along with information gathered during individual interviews, enriched the scope of the study and allowed for a clear identification of themes and patterns to MOOC adoption and implementation among higher education institutions. The qualitative design of inquiry focuses more broadly on multiple viewpoints, positions, and interpretations (R. B. Johnson, Onwuegbuzie, & Turner, 2007), and is often used to study more recent phenomenon such as MOOCs, which may have hitherto been lacking in extensive research. The qualitative approach, therefore, notified the study of the widely varied interpretations of the MOOC presence in higher education and its implications for the future.

Methodology

As noted, the study employed a phenomenological lens which focused upon the accumulation of personal narratives of administrative and faculty members at higher education institutions to assess the implication of MOOCs in their curricular programs. The phenomenological approach used throughout the investigation focused on participants’ experiences as interpreted from their own perspectives in efforts to gain a deeper understanding of the nature of the problems presented, and possible solutions to pressing issues. This method of “natural inquiry” was conducted in “real world settings” so as to further interpret “the meanings people attach to the activities and events in their world” (Roberts, 2010, p. 143),

which allowed for a deeper understanding of participants' viewpoints and feelings concerning the study. By assessing the essence of the lived experiences of participants through phenomenological design, the researcher gained sharper insights to the perceived benefits and threats that MOOCs may pose to these individuals, and higher education institutions, overall.

According to Creswell (2013), there are several factors inclusive in the structured process of phenomenological studies:

1. There must be an emphasis on a phenomenon to be examined.
2. The focus of the study must be derived from a collection of individuals who have had common experience with the phenomenon; preferably, a heterogeneous group that can range from 3-4 individuals, to 10-15 individuals.
3. A philosophical discussion concerning the basic ideas involved in the study should be included, examining the lived experiences of individuals, and both their "subjective experiences of the phenomenon and objective experiences of something in common with other people" (p. 78).
4. The principal investigator should bracket him- or herself out of the research study by acknowledging and discussing personal experience with the phenomenon under exploration. Bracketing enables the researcher to have an ability to both identify personal experiences with the phenomenon, and also set these experiences aside so as to focus solely on the experiences of the individuals in the study.
5. Data collections should include interviews with participants to gain a well-rounded, thorough understanding of their perspectives and reflections concerning the problems presented by the study, and of the phenomenon, overall.
6. There must be a systematic process to the study, moving from narrow units of examination to broader descriptions that summarize "what" the individuals have experienced, and "how" (Moustakas, as cited in Creswell, 2013, p. 79) they have experienced it.

7. The phenomenological study should conclude with a descriptive passage explaining the *essence* of the experience as perceived by participants—again, identifying what exactly they experienced, and how they experienced it.

Essentially, phenomenological research is aimed at finding the universal nature of a particular experience or shared phenomenon. Some advantages of phenomenological study include a clearer understanding of meanings attached by individuals involved in a shared experience, and the development of new theoretical paradigms. Additionally, phenomenological research can examine change processes over extended periods of time, and data collection is seen as natural, not artificial. Some disadvantages include possible obstacles with analysis and interpretation, lower levels of validity and reliability, and the more extended time period and resource base generally expended for the collection of data (Dudovskiy, 2016).

The researcher believes that the phenomenological approach was appropriate and well-matched to this particular study as it allowed for a deep understanding of the viewpoints and concerns involving the advent of MOOCs as drawn from the common experiences of a sampling frame of professional individuals in higher education. As Creswell (2013) states, "a phenomenological study describes the common meaning for several individuals of their lived experiences of a concept or a phenomenon" (p. 76) in the hopes of arriving at a universal essence and consensus. As opposed to the other methods of qualitative study previously mentioned, the phenomenological research method enabled the researcher to probe further into the root of the problem being addressed, as it allowed for inquiry that included personal interviews with follow-up questions that were aimed at examining the lived experiences of participants in their interpretation of a shared phenomenon. By compiling this information, it was hoped that certain patterns and themes would emerge that would highlight the development and deployment of MOOCs in higher education, and the ramifications that this massive shift in educational technology and andragogy may pose. Because of the exploratory nature of the study, which required a deep understanding of the personal experiences of administrators and

faculty members during this educational transformation, the phenomenological method was ultimately deemed to be the most appropriate to employ.

Research Design

An important aspect of a phenomenology study is the selection of participants to be interviewed (Goulding, 2005; Starks & Trinidad, 2007). The researcher hoped to gain a more expansive understanding of the impending impact of MOOCs on higher education; therefore, a specific, but varied sampling of individuals who have been employed at various types of colleges and universities, in both administrative and faculty-oriented roles, were chosen for the study so as to gain a deeper perspective of the possible benefits and drawbacks of MOOC inclusion to school programs. The following sections discuss the participation selection process in more detail, as well as the topics of human subject consideration and data collection procedures.

Participant selection. The study hoped to identify leaders in higher education for the purposes of pinpointing the effects that MOOCs have had, and will have, on traditional methods of learning. The ideal candidate, or *unit of analysis* for the study, was characterized as follows:

- Male or female between the ages of 25 and 65.
- At minimum, have a master's or higher degree that is related to the field of education.
- Have relevant experience in the realm of higher education that can speak to the trends of online learning.

The population chosen for the focus of this study was comprised of seasoned administrative and faculty members in higher education whose experience with both traditional and online learning methods could shed light on the development of MOOCs and their impact on best practices of learning institutions. The sources of data for this research were gathered from a sample of 12 education professionals employed at different types of universities during a six-month period of time. The time frame chosen allowed the researcher to obtain data from

multiple sources, thereby providing a broad perspective from which to draw conclusions. The research study identified a list of expert higher educational administrators and faculty members through *purposeful sampling* methods. Creswell (2007) describes purposeful sampling as a way of selecting individuals through an established process and asserts that it can be instrumental in gaining an assessment of both the research problem, and the central phenomenon that is being examined. Creswell (2013) maintains that there are three criteria that should be considered in purposeful sampling procedures when employing a phenomenological framework, and they are listed as follows:

1. The participants in the sample. All of the individuals chosen for the study should have experience of the phenomenon being examined, and it is helpful if these individuals have stories to tell about their own lived experiences with the particular phenomenon.
2. The types of sampling. Decisions need to be made to establish who will be chosen for purposeful sampling, what form this sampling might take, and how many individuals or sites are to be sampled.
3. The sample size. Phenomenological studies can range anywhere from 1 to 325 participants; however, Creswell suggests that the inclusion of 10-15 individuals can serve as a good range of participants to aim for in a particular phenomenological study.

Sampling frame for master list. The *sampling frame* for the study included a *master list* of potential candidates with full contact information provided by their employers, and was random and based on self-selection; however, to sustain the framework of purposeful sampling, the *criteria for inclusion* for each participant required a minimum of seven years of professional experience as either an administrator or faculty member in higher education. The researcher obtained the master list through the use of phone calling and emailing to contact the various types of schools that had been determined to be the most beneficial to the aims of the study, and the colleges and universities that were contacted were located across the country. The researcher contacted the administrative offices of the types of colleges outlined for the study—

schools that had a MOOC component in their curricular programs—in the hopes of obtaining a master list for the study. He also exhausted any contacts who were able to assist in the process at any of these institutions to accelerate the process. A phone and/or email script (Appendix C) was provided for the first contact to each learning institution to gather the vital information (name, phone number, and email address) of individuals deemed as good candidates for the study, and the phone and email script had already been approved by Pepperdine University's Institutional Review Board for use. The master list obtained from the initial sampling frame was narrowed down utilizing a *criteria for inclusion*, a *criteria for exclusion*, and as needed, a *criteria for maximum variation*. The initial recruitment script was sent out in hopes of forming a sampling frame master list, and subsequently, a second contact either through email or by telephone included relevant questions for the potential participant that were designed to achieve criteria for inclusion to the study. This original list was narrowed further by examination of the responses of potential participants so as to create a criteria for exclusion, and finally, as the list was greater than 25 individuals (a number higher than the 12 needed for the study to ensure backup participants if needed), further analysis of participants identified those chosen through the criteria of maximum variation so as to identify the individuals who were most suited to the project. As previously stated, the study included 12 higher education professionals who held positions such Dean of Learning and Technology Resources, Dean of Academic Affairs, Faculty Chair, and Professor. The different kinds of higher education institutions that were involved in the study included a community college, 4-year private universities, 4-year state universities, and some universities that were foundational in the establishment of the MOOC phenomenon.

The researcher felt that the education professionals chosen at these different types of universities would be able to provide an extensive understanding of the implications and effects of both online education and MOOCs on their institutions, from both an administrative- and faculty-oriented lens. These varied types of educational leaders provided a well-rounded interpretation of the current state of affairs in higher education and what implications MOOCs

and online learning have had, and will have, on it. The Dean of Learning and Technology Resources generally provides leadership and vision for online education, the Dean of Academic Affairs leads faculty and sets academic policies, and faculty members help shape curriculum and gauge its effectiveness on students. The input from members who have held these types of positions have spoken to the effects that MOOCs have had, or will have, on these organizations, and articulated the steps that were necessary to incorporate these open online courses into the curriculum for the benefit of their schools. These professionals had first-hand experience not only with student perspectives concerning this new shift in learning capabilities, but also with enrollment rates and financial indicators that further illuminated the significance of MOOCs in higher education. The information furnished by these individuals enabled the researcher to not only gain a more solid interpretation of the ramifications of MOOCs, but also to create a compelling study that outlines coming trends and/or threats that may be developing, and ways that higher education leaders can meet those challenges from stronger vantage point. The study, therefore, involved 12 individuals from varied types of colleges or universities, over a six-month period, to better assess ways in which MOOCs and online education could benefit higher educational institutions, instead of depleting their ranks, eroding their status, and perhaps hastening their extinction.

The participant selection for the study commenced when the researcher contacted the relevant sources at these different types of colleges and universities to identify prospective administrative and faculty members who were interested in participating in the study. The participant selection process was outlined as such:

1. Researcher conducted online search for colleges and universities that offered MOOCs in their curriculum to obtain contact information, insight, and any additional, relevant information through keyword searches.
2. Researcher initiated contact with administrative offices of each of the higher education institutions identified for the study.

3. Researcher identified administrative and faculty members who were interested in participating in the project. This included a list of email addresses and phone numbers that provided contact sources.
4. The sample chosen from this process was further analyzed for criteria for exclusion from the study, and if needed, criteria for maximum variation.

Protection of human subjects. The researcher of the study sought to recruit voluntary participants from various, separate educational institutions of higher education, and the methodology used in the investigatory process was submitted for approved for human subjects through Pepperdine University's Institutional Review Board (IRB) before the study commenced. The investigator was aware of the potential risk involved in research projects, as sometimes disturbing memories may arise during the interview process; therefore, it was determined that taking part in the study would not put participants in any risk greater than what they would normally experience in their everyday lives (Saldana, 2013). All members who participated were chosen with regard to their professional status and credentials in higher education, and there was no risk of physical or mental duress to the subjects. Prospective participants were initially contacted through either an introductory electronic mail (email), or telephone call, and the researcher followed IRB approved guidelines when contacting these individuals. All participants received an Informal Consent form (Appendix B), which outlined the procedures of the study, giving an overall understanding of the following:

- The structure and design of the study
- The participants' level of involvement, risks, and/or benefits
- The duties and responsibilities of the researcher
- A sampling of the Pepperdine University IRB Informal Consent form is listed as Appendix B. As previously stated, each participant in the study signed such consent forms specifically designed to ensure that the individual's participation was voluntary, and that he or she had the right to withdraw from the group at any time without any risks

associated with the project. The consent form also outlined the fact that confidentiality would be maintained throughout the duration of the study, and thereafter. Approval to move forward with the study had been approved by the Institutional Review Board (IRB) prior to the commencement of the study, ensuring that participants were at no time at risk of criminal or civil proceedings, or suffering tarnished reputations, as a result of involvement in the study (Pepperdine IRB Manual, 2009, pp. 22-23). An IRB approved site permission form (Appendix D) was secured before any interviewing took place, and follow-up calls or emails prior to the interview session ensured that the process was in place.

- Participants' identities were to remain anonymous for the duration of the study and thereafter, and to further protect their identities, pseudonyms were provided in place of their names when mentioned in the investigation. All recorded information from the interview process is secured in a safe place, password protected on a portable hard drive, and content from the interviews were transcribed by the principal investigator only. All notes, recordings, transcriptions that are protected at a secure location will not be released to the public and will subsequently be destroyed after a 3-year period following the termination of the study. There was no monetary reward for participation in the study, and each participant can receive a reproduction of the study's findings, if so desired.

Data collection. The researcher spearheaded the project by receiving site permission from the designated colleges and universities to gain access to study participants, and to determine the 12 individuals who were to be involved in the study. Participants were self-chosen and informed that their involvement would be voluntary, their responses anonymous, and their information held in confidentiality by the research committee. The researcher was hopeful that the variation of individuals chosen for the study, as well as their wide range of experience in higher education, would help achieve saturation of the categories and themes of

the topic for the study. The recruiting email (Appendix B) was distributed to the participants during a six-month period through their individual university email accounts to allow time for their responses. Participants were sent a hyperlink created for these research instruments via web-based software, along with a letter approved by Pepperdine and the IRB Review Board requesting consent to participate, but which also outlined the fact that participants are under no obligation to complete surveys or questionnaires against their will (Pepperdine IRB Manual, 2009, p. 22).

Concurrently, emails were sent to study participants that included dates and times to choose from for interviews on relevant subject matter and interviews were conducted during subsequent months. An attached IRB Consent form was also sent to be signed and returned to the research project before commencement of the interview questioning. The consent form was considered to be evidence that precaution had been taken to protect participants' rights as mandated by the IRB Review Board. The researcher conducted interviews using the interview instrument that was provided, which was also designed with open-ended questions for further development of responses. The researcher also encouraged relevant conversation which sometimes went beyond the scope of the interview questions in efforts to delve deeper into topics presented. Interviews were scheduled for 60-minute time slots. The interview process was therefore constructed as follows:

1. Each participant was contacted through an introductory email from the investigative researcher's Pepperdine University email account.
2. Invitation to the research project was conducted via the researcher's recruiting email script which had hitherto met approval by Pepperdine University's IRB Committee.
3. If potential participants expressed interest in becoming part of the study, they were to be emailed an Informed Consent Form to be signed and returned.
4. Participants were encouraged to provide full contact information, which was to be stored on the researcher's computer in password-protected file folders, on a specific hard drive

in password-protected folders, and on one specific password-protected, cloud-based server, for the purpose of scheduling interviews for the phenomenological study.

5. An interview schedule was published and distributed to participants four weeks prior the actual interviews, and an email reminder was sent out the week before the interviews commence.
6. Subjects were requested to rank the top three time-slots that would best suit their schedules for the interviews to be conducted, and a final version of the Interview Calendar was crafted together by the researcher. This calendar was not distributed to participants for confidentiality purposes but was used as a reference by the researcher for the interview process.

Participants were also informed about the semi-structured interview process so as to determine if they had any objection to participating to recorded and transcribed interviews guided by the researcher. If, for any reason, the participant had any reservations concerning this method of interviewing, the researcher offered to take notes during the interview for the better retention of information given during the process. If the participant deemed that he or she did not want any information from the interview process to be included in the study, all information pertaining to the interview procedure would be immediately destroyed, and the participant's identity would be removed from the study.

Interview techniques. Interviews took place during 60-minute periods, and the researcher arrived with two digital recording devices, a note pad, writing utensils, and a copy of the Informal Consent form, which outlined the structure of the study. The researcher opened the interview in a friendly manner, which created an environment that was trusting and comfortable for the interviewee. Interviewees were given instructions as how to proceed with the semi-structured interviews and informed of the length of the session. They were encouraged to reflect upon and expand on ideas during the interview process, as the semi-structured format allowed for this. Participants were reminded that this was a qualitative study

done for doctoral research, and answers given to questions would be used to further understand the pressing matters of the subject area of the study. Interviewees were also reminded that they would be willing participants in the project, that their identities would be protected, and that the use of aliases would ensure this. The researcher informed the participants that there may be follow-up questions to answers given to garner greater understanding of the topics discussed, and that their participation in the study was greatly appreciated. At the termination of the interview session, the investigator thanked the participants, and thank you notes were sent forthwith to offer formal appreciation for the interviewees' time and effort given during this process.

A semi-structured interview process was employed, as this non-standard interview protocol that is often used in qualitative data analysis allows for the researcher to utilize pre-planned questions (Morse & Richards, 2012), and for further inquisition if the interview time allows it, so as to gain a clearer outlook of the participant's views (Gray, 2013). The researcher believed that in comparison to unstructured, open ended interviewing, which does not generally work off of a pre-planned questioning format, or focus group interviewing, which is designed to interview small groups of individuals collectively, the semi-structured process would be more supportive of the phenomenological approach as it would enable participants to be more fluid in their responses and provide more details concerning their beliefs and perspectives on a particular topic, with a more refined focus (Creswell, 2014).

Interview Protocol

Copies of interview questions were forwarded to participants through email in advance to provide to these individuals a few days to reflect on the responses they will give. An Interview Form was used by the researcher to notate information given during the interview process and use of this template assured that the same interview procedures were followed for each participant. The Interview Form included information pertaining to each individual's level of experience in higher education, and the interview questions it contained were developed from

information garnered from the literature review of the study, and from the researcher's personal knowledge of the subject, following an initial three-step process (Prima Facie, Peer Review, and Expert Review) to establish validity. Research and interview questions were designed to address aims of the study, and to elicit important information concerning perspectives and reflections regarding online learning and MOOCs in the higher education environment. The interview process provided open-ended questions which had been structured to enable participants the chance to expand on their own personal experiences regarding the main issues of the study. The information gathered from these experienced educational leaders during this process greatly helped to elicit valuable industry knowledge that has further shed light on the implications of MOOCs on the future of higher education. The 12 interview questions that were designed for interview purposes are found in Table 1.

Interview questions. Twelve interview questions were used in efforts to satisfy both the research questions and the overall purpose of the study. They are as follows:

- IQ 1: What techniques/strategies have been employed for the successful inclusion of MOOCs into the curriculum?
- IQ 2: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs?
- IQ 3: What strategies have you employed to overcome administrative challenges for the inclusion of this broad new medium?
- IQ 4: What are some of the economic and technical issues related to making the transition to MOOC-driven courses?
- IQ 5: In what ways is push-back, or resistance from faculty to new online technologies such as MOOCs handled?
- IQ 6: How have some of these challenges been overcome thus far?

- IQ 7: What are some new ways that faculty members can incorporate MOOCs into the course curriculum?
- IQ 8: How do these standards measure up to other schools' criteria for success?
- IQ 9: How do you measure and track your success?
- IQ 10: What formal feedback systems do you employ to ascertain success or failure of these proceedings on an ongoing basis?
- IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been the most successful?
- IQ 12: What advice would you give to educational leaders in making this transition, and is there anything else that you would like to share that you think may be relevant to this study?

Table 1

Research Questions and Corresponding Interview Questions

Research Questions	Corresponding Interview Questions
RQ 1: What challenges have you encountered in making the transition to MOOCs?	IQ 1: What are some of the economic and technical issues related to making the transition to MOOC-driven courses? IQ 2: In what ways is *push-back*, or resistance from faculty to new online technologies such as MOOCs handled? IQ 3: How have some of these challenges been overcome thus far? IQ 4: What are some new ways that faculty members can incorporate MOOCs into the course curriculum?
RQ2: What strategies have you implemented to meet the changes brought on by Massive Online Open Courses?	IQ 5: What techniques/strategies have been employed for the successful inclusion of MOOCs into the curriculum? IQ 6: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs? IQ 7: What strategies have you employed to overcome administrative challenges for the inclusion of this broad new medium?

(continued)

Research Questions	Corresponding Interview Questions
RQ 3: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation?	IQ 8: How do these standards measure up to other schools' criteria for success? IQ 9: How do you measure and track your success? IQ 10: What formal feedback systems do you employ to ascertain success or failure of these proceedings on an ongoing basis?
RQ 4: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ?	IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been the most successful? IQ 12: What advice would you give to educational leaders in making this transition, and is there anything else that you would like to share that you think may be relevant to this study?

Relationship between research and interview questions. As previously stated, the *Interview Questions* were designed specifically to coincide with the broader *Research Questions* so as to gain a more focused understanding of the issues of the study, and to establish Prima Facie validity, which is discussed in a subsequent section. Research Question 1 (RQ1) enquires about the strategies that higher educational organizations have implemented to meet the changes brought on by Massive Online Open Courses. Research Question 2 (RQ2) analyzes the challenges that these organizations have encountered in making this transition and what new strategies might be implemented in achieving success. Research Question 3 (RQ3) explores ways that higher education organizations have been able to measure success in their transition to MOOC-inclusive curriculum. Research Question 4 (RQ4) seeks to identify advice that university leaders can give for the successful implementation of MOOC-friendly curricular environments in Higher Education. The relationship between Research Questions and Interview Questions is expressed as such:

- RQ 1: What strategies have higher educational institutions implemented to meet the changes brought on by Massive Open Online Courses?
    - IQ 1: What techniques/strategies have been employed for the inclusion of MOOCs into the curriculum, and what is their measure of success?

- IQ 2: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs?
- IQ 3: What analysis of the organization's strengths and weaknesses in regard to competing online schools and learning venues has been implemented?

- RQ 2: What challenges have these organizations encountered in making that transition, and what new strategies might be implemented in achieving success?
  - IQ 4: What are some of the major challenges facing administrators and faculty members in transitioning to MOOC-driven courses?
  - IQ 5: In what ways is push-back, or resistance to new online technologies such as MOOCs handled?
  - IQ 6: How have some of these challenges been overcome thus far?
  - IQ 7: What are some new ways that school leaders can incorporate MOOCs into the course curriculum?
- RQ 3: How have higher education organizations been able to measure success of the transition to a MOOC-inclusive curriculum?
  - IQ 8: How do these standards measure up to other schools' criteria for success?
  - IQ 9: What factors have contributed to a successful transition to MOOCs?
  - IQ 10: Do you employ any formal feedback systems designed to ascertain success or failure of proceedings?
- RQ 4: What advice do university leaders have for implementing these approaches to create MOOC-friendly curricular environments in Higher Education?
  - IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been the most successful?
  - IQ 12: What pitfalls can you tell others to avoid in this process, and what advice would you give to educational leaders in making this transition?

The Interview Questions were structured to delve deeper into the topic presented by the initial Research Questions in efforts to reach the essence of what the Research Question asks. By establishing a broad framework presented in the Research Question, the researcher utilized the Interview Questions to pinpoint several related areas that may have needed attention to get to the crux of the problem and possibly extract additional, valuable information that could have been helpful in finding solutions to pressing issues.

Reliability and validity of the study. The investigator of the study assessed the content validity of results on an ongoing basis by examining both qualitative data and any relevant documents or archival material related to the study on a periodic basis, continuously analyzing historical perspectives and reading through qualitative data to gain a thorough perspective of participants' responses to interview questions and documented material. The researcher continuously checked for accuracy and reliability of data, and qualitative analyses and interview responses were merged through triangulation to better interpret information, address research questions, and compare findings (Creswell, 2014). Both the follow up to the recruiting script and interview instrument were constructed to ensure that they each addressed relevant matters posed in the research questions. The interviewing instruments were reviewed by the researcher's dissertation committee to detect any degree of bias or inferiority in structure before they were administered to participants in the study. The reliability of these data-collecting instruments was established through a three-step process of validation which ensured the proper alignment of research questions and related interview questions, and are described as follows:

***Prima facie validity*.** Prima facie is a Latin term used to describe something being acknowledged "at first sight" (Cornell University Law, 2016, p. 1). It can also be used as an adverb form meaning, "on first appearance but subject to further evidence or information" (Cornell University Law, 2016, p. 1). The researcher, therefore, employed prima facie validity in constructing a research project that pertains to the issues of the study, as it is based on

knowledge gained about the topic of research *up until the present time*. Information gathered through investigative means throughout the course of the study could have altered this validity, as more information was collected, and new knowledge could alter current perceptions and beliefs. Prima facie validity was first established by developing a chart pairing original research questions and their complementary interview questions designed for the implementation of the interview process, and the twelve original Interview Questions were constructed to elicit responses that would further shed light on relevant topics in the research study. The twelve original questions are outlined as follows in prima facie form:

- RQ 1: What strategies have higher educational institutions implemented to meet the changes brought on by Massive Open Online Courses?
    - IQ 1: What techniques/strategies have been employed for the inclusion of MOOCs into the curriculum, and what is their measure of success?
    - IQ 2: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs?
    - IQ 3: What analysis of the organization's strengths and weaknesses in regard to competing online schools and learning venues has been implemented?
- RQ 2: What challenges have these organizations encountered in making that transition, and what new strategies might be implemented in achieving success?
    - IQ 4: What are some of the major challenges facing administrators and faculty members in transitioning to MOOC-driven courses?
    - IQ 5: In what ways is push-back, or resistance to new online technologies such as MOOCs handled?
    - IQ 6: How have some of these challenges been overcome thus far?
    - IQ 7: What are some new ways that school leaders can incorporate MOOCs into the course curriculum?

- RQ 3: How have higher education organizations been able to measure success of the transition to a MOOC-inclusive curriculum?
    - IQ 8: How do these standards measure up to other schools' criteria for success?
    - IQ 9: What factors have contributed to a successful transition to MOOCs?
    - IQ 10: Do you employ any formal feedback systems designed to ascertain success or failure of proceedings?
- RQ 4: What advice do university leaders have for implementing these approaches to create MOOC-friendly curricular environments in Higher Education?
    - IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been the most successful?
    - IQ 12: What pitfalls can you tell others to avoid in this process, and what advice would you give to educational leaders in making this transition?

***Peer review validity*.** So as to achieve an external check of the research process for this study, peer review validity was conducted through the exchange of interview questions amongst doctoral colleagues and cohort members in the *Dissertation Excellence* program at Pepperdine University. These students were pursuing doctoral degrees in Pepperdine's EDOL Program, and all had specific industry knowledge in various fields and were applying that proficiency to their doctoral studies of research. Familiarity with qualitative and quantitative research methods as well as other means of research design enabled these individuals to make sound determinations of others' doctoral work, as each applied his or her own knowledge and skill set to determine the content validity and credibility of the research and interview questions being posed in each research project. It was the job of each doctoral candidate to review and analyze the work of others to determine the relationship between the research and interview questions being asked, and the overall purpose of the particular study under consideration. The members of the doctoral cohort were supplied with a copies of the researcher's original research and interview questions and asked to indicate vocally in a small group class session if

corresponding questions should be altered as follows: (a) kept as stated, (b) deleted, or (c) modified as suggested. If cohort members felt that any changes were necessary, they were requested to provide alternative wording for the research or interview question. Changes that were made per these doctoral colleagues' suggestions are articulated as follows (see Table 2).

Table 2

Changes Made to Research and Interview Questions

Research Questions	Corresponding Interview Questions
RQ1: What strategies have higher educational organizations implemented to meet the changes brought on by Massive Online Open Courses?	IQ 1: What techniques/strategies have been employed for the inclusion of MOOCs into the curriculum? IQ 2: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs? IQ 3: What analysis of the organization's strengths and weaknesses in regard to competing online schools and learning venues has been implemented?
RQ 2: What challenges have these organizations encountered in making that transition, and what new strategies might be implemented in achieving success?	IQ 4: What are some of the major challenges facing administrators and faculty members in transitioning to MOOC-driven courses? IQ 5: In what ways is *push-back*, or resistance to new online technologies such as MOOCs handled? IQ 6: How have some of these challenges been overcome thus far? IQ 7: What are some new ways that school leaders can incorporate MOOCs into the course curriculum?
RQ 3: How have higher educational organizations been able to measure success of the transition to a MOOC-inclusive curriculum?	IQ 8: How do these standards measure up to other schools' criteria for success? IQ 9: What factors have contributed to a successful transition to MOOCs? IQ 10: Do you employ any formal feedback systems designed to ascertain success or failure of proceedings?
RQ 4: What advice do leaders in higher education have for implementing these approaches to create MOOC-friendly curricular environments in Higher Education?	IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been the most successful? IQ 12: What pitfalls can you advise others to avoid in this process, and what advice would you give to educational leaders in making this transition?

Expert review validity. The final step in the quest for the reliability and validity of each study lies with dissertation committee's expert advice as pertains to each individual's research

project. The dissertation committee members' review recommendations of the peer review session and either approve their endorsements or send the sets of research and interview questions back to the doctoral cohort with requests for modifications. When all requests for modifications are complete, and each doctoral candidate has a set of approved research and interview questions from the dissertation committee, he or she can move forward in the research process in the confidence that each research and interview question has been tested for validity by both a panel of their peers, and their doctoral committee. The final recommendations resulting from the three-step process of prima facie validity, peer review validity, and expert review by the dissertation committee are articulated below, listing the finalized twelve, semi-structured interview questions that were used in the study:

Statement of Personal Bias

Bias can not only distort results, but also affect decision-making processes. Bias in qualitative research, or any research, should be avoided if at all possible, as it can affect both the validity and reliability of a study's findings by slanting data and distorting the truth. In qualitative research, there are five basic categories that may be subject to bias:

- Moderator bias. The moderator generally collects all of the data and his or her interpretation may have some effect on the data.
- Biased questions. A biased question may influence a respondent's response, either positively or negatively. The way a question is asked may also create bias.
- Biased answers. An example of a biased answer is one that is wholly or partially untrue. Bias can cloud issues and serve to mask the truth.
- Biased sampling. The subgroup or segment of respondents interviewed for a particular study may not be truly representative of the group's interest, as the wrong individuals may have been chosen from the master list created through purposive sampling methods.

- Biased reporting. Remaining open to ideas and concepts often requires extraordinary discipline, as experiences, beliefs, wishes, culture, attitudes, etc., can taint anyone's perspective, and researchers should strive for objectivity in their reporting of data for qualitative studies ("What Is Bias," 2012).

Bias can be hard to avoid as "people and their interactions are more than a collection of objective, measurable facts" (Brown, 1996, p. 16); they are viewed and perceived through the researcher's frame of reference—that is, how he or she assesses the details of interaction with participants, and which elements of those interactions are relevant to the study.

It was the investigator's assumption that participants would answer questions truthfully and honestly, and would not answer questions based upon false notions or biased interpretations. The research collected during the study was based upon the memories and perceptions of the participants gathered for the study; therefore, the research itself relied on the assumption that these memories and thoughts given by the participants were accurate and truthful. The researcher exercised his utmost integrity in directing an objective analysis of the issues addressed in the study, attempting to present materials in a non-biased and non-judgmental way, and was dedicated to creating an honest, truthful, and untainted body of work by avoiding the aforementioned categories of bias.

Epoche. As previously discussed, the investigator attempted to gain a fresh perspective during the course of the study by setting his own experiences with online learning and MOOCs aside as much as possible by employing a technique known as *bracketing* (*epoch*), "in which everything is perceived fresh for the first time" (Moustakas, 1994, p. 34). This renewed outlook was accomplished as the researcher concentrated solely on the experiences of the participants of the study without dwelling on his own perspective of online education and the emergence of MOOCs; he did not forget what he has experienced, but rather, avoided letting past experience and knowledge detract from new knowledge gained from participants during the course of the study. This method of research helped to eliminate bias or preconceived notions, which

enabled the investigator to perceive the study with a fresh pair of eyes, allowing him to discard distracting belief-systems that may have obfuscated the current events of this particular study.

Data Analysis

Through a thorough review of documentation and descriptive interviews with follow-up questions, the primary investigator hoped to gain a more substantial understanding of the impact of MOOC learning platforms on higher education leaders and assess ways that these individuals could implement such programs to the benefit of their organizations. Following initial contact of possible participants in the study, a semi-structured interview protocol created a record of personal narratives reflective of the perspectives and concerns of administrative and faculty members regarding MOOCs. This sequential research methodology process enabled the researcher to identify emerging patterns and themes that validated the findings of the study.

As the interviewing process is an essential method utilized in qualitative research, to gain a more substantial perspective from the targeted sampling frame of the study, open-ended interviews were conducted which enabled these individuals to reflect on their experiences in a safe environment (Creswell, 2013; Roberts, 2010). The original questions used in the interview instrument were designed by the researcher with an open-ended quality, and this phenomenological approach helped to glean the objective viewpoints of the participants, allowing for further probing on relevant issues. For instance, the open-ended questioning format allows for embellishment of participant responses; additional conversation is encouraged by the questioning instrument, and this form of questioning can elicit more thorough responses that reveal more relevant material throughout the interview process. The process of analysis began immediately following the interview process, as the recordings were coded and transcribed in order to make sense of the data provided and to discern appropriate interpretation of its implications. During this first step of analysis, a systematized structure was created so as to organize the voluminous amounts of data in a meaningful manner. The process of the study

was conducted during a six-month period to allow for scheduling issues of participants and to ensure effective collection of data.

Reading, memoing. *Reading* and *memoing* are ways that the investigator can gain a full perspective of the study, "in which the researcher writes down ideas about the evolving theory throughout the process of open, axial, and selective coding" (Creswell, 2013, p. 89). This second step of the analysis process enabled the principle researcher to study all of the data, from transcripts to field notes to memos, many of which were jotted down in the rush of investigation to more fully understand the ideas put forth in the data (Creswell, 2014). The collection of all forms of data enabled the researcher to draw on voluminous resources to discern broad themes and patterns to the study.

Describing, classifying, interpreting (coding). As Creswell (2014) states, "coding is the process of organizing the data by bracketing chunks (or text or image segments) and writing a word representing a category in the margins" (p. 98). This third leg of the coding process is a method of describing, classifying, and interpreting large and often dense quantities of data, making them manageable enough to discern from them themes and patterns which drive the narrative of the study. In this study, qualitative analysis was derived from information obtained through the interview process and documentation, which was then transformed into *codes* that revealed broader themes. As categories, patterns, and themes emerged throughout the course of the research project, observations were supported and analyzed through coding methods to determine relationships between variables and gain new knowledge and perspective regarding the overarching problem addressed in the study (Creswell, 2013). This coding procedure employed interrater reliability and validity to identify these themes and patterns, which are explained in the next section.

***Interrater reliability and validity*.** Marques and McCall (2005) identify *interrater reliability* as a process whereby "two or more individuals (coders or raters) agree" (p. 442) on a methodological process to obtain data information, and Creswell (2013) identifies this process

as being necessary to verify that information obtained through coding methods is truthfully represented. So as to heighten the reliability and validity of this study, the investigator employed a measure of *external validity*, enabling the research to be generalized across different stratum of research, through peer and expert reviewing of coding data (Creswell, 2013). The leader of this study utilized a three-step interrater reliability process to ensure reliable handling of data and to validate the findings of the research project:

- Step One – Response data from three participants of the study were initially coded (exclusively) by the researcher using manual coding software, which identified significant themes that shed light on relevant topics of the study. These themes are categorized by Creswell as broad units of information that can be further analyzed as "codes aggregated to form a common idea" (Creswell, 2013, p. 186).
- Step Two – Two colleagues from the researcher's Pepperdine University doctoral cohort were requested to serve as co-raters of the information garnered from the researcher's interviews with the three initial respondents to ensure reliability and validity of the coding process put into place. As with the peer review validity requirement described earlier, these co-raters were very familiar with the process of the study, had extensive experience in qualitative research and coding, and were highly adept at software coding procedures. During this process, if there is agreement between the co-raters on the validity of the researcher's findings during this initial interview process, then the coding procedures is not modified. If, however, the co-raters find disagreement on the validity of the researcher's coding process, then they will deliberate with the researcher to find ways to alter the coding method to achieve consensus. If there is no agreement between the co-raters and the researcher concerning the coding protocol, the process is further scrutinized by the dissertation committee to arrive at an agreement as per the co-rates recommendations, thereby allowing the study to proceed.

- Step Three – After making any necessary adjustments as identified by the co-raters and dissertation committee and reaching agreement on the coding protocol, the researcher proceeded with the study, completing coding for the remainder of the interviews. Once the coding process was complete, the co-raters were again requested to review the coding procedure and identify emerging themes that were germane to the study. The co-raters and the researcher shared a commonality in their interpretations of the coding data and themes, and the coding method was considered to be a success, ensuring accuracy of data collection and interpretation. After all data-gathering and coding was accomplished, co-raters were asked to delete all related files and materials from the study from their computers.

***Representing, visualizing*.** This final stage in the coding process is to arrive at a conclusive narrative that emerges from the data analysis (Creswell, 2014). The procedure for reporting the analysis of a qualitative study is employed to both elicit themes and patterns from various forms of data collected, and to present, in narrative form and through charts or graphs, themes "that convey multiple perspectives from participants and detailed descriptions of the setting or individuals" (Creswell, 2014, p. 204). The qualitative makeup of the study can provide a chronological narrative of the nature of the problem being analyzed, themes or patterns that have been discovered, findings that support those themes, and possible strategies to address the particular problem in a new way. Gaining this new knowledge is generally the goal of such study, and the *representing* and *visualizing* stage is the articulation of that process.

Summary

This chapter has described research methods that the investigator employed to determine the effects of MOOCs on higher education and its leaders. The chapter discussed the researcher's worldview as pertains to the study, and identified the chosen phenomenological, qualitative, and quantitative research design that was utilized for the study. The research questions were restated, and data collection and analysis methods were also

discussed, providing a detailed description of the population and sample framework which comprised the study based on defined elements for inclusion or exclusion in the research project. Consideration was given to the protection of human subjects, as IRB requirements were reviewed. The design of the interview protocol for the research was explained, with a discussion concerning the specifics of the way each interview question was related to each research question, highlighting the significance of inter-rater reliability and validity measures used to verify the soundness of the data-collection method. The chapter outlines the interview process that was set forth for the research project and suggests the most effective techniques used in securing successful interviews. Finally, the chapter concludes with a description of the 4-step process that the investigator employed to test the validity and reliability of data that was collected. The research project was an examination of the phenomenon of massive online open courses, or MOOCs, and benefits to the study are the insights gained through both qualitative and quantitative analysis as interpreted through a phenomenological lens which can assist higher education administrators and faculty members in embracing and including these massive online learning platforms in their collective administrative and curricular framework.

Chapter 4: Findings

It is critical for practitioners in higher education to fully understand the continuous evolvement of education technology and its enormous impact on higher learning institutions, as the prolific and ongoing introduction of newer learning innovations serves to further modernize, and even negate, previous methods of scholarship. Just as online learning has revolutionized traditional education as we know it, Massive Open Online Courses may be the first step in providing an even more effective, refined, and evolutionary method of delivering education and knowledge to the masses. The rapidly shifting terrain of the education industry presents internal and external challenges that must be addressed by higher education leaders to ensure both the survival and relevance of traditional universities in the digital age. As outlined in Chapter 1 of this study, the guiding purpose of this research project was to determine the overall impact of Massive Open Online Courses on traditional higher education learning institutions, ascertain ways that higher education leaders have implemented the inclusion of MOOCs into their curricular programs, and contribute new knowledge and perspective as to how this new learning venue will affect the future of education. This chapter explores the thoughts and concerns of 12 participants chosen for this study as they responded to 12 interview questions on the topic of Massive Open Online Courses, and how the advent of this new learning platform has affected their universities. For this study, four research questions outlined the framework of the investigation in efforts to gain additional insight to the MOOC phenomenon:

- RQ 1: What challenges have you encountered in making the transition to MOOCs?
- RQ 2: What strategies have you implemented to meet the changes brought on by Massive Online Open Courses?
- RQ 3: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation?

- RQ 4: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ?

Interview Questions

Intensive interviewing is a critical component of phenomenological research, a notion fortified in the *Australian and New Zealand Journal of Public Health* as Gibbs, Kealy, Willis et al., state, "Sampling and data collection processes are critical to determining the quality of a study and the generalizability of the findings" (Gibbs, Kealy, Willis, Green, Welch, & Daly, 2007, p. 1). The four overarching research questions were constructed to form the basis of the study, and as previously mentioned, 12 additional interview questions were designed to delve further into each research topic. Once finalized and approved by the researcher's dissertation committee, the 12 interview questions listed below framed the basis of the semi-structured interview sessions with the 12 education professionals chosen for the research project, thereby helping to glean an additional understanding of the advent of MOOCs and provide data on their impact on these individuals' learning institutions as interpreted through their own personal and lived experiences:

- IQ 1: What are some of the economic and technical issues related to making the transition to MOOC-driven courses?
- IQ 2: In what ways is push-back, or resistance from faculty to new online technologies such as MOOCs handled?
- IQ 3: How have some of these challenges been overcome thus far?
- IQ 4: What are some new ways that faculty members can incorporate MOOCs into the course curriculum?
- IQ 5: What techniques/strategies have been employed for the successful inclusion of MOOCs into the curriculum?

- IQ 6: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs?
- IQ 7: What strategies have you employed to overcome administrative challenges for the inclusion of this broad new medium?
- IQ 8: How do these standards measure up to other schools' criteria for success?
- IQ 9: How do you measure and track your success?
- IQ 10: What formal feedback systems do you employ to ascertain success or failure of these proceedings on an ongoing basis?
- IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been the most successful?
- IQ 12: What advice would you give to educational leaders in making this transition, and is there anything else that you would like to share that you think may be relevant to this study?

The framework of the research project required that each participant have at least seven years of professional experience as an administrator or educator in Higher Education (IRB Consent Form, Appendix C). Each interviewee provided open and thoughtful perspectives of their individual experiences with online education – MOOCs in particular – offering insight to the adjustments made at their respective institutions in dealing with this new, possibly disruptive, technological advancement in education. Information and data collected during these interviews helped form the basis of the findings of the study, as each participant's contribution provided added perspective as to how their particular colleges and universities developed ways to incorporate massive open online courses into their curriculum. Data obtained from these 12 interview sessions have been broken down into themes to gain a further understanding of the information provided, and this analysis is presented in subsequent sections of this chapter to best articulate the results and interpretations of the study's findings.

Participants

The original intention of the researcher was to interview 15 participants at various types of colleges and universities that offered MOOCs in their curriculum, with a focus on individuals from administrative or faculty departments so as to gain a wide perspective on the impact of MOOCs on their institutions. The study was to be conducted with participants from higher education institutions located in Southern California for the sake of proximity for the proposed onsite interview process anticipated at each school. Once the study had commenced, however, it became clear that there was a lack of colleges and universities in the Southern California region that offered MOOCs in their curricular programs.

The researcher, therefore, found it necessary to expand the study nationwide to colleges and universities located across the country, and conduct the majority of interviews via telephone and/or Skype instead of the originally proposed face-to-face method, since several of the schools were out of state. The researcher was eventually very successful in reaching 15 willing participants from highly esteemed higher education learning institutions who had prolific experience as administrators or faculty members (or both), and who also had first-hand experience with MOOCs. Ultimately, these 15 participants were secured for the study, and they were identified through the purposive sampling process to ensure that they not only had had experience with the phenomenon of MOOCs, but could also provide the most meaningful information about the advent of MOOCs on their learning institution (Creswell, 2007).

Another surprising factor that developed from the interview process was that *saturation* was reached after the researcher had interviewed 12 participants; that is, many of the same themes and reflections began to emerge from the interviewees, with minimal new insights and discoveries. With the blessing of the dissertation committee, it was decided that because of the saturation factor, 12 participants would serve as the threshold for the research study. The other three participants who had volunteered to be part of the study were notified of this change, and

wished the researcher success with the remainder of the project. The choice of participant (unit of analysis) for the study was determined by the following criteria:

- Possessing at least 7 years' professional experience as an administrator or educator in higher education.
- Possessing relevant experience in the realm of higher education that can speak to the trends of online learning, and MOOCs specifically.
- Agreement to be audio-recorded for interview purposes
- Agreement to a face-to-face or telephone interview process

As previously stated, the researcher had great luck gaining access to esteemed professionals at highly regarded colleges and universities, some of which were foundational as the first to establish MOOC programs and have gained fame in fostering their success during the early years of development. All of the participants chosen met the qualifications for the study, and all were either faculty members or administrative members with previous faculty experience who had had first-hand experience with MOOC programs during the last few years. Several study participants were deans, vice provosts, and directors in addition to being current or former professors, and each individual's generous contribution to the study was both incisive and invaluable.

Data Collection

Through the semi-structured interview process, the researcher collected data and personal insights from 12 mid- to high-level administrators and faculty members at various colleges and universities across the nation which offered MOOCs in their curriculum. As stated in the previous section, the original goal was to reach 15 participants who had had experience with Massive Open Online Courses in higher education to gain a broad understanding of the effects of these learning platforms on curricular practices at major U.S. universities. However, after conducting interviews with 12 participants chosen for the study, the researcher determined that the research project had reached saturation, as many common themes and thoughts

contributed by the study members began to take on a similar aspect. The researcher, therefore, decided that enough relevant and compelling information had been gleaned from the 12 interviewees to finalize the project and determine the major implications of the study.

After initially researching all colleges and universities that the investigator could locate that purported to carry MOOCs in their curriculum, he then contacted leading administrative and faculty members at these organizations by email, utilizing the Institutional Review Board (IRB)-approved email message to spark these individuals' interest. Once successful contact was made with any particular individual, the researcher sent an introductory IRB-approved email with a description of the study and its requirements for participation (Appendix C), the IRB Approval Form for the study (Appendix A), the 12 Interview Questions that would be used in an interview session (Appendix D), an IRB Consent Form to be signed and returned via email if the individual was interested in participating in the research project (Appendix B), and a Site Permission Form if needed (Appendix E). If the individual complied with the requirements for the study and offered to be a participant, a date was set for either a face-to-face or telephone/Skype interview at the time of the participant's convenience.

Once the interview time was determined, the researcher either met with the individual at his or her respective learning institution or called the individual on the telephone at the agreed date and time. The investigator of the study recorded the participant's responses on both an Analog cassette-tape recorder, and an MP3 digital recorder to ensure that the conversation was successfully chronicled for research purposes. No interview went over the allotted 60-minute timeframe, and the semi-structured interview process allowed for the interviewer to subsequently ask follow-up questions once the 12 Interview Questions were exhausted, and many of the participants' responses to these follow-up question shed additional light on topics discussed, providing valuable insight to the study.

Table 3

Dates of Participant Interviews

Participant	Interview date
P1	May 4, 2017
P2	June 26, 2017
P3	July 21, 2017
P4	July 23, 2017
P5	August 4, 2017
P6	August 8, 2017
P7	August 9, 2017
P8	August 18, 2017
P9	August 22, 2017
P10	August 23, 2017
P11	August 28, 2017
P12	August 30, 2017

The researcher utilized the 12 Interview Questions to collect data and participants' individual perspectives based on their first-hand knowledge and lived experiences with MOOCs at their respective colleges and universities. The interview process took place between the months of May and August 2017, and data collection, transcription, and coding of the material was accomplished within a two-month period from the time the interviewing period ended. The interview process, along with personal notations that the investigator took during the interviews, formed the basis of the themes culled from the voluminous material. The researcher acted as the sole transcriber of the interview recordings and reviewed the audio recordings three times each to ensure accuracy and consistency during the transcribing process. The investigator retains signed consent forms for the audio-recording of the interviews from all participants, and all MP3 recordings have been stored on an MP3 flash-drive device and are safely stored (along with the Analog cassette tapes) at his place of residence. Pseudonyms were used in place of the participants' names to protect their identities for confidentiality purposes, and all audio files and cassettes, in addition to transcriptions of interviews, will be destroyed by the researcher after a three-year waiting period has passed, as recommended by the Pepperdine University Institutional Review Board (2015).

Data Analysis

Data analysis "should advance the purposeful sampling approach and the forms of data to be collected" (Creswell, 2014, p. 212), and observations, interviews, documents, and any other source of information can greatly contribute to the wealth of data that is generally collected and analyzed during the research phase of a qualitative study. As Creswell (2014) maintains, data analysis is constant during the research process, and it often involves "analyzing participant information, …organizing and preparing the data, …reading through the information, coding the data, developing from the codes a description and thematic analysis, using computer-generated programs, representing the findings in tables, graphs, and figures, and interpreting the findings" (p. 212). The final interpretation of a study may include stated lessons that have been learned, comparisons of the results to past studies or theoretical information, questions that have come to light, or a call to action for reform or to meet an agenda. The final stage of research (saturation) is generally realized when categories or themes have been exhausted and no new significant insights or discoveries can be identified (Charmaz, 2014).

For this study, the data was analyzed, transcribed, and coded in efforts to find common themes among the participants that might shed light on the topic of MOOCs and their impact on higher education, and these coded themes became foundational in constructing a final interpretation of the research project, articulated in Chapter 5 of this document. The semi-structured interview process served as the basis of the data collection phase, whereby the researcher gathered information and reflections concerning the lived experiences of the participants regarding Massive Open Online Courses at their respective colleges or universities. The researcher transcribed the interviews on individual Word documents, employing the process of *memoing,* when necessary, by writing down thoughts and ideas concerning the information gathered to add dimension to the material provided. The investigator listened to the recordings three times each during the transcribing process, and any identifying information about the participants or their institutions that may have been stated in the recorded information

was eliminated from the written transcripts of the conversations to protect their identities. The researcher adhered to a policy of *bracketing* so as to suspend any pre-conceived notions and precepts concerning online learning and MOOCs and approach the research topic from a fresh perspective (Creswell, 2013). Occurrences and frequencies of themes were then analyzed to find similar, or dissimilar, patterns among the responses collected to enable the researcher to accurately interpret the data and report the findings of the study for posterity.

Interrater Review Process

In efforts to secure validity for the data collected during the study, an interrater review process was adopted for the first three of the 12 interviews that took place. As previously stated in Chapter 3, securing a measure of external validity allows the research findings of a particular study to be sourced for other research studies. To prevent threats to external validity, a researcher must ensure that personal bias does not taint his or her conclusive interpretations of any research study, and verify that information gleaned from the project is truly free of personal partiality and usable for other research investigations:

> The researcher brings a construction of reality to the research situation, which interacts with other people's constructions or interpretations of the phenomenon being studied. The final product of this type of study is yet another interpretation by the researcher of others' views filtered through his or her own. (Merriam, 1998, p. 2)

As Merriam implies, the researcher still interprets findings of a study's proceedings through his or her own personal lens; however, by employing rigorous methods to ascertain external validity, conclusive evidence is more purely constructed through a process of *disciplined inquiry* (Yazan, 2015). For this study, the researcher utilized a four-step method to establish inter-rater reliability to thereby prevent threats to external validity of the research project's findings. The first step involved the researcher solely transcribing and coding the first three interviews to begin the process of determining themes for the findings of the study. Second, two graduates of the Pepperdine University GSEP Doctoral Program who had offered to serve as inter-raters for

the project examined the coding results of the first three interviews. Third, after reaching an agreement with the inter-raters on the coding approach and changing some of the theme names that had emerged during the coding process as per their suggestions, the researcher implemented the fourth step of the process by employing the agreed-upon coding method for the remainder of the interviews. The inter-rater reviewers made themselves available for any additional review or feedback that may have been necessary during the remainder of the coding procedure.

Initially, a color-coded Excel spreadsheet which included themes outlined for the first three interviews was shared with the two doctoral-level inter-raters, who were familiar with the process and had extensive training in qualitative research and coding practices. Both individuals examined the theme-based Excel coding sheet to verify the validity of the coding process. For confidentiality purposes, no identifiable information concerning the participants was provided within the Excel coding spreadsheet, and the inter-raters analyzed the data independently, providing suggestions as they saw fit. The alterations to the coded information suggested by the inter-raters was as follows:

- *IQ 3:* Theme of *Creative freedom* was added.
- *IQ 4:* Theme of *Ability to use course materials across all mediums* was reworded as "Adaptive course materials."
- *IQ 5:* Themes *Structural improvements* and *Fine-tune Pedagogy* were added.
- *IQ 7:* Theme of *Retain inclusion of department for new programs* was changed to *New division created for MOOC programs*.
- *IQ 9:* Theme of *Massive Global participation* was added.
- *IQ 12:* Theme of *Best Advice* was replaced with theme of *Program Development*, and theme of *Reflections* was replaced with theme of *Collaborative Planning*.

From this procedure, more specific themes emerged that addressed the four overarching Research Questions and the 12 Interview Questions more fully. Individual themes were deemed as useful to the study if at least two of the participants involved with the project identified them as being important.

Data Display

The study was framed by four principal Research Questions, and 12 Interview Questions were developed from their context to further mine any data collected through the participants responses concerning the advent of MOOCs on their higher education learning institutions. The original intention of including 15 participants for the study was reduced to 12, as during the interview process, similar elements and themes began to emerge after 12 interviews had been completed, thereby establishing that saturation had been achieved. A total of forty-seven themes emerged from the analysis of the transcribed interview material, and these themes are subsequently discussed in the following pages as each correlate to their individual corresponding Research Question. Participants in the study are referred to as P1, P2, P3, etc., for confidentiality, and interviewees' reflections on their lived experiences with MOOCs at their respective learning institutions are denoted by quoted material drawn from the interview process, and also from the researcher's own interpretation of the data presented.

Research Question 1

RQ 1: What challenges have you encountered in making the transition to MOOCs? For further specificity into this query, the following four Interview Questions were presented to all 12 interviewees:

- IQ 1: What are some of the economic and technical issues related to making the transition to MOOC-driven courses?
- IQ 2: In what ways is push-back, or resistance, from faculty to new online technologies handled?
- IQ 3: How have some of these challenges been overcome so far?

- IQ 4: What are some new ways that faculty members can incorporate MOOCs into the course curriculum?

Interview question 1. What are some of the economic and technical issues related to making the transition to MOOC-driven courses? Five major themes arose in response to IQ1: (a) initial expense, (b) availability of funding, (c) need for additional funding, and (d) technical barriers, and (e) pedagogical adjustments (see Figure 1).

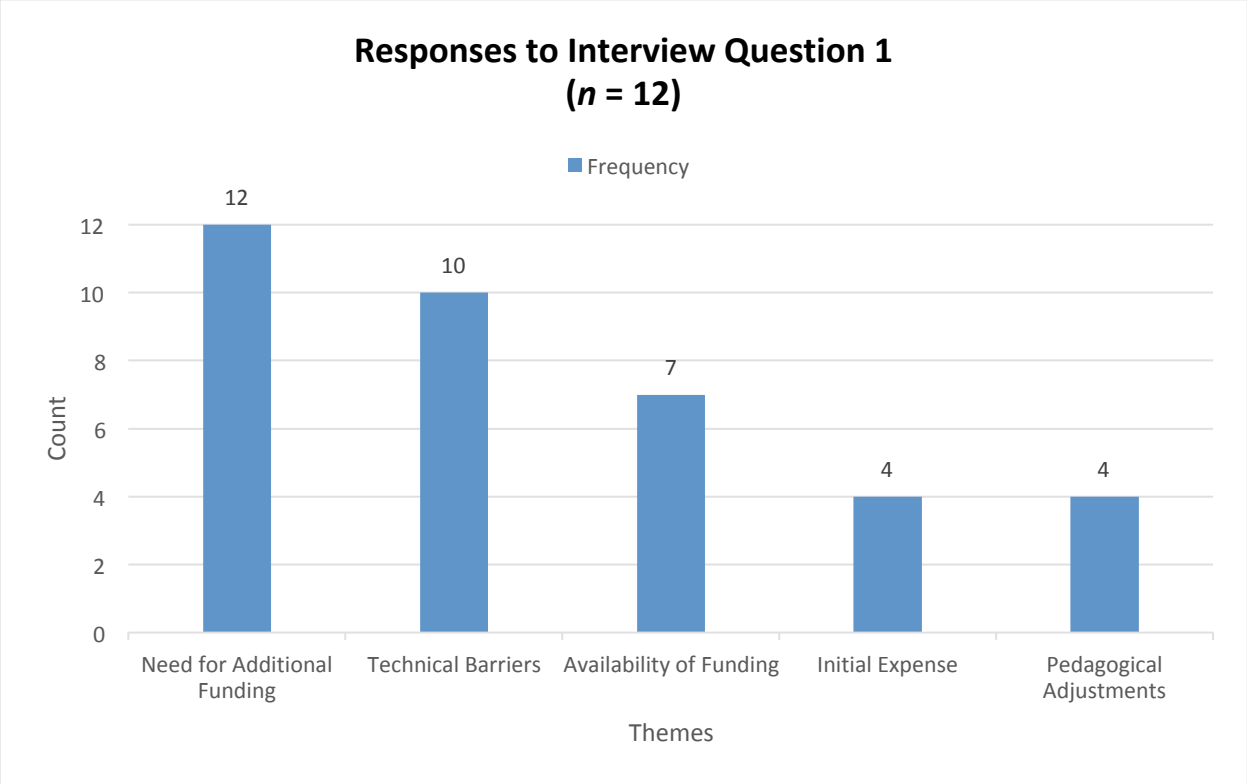

Figure 1. Themes that emerged from IQ 1: What are some of the economic and technical issues related to making the transition to MOOC-driven courses?

Need for additional funding. All participants mentioned some type of financial assistance from MOOC providers with the establishment of massive open online courses at their schools, especially during the latter phases of development. As participants described the inclusion of MOOCs to their individual curricular structure, MOOC providers such as Coursera, Udacity, and EdX were all mentioned during the interview process. P1 asserted that "Coursera shouldered a lot of the burden, and the courses became incredibly successful," adding, "Our

first MOOCs went up in 2013, and we gained prominence with Coursera right away…I think we now have 80 courses on Coursera and almost 200,000 completers" (Participant 1). P2 reported that Coursera was a major contributor to the MOOC program, offering a generous advance and sharing the risk while providing a valuable partnership in establishing the new venue, which has led to great success (Participant 2). P9 maintained that the "main driver" of the MOOC platform has been EdX, "although the school also works with Coursera and is always looking for other providers" (Participant 9). Other participants said that there had been considerable financial support provided by MOOC providers, while some also mentioned that additional grant monies had been contributed for MOOC courses at their respective colleges.

Technical barriers. Ten of the 12 participants reported technical challenges and structural adjustments that had to be made in the transition to MOOC-driven courses. For instance, P1 and P3, who are employed at the same university, mentioned that open courseware had already been built out by the time MOOCs became an issue, but P3 stated that despite that fact, "…technology used for online peer grading was an issue" (Participant 3). P2 said that the biggest tech challenge was in adjusting to the MOOC platform, which included smaller units and more video instruction in its design, adding that the accelerated workload to craft these courses together had become a daunting task. Others maintained that courses had to be built out to provide for MOOC classes, and media specialists had to be brought in to assist in course set-up. P6 said that MOOCs at her university are actually posted on three different platforms, "and each platform has its own limitations and its own quirks, so we've had to struggle with all three…you have to really worry about making sure that you're accessible…how you're grading, how you're responding, how you're participating in the discussion forums, and everything else" (Participant 6).

When discussing additional technical challenges that MOOCs posed at their schools, many of the respondents reiterated such necessities in initiating MOOC platforms as the hiring of course developers, the training of instructors, and the development of existing courses to

match with integrated MOOC curriculum. Some cited the task of integrating social media with platforms and aligning them with particular courses, while others maintained that MOOCs demanded more overall interaction with students and access to materials than the limited toolset of previous courses provided, which often created other thorny issues. One initial technical adjustment was "just trying to figure out the [MOOC] platform," as learning ways to leverage the third-party learning structure could often be time-consuming and problematic (Participant 1). Many participants echoed the realization that programs became more sophisticated and demanding than originally thought, and that MOOC video components and design were often costly. Some noted that professors often needed to adjust to create large-scale programs to adapt the MOOC design, while P10 highlighted the necessity of finding ways to "manipulate simple tools, find ways to integrate third-party software, or find alternatives that would work in parallel with MOOC programs to achieve the ultimate goals of the course" (P10).

Availability of funding. Seven of the participants mentioned that MOOC programs had considerable funding through university monies or private donations. P4, P5, and P12, reported large amounts of university funding for MOOC projects at their schools, while P9 cited considerable investment by the Provost Office for the new MOOC platform. P10 mentioned the need for an overall budget to meet the needs of MOOC degree-oriented programs. MOOC platforms can be very costly to implement, and often schools have had luck obtaining funding from private organizations that see opportunities for professional development for their employees through the use of MOOCs. P6, for instance, noted that an anonymous donor who was very interested in open education was instrumental in getting MOOC programs initiated at the university, allowing the school to "fund some MOOC creations through [platforms] specifically earmarked for open education" (Participant 6). P8 cited enormous philanthropic funding granted through communications giant AT&T for MOOC-driven courses, greatly advancing advertisement for the university program and spearheading its successful implementation at the school. P8 further mentioned, "…we have close to 30 courses now…and

the program is building. [Because of] the philanthropy of AT&T…the program operates very comfortably…and that's because of their generosity" (Participant 8).

Initial expense. Eight of the study participants maintained that there were few economic issues with the initial implementation of MOOCs at their universities, and all mentioned that MOOC providers generally supplied additional funding at least in part for these programs. Some of these learning institutions had already had significant online learning apparatus in place, so the inclusion of a MOOC platform was not a huge adjustment to their programs. P1 said that economic issues were not as great as what one may see at other institutions, further stating that "[Our university] has a long history of being involved in the open courseware movement…and when MOOCs came along…in a fairly short time, we were able to get six MOOCs up because we already had open courses designed" (Participant 1). P8 explained that his university already had millions of dollars in equipment and many years of distance learning and online education accessibility, along with experienced course designers and educators. P11 stated that although an annual license is paid for MOOC programs, the MOOC provider offers content and a hosted environment, which keeps costs down.

Some other participants, however, stated that there were some significant cost issues with the instigation of MOOC courses at their universities. P5, for instance, replied that cost at first was daunting, as the university put up "between $60,000 to $100,000 worth of in-kind labor" to initiate the MOOC program (Participant 5). P9 cited significant cost issues in the creation of MOOC programs saying that "it was an investment by the Provost Office…several million dollars…[which] put quite a strain on a lot of current systems, [such as] Registrars, [etc.]" (Participant 9). P10 volunteered that the school found it necessary to "create an overall budget for implementation of MOOCs for degree-type programs; for example, faculty compensation, course design, course developers, etc." (Participant 10)

Pedagogical adjustments. Four respondents mentioned some initial pedagogical adjustments that had to be made regarding the installation of MOOC courses. P2 mentioned

that the early success of the MOOC program caused a course overload, and some instructors were overwhelmed at first dealing with more courses than had originally been planned. The design of the MOOC courses also took some adjustment for faculty members, as many of these courses were more *video-driven,* with less emphasis on class lectures or even class length, and class materials and course concepts were often presented in much smaller units. Of course, larger classes demand altered methods of teaching, and P6 noted that huge MOOC classes needed to be structured correctly, or else they would present massive problems, underscoring the fact that people can become alienated or lose interest if the design of a such an enormous, online course is not presented effectively and professionally. P6 mentioned that faculty have often needed to adjust courses to align with the MOOC model, noting that the school had to create a way for instructors to grade—as that was not yet included in the MOOC program—and that professors generally had to fit existing courses to the technologies of the MOOC learning platform. Additionally, instructors also had to primarily use open source and original material for these courses—not published material—which took an enormous amount of time to create. P12 maintained that although many professors were eager to initiate MOOC structures for their courses, one big issue was finding ways to devote faculty time to the development of MOOCs.

Interview question 2. IQ 2: In what ways is *push-back*, or resistance, from faculty to new online technologies handled? Five major themes arose in response to IQ2: (a) administrative support, (b) additional training, (c) creative license, (d) periodic feedback, and (e) maintaining stability (see Figure 2).

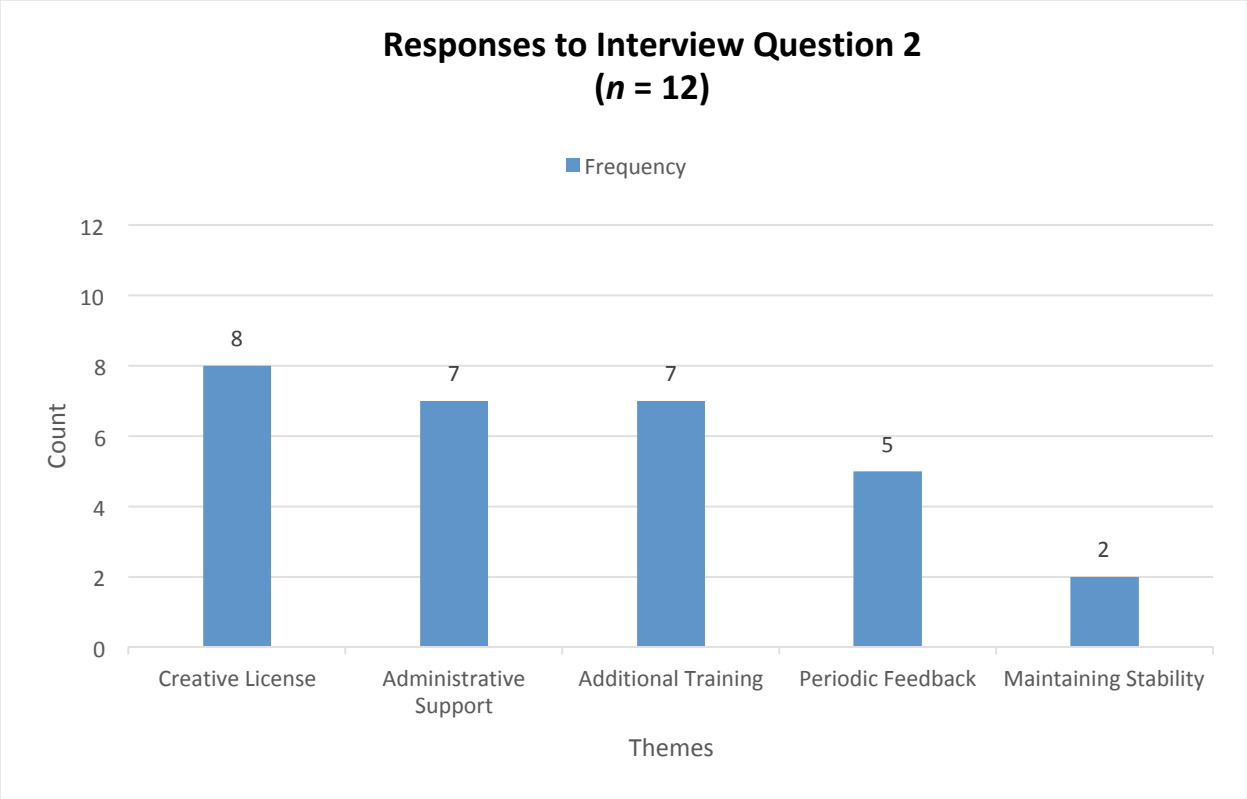

Figure 2. Themes that emerged from IQ 2: In what ways is push-back, or resistance from faculty to new online technologies such as MOOCs handled?

Creative license. Many faculty members have been encouraged to use their own materials in unison with the tools and content provided by MOOC platforms, and this opportunity has served as a large motivation for professors to embrace the new learning venue with enthusiasm. A majority of participants mentioned the importance of allowing professors creative license in the design of MOOC classes. P2 mentioned that faculty members are allowed creative freedom with any materials they create for the program, while P5 indicated that course materials created in addition to the MOOC venue can be used by faculty across all mediums. P8 highlighted the importance of granting creative freedom to professors in tailoring MOOC content, while P10 expressed the fact that faculty were allowed control of intellectual property when adapting class materials to the MOOC structure. P12 reported that faculty were allowed significant creative freedom when creating MOOC course curriculum, adding:

> We have one of our faculty members who has taught for many years who says that the best teaching experience he's ever had was teaching his on-campus PhD students [while in MOOC mode]—which he had built—and coming to class to have a…more Socratic or Tutorial-style, more active engagement. (Participant 12)

Administrative support. Of the 12 participants in the study—many of whom serve as in an administrative capacity at their learning institutions—only two noted any push-back, or resistance, from faculty members in the adoption of the MOOC learning structure. It was largely reported that, conversely, many faculty members at these universities were already tech-savvy, early adopters to new online teaching technologies, and were both inspired and excited by the breadth and global reach of the MOOC format. P2 acknowledged that although developments in a university environment can move at a glacial pace, at her university, faculty members who wanted to jump on-board with MOOC programs made themselves available early on, and administrators were quick to bring in industry experts to make the transition to MOOC structures smoother. P3 reported that faculty at his university were excited overall to join in with this new venture, and administration was highly supportive of the inclusion of MOOCs to the curriculum. P4 noted that there was very little resistance from faculty members as only a few MOOCs were developed at the school, and even though these classes were used for outreach purposes only, those who were involved with MOOCs were enthusiastic about the new phenomenon. P8 replied:

> Sometimes there was dissension…[but] the people we support for the development of MOOCs want to do it, and invariably …they become better teachers…they learn a different method of pedagogy and of organizing the material…and in many of our experiences, they turn around and use that residentially with incredible success, [which is] a *win/win* as far as I am concerned. (Participant 8)

P11 identified the faculty members in her college system as mostly being early adopters, but since it is a district that includes several community colleges, it can be "a real mixed bag in

terms of level of adoption, with online, and even with MOOCs" (Participant 11). Nonetheless, it is a completely online system, so most of the professors are already tech-savvy, which largely serves to negate any large level of resistance from faculty members throughout the system for technical reasons.

Most participants acknowledged that there will most likely always be some level of resistance to heightened levels of online education from some faculty members and others who are not tech-savvy and who do not want to adjust to new technology, or who feel that perhaps the new MOOC domain can only denigrate the traditional classroom experience in some way. However, all 12 mentioned that there was not much push-back regarding the implementation of MOOCs at their schools, and that their administration departments largely focused on those individuals who were excited about being part of the new MOOC programs while providing support systems to help them develop courses inclusive to the MOOC paradigm.

Additional training. New technologies can be challenging to master, and often older or less tech-savvy faculty members resist new, technically advanced learning platforms for a variety of reasons. Seven participants in the study mentioned that additional technical training was generally provided to faculty or administrative members who felt that further instruction and guidance in the MOOC arena was necessary. P1 said that because open courseware was already designed and in use at the school, most faculty members were already fairly proficient at new technology in the learning sphere, and those who were approached to teach these courses were already excited by the challenge. Once the courses were seen as being successful, others came on-board. P3 said that he would often emphasize the advent of online education as being "nothing more than just another [teaching] tool" when he encountered resistance from faculty members about the implication of MOOCs (Participant 3). He said that although additional technical training is always provided for these types of transitions, often "the biggest concern is the amount of faculty-student and student-student interaction…and in an online space, how do you achieve that interaction? That can make faculty very nervous…and

rightly so" (Participant 3). He maintained that Massive Open Online Courses need to be treated differently because they *are* different in scope and capability, and faculty must consider all elements of these types of courses in discerning the best use of the materials and technologies they offer. P5 stated that in addition to providing training at the university for the inclusion of new teaching technologies, he would always emphasize the transformative qualities of online education as he believes that these new learning venues will "transform the way we think and teach" (Participant 5).

Periodic feedback. Five participants stressed the importance of a checking-in process to provide periodic feedback on the transition to MOOC programs. P1 noted that his organization holds monthly meetings to establish and record progress of the MOOC transition to address any issues involved with it. He stated that "…in the early days, it was certainly more of a [process] than it is today…trying to get all of the specifications worked out was a bit of a challenge at first" (Participant 1). P2 expressed the daunting nature of the task that lay ahead during the beginning stages of the MOOC transition, stating, "My team was pretty small and we pretty much doubled in size…I think the biggest challenge for us has been the timelines because [the MOOC provider] is more commercially oriented than we've ever been" (Participant 2). She mentioned that semi-monthly meetings were established to address issues with the initiation of MOOCs, largely because of the enormity of the process, and that they were very helpful in keeping things on track.

Maintaining stability. Early interpretations of the MOOC phenomenon left many education professionals feeling that a big change was on the way, and perhaps not for the better, as many thought that these massive online *free* courses might prove to be massively disruptive to the whole education system. Two of the study participants stated that their learning institutions emphasize stability over disruption in the implementation of these new learning systems. P4 reported that as MOOCs were offered as *outreach* only, the integrity and status quo of regular university programming was maintained, serving to quell a lot of fears

about the impending changes. P7 stated that some MOOC courses had the same overall structure as residential courses, so there was not a big shift with the inclusion of MOOC classes. He also noted the general enthusiasm at his university for these newly structured courses and the great advancements they could bring to education, stating, “I really do believe…that this is something that is mostly inevitable, and we really need to seize upon it, and do it well” (Participant 7).

Although the researcher has encountered widespread trepidation among higher education leaders in recent literature concerning the introduction of MOOCs, most of the participants in this particular study reported a general acceptance and welcoming of MOOCs at their respective learning institutions, describing a general feeling of excitement from both administration and faculty members with the induction of MOOCs at their universities. Sensing the many advancements and improvements that this global learning venue offers, most participants were enthusiastic and supportive of the constructive changes that MOOCs could bring.

Interview question 3. IQ 3: How have some of these challenges been overcome so far? Six major themes arose in response to IQ3: (a) organizational oversight, (b) structured training, (c) empowerment for educators, (d) administrative guidance, (e), encouraging change, and (f) success of programs (see Figure 3).

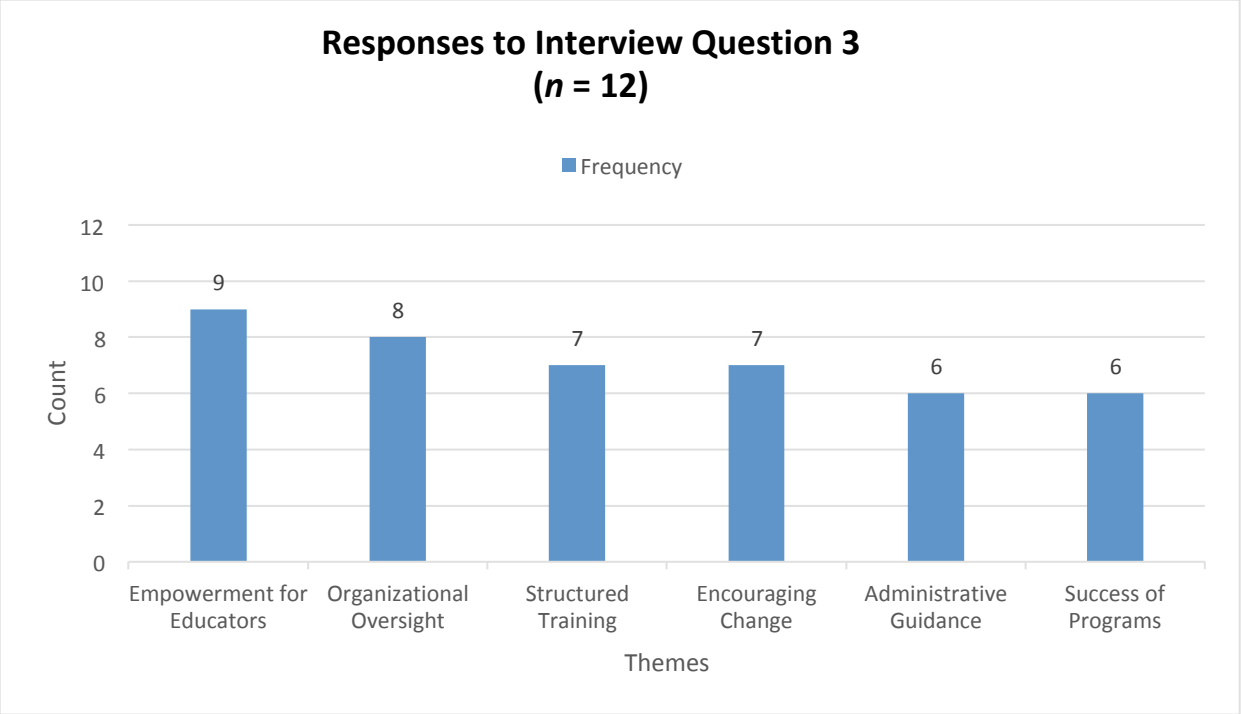

Figure 3. Themes that emerged from IQ 3: How have some of these challenges been overcome so far?

Empowerment for educators. Certainly, having creative freedom to teach as one wishes at the university level is of utmost importance, and many participants noted the fact that they could generally infuse their own materials and ideas into the MOOC class structure to articulate their own unique vision for the courses they were teaching. As P1 stated, "Basically, they own whatever they've created, although the university retains the right to use it and put it on the platform—but they certainly could control the intellectual property where it went other than with Coursera" (Participant 1). P7 commented that MOOCs presented "a host of challenges," and that leadership at both the campus and division levels were very committed to making a successful transition to MOOCs, encouraging faculty members to adopt a "powerful conceptualization of what this looks like, how it's scoped, how it's sequenced, and how it's is designed specifically to meet the needs of learners," while allowing them creative freedom to develop courses that utilize their own individual talents and resources in enhancing the MOOC platform (Participant 7). P10 replied that professors can shape their own materials at her

university, and P12 stated that the Provost Department at his university was very supportive of new strategies that would ensure that faculty had the time necessary to devote to MOOC development, thereby allowing for greater faculty involvement with the creation of the materials used in these courses.

Organizational oversight. Eight of the participants reported that the leadership at their respective learning institutions was highly supportive in the transition to MOOC structures, offering assistance in various ways to lessen anxieties about the new online venue and encourage the benefits that MOOCs could bring. Even at one university, where the inclusion of MOOCs was minimal, P4 volunteered that leadership was very engaged and interested, but entirely as outreach, not as part of the curricular structure at the institution. As a leading administrator and leader of the MOOC platform at his university, P8 highlighted the school's support for the program, stating that millions of students have been able to learn content that they may not have been able to obtain elsewhere with such rapid accessibility. P8 further assayed the value of MOOCs at his university, stating how MOOC structure "changed the way we deliver our own residential courses. It improved them, and it improved their delivery residentially…empowering them in ways that weren't there before" (Participant 8). P9 illustrated his university's commitment to the MOOC process, stating that it wasn't just about the content of these courses that make them so beneficial, stating, "It was a whole community of practice about how you think of the problems associated with a particular discipline, and then [applying] ways that are accessible, and open" (Participant 9). P10 acknowledged a *paradigm shift* with the implementation of MOOCs at her university, underscoring the administration's high level of interest in creating a successful transition to these types of courses for the delivery of a large-scale degree program that gives back to the community. P10 added that faculty members were initially very excited about the format of these new courses, saying that professors generally volunteer to teach degree programs. P12 stated that although there were some professors who were not at all interested in teaching through the MOOC platform, most of them did eventually

become interested in creating MOOC-oriented courses, and there is significant guidance and support from the Provost Department to help them achieve this goal.

Structured training. As indicated in Interview Question 2, some faculty members at these and many colleges and universities are resistant to MOOCs often because of the technological sophistication that these courses demand, or the belief that shifting a class to a wholly online venue, with the addition of hundreds—if not thousands—of participants will only cheapen the classroom experience and disparage it. However, the infusion of structured training sessions aimed at helping faculty members adapt to the new technology has served as a great impetus in not only helping these individuals become more comfortable and adept at using the MOOC platform, but also in generating excitement for the new programs. As a leading administrator of his school, P2 said that at the initiation of the MOOC program, faculty members who were excited about teaching the programs were quickly identified, and industry experts were immediately brought in to implement necessary adjustments to include MOOCs in the curriculum. P6 said that some faculty had originally resisted the MOOC paradigm for teaching purposes, but that the demands from the faculty who were eager to use these programs have far outweighed those who have resisted, and the school provides any necessary training with scheduled sessions, concentrating on faculty members "who are interested in pushing the envelope and…reaching a broader audience" (Participant 6). P10 said that many professors have been committed to the development of the MOOC-degree programs, and often trainers are brought in to assist, especially in cases of older faculty members who may show initial resistance to the technology. P12 mentioned that even though some professors were not interested in moving into the MOOC venue during its early development, most of the faculty members were already using online tools for their teaching methods and were excited about the new platform, eliminating the need for extensive online training. Most participants declared a general welcoming of MOOC learning capabilities by the faculty at their learning institutions, stating that additional technical training was usually provided to anyone in need of it for teaching

purposes, which usually helped allay any fears or concerns in adapting to the new MOOC technology.

Encouraging change. Seven participants articulated the importance of administrators at their schools who were instrumental in encouraging change and embracing the new educational vista that MOOCs present. P1 mentioned that, in the early days of MOOC development, the Vice Provost created opportunities for faculty to share thoughts and ideas about these courses and to teach other faculty members about the benefits of the program. Rather than forcing these new types of courses on them, he stated, the strategy was to move forward with those individuals who were open to new things and use them as an example to others who might be reticent about moving forward with MOOCs. Highlighting the supportive relationship at her school among faculty members and administrative staff that helped encourage the transition to MOOCs, P2 said, "…everybody did their part, and we were all involved…and it helped us make a lot of changes really quickly" (Participant 2). P12 emphasized the importance of the administration/faculty relationship, stating, "…I see this as a very important part of (the university's) future…look for faculty members at your institution who are interested in trying this out…figure out how you can support them so that they can take a crack at building [the necessary] tools and using them in their own classrooms" (Participant 12).

Administrative guidance. Six participants mentioned the importance of administrative guidance and support throughout the transition to MOOC learning venues. Stressing that periodic meeting sessions have been instituted to ensure that courses are being properly constructed, and faculty members have been prepared for the coming changes (while specific positions have been created to oversee the development of MOOC-driven programs), actions taken by administrative members at their schools have had a great effect on the success of the MOOC program. P5 said that faculty members at his university meet periodically to share ideas about MOOC programs, and acknowledged that the program had been very structured since its inception:

> Extension set it up, they spent some money, they gave us a very competent Course Manager and several other media specialists who basically packaged our lectures…we made it into much more of a course, and much less of an informal graduate seminar, which is how it all started. (Participant 5)

P12 informed the researcher that regular meetings were scheduled to monitor progress of MOOC courses, emphasizing the fact MOOC assessment is often tied to the way that faculty members—who create a large portion of the MOOC forum—feel about the final product. He said that faculty members "…have the highest standards…and they're typically making a MOOC that is related to a particular course they've taught in the past…and so a very relevant thing for us is *actually listening* to our faculty" (Participant 12). Underscoring the importance of administrative support during the transitional period to MOOC inclusion, P1 noted that at his university, a new Vice Provost position was created specifically to deal with the impending technological change that was coming. It appeared to the researcher that overall guidance and support for MOOC programs was a high priority for administrative leaders at these participants' learning institutions.

Success of programs. The rapid and massive success of MOOC programs at these individuals' respective learning institutions was often a driving factor in generating enthusiasm for these courses by faculty members and administrators. P2 stated that the great success of the MOOC program had taken many at the school by surprise and noted that her team was overwhelmed at first because of the tremendous response to MOOCs: "I think my team was pretty much ready to jump ship by the end, getting the first three [MOOCs] up. However, at the same time…they were excited and energized…and we just won three more bids for programs for next winter," adding, "…and it has been a financial success for us, as well" (Participant 2). Reflecting on the success of MOOCs at his university, P1 stated, "I would say that MOOCs really elevated the stature of online education among faculty…because they saw Stanford, MIT, and Harvard doing high-quality online MOOCs…and whatever faculty resistance there might

have been was sort of quashed by people becoming involved with MOOCs, including some very influential faculty members who were excited about doing them" (Participant 1). P8 mentioned that although it took a few years to accomplish, most faculty members are all in with the MOOC programs, adding that people tend to get more comfortable with the new learning venue when they see that it works.

Interview question 4. IQ 4: What are some new ways that faculty members can incorporate MOOCs into the course curriculum? Four major themes arose in response to IQ4: (a) adopt relevant material, (b) creative flexibility, (c) adaptive programs, and (e) adjusted pedagogy (see Figure 4).

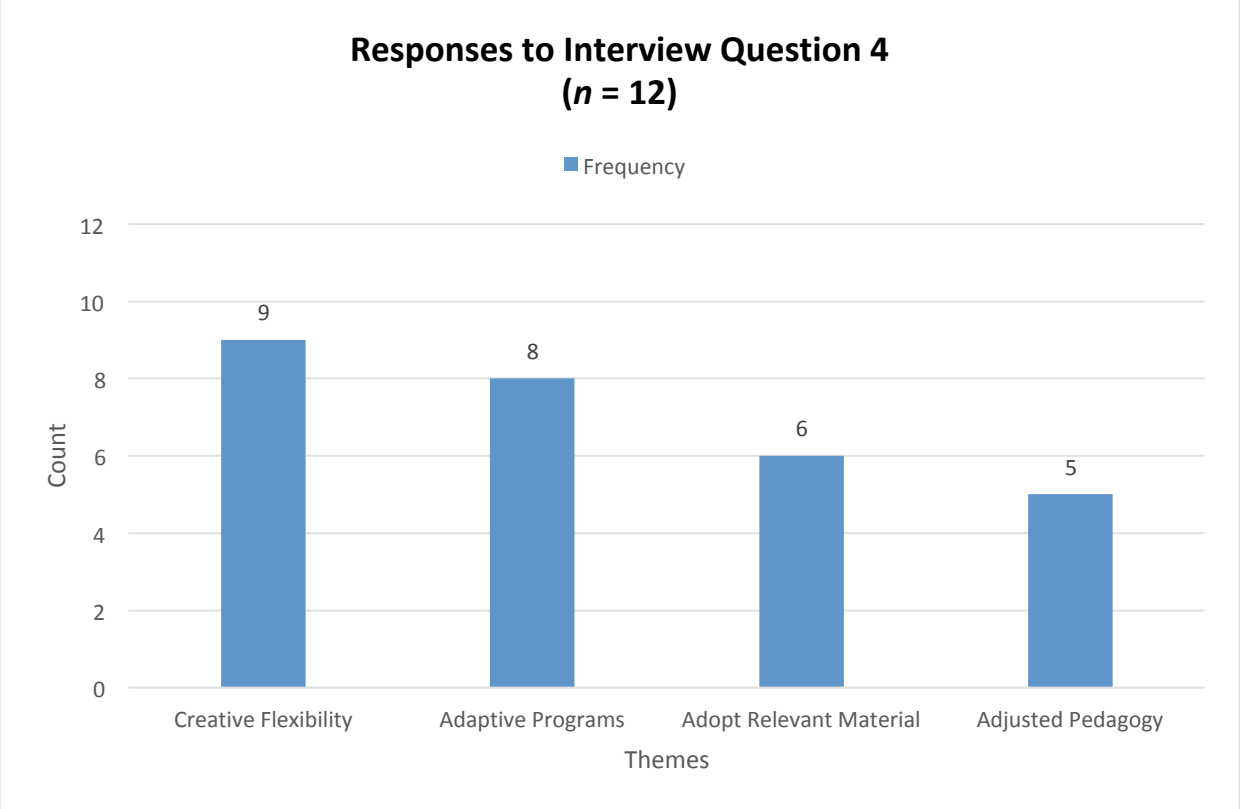

Figure 4. Themes that emerged from IQ 4: What are some of new ways that faculty members can incorporate MOOCs into the course curriculum?

Creative flexibility. Once again, when asked this question, many participants stressed the importance of having creative license in the creation of class materials for these new courses. P7 recommended that these courses needed to be specifically designed to

incorporate elements of both the traditional classroom and the online format into one cohesive unit, by having a clear idea of how these courses are structured and delivered, and how they can specifically address the needs of the learners. P9 mentioned that the school had to create a way for instructors to grade students in the MOOC platform, adding that faculty members had "…to take their existing projects, and then completely redesign them to fit the…technologies that EdX had." P9 added that another issue was with published material, saying, "We couldn't use any published material…so there was a big push in terms of [creating content] from scratch, or using open source [materials]…and the amount of time to develop content from scratch was enormous." (Participant 9). P12 maintained that professors at his university were able to retain ownership of materials they had created and use them across both onsite and online platforms, creating relevance across all mediums.

Adaptive programs. Freedom to mix and match course materials was a high priority at the learning institutions examined in the study, and all participants mentioned that having this option was critical in shaping MOOC courses to meet student needs. Offering adaptive programs can be complex, as P3 notes, "You really want to be intentional about what you want to use MOOCs for, and that should drive the sort of courses you put out there and what sort of developmental resources you put into them" (Participant 3). Having the latitude to create an entirely unique course using the MOOC platform can also create heightened innovation, creativity, and excitement. As P5 describes:

> We were basically senior researchers, all of us, who started teaching a course [on Climate Change]. …we thought that we had a factually unique point-of-view, and really that there was no other university that could marshal on these same topics the same kind of firepower that we thought we had. So, what we decided then, was that we would teach a course. (Participant 5)

P5 further illustrated the value of flexible course creation and the potential impact of the MOOC model by stating, “At some point, somebody heard about this...and mentioned that this is the kind of star power that could really win in the MOOC marketplace” (Participant 5).

Adopt relevant material. Six of the participants in the study said that they were free to adopt any relevant material that they saw fit to the MOOC course curriculum, and conversely, they could also pick and choose the elements included in the MOOC courses that they felt best supported their teaching style and content. P1 said that teachers at his university have total creative license as pertains to the MOOC programs, and further illustrated the school’s support of this notion by adding that the school made all of the assets created for MOOC courses available to professors to use whenever they wanted. P2 mentioned, “We like to bring the theoretical and the practical together, because most of our students are already out there working…it’s got to be really relevant” (Participant 2). P5, highlighting the global nature and relevance of MOOC courses, stated that students would immediately become involved in discussions about issues occurring in their own countries while exchanging information about international problems and concerns.

Adjusted pedagogy. Just as having freedom to expand and adjust the materials used for MOOC courses, participants also re-emphasized the need for adjusted pedagogy at times to suit course content to the MOOC curriculum. P8 illustrated this point by saying that instructors who support the development of MOOCs learn a different way of organizing pedagogy to fit the needs of the course. He said that often these courses are taught using the platform originally developed for the MOOC purposes, but that the platform is malleable, indicating that the main thrust of MOOC development is geared toward providing unique content that can be adapted to the MOOC curricular structure (Participant 8). P11 acknowledged that professors at her college have been able to adjust pedagogy to fit lessons, saying that they adopt MOOC content and customize it. She added, “If you really want to be successful, you need to marry the MOOC infrastructure with the student success that you do for credit-bearing courses that are smaller—

not massive, or free" (Participant 11). P12's response to this question supported that notion, as he stated:

> All of our MOOCs are being developed in such a way that they directly impact how we teach on-campus students. The purposes for us are partly outward-facing…to launch a MOOC out into the world, as it were, and partly inward-facing. The online tools that we're building, we're using in our own classrooms for our own students in a way to improve their experience. And I think that the linkage is important (Participant 12).

Research Question 1 summary. RQ1 asked: What challenges have you encountered in making the transition to MOOCs? To answer RQ1, four Interview Questions were presented to 12 interviewees. In responding to Research Question 1, participants articulated the methods and systems that were utilized at their learning institutions to most effectively implement Massive Open Online Courses to their curriculum. Such issues as economic and technical challenges were discussed, as were instances of resistance to these new programs, and participants volunteered their thoughts on methods that have been used to overcome some of these types of challenges. Many participants employed similar strategies in dealing with this new phenomenon, while some had very unique solutions to problems or changes that the installation of MOOCs would often bring.

Four commonly occurring themes that emerged from the data are the following: (a) technical barriers, (b) need for additional funding, (c) empowerment for educators, and (d) encouraging change.

Research Question 2

RQ 2: What strategies have you implemented to meet the changes brought on by Massive Open Online Courses? For further analysis of Research Question 2, the following three Interview Questions were asked of the 12 participants:

- IQ 5: What techniques/strategies have been employed for the successful inclusion of MOOCs into the curriculum?

- IQ 6: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs?
- IQ 7: What strategies have you employed to overcome administrative challenges for the inclusion of this broad new medium?

Interview question 5. IQ 5: What techniques/strategies have been employed for the successful inclusion of MOOCs into the curriculum? Four major themes arose in response to IQ1: (a) pedagogical fine-tuning, (b) expanded course objectives, (c) utilization of MOOC capabilities, and (d) new leadership position established (see Figure 5).

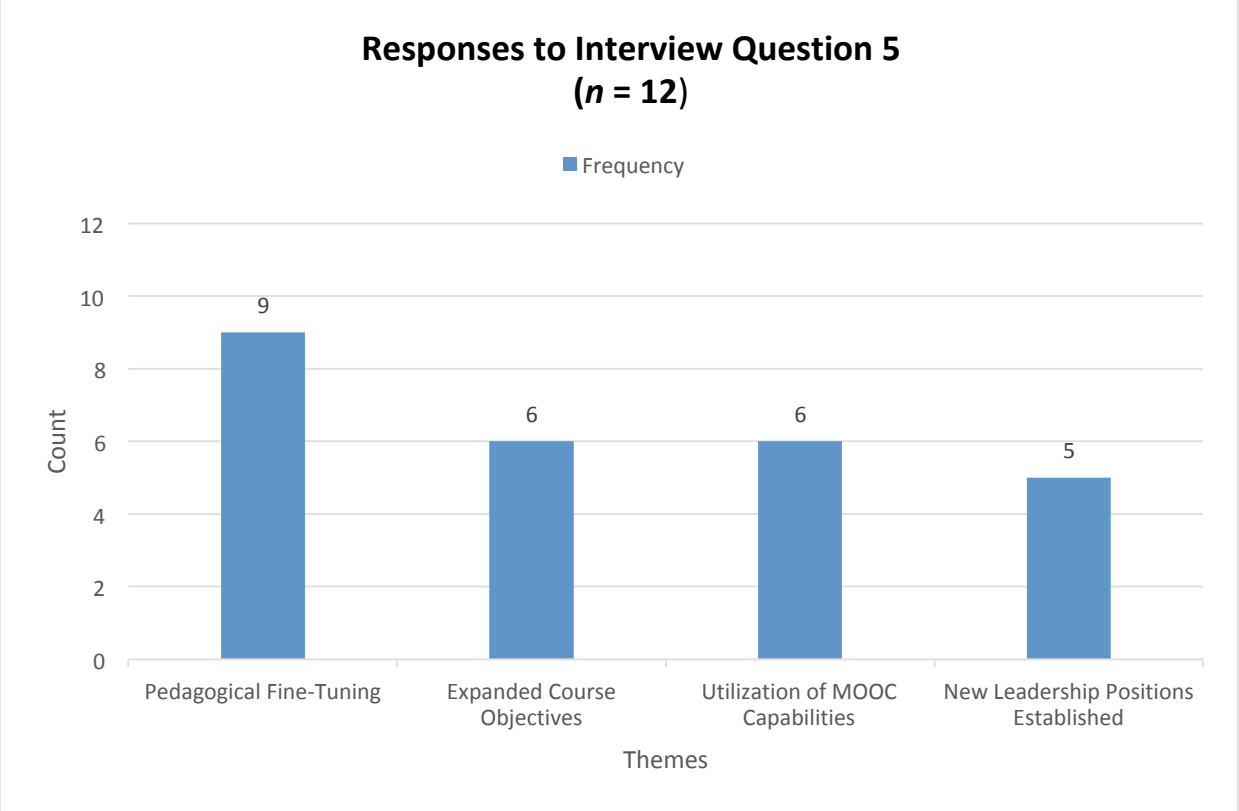

Figure 5. Themes that emerged from IQ 5: What techniques/strategies have been employed for the successful inclusion of MOOCs into the curriculum?

Pedagogical fine-tuning. Nine participants reiterated the importance of pedagogical adjustment from Interview Question 4 and responded positively to the necessity of additional fine-tuning of pedagogical objectives in achieving success with the MOOC structure. Massive Open Online Courses can deliver greatly expanded virtual capabilities—from global chat rooms

to flipped classes—and often professors need to refine their course content, even after adjusting it, for the MOOC venue to take full advantage of everything the MOOC has to offer. P5's previous statement from Interview Question 4 on the topic denotes the fact that media specialists were brought to help professors package lectures, record them, and break them down into segments to tailor them for the MOOC venue at his university. P6 said that professors at her school use MOOCs in course curriculum in variety of ways. "The most obvious one is the flipping of the class…where students watch the MOOC videos before they come to class and then do hands-on activities during the class" (Participant 6). P9 maintains that many faculty members have been able to "apply certain research techniques that they've been talking about for years, and actually apply them to these courses." He added:

> …they perform research with them…[deciding] how to give feedback, how to scale feedback…and using the MOOC, they're trying to bridge those issues…and also trying to incorporate that into their existing online courses. (Participant 9)

P11 reported that faculty members modify MOOC material to fit the class, saying that professors can utilize their own sequencing with the materials, adopt the content, and customize to give it the university's own unique branding and flavor while matching MOOC classes to the school's distinct competencies.

Expanded course objectives. Having an expanded platform to navigate has often resulted in equally extended objectives for these courses that offer limitless virtual opportunities in educational content and scope. P5 described an expansive course that he and his colleagues devised for the MOOC venue, stating that as the course developed, more materials and content were added, and the course was picked up by iTunes as something new and exciting, with about "15,000 hits for the course as soon as it went up" (Participant 5). P5 added that the new MOOC format included a series of study questions infused into the course for added rigor which included global engagement.

P7 noted that courses could be designed and expanded to specifically meet the needs of the learners, while P8 implied that videos, lectures, etc., all had higher production value in the MOOC platform, enabling professors to create more compelling content for courses. Offering additional insight to the expansion of course objectives in the MOOC platform, P9 said:

> Some [faculty members] have been able to use [portions] of the content they've created for the MOOC because they've had a much higher budget for development costs than they would have had for a normal online course, so they've taken higher production value for videos, and higher production value overall, and have been able to use those videos and other resources for their courses to great effect. (Participant 9)

P11 oversees an entire system of online colleges, and offered that the MOOC format generally encourages a broader spectrum for study and engagement.

Utilization of MOOC capabilities. MOOC platforms offer enormously extended online capabilities that convert the classroom experience to one of seemingly unlimited virtual connectivity. Many professors who have embraced the MOOC style of teaching have found that the limitless reach in terms of enhanced content, educational materials, and global connectivity that MOOCs offer has transformed the traditional methods of teaching in myriad ways. P1 replied that although instructors "pretty much teach the way they always did," he also acknowledged that the additional extensive online element that MOOCs offer provides a tremendous expansion of materials to work with (Participant 1). P3 said that he encourages faculty members to use the new tools in the platform to help shape their own vision of how the class should be. P5 noted the value of the global discussion forums that the MOOC platform provides while highlighting the transformative aspect of the MOOC venue, saying:

> We had weekly discussion seminars as well as lectures that were posted…and we would have the discussion on the Web, and basically, people tuned in from all over the world…. And at the end of the day, I thought that the greatest value to [the university]

was not that we were going to make money…it was that we were going to make curricular teaching more efficient. (Participant 5)

Participant 11 stated that professors are free to use their own materials to match lessons to school's standard of competencies, and conversely, to utilize tools provided in the MOOC course to streamline courses the way they see fit. P12 mentioned that faculty have the freedom to adjust curriculum and shape the MOOC material to fit the needs of the particular classes they are teaching.

New leadership position established. Some university administrators found it necessary to create a special leadership position, or special Provost, to oversee the implementation of MOOC curricular structure at their schools. P1 said that at his university, a new Vice Provost for Teaching and Learning position was established to deal with the incumbent changes that the new technology and learning methods of MOOCs would bring, and by making it the duty of one specific person to oversee the operation, it would serve to cut down on consternation among faculty while providing a smoother transition to these new learning platforms.

P1 added, "Increasingly, the Vice Provost is creating opportunities for faculty to look at new (teaching strategies) and have them using them to teach other faculty members who might want to use them, and so forth. There's a whole network of programs that the Provost has been [overseeing]" (Participant 1). "We're conducting a [MOOC] program with our Graduate School of Management, which is really exciting," volunteered P2, "and we have a new Chancellor who is coming on board" (Participant 2). P5 said that his university had created a Course Manager specifically for the implementation of the new MOOC programs who would actually run most of the courses, package the lectures, record them, and break them down into segments (Participant 5). A team of *Course Architects* was formed at P7's university, which was responsible for the final product and communications with the MOOC provider. The ability to provide a central figure for the leadership role for the implementation of these MOOC learning

structures has proven to be instrumental in the success of the programs at most of these participants' universities.

Interview question 6. IQ 6: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs? Four major themes arose in response to IQ6: (a) dedication to success, (b) enhanced funding, (c) additional oversight, and (d) new strategies employed (see Figure 6).

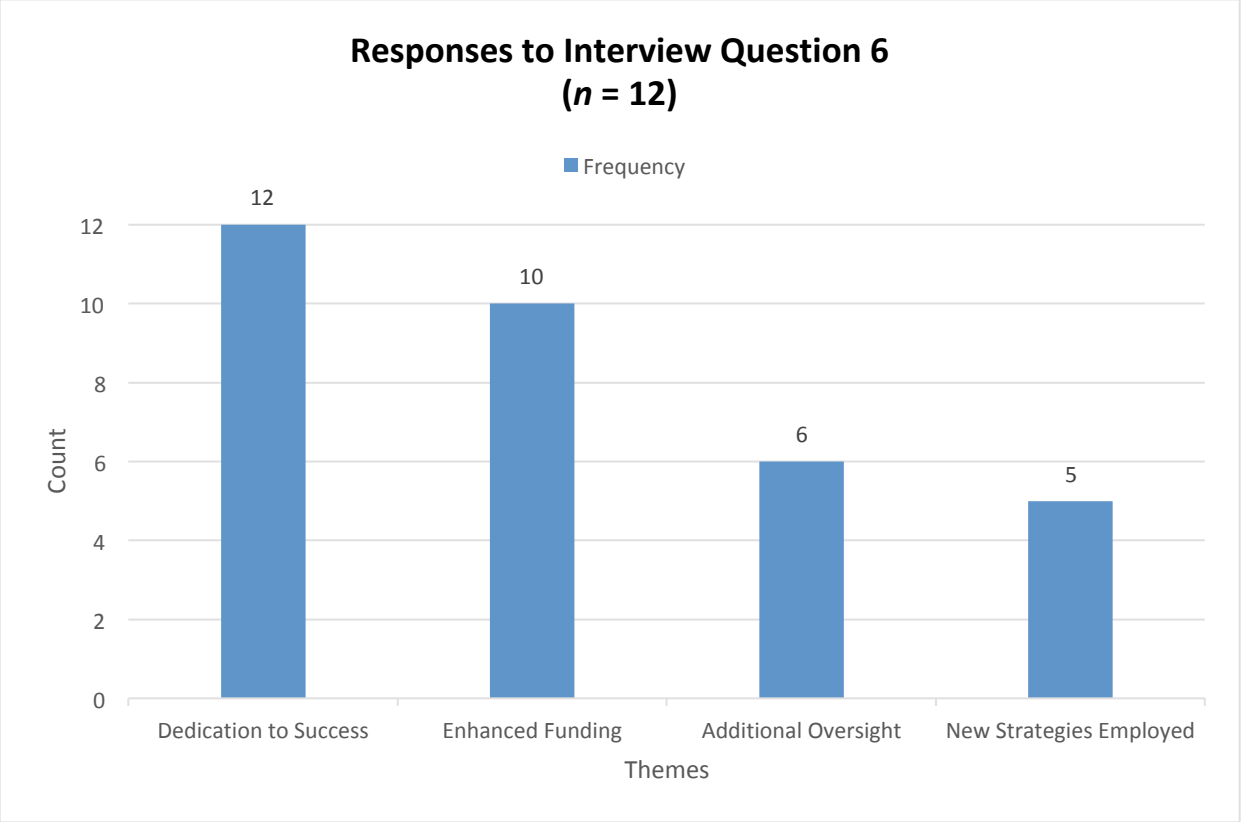

Figure 6. Themes that emerged from IQ 6: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs?

Dedication to success. All 12 participants expressed that the administration departments at their respective learning institutions were highly engaged and enthusiastic about the implementation of MOOC programs for their schools. Once again, P1 said that administrative challenges at the university were very low as the school had previously had a long history of being involved with open courseware. He added, "People were pretty excited to make this change and looking to jump on, and the extensive experience with open courseware

was part of that," underscoring the enthusiasm for the project by saying, "The Vice Provost created really high-level learning experiences for students, and incorporated them into the new courses" (Participant 1). P2 noted that the leadership of her organization was very excited about this new program, and P5 replied that the administration at his university was highly engaged and contributed greatly to the implementation of MOOC courses. P6 maintained that the administration was highly involved with the creation of the MOOC platform, stating that it was largely driven from the Provost on down.

When asked about his school administration's dedication to the MOOC program, P7 said, "The campus was quite keen on dipping its toes into the, sort of, MOOC-y waters, as it were," saying that the school had met with a high degree of success with MOOCs launched, and that at the administrative level, the leadership was very committed to making the transition to MOOCs work (Participant 7). P9 maintained that the president of the university "…was on-board from the beginning," and that the program was driven from the top of the administrative department, saying that the president's attitude could be expresses as, "We're going to make this happen!" (Participant 9). As previously stated, all participants acknowledged that the leadership at their universities were not only excited by the new MOOC phenomenon, but dedicated to the successful inclusion of MOOC courses in the school curriculum, and even P4, who stated that the MOOC program was for outreach only, said that the administration at his university was extremely engaged and excited about the new venue.

Enhanced funding. Most participants commented about the importance of enhanced funding obtained by administrative leaders for the initiation of the MOOC format. "We'll jump, and the net will mysteriously be there!" P9 stated, as he described the reaction by the President for the inclusion of MOOCs at his university, adding that a great source of additional funding for the program was provided by the President and Provost office (Participant 9). P9 added, "Faculty tend to be really, really excited when they hear that their courses will be offered to thousands and thousands of students worldwide" (Participant 9). P11 replied that the Associate

Dean of the school obtained a large grant for the MOOC program, setting the stage, initiating enthusiasm, and accelerating the process for the MOOC format. Most participants indicated that MOOC-provided funds and allotted monies furnished by their respective universities were instrumental in creating heightened enthusiasm for the MOOC programs from both the administration and faculty perspectives.

Additional oversight. Often, gaining substantial support from administrative leaders for the inclusion of MOOCs at their schools proved to be pivotal for the successful establishment of MOOCs, enabling faculty to focus energies on creating and adapting course content to align with the new learning structure. Illustrating the administration's support for the development of the MOOC system at his university, P1 specified that the Vice Provost was the first person to teach MOOCs at the school and was instrumental in suggesting new strategies to teach these courses. He added that to mitigate any initial faculty resistance to the new MOOC courses, they were set up at the university's Academic Center as experimental summer courses to get a gauge of faculty engagement and success with them, and by the end of this experiment, everyone had approved of the new MOOCs. P2 mentioned that administrators at her university had the foresight to hire a new Chancellor with previous experience instituting MOOCs into school curriculum, which made the transition to these courses at her school smooth and effective. P5 reiterated that the addition of a new Course Manager was instrumental in successfully structuring MOOCs for faculty flexibility and student success. Adding a team of Course Architects at his university for the inclusion of MOOCs did, according to P7, add "a manner of consistency...creating cohesion between courses, not only in terms of content, but in terms of format" (Participant 7). As previously noted, P11 reiterated the importance of creating a Program Chair Lead Faculty position at the university which was designated to implement and run the MOOC program.

New strategies employed. Just as faculty members search for new strategies to link their own course content to MOOC courses, administrative leaders also seek creative ways to

ensure the successful implementation of the MOOC forum in their university programs. P1 mentioned that the Vice Provost was the first to [initiate MOOCs] at his university, "…so we have the leadership really, really understanding what MOOCs are all about…as he taught the first ones we did, so he is very much familiar with the process" (Participant 1). P1 added that the Vice Provost invariably looks for new teaching strategies to suggest to faculty, and always keeps an eye out for any improvements that can be made to the MOOC system. P2 replied that having a very strong project manager for lead administering and development and academic units for creating all of the design has helped shape the MOOC platform into a cohesive, workable curricular learning venue, especially during the beginning stages.

Reminding the researcher that his university constructed the MOOC system for outreach only, P4 emphasized the fact that the courses were developed for non-collegiate students—primarily high school students with minimal computer training—and that MOOC courses can extend education and new knowledge to populations that may be in dire need of information, but which may not have the means to obtain it (Participant 4). According to P7, the administration at his university was highly involved and engaged at every step of the transition process, and a team was formed to ensure that any issues with intellectual property were taken care of to create a smooth inclusion of the instructors' own materials with MOOC courses. Highlighting the administration's involvement with MOOCs at her university, P10 stated:

> The leadership is very committed, just like the faculty is, to producing quality courses, and if there is any uncertainty about any of them, we linger on making those courses active until they fit a particular situation, or until we're in a position where we feel comfortable that they're of high quality. (Participant 10)

Interview question 7. IQ 7: What strategies have you employed to overcome administrative challenges for the inclusion of this broad new medium? Four major themes arose in response to IQ7: (a) new divisions created, (b) innovation and strong leadership, (c) a drive toward success, and (d) maintaining status-quo (see Figure 7).

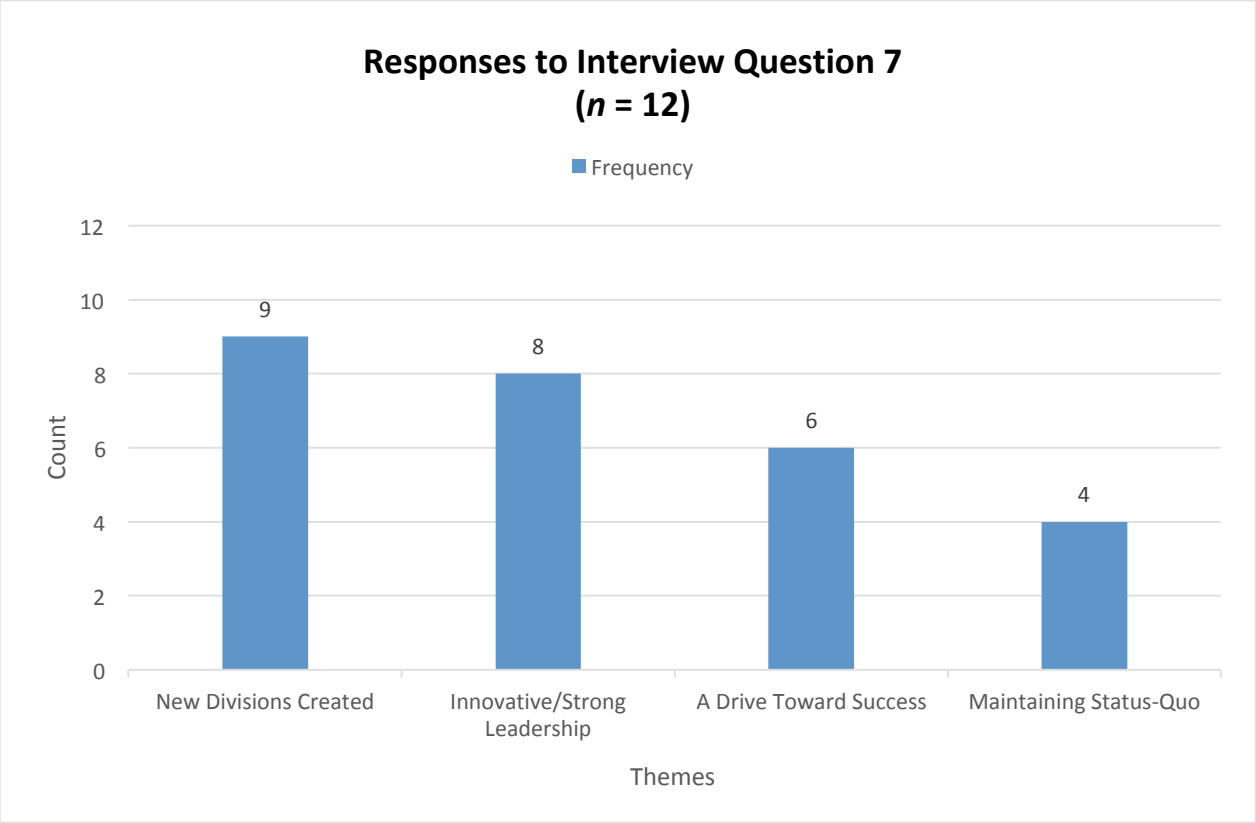

Figure 7. Themes that emerged from IQ 7: What strategies have you employed to overcome administrative challenges for the inclusion of this broad new medium?

New divisions created. Participants mentioned throughout the study that their respective learning institutions met the MOOC challenge by creating specific divisions or administrative posts to help shepherd in the new medium. P2 mentioned the production team that had been established to deal with the MOOC inclusion, saying that the instructional design created by the team had to align with academic units for curriculum continuity. She said that although they sometimes ran into challenges, the initiation of a solo unit to help introduce MOOCs to the learning system was instrumental to the program's success, adding that the experience "brought us a little closer together because we had to rely on each other…and we were all involved" (Participant 2). P5 reiterated his belief that the implementation of a Course Manager position along with the inclusion of media experts not only served to make the transition to MOOCs smoother, but also created excitement and lessened fears about the new

learning phenomenon. P12 mentioned that he will soon be his university's new Dean for Digital Learning, responsible for the entire MOOC program that offers extensive course content to an ever-increasing global community. He emphasized the importance of the MOOC dynamic, stating, "The fact that I accepted the invitation to serve in this way tells you that I see this as a very important part of [the university's] future," adding that the key to instigating and maintaining a successful new learning forum such as MOOCs is to use his new position to help organize resources that ensure the system is expertly designed, and rally faculty-member support for the program by providing the tools necessary for success (Participant 12).

Innovation and strong leadership. Many participants noted the importance of finding innovative and creative ways to create excitement for MOOC courses while providing strong leadership to accomplish this task. P1 replied that the university moved forward with those who wanted to use MOOCs to create a model that could be used to encourage others. He reiterated the fact that his learning institution involved the Academic Center to create "experimental sessions" to introduce MOOCs during the summer months so as to move the project forward in a non-threatening way and generate excitement for it (Participant 1). P2 once again mentioned the value of having a strong Project Manager to navigate the inclusion of the MOOC platform, which helped eliminate issues and move the program in the right direction. P3 implied that the administration at the university was excited to make the transition to include MOOCs, and highlighting innovative efforts to instill the program effectively, he added that, as the Chair of the Faculty Senate Committee, he treated these types of courses as something very different than regular for-credit courses; instead, he saw them as being more of a collective research project to be analyzed to "see what we need to do, see how it works, and evaluate it (Participant 3). Participants 6 and 7 replied that leadership at their schools was committed to the making the necessary changes to create success for MOOCs, while P9 restated that both the Provost and the President at his university were highly enthusiastic about the program, providing strong

leadership in finding funding for MOOC programs and for devising methods for MOOC development.

A drive toward actualization. Six participants specified the importance of the drive toward completion for MOOC learning venues, and generally, the more successful the programs became, the more excited administrators and faculty members were with them. A combination of excellent management and oversight practices helped bring MOOC formats to fruition at these participants' universities, and supporting this notion, P2 offered that although she thinks some things could have been done differently, completion and success with the programs brought tremendous enthusiasm from both faculty and staff. P5 said that the drive by faculty to make curricular teaching more efficient and effective created added enthusiasm for the MOOC forum among administrators, which only added to the department's commitment to the program. Both P6 and P10 noted the strong push from the Provost Department at their respective universities to create successful MOOC programs, and with rapid implementation and great success came strong support from both the administrative and faculty departments at their schools. P7 replied that "…a push to drive success was strong on all levels," starting with the Extension Division, and moving on to the main campus afterward (Participant 7). A robust drive toward actualization and success from the beginning of the program was key, according to P11, and grant money received by the Associate Dean of Career and Technical Education helped overcome any administrative challenges to instituting the program.

Maintaining status-quo. Many organizations strive to dispel fears of major disruption when facing impending change to traditional policies or procedures. Although there was general enthusiasm felt for MOOC formats at most of the participants' learning institutions, a few mentioned the importance of maintaining calm and stability by keeping the status-quo of the teaching methodology intact at these universities. P1 agreed with the notion put forth by MOOC foundational leader Sebastian Thrun of, *Let's try this*, who wound up with thousands of students on the class roster when constructing his first MOOC class (Ripley, 2012). He said that there

were no real administrative challenges except overcoming the "natural inertia" of faculty in doing new things and finding professors who showed an eagerness to try this new medium (Participant 1). P1 maintained that the non-threatening way that MOOCs were presented at his university was a big factor in their success, ensuring that no one would be forced to use the MOOC format unless he or she wanted to do so. P3 mentioned that his university kept a lot of the structure the same when introducing MOOCs to the curriculum, offering that, "...the administrative structure has always been very supportive of experimenting in this space…we've used MOOCs, but we don't use them to account for any credit anywhere. We use online courses for credit, but they're very much led by an instructor, and run very much differently than one would run a MOOC," adding that MOOCs are generally certificate-based (Participant 3). Both P4 and P11 implied that MOOCs are only a small part of the school curriculum, so status-quo has been maintained.

Research Question 2 summary. RQ 2 asked: What strategies have you implanted to meet the challenges brought on by Massive Open Online Courses? To answer RQ1, three Interview Questions were presented to 12 interviewees. In answering the questions posed, each study participant expressed the challenges faced when instituting Massive Open Online Courses at their respective universities and discussed the methods employed to bring about a smooth transition to these types of learning venues. Many participants noted the need for pedagogical fine-tuning to ensure that curricular structures and materials reflected course objectives as defined by faculty members for their courses. Most felt that professors at their schools have generally been more enthusiastic about the full or partial transition to MOOCs when given creative freedom in designing these courses. The need for the creation of new divisions for the overall implementation of MOOCs was a prevalent theme during this section of the study, and all members felt that innovative leaders who were dedicated to the development and advancement of these programs were instrumental to their success.

Five dominant strategies and practices emerged from the data: (a) pedagogical fine-tuning, (b) dedication to success, (c) enhanced funding, (d) new division created, and (e) innovation/strong leadership.

Research Question 3

RQ 3: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation? For more in-depth perspective of Research Question 3, the following three Interview Questions were asked of the 12 participants:

- IQ 8: How do these standards measure up to other schools' criteria for success?
- IQ 9: How do you measure and track your success?
- IQ 10: What formal feedback systems do you employ to ascertain success or failure of these proceedings on an on-going basis?

Interview question 8. IQ 8: How do these standards measure up to other schools' criteria for success? Three major themes arose in response to IQ8: (a) the proliferation of MOOC programs, (b) the value of programs, and (c) defining success (see Figure 8).

The proliferation of MOOC programs. A good method for measuring for the success of MOOC programs has been to determine the size and scope of these venues at each learning institution and examine enrollment and completion rates of programs. Although this method can offer a good measure of the commercial value of these new learning platforms, another element to consider is the intrinsic value of these courses and their impact on the people who take them. Initially, however, some participants mentioned the virtual explosion of MOOC programs at their schools, which gave them a good gauge of the commercial success of the learning venues early on. P1 reported:

> MOOCs came along in 2012-2013…[and] about three or four years before that we were offering online courses in the summer only, and started with one course, and the next term, we had three, and the next term we had 15, and then last summer, we had 80….

> This year, we'll probably have 8,000 in the Fall, Winter, and Spring, and next year, we'll probably have 10,000 in the Fall, Winter, and Spring. (Participant 1)

P1's commentary is a true indicator of the eruptive nature of the MOOC phenomenon and illustrates not only the rapidity with which these programs took hold at many leading colleges and universities, but also their inherently disruptive quality regarding traditional education. The burgeoning aspect of these programs during their initial implementation has provided some participants of the study a benchmark from which to assess each of their own school's success with MOOCs in relation to other MOOC-inclusive colleges and universities as these courses have developed.

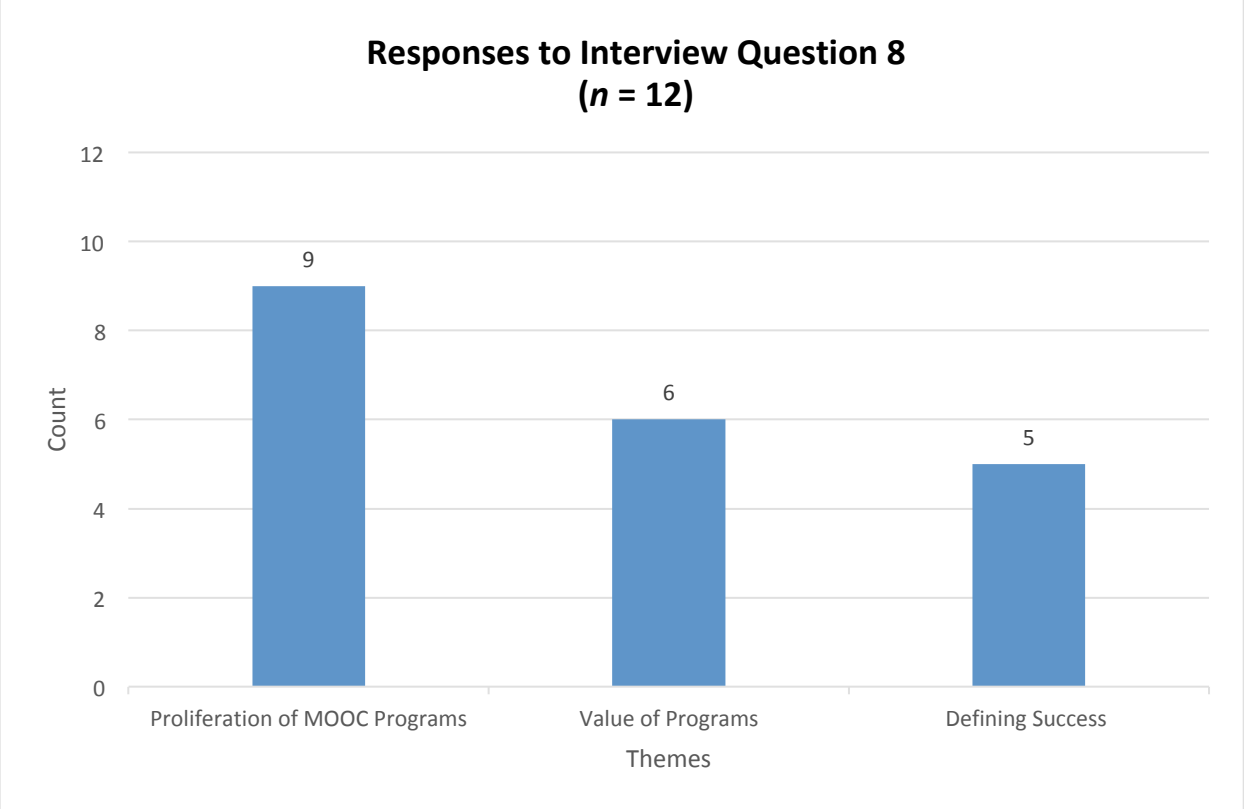

Figure 8. Themes that emerged from IQ 8: How do these standards measure up to other schools' criteria for success?

P2 reiterated that her university has had great success with the MOOC program, referencing the rapid growth of the system, adding, "We have quite a good track record…we've even won a few awards for the quality of our programs" (Participant 2). Other participants

emphasized the rapid development of MOOC learning venues at their schools, and said that initially, the sheer number of classes offered, and size of the programs gave them a clear indication of the commercial success of these formats in relation to other universities.

The value of programs. Commercial success aside, another critical factor in assessing the value of MOOCs is determining the positive benefits that these programs can have on individual student-life experiences. Massive Open Online Courses are indeed massive, and their global reach can impact regions that otherwise may not ever have had educational opportunity, providing new knowledge and skills to populations that may be in desperate need of modernization and development. Additionally, MOOC platforms are not only becoming more numerous, but more common in higher education curriculum, and competition among schools that offer them is becoming fierce. To meet the needs of a global population thirsting for knowledge and an ever-increasing student population demanding high-quality online learning platforms, MOOCs must be highly informative, well-constructed, and proficient in delivering value to whomever is enrolled in these programs. Quality matters, and if MOOC programs are really going to retain value and have a beneficial effect on education, MOOCs must remain competitive in design and structure. P1 articulated the increasing value of MOOCs, emphasizing the importance of getting knowledge to people in remote places who may be attempting to find solutions to global issues. A foundation could be established, for example, in a faraway region that could present a MOOC platform to educate local scientists and geologists about ways to save reefs in the area. Noting the unique quality of the MOOC that P5 and his colleagues designed at his university, he stated that this particular course "…doesn't fit into the curriculum…it fits into the *public service* role of the university…and I think we had a winner in the public appreciation point-of-view." He added, "I think there is a role for people who make MOOCs to create public interest courses that [serve to] build the reputation of the university in the educated world" (Participant 5). Emphasizing the high value that MOOCs can offer, P8 maintained, "These systems are reserved to a very few who are involved in saving world

problems, and the reality, in my opinion, is that it has worked…and it's not just the technology of disseminating the content, but the pedagogical elements that go with it" (Participant 8).

Defining success. Some participants emphasized that success of MOOCs should not only be measured in commercial terms, and P4's comment underscored the importance of other considerations when measuring the value of these learning venues: "We consider every participant a success because the whole thing is outreach…and if [one takes] one minute of one of these courses, one knows more about (our university) than one did before; so, it's a success" (Participant 4). P6 reiterated her views from an earlier question in the study, stating:

> When we consider student learning and MOOCs, we don't really worry about it if 300 people out of 10,000 actually pass the course…because it's still 300 people, or 7,000 people, or whatever, who got vastly more than they would have because they were not [university] students previously. (Participant 6)

Other participants mentioned the importance of benchmarking other schools to get a better idea of curriculum being used and general MOOC success rates in relation to their own. P11 mentioned that MOOC content at her university has often been compared with other schools for benchmarking purposes. P7 noted, however, that as important as benchmarking and comparisons are in determining options to increase the success of MOOC programs, "…we don't want to replicate or duplicate, so one of the ways that we look at what other schools are doing, certainly, is to ensure that what we have is distinct and meets a particular need…while also looking at the quality of the courses as a way to get a better comparative understanding of how things work" (Participant 7).

Interview question 9. IQ 9: How do you measure and track your success? Three major themes arose in response to IQ9: (a) enrollment rates, (b) completion rates, and (c) overall satisfaction of programs (see Figure 9).

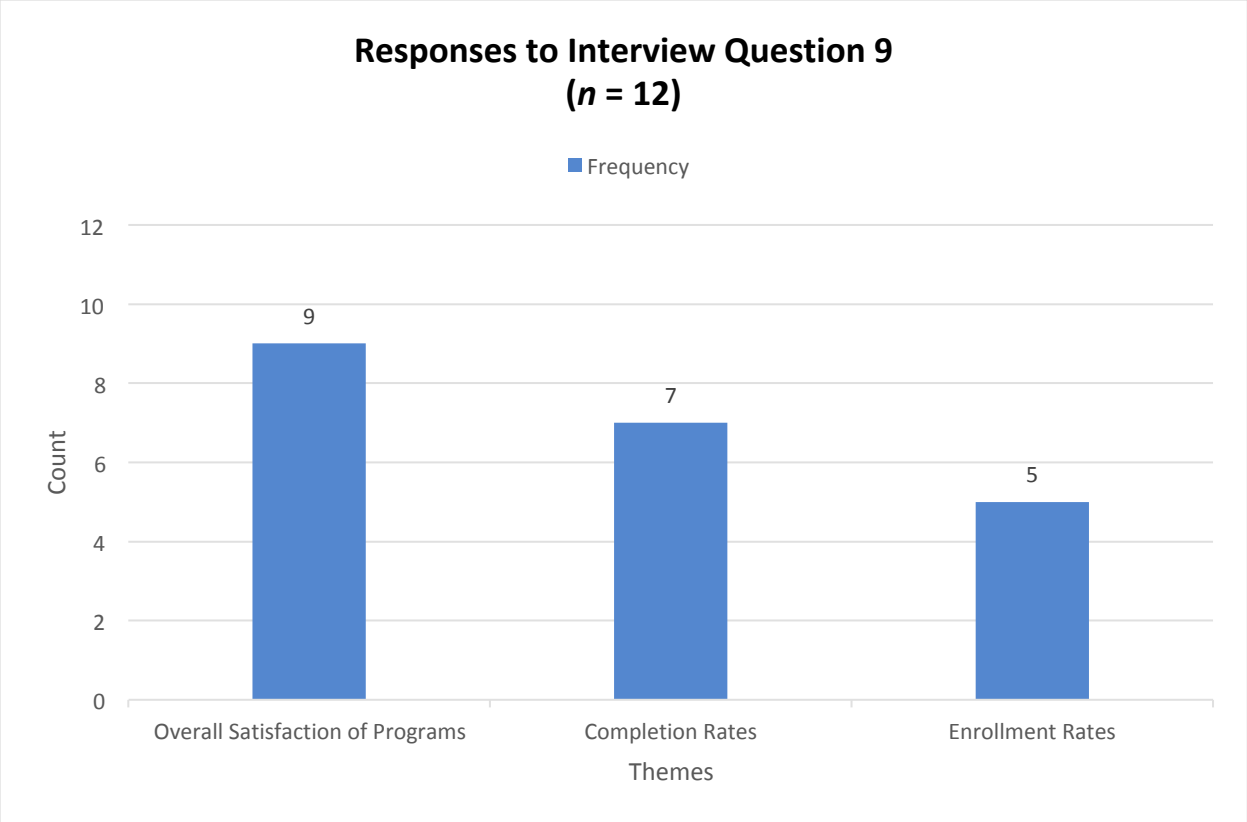

Figure 9. Themes that emerged from IQ 9: How do you measure and track your success?

Overall satisfaction of programs. A tremendous indicator of the success of MOOC programs is the general feeling of satisfaction participants gain when taking these courses, and many study participants highlighted this as being important. P8 mentioned that in addition to tracking enrollment and completion rates of MOOC courses to measure success, these formats demand rigorous attention and expert design to ensure that quality courses are being created. He furthered the point by saying:

> We found that we really need to be hyper-organized in the way that we structure these things. I think that you need to take great care in defining the role of the course creator, and somebody needs to follow up after the course is delivered…[for] monitoring, quality checking…and so forth. (Participant 7)

Emphasizing the importance of delivering superior content and structure in designing quality courses, P3 stated:

> People taking a MOOC are often expecting much higher production quality as if it's a NOVA or TV special….so, when you move into that MOOC space, you have to be much more aware of the product you're developing and delivering if you're going to get a buy-in from the public to take it. (Participant 3)

P6 noted the emphasis on delivering quality courses through the MOOC format at her university, saying that administrative leaders greatly focus on student success stories that reflect their overall satisfaction with the program. She stated that university leaders gauge individual enthusiasm for MOOC classes through various tracking methods, but added that the school's goal is on creating quality courses that have beneficial effects on people's lives. She reiterated a point she made previously, saying that a common question brought up in faculty meetings is, "What changes have we had on individual people?" (Participant 6). She added that administrators often attempt to discern the reason students might want to take particular courses and provide guidance in helping them choose the most beneficial program to satisfy their needs.

Completion rates. Tracking student completion rates can greatly help educators assess the success of MOOC learning venues. A common complaint heard from both faculty members and administrative leaders is that MOOCs, and online courses in general, often have abysmal completion rates. Online courses take initiative and perseverance to complete, often demanding more dedication than traditional classroom courses, as without the presence of a physical instructor and the more rigid structure of onsite course schedules, people who take online courses often fall behind in their studies, or completely abandon the program they had originally so enthusiastically signed up for, not realizing the commitment and independent time management that online courses usually require from individuals. MOOCs only exacerbate this problem, as with their massive size and usually completely online format, students are easily distracted or pulled away from a classroom with thousands of participants, mostly because it is such an impersonal experience. Completion rates, therefore, can decline significantly with

online course enrollees, and even more dramatically with MOOCs. Since MOOCs are so immense in size and scope, however, even if completion rates are low, with such massive amounts of participants, a completion rate of even 300 people out of 10,000 is still considered good, as was noted by one of the participants. Getting that education to 300 people would be much more difficult with onsite classes, and there would not be the benefit of global connectedness or the diversity of educator talent that MOOCs can offer.

P1 fortifies this notion, stating, "You can look at the drop off rate…it is significant, and a lot of people enrolled never become active learners…a lot of them just click [on a course], enroll, and then don't do anything beyond that." He added, however, "As you can see …here is our average [completion rate]. Generally, we are at around 4.5 on a 5.0 scale of completion," illustrating that even though drop off rates are significant, his university still rates high on the MOOC provider's scale of completion, and considering the fiscal advantage that MOOC programs have provided to the school, MOOCs have generally been a great success (Participant 1). P11 maintained that completion rates "are abysmal," stating that colleges often put MOOC content out— "particularly the prestige colleges" —without really tracking students [progress]. She added:

> It is the support structure that is important in persistence and course completion…they're just not doing that. And if you really want to be successful, you need to marry the MOOC infrastructure with the student success that you do for credit-bearing courses that are smaller, and not massive, or free. (Participant 11)

P8 maintains that the emphasis on completion rates is overstated, saying, "The criticism of 'people do not finish'…I don't buy it…because a few *do*…and the few persons of the *massiveness* adds up to significant numbers" (Participant 8). He added a more colorful interpretation of the benefits of MOOCs and the emphasis on completion rates of courses, likening it to someone who peruses a book at a book store; he or she may read a few pages, or

even a chapter, and if the person is interested in reaching the end, he or she may buy the book, or if not, may sample and jump around—"and that's perfectly fine" (Participant 11).

Enrollment rates. The overall method of gauging the success of MOOCs generally involves tracking enrollment numbers and completion rates and assessing student satisfaction with courses. P1 offered that overall, the success of MOOCs generally involves the number of people enrolled in them, rates of completion, and students' attitudes concerning the value of the courses offered, and he noted that his university has had good results in all these areas in relation to other schools that provide MOOCs. Adding more specifics, he stated, "Here is a list of all our enrollments with MOOCS. You can see that we've had 5.7 million visitors, 2.4 million enrolled, 1.5 million actively engaged, and 200,000 completers" (Participant 1). Of course, monetary success with the program helps a school assess whether the MOOC inclusion to the curriculum is a worthwhile financial endeavor, and many schools have gained significant fiscal advantages with the implementation of MOOCs. P1 fortified this notion stating that his university is currently making about $2 million back on an initial $1 million investment in MOOC programs, illustrating the enormous financial benefit that enacting these learning venues has produced.

Other participants mentioned the importance of tracking enrollment rates, and P9 added that other considerations also come in to play in assessing MOOC success. When asked about tracking methods for measuring MOOC results, and whether they are formal or informal, P9 stated, "It's been a mix of both, and as the technology, the personnel, and our own capabilities to track what is happening in the courses grows…we'll see a much more fine-grained analysis" (Participant 9).

Interview question 10. IQ 10: What formal feedback systems do you employ to ascertain success or failure of these proceedings on an ongoing basis? Three major themes arose in response to IQ10: (a) university tracking system, (b) MOOC-provider tracking system, and (c) assessments and analytics (see Figure 10).

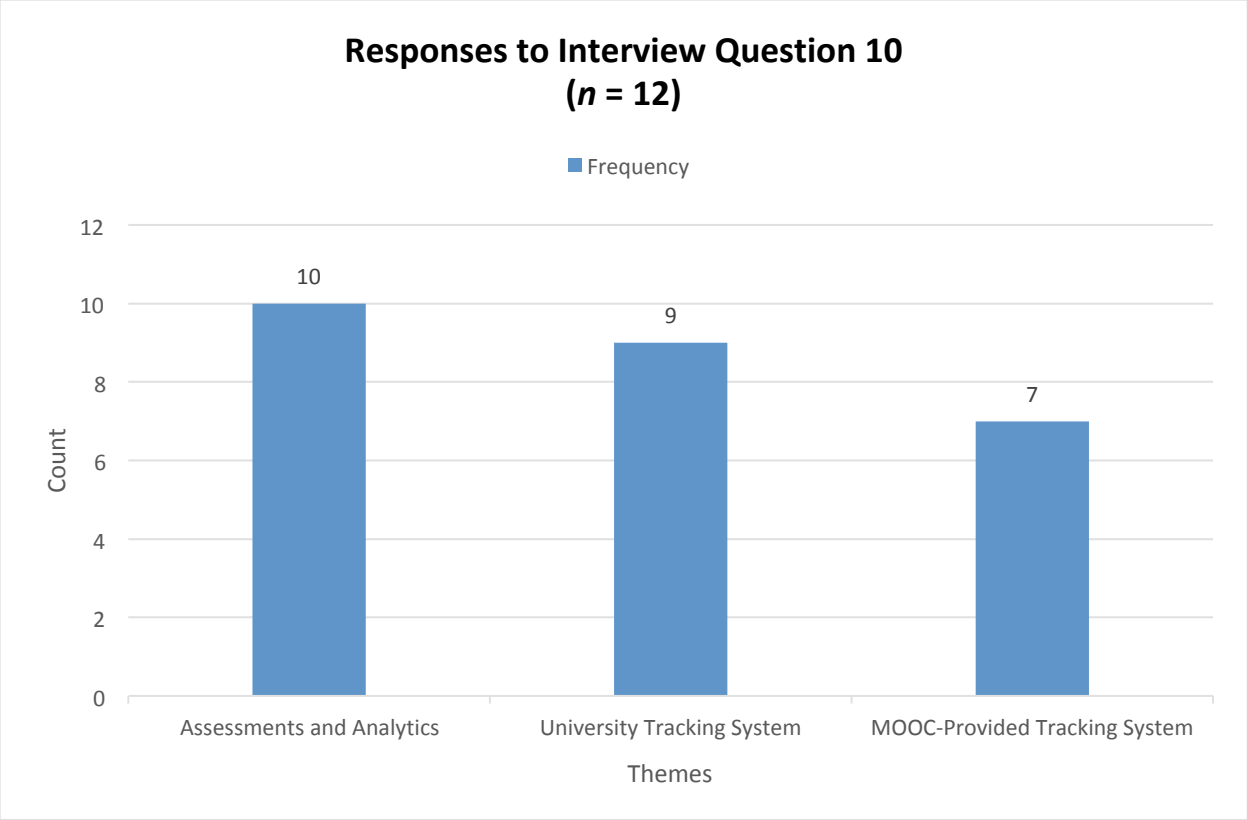

Figure 10. Themes that emerged from IQ 10: What formal feedback systems do you employ to ascertain success or failure of these proceedings on an ongoing basis?

Assessments and analytics. Assessments and analytics in the forms of surveys, questionnaires, quiz and test scores, and student feedback all contribute to the analysis of MOOC platforms and their impact on student achievement. Ten participants mentioned some of these types of ways to track success and adapt materials to better serve students taking MOOC courses. When measuring success in online platforms, including MOOCs, P6 stated:

> We actually use the exact same quizzes and assessment materials from our on-campus courses as we do in our online courses, which lets us measure [results accurately], in concrete fashion…so that students from around the world can take the same tests and do the same projects and be graded by the same teaching assistants, and by the same faculty. (Participant 6)

P9 reiterated that his school researches data, mined through the Research Lab, to assess information based on test and quiz scores, surveys, questionnaires, etc. to determine ways to

make systematic changes to courses for improvement. Other participants said that analysis of MOOC programs is largely done through the use of surveys, questionnaires, test scores, and enrollment and completion rates to better summarize the success of the courses. P12 once again emphasized that in addition to these methods, his university makes it a point to "actually listen to faculty" to better assess what they think of their own course creations and see where improvements can be made (Participant 12).

University tracking system. As with any new learning medium, the real test of the efficiency or deficiency of a program is generated through the results obtained through tracking systems, assessments, and analytics. Nine participants mentioned the importance of having some sort of university tracker to analyze specifics such as enrollment numbers, progress reports, and completion rates, and universities providing large-scale MOOC formats and others with smaller, less numerous ones both recognize the value of tracking this kind of information to help gauge the success of the programs on an on-going basis. P1 reiterated his belief that the success of a MOOC stems from the number of people enrolled in it, the completion rate, and the overall assessment of the course from students and faculty, and articulated the astounding success rate of MOOCs at his university that boasts 200,000 completers for 2017. P2 maintained that university tracking systems are important, but broadened the scope of what was asked in the Interview Question, saying:

> I feel like [formal feedback systems] are not technical…they're more strategic challenges. What topics? Are you going to open a 'white space' on the platforms, or are you going to follow along with other programs that others have pioneered? So, to me, all of the challenges are strategic. (Participant 2)

P5 and P6 both noted the importance of keeping records of enrollment, progress, and completion rates for MOOC programs, and P6 added, "Sometimes we do a pre-course assessment and a post-course assessment…but we also have feedback systems and survey tools that [tell us more specifics]" (Participant 6). "We always watch what is going on

everywhere," said P8, "We [let our people monitor]. And in many ways, people watch *us*…but we learn" (Participant 8). P7 noted that his university's main Research Lab receives all of the *click-stream* data to assess the progress of the MOOC classes, and added that all of the information collected through in-course surveys is analyzed by instructional designers, marketing managers, and program directors to make relevant changes to courses based on student concerns and desires. He added that this method has led to positive results, overall. P12 also mentioned that his school does course evaluations, surveys, and tracks student opinions about MOOC courses while also tracking completion rates.

MOOC-provider tracking system. Many of the participants said that the MOOC-providers of these programs keep highly accurate records of enrollment and completion rates, which can help verify numbers noted in university tracking systems. P1 mentioned Coursera's excellent system of evaluating MOOCs and measuring success rates, reiterating that his university has a 4.5 score on the provider's 5-point completion-rate scale. P3 replied that the MOOC program has been highly successful at his university, and university leaders are very pleased with the Coursera Certificate Program and the tracking systems that the MOOC provider supplies. P6 replied that the MOOC provider closely tracks enrollment and completion rates at her university, while P8 stated that Coursera, EdX, and AT&T all have tracking methods to follow success results with these courses. P6 noted that global enrollees to these programs are also subject to university tracking systems as well as the MOOC-provided system. Other participants mentioned that MOOC providers at their schools often track results with other schools' MOOC success rates for benchmarking purposes, which can be a great benefit to on-going assessment of student involvement and achievement as well as course design. P9 said that EdX has been the main MOOC provider at his school, and that Coursera has also worked with the university to create programs and shoulder some of the expense, providing tracking systems to gauge enrollment and completion rates for measuring success of the MOOC format.

Research Question 3 summary. RQ 3 asked: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation? To answer RQ 3, three Interview Questions were presented to 12 interviewees. Participants assessed discoveries made while tracking the success of MOOC programs at their learning institutions. Many noted the rapid proliferation of Massive Open Online Courses once implemented at their schools, reflecting the enormous success of the programs and the fiscal advantage they have provided. Although completion rates of online courses—MOOCs in particular—can be problematic, several participants maintained that even a low rate of completion in courses that can often include hundreds, or thousands of students is often still substantially higher than what is generally accomplished in traditional onsite courses because of the sheer size of these classes. Commercial success aside, all participants emphasized the importance of achieving levels of satisfaction among students who partake in these courses, stressing the necessity of using MOOCs to improve the overall student experience by creating quality venues that often elevate the educational component because of their massive interconnectivity, reach, and availability of online resources. They also noted that MOOCs are continuously analyzed and improved through assessments and analytics such as in-course surveys and questionnaires, heightening their relevance and value while also serving to greatly modernize the educational system.

Four common articulations of MOOC success emerged from the data: (a) proliferation of MOOC programs, (b) completion rates, (c) overall satisfaction, and (d) assessments and analytics.

Research Question 4

RQ 4: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ? For a deeper analysis of Research Question 4, the following two Interview Questions were asked of the 12 participants:

- IQ 11: What have you learned in the process, and which methods of implementation to MOOC curriculum have been the most successful?
- IQ 12: What advice would you give to educational leaders in making this transition, and is there anything else that you would like to share that you think may be relevant to this study?

Interview question 11. IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been most successful? Three major themes arose in response to IQ11: (a) conceptualizations, (b) strategizing opportunities, and (c) adjusting programs (see Figure 11).

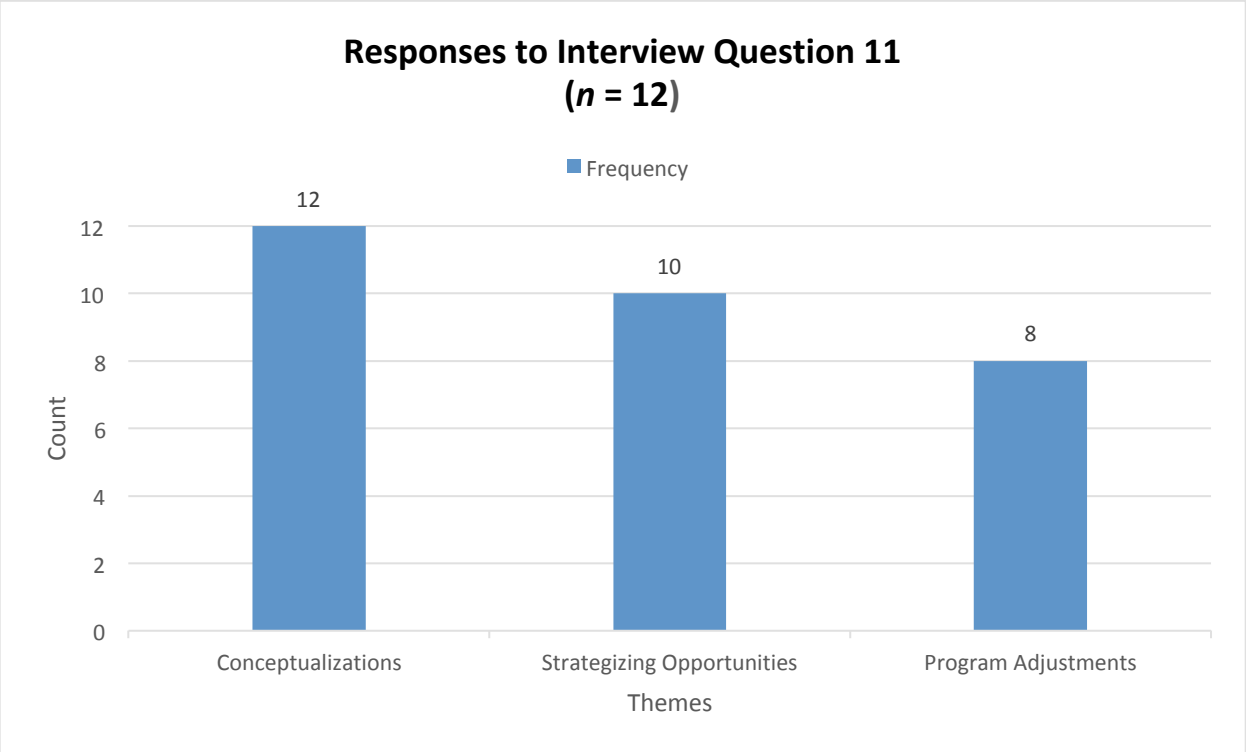

Figure 11. Themes that emerged from IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been the most successful?

Conceptualizations. All participants said that during the process of implementing MOOCs at their schools, they had learned a considerable amount about not only the best ways to design and deliver MOOC courses, but also about what they might have done differently if they were to do it again. P1 mentioned the tremendous financial gain that MOOCs have

brought to his university, noting the escalating nature of the learning phenomenon and the considerable opportunities that it offers. Indicating what he might have done differently, P1 replied, “I would have been a little more enthusiastic about investing in MOOCs…and I probably would have tried to gain more territory in the MOOC world,” adding that he would have also tried to create a more stable team to implement the MOOC format (Participant 1). P2 stated that she would have gone for two courses to start out the program instead of the six that were introduced, but remarked that all of the hard work was worth it, as the program has brought great financial and branding success to the university. She emphasized the importance of hiring a Project Manager to oversee production, and the value of learning how to manage work flow (Participant 2). P3 stated that MOOCs and credit go well in certification-type areas, but noted the following:

> except in very rare cases, MOOCs still do not really serve the role of being credit-bearing courses. I know that some places like MIT and other schools are using them…[but] I think that most universities are not going to have the resources to truly have full-time instructors associated with the courses…so they’re going to have to be run in the originally thought-of, envisioned way, of massive enrollment. (Participant 3)

P4 said that his university quickly realized that MOOCs would be better used for outreach, stating, that in-person interactions are crucial to fostering the identity that the university hopes that students pursue. P5 maintained that teaching will only be enriched by online and MOOC technology, while P6 stated that she soon realized that “universities are going to have to change,” adding:

> We’re going to have to modernize…students are so different than they were, say, 20 years ago…the demands are different…so, if you’re going to [install a MOOC program], understand the pedagogy behind it, and the instructional design, and don’t just put a Go-Pro camera in the back of the classroom and film a professor from the back of a lecture hall. (Participant 6)

Asked what he had learned along the way, P9 emphasized the hard work that goes into creating "free courses with high accessibility," saying that if a university commits the time and resources to this type of educational program, it may involve more than what is originally expected (Participant 9). P12 noted the evolving nature of the MOOC phenomenon and the need to stay abreast of changes, stating that he felt that leaders at his school learned an enormous amount in the implementation of MOOCs, and quickly realized the necessity of finding ways to teach students on-campus while spreading perspective to off-campus learners.

Strategizing opportunities. While offering perceptions on what they had learned during the process of MOOC implementation at their schools, many participants mentioned that they had attained success with the programs by identifying developing opportunities and adjusting MOOC courses for greater effectiveness. A few participants mentioned that in addition to catering to the student population, their universities have been successful designing courses for professional development with certificate programs. P3 noted that in the MOOC arena, there has to be increased attention and awareness of the product being developed and delivered for the program to be successful. P2 and P5 both mentioned the importance of tailoring these courses to specific audiences as competition escalates. P6 volunteered:

> Understand what your success criteria is. Understand what your goal is when you enter the MOOC world. Is it financial? Is it global awareness? Is it faculty enrichment by…getting their names out there, for reputation advantage? You have to understand what makes each course successful. (Participant 6)

P7 highlighted the importance of defining the role of the course creator and overseer for the successful implementation of MOOC curriculum, adding that these courses must offer level of consistency to be effective, allowing for cohesion between courses not only in terms of content, but in terms of format as well. "There needs to be a strategy," remarked P10, adding:

> I think the school needs to realize what it's goals are…looking at a specific classroom site, like EdX or Coursera, for example…what is the goal, or vision, for that class? What

aspects of this organization can I concentrate on that aligns with our goals with its goals so that we may be successful…and yet still represent [our] institution? (Participant 10)

In enumerating successful methods for putting together a successful MOOC program, P12 reiterated the importance of listening to faculty about course development, and paying attention to information garnished from student surveys and questionnaires.

Program adjustments. From curricular design to pedagogical content, imperfections of MOOCs have often had to be ironed out during their implementation at many learning institutions, and several participants responded positively when asked if they had had to adjust these programs once they had been initiated. P1 noted that it became necessary to create a more stable team after a "rocky start" to accomplish the goals of the MOOC program (Participant 1). P3 emphasized that moving into the MOOC arena means that more attention must be paid to the product being delivered, as people generally expect much higher production quality when they sign up for MOOCs, which often means paying out additional monies for costly video production and design. Offering his thoughts on a MOOC course he taught recently, P5 mentioned that although the course doesn't really fit into the school curriculum, it represents the fact that MOOC platforms can be adjusted and used for all types of forums in addition to college renderings.

Identifying a major adjustment made to accommodate MOOCs, P8 stated, "Certainly, in the credit arena…we had some things wrong. But it turned out, luckily, better than we had predicted." He added, "We've become incredibly good at course design. We have developed a cadre of professional contacts who work with professors, so there's been a lot of learning…a lot of building up of that infrastructure" (Participant 8). Some participants said that creating a blended version of MOOCs has been highly successful, and P11 restated that marrying the MOOC structure with the student success that is done for credit-bearing courses— thereby adjusting courses to more accurately meet the needs of students while also holding them accountable for their work—is key to running a successful MOOC program.

Interview question 12. IQ 12: What advice would you give to educational leaders in making this transition, and is there anything else that you would like to share that you think may be relevant to this study? Three major themes arose in response to IQ12: (a) strategic vision, (b) collaborative planning, and (c) understanding the role of MOOCs (see Figure 12).

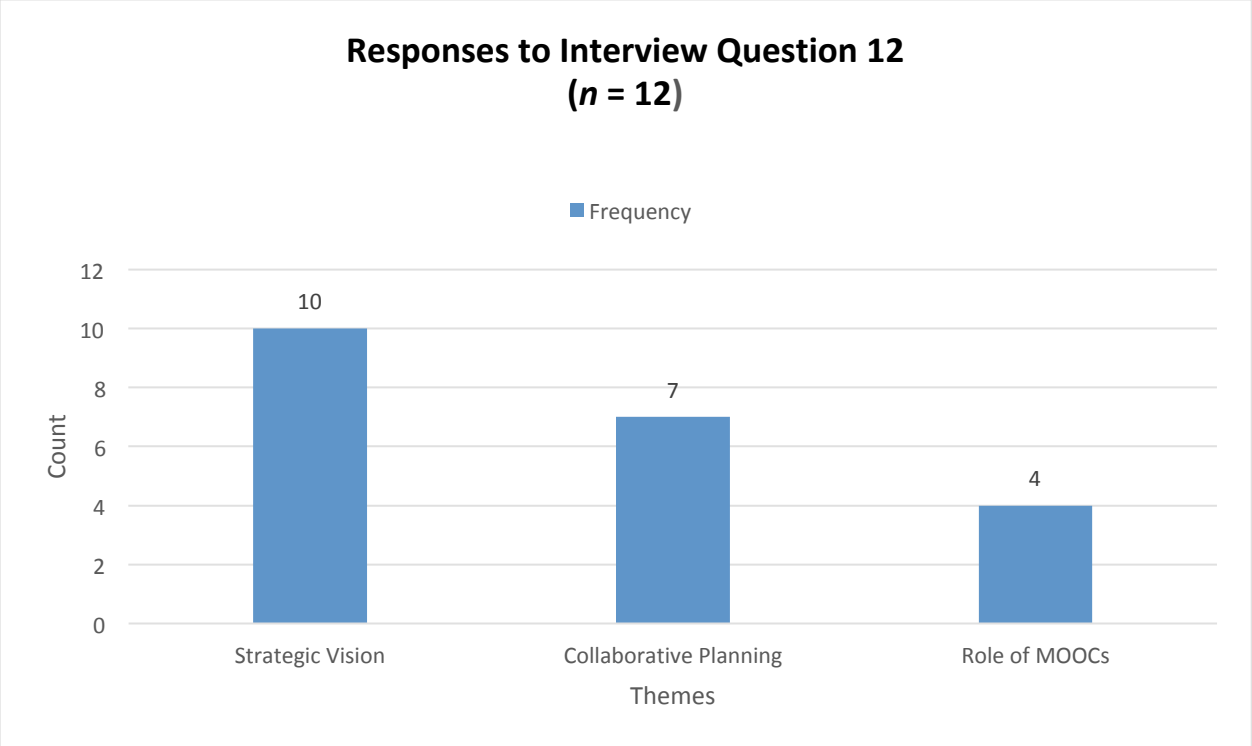

Figure 12. Themes that emerged from IQ 12: What advice would you give to educational leaders in making this transition, and is there anything else that you would like to share that you think might be relevant to this study?

Strategic vision. In offering advice as to the best ways to instill MOOC programs at learning institutions, most participants mentioned the importance of having some kind of strategic vision for the successful application of these types of courses at their schools. The need to stay informed of rapidly changing technology was a concern of many, saying that finding ways to maintain effective course design while providing flexibility for alterations to programs—*because* of the quickly evolving technology—has been no easy task. Having a good understanding of how to plan for changes and how to interpret the shifting landscape brought on by MOOCs to the world of education is critical. P1 offered his vision of what the future of

MOOCs may bring, saying that it is important to realize that MOOCs are both part of the online movement and part of the open education movement, and structural fluctuations will vary. Noting the change that MOOCs will bring, he stated:

> I think that basically open courseware itself will continue to flourish, and every major university is going to have to be both the contributor and a user for free, open education resources in order for it to maintain itself… I think that the cost saving will actually manifest itself through MOOCs, and the cost of education will be reduced...and there's just going to be a difference between instructor-led and highly designed, self-paced courses. (Participant 1)

The MOOC phenomenon has greatly increased competitiveness between schools, and P2 emphasized the importance of maintaining a clear vision when constructing MOOC formats into curricular structures:

> You'd better have a strategic direction that you've discussed with your [MOOC] partner, and where you're going to bring your brand to have some clout…because it's getting very, very crowded out there. You could either go into the three or four areas that are gold mines to find a slightly different topic within that, or you could try to capture some of the *white space* that nobody's going after…anybody coming into it today better have a clear idea, or you could just flounder. (Participant 2)

P5 suggested that advertisement plays a big role in creating successful MOOC programs, stating that the global reach and awareness of these courses can serve to build the reputation of the university in the educated world in terms of public service, public image, and public relations.

P6 implied that executing successful MOOC programs requires careful strategic planning, and highly recommended the importance of understanding the pedagogy and structural design of the MOOC program before launching it. P10 said that it is of utmost importance to have a definite strategy or goal in mind when setting out to create a MOOC

program, while P11 mentioned the value of having a strong tracking system that records student success and completion rates so that university leaders can adjust and adapt courses for better content and structure.

Collaborative planning. Once strategy is devised, collaborative planning is often the next step in creating MOOC structures at many universities, and most participants highlighted ways that administrators and faculty members at their particular learning institutions worked together to address the design and technology of MOOC formats. P3 said that knowing one's purpose and audience can drive the sort of courses put out there and the types of development resources one puts into them. He added that just because a particular course might be attractive to undergraduates, it might not have the best content as a MOOC. P7 put forth a similar notion, replying that with MOOC courses, there will often be a lot more work and organization required, and adjustments to make in clarifying the overall vision and purpose of program, and determining how the component courses fit into that vision is imperative. Most participants highlighted the importance of working collaboratively between different departments to achieve successful results with MOOC programs, and P8 mentioned that often schools will work collaboratively with one another to improve online and MOOC learning venues: "For example, University of Illinois…we help them. We've had a lot of conversation and input together with their own online program in business…[and] they want *a lot* of conversation" (Participant 8).

P10 advised against overloading faculty with the burden of building out new courses from scratch unless they are prepared to move forward with such a move, and maintained that there needs to be an overarching strategy to structuring a MOOC format to closely meet the needs of students, especially given their massive size. P11 cited the low completion rates often reported for MOOCs, advising that the tracking of student success and completion rates by different departments, and also through MOOC-provider measurement tools, is imperative to maintaining a successful MOOC program. P12 noted the importance of keeping up with

technological advancements within all departments—as daunting as it may be—in educating people through MOOC platforms, especially younger ones, saying, “The students of today don’t have the same life experience as I did when I was 19 or 20 years old…if we’re going to think about how to teach our students, we have to teach them as they are” (Participant 12).

Understanding the role of MOOCs. As several participants maintained, a key component to the successful adaptation to MOOC learning venues is understanding the role that these massive courses have in not only reshaping educational venues and methods, but also in providing beneficial advancements on a global basis. Offering advice on ways that MOOCs can help the spread of knowledge and education in ways that have not before been possible, P1 stated that universities can have a major impact on society through this type of educational system, maintaining that MOOCs have served to legitimize open education at many higher education institutions by creating free or low-cost courses for populations that can help solve many of the world’s problems (Participant 1). On a similar note, P4 restated that MOOCs are a tremendous source of outreach to non-university student populations that may be lacking in education; for example, high school students who may not have access to computer courses may benefit from MOOC programs provided by universities or learning centers.

Highlighting the fact that MOOCs have become educational venues for both collegiate and corporate settings, P6 emphasized that many working professionals take MOOC courses for training and career advancement and need this type of online structure, stating:

> If you look particularly at graduate education, a lot of professionals who have been out in the workplace for a few years are really interested in going for a Master’s degree, but they don’t want to invest the $40,000, or $60,000 plus dollars…and they’re not going to be able to [go to school] full-time…so, it points to a different market. (Participant 6)

P8 restated his belief that the advent of MOOCs has improved the way residential courses are delivered, serving to empower both professors and students who have taught and taken these courses, respectively. He believes that the massive online presence is only enhanced by

technological advantages that MOOCs offer, which allows educators to do things that were just not possible before.

Research Question 4 summary. RQ 4 asked: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ? To answer RQ 4, two Interview Questions were presented to 12 interviewees. A commonality among all participants was an expression of the need to find strategic ways in implementing MOOCs at their schools that align with student needs while serving to augment their respective school's branding and educational reach. All mentioned that the inclusion of the MOOC venue generally expanded their institutions' strategic opportunities, often creating significant financial gain while increasing the school's reputation and clout. Many replied that if given the opportunity again, they would have planned better for the massive changes that MOOCs would bring, and perhaps have been more aggressive in establishing Massive Open Online Courses at their schools from the outset. All participants noted the importance of understanding the role of MOOCs and the great changes they will undoubtedly bring to the world of education. Three commonly occurring strategies emerged from the data: (a) strategic vision, (b) collaborative planning, and (c) understanding the role of MOOCs.

Summary

The overall purpose of this research project was to ascertain the impact of Massive Open Online Courses on higher education, and to gauge the success of these programs at leading colleges and universities that have adopted MOOC-inclusive programs to their curriculum and methodologies during the last few years. Gaining first-hand perspective on MOOCs from these 12 participants provided vital information supporting the investigator's previous research during the study, serving to broaden both the scope and depth of the project while garnering a deeper analysis of the topic. Twelve semi-structured Interview Questions were proffered to 12 experienced higher education leaders, all of whom have had direct involvement in some way with MOOCs, via a face-to-face, or telephone interview process.

These 12 Interview Questions were culled from four overarching Research Questions that framed the study and were devised to gain further analysis of the participants' personal interpretations of the MOOC phenomenon at their respective learning institutions:

- RQ 1: What challenges have you encountered in making the transition to MOOCs?
- RQ 2: What strategies have you implemented to meet the changes brought on by Massive Online Open Courses?
- RQ 3: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation?
- RQ 4: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ?

Chapter 4 is a summary of the 12 participants' perceptions and the data collection procedures, data analysis, and findings of the interview process. A coding process, which had first undergone an interrater reliability review process for ensured validity, revealed 47 themes from the data, which are listed in Table 4. Chapter 5 is an articulation and discussion of the study's findings, the researcher's conclusions, implications drawn, and recommendations for future research.

Table 4

Summary of Themes for the Four Research Questions

RQ1: Challenges	RQ2: Strategies	RQ3: Measurement of Success	RQ4: Recommendations
Initial expense	Utilization of MOOC capabilities	The proliferation of MOOC programs	Conceptualizations
Availability of funding	New leadership positions established	Defining success	Strategizing opportunities
MOOC-provided support	Expanded course objectives	The value of programs	Adjusting programs
Technical barriers	Pedagogical fine-tuning	Enrollment rates	Strategic vision
Pedagogical adjustments	Dedication to success	Completion rates	Collaborative planning
Administrative support	New strategies employed	Overall satisfaction of programs	The role of MOOCs
Additional training	Additional oversight	The University tracking system	Program development

(continued)

RQ1: Challenges	RQ2: Strategies	RQ3: Measurement of Success	RQ4: Recommendations
Creative license/freedom	Enhanced funding	MOOC-provider tracking system	
Periodic feedback	Maintaining status-quo	Assessments and analytics	
Maintaining stability	New divisions created for MOOC programs	Massive global participation	
Organizational oversight	Innovation and strong leadership		
Structured training	A drive toward success		
Empowerment for educators	Adaptive Course Materials		
Administrative guidance	Structural improvements		
Encouraging change	Fine tune pedagogy		
Success of programs			
Adopt relevant material			
Creative flexibility			
Adaptive programs			
Adjusted pedagogy			

Chapter 5: Conclusion

Retrospective

Massive Open Online Courses are representative of the newest iteration of online learning that has not only taken immense hold in the world of education, but also become significantly entrenched in the corporate realm for business training and certification purposes. An outgrowth of rapid technological advancements of recent years, MOOCs have become transformational educational vistas that can offer expansive virtual learning at a fraction of the cost of traditional college programs, and as such, have often been viewed as being equally disruptive to the whole notion of established educational methods and institutions. The exorbitant price of a traditional college education has created a great demand for cheaper, more convenient online programs, and MOOCs offer all the benefits of online learning, but on a global scale. As Belkin (2014) maintains, a generation of college graduates is under siege from decades of runaway tuition costs, entering the workforce with devastating student loan debt that is prohibitive to having the ability to purchase automobiles and homes, or even start families, and notes that MOOCs "hold the promise of bending that cost curve down" (2014, p. 1). Revolutionary in scope, MOOCS are redesigning the ways that formal education is delivered, and this new phenomenon may have the capacity to bring education to *the four corners of the globe*, creating educational advancement in places that would have never have had such opportunity.

Despite the tremendous educational benefits that MOOCS offer, however, there are drawbacks. As Ng'Ambi and Bozalek (2015) point out, although MOOCs draw from traditional distance learning and online education models, they do not follow the same well-established economic and pedagogical structures; instead, they offer free course content while accommodating an unlimited number of registrants, thereby expecting "no explicit commitment by participants…shifting commitment and consequences to institutions" (p. 451). The glaring occurrence of low completion rates among students is also a common complaint among

educators for MOOC courses, and many express concerns about the impersonal nature of global MOOC classrooms—often with upwards of a thousand participants—with few gauges in place to minimize instances of plagiarism or cheating. An interpretation of the repercussions of the massive shift to online MOOC-style learning and its impersonal nature is expressed by Professor Darryl Tippens of Pepperdine University:

> If we aren't careful, we will bifurcate education into two separate and unequal systems: the residential college education, which involves rich interactions between professors and students, enhanced by an array of heady co-curricular experiences with the goal, not just of information transfer, but transformation—the formation of competent, ethical citizens and whole human persons. The other model will promise less: somewhat depersonalized, 'objective' and fact-based training; skills development that leads to certificates, badges and degrees—valuable, but carrying less prestige. (Belkin, 2014, p. 2)

Tippens' statement clarifies the notion that education may become split between a more substantial and personalized residential, educational experience and the more depersonalized, certificate-based online experience, but it also points to a belief that a further split may be impending because of economic status. Michael Crow, president of Arizona State University, warns against a future in which "rich kids get taught by professors and poor kids get taught by computers" (Delbanco, 2013, p. 6), drawing a stark comparison that depicts the future of education as being divided between the *haves*, and the *have nots.*

This study was an examination of both the pros and cons of the MOOC phenomenon and its overall effect on traditional learning institutions in higher education. It is the researcher's hope that the findings of the research project can benefit educational leaders as they navigate the vicissitudes of online learning's rapid technological advancement and devise ways in meeting the challenges and opportunities that Massive Open Online Courses present for the betterment of their learning institutions.

Summary of the Study

The overall aim of this phenomenological, qualitative study was to assess the impact of Massive Open Online Courses on higher education learning institutions during recent years, and shed light on methods that have been utilized by educational leaders to successfully incorporate this new learning medium into their universities' curricular structure. MOOCs have opened up a whole new window of opportunity for virtual education while also offering the possibility of expanded educational prospects to regions that have hitherto been restricted either because of geographic location or economic disadvantage. Insights obtained from the research project were contrasted with current literature on MOOCs—and the development of online education, in general—during the past few years. Four overarching Research Questions provided the overall design of the study, and 12 related Interview Questions served as a sub-set questionnaire for the conduction of semi-structured interviews with 12 professionals in higher education who have had experience with MOOCs. The following four Research Questions were utilized to gain perspective from the 12 education professionals on the advent of MOOCs at their respective learning institutions, and the individual actions that each took to meet the challenges of this new learning medium:

- RQ 1: What challenges have you encountered in making the transition to MOOCs?
- RQ2: What strategies have you implemented to meet the changes brought on by Massive Online Open Courses?
- RQ 3: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation?
- RQ 4: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ?

Summary of the Findings

Twelve participants agreed to be part of the research project, and semi-structured interviews were conducted by the researcher using an interview assessment tool which was approved by the Pepperdine University IRB Board and vetted by two Pepperdine Doctoral Graduates who served as inter-raters. The study was guided by an expert panel composed of the researcher's doctoral dissertation committee members. Interviews were transcribed and coded solely by the researcher, and reliability of the coding process was verified by the two inter-raters as themes from the interview process began to emerge. All themes were presented and detailed in Chapter 4 of the research project, and the final findings of the study are discussed in subsequent sections of Chapter 5. Of the 47 themes culled from the 12 Interview Questions during the semi-structured interview process, several significant, dominant themes emerged from each Research Question:

- RQ 1: What challenges have you encountered in making the transition to MOOCs?
    - Technical barriers
    - Need for additional training
    - Empowerment for educators
    - Encouraging change
- RQ2: What strategies have you implemented to meet the changes brought on by Massive Online Open Courses?
    - Pedagogical fine-tuning
    - Dedication to success
    - New leadership positions
    - Innovative leadership
- RQ 3: How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation?
    - Assessments and analytics

- Value of programs
- Overall satisfaction

- RQ 4: If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ?
  - Employ strategic vision
  - Collaborative planning
  - Assess the role of MOOCs

Key Findings

It is vital for modern educators to stay current with the latest technological advancements to online learning, and MOOCs represent the most recent major shift in the composition and delivery of virtual education that is both evolutionary, and revolutionary, in nature. Today's tech-savvy students demand learning venues that offer ever-changing, online platforms for education and training purposes, and university leaders must not only continually adjust and adapt their strategies to accommodate these new learning mediums, but also ensure that their institutions offer advanced programs such as MOOCs in their curriculum to remain competitive. The study's four Research Questions were designed to ascertain the thoughts and beliefs of the 12 participants on the impact of MOOCs, which would shed light on their own individual interpretations of ways to embrace the new technology that MOOCs represent. Some dominant themes that emerged from the Research Questions are discussed below.

RQ 1: **What challenges have you encountered in making the transition to MOOCs?** Most study participants cited the numerous *technical barriers* that had to be overcome to accommodate the new MOOC design, as often these new course structures involved smaller units of instruction, increased video components, the infusion of social media, and overall course design that prompted many university leaders to hire media specialists to assist with the process. *The need for additional training* for instructors was another consideration, as often professors had to be shown how to match the development of existing courses to these virtual

classes for full integration to MOOC platforms. These individuals would also have to become more tech-savvy in adjusting to the more sophisticated design of MOOC programs while often having to take time out of their busy schedules to create original content for new MOOC classes. However, being able to create original content for courses has also served as a huge motivator for professors to embrace these new online venues. This *empowerment for educators* notion that emerged as a theme from Research Question 1 was brought up by participants at various times throughout the study, as many felt that educators who were able to craft their own unique vision for new MOOC courses were generally more inclined to embrace the process with enthusiasm. By being allowed more creative freedom, educators were more likely to accept additional technological training and devote extra hours to the development of MOOC classes, using their own individual talents to help shape courses specifically designed to meet the needs of their students. As P7 from the study mentioned, professors at his learning institution generally shape their own materials and are free to develop courses drawn from their own particular vision to enhance the MOOC platform. For many educators, having the freedom to develop such courses has become an enjoyable and creative prospect. The MyCS MOOC program at Harvey Mudd College, for instance, was designed as a curricular resource for teachers at other learning institutions in need of computer science courses at their schools, and as MOOC Program Coordinator Elly Schofield '13 states,

> At its heart, computer science is as much about creativity as it is about analytical problem solving. We want our course to reflect that creativity, and to show students encountering [Computer Science] for the first time that the field is not only useful, but also exciting. (Harvey Mudd College, 2014, p. 1)

Another dominant theme brought up by many participants during the Research Question 1 section of the interview process was *the importance of encouraging change*. To allay the fears that the encroachment of MOOCs has often instilled in educators nationwide, administrators should provide guidance and support through such a transition, and many of the

participants reported that administrative members at their learning institutions continuously sought ways to encourage faculty to embrace the new MOOC paradigm, and not be intimidated or threatened by this new form of learning. Study participants P1, P2, P8, and P12, for instance, all mentioned that administration members at their universities were highly supportive of staff and faculty in making the transition to MOOCs, with Vice Provosts and Deans working diligently to create training programs and hire media specialists to assist in the process. P1 stated that the Vice Provost at the school was instrumental in developing a forum for faculty to share their thoughts and ideas concerning MOOC programs, encouraging them to take advantage of any additional training provided and assist in helping other faculty members with the implementation of the new courses. P3 said that as a Vice Provost at his university, he was very supportive of faculty members in their efforts to meet the challenges of MOOC classes, and he would remind faculty members that this new medium was nothing more than an online tool to evaluate and use appropriately.

Organizational change can be a daunting task at any type of establishment, as change can often "undermine existing structural arrangements, creating ambiguity, confusion, and distrust" (Bolman & Deal, 2013, p. 381), and the mammoth alterations to traditional modes of education that MOOCs are feared to bring have often only served to exacerbate the change process at some universities the more pronounced they have become. As Bolman and Deal assert, to minimize consternation to change, "Innovators must anticipate structural issues and work to redesign the existing architecture of roles and relationships" (p. 382), and all participants of the study implied that by encouraging faculty and staff members to embrace the coming modifications brought on by MOOCs—offering assistance and training to lessen the impact of such sudden change—administrators at their learning institutions were extremely helpful in making the transition to MOOCs less strenuous and more beneficial for university personnel, overall.

RQ2: **What strategies have you implemented to meet the changes brought on by Massive Online Open Courses?** One theme that emerged that seemed to be of vital importance was *the need for pedagogical fine-tuning.* As Knowles et al. (2012), maintain, the learning process generally encompasses change, not only from a student's perspective, but also from a professor's vantage point with the inclusion and delivery of newly designed educational materials, and nowhere is this more evident than with the advent of such an overwhelmingly novel learning method as a MOOC. The *rush to MOOCs* by colleges and universities in recent years has often outpaced core developments of these programs that would ensure quality of content while avoiding such pitfalls as plagiarism, cheating, deception, and low completion rates. As with all new learning venues, MOOCs are still evolving, and often professors are left with the daunting task of adjusting existing course content to the wholly virtual design of MOOC class structures, which can bring with it a whole new host of problems because of the scope and breadth of the MOOC format. Participants of the study were well aware of the impending changes that MOOCs would bring, which would force them to reconsider and adjust traditional teaching methods in adapting to the new medium. Technical proficiencies of the MOOC platform would often redefine ways that faculty members would teach classes, and additions such as the flipped classroom and video-driven course content serve to alter previous methods of instruction. As P2 from the study noted, it could generally take some adjustment for faculty members to become familiarized with these newer class structures, with simpler course concepts presented and less emphasis on class lectures. Grading would often have to be done differently, new content would need to be created, and as P6 reported, massive MOOC classes would have to be designed correctly so as to avoid massive problems later on, an undertaking which could often be very time-consuming. Pedagogical fine-tuning would also usually involve outside assistance in the form of media experts who could train faculty to utilize these courses for maximum efficiency, which often spurred the creation of a management team or Vice Provost who could oversee the production

of the new courses to ensure their quality and effectiveness for student success. As P11 mentioned, a key component to the successful adjustment of pedagogy for MOOCs was the ability to adopt and customize content delivered by the MOOC provider, allowing a professor to use his or her own unique vision in designing the course while tying it to the university's "own branding, flavor, and matching it to [its own] competencies" (Participant 11).

Other important themes that emerged from Research Question 2 of the study include *dedication to success* and *the creation of new leadership positions* as strategies in designing effective MOOC programs. Study participants, overall, maintained that the administrative divisions at their respective learning institutions were generally excited to include MOOC programs at their universities, and that it was a dedication to success that proved to be not only inspiring to staff and faculty members, but instrumental to the successful implementation of these new venues, despite challenges that may have emerged. All participants noted that administrative members at their schools were highly engaged and contributed greatly in bringing together the necessary components for successful MOOC design—from obtaining additional funding to hiring media experts and trainers to ensure a smooth transition to MOOC programs. The creation of new leadership positions also proved to be a crucial step in the development of MOOC formats, and P2 and P5 from the study mentioned the importance of establishing a production team or course manager to ensure the successful transition to MOOCs. P5 emphasized that often the expertise supplied by these professionals created enthusiasm and excitement for MOOCs while lessening fears about their implementation. P3 noted his own ascendancy to Vice Provost, recounting his own actions in efficiently utilizing resources for the expert design of MOOC venues.

The presence and importance of *innovative leadership* was strongly noted by many participants of the study, as often it was the innovative and creative ways that university leaders used their talents that led to MOOC success at their schools. By moving forward with confidence and creating successful models for newly designed MOOC structures, strong

leaders at these universities inspired and encouraged faculty members to embrace the changes that MOOCs would surely bring. Using creative vision to *think outside the box*, many leaders at the participants' universities employed what Puccio et al., (2011), classify as *ideational thinking*, or "the ability to produce original mental images and thoughts that respond to important challenges" (p. 79). As P7 replied, "A push to drive success was strong on all levels" at his university (Participant 7) while P9 emphasized that both the Provost and the President at his school were extremely enthusiastic about the MOOC program, providing strong leadership in obtaining funding for MOOC structures and devising methods for successful MOOC development.

RQ 3: **How have you been able to measure success of the transition to a MOOC-inclusive curriculum, both in implementation and operation?** As previously mentioned in the study, tracking enrollment and completion rates is critical to understanding the success or failure of MOOC programs, and all of the participants mentioned that their schools use some sort of tracking system—often in unison with similar instruments used by MOOC providers—to gauge their progress. P1, P2, P5, P6, and P8 specifically noted the importance of keeping records of enrollment and completion rates through assessment and feedback systems, while P1, P3, P6, and others acknowledged the value of having an additional, MOOC-provided tracking method in place to gain additional insight to the success of the courses. The importance of *assessments and analytics* to measure success was a common thread among the participants' responses, and most of them mentioned the value of gathering perspective on student engagement with MOOC programs through the use of surveys, questionnaires, quiz and test scores, and student feedback. The goal of these virtual courses is to provide quality content that is delivered through a well-designed medium while streamlining instructional methods to enhance the educational experience. For many educators, however, the MOOC experiment has been a foray into the unknown, which has sometimes become problematic as

professors adapt to the new medium. As Peter C. Caldwell, history professor at Rice University, states,

> A bunch of issues are going to hit us—we have a number of professors doing things related to online education across the university, with our own little modules here and there. We need to ask hard questions about how that works with what the university is doing. (as cited in Azevedo, 2012, p. 2)

Gauging the results of assessments and analytics can offer additional information concerning the *value of these programs* and the *overall satisfaction* gained from them—two other dominant themes emergent from this section of the study—and all participants of the study noted that by tracking results with these analytical tools, they were able to gain a better assessment as to the success of the MOOC programs, and make adjustments accordingly to address any deficiencies detected in their design or delivery.

The value of these programs is directly tied to the overall satisfaction that students feel about them, and as P1 curtly stated, "The success of the MOOC is the number of people who enroll in it, what the completion rate is, and what students think of it" (Participant 1). As previously mentioned, the defining value of an educational program should not be measured solely by its commercial success—usually measured by such things as enrollment and completion rates, or financial compensation—but more by its intrinsic quality that fulfills a student's essential needs and desires. Many of the participants interviewed echoed the sentiment that the driving force of the MOOC platform is the broadening of the educational experience for the purpose of enriching each individual student's life experience. Therefore, the creation of quality material should be of paramount importance, and by delivering well-constructed, superior content through state-of-the-art virtual design, these programs can offer tremendous value to a student's educational journey.

Assessing the overall satisfaction with educational programs is of premiere importance to any learning institution, and P8 emphasized the need for delivering superior content and

structure to enhance not only the educational quality of MOOCs, but also the enjoyment factor for students enrolled in the programs. P6 maintained that administrative leaders at her university largely focus on student success stories that express their overall satisfaction for MOOC classes, and offered that a common concern that faculty members often bring up is, "What changes have we had on individual people?" (Participant 6). This focus on more *personalization* of the MOOC experience is echoed by Richard DeMillo, Director of Georgia Tech's Center for 21st Century Universities, as he states, "Personalized feedback to a student is the most important thing to affect [his or her] success. But there is nothing that says that personal feedback can't be delivered automatically" (Weldon, 2016, p. 1), implying that although MOOCs are massive in scope, personalized instruction can easily be accomplished just as effectively in a massive online class as in a traditional onsite classroom through digital means. Even with the immensity of MOOC classes, personalization is key, and the participants of the study all mentioned the importance of keeping an individualized connection to students strong in these types of courses. Participants of the study seemed to agree that through the use of assessment tools and a constant attention to student feedback, educators can—and must—keep lines of communication open with students to maintain the success of MOOC programs. As they implied, despite the mammoth nature of MOOCs, motivated professors can take advantage of the extensive virtual design that MOOCs afford to offer high-quality educational value while also using their talents to provide a personalized class experience for students.

RQ 4: **If you had to start over, what approaches to create MOOC-friendly curricular environments would you employ?** Two overarching themes that emerged during the Research Question 4 section are the importance of having *strategic vision* and of *understanding the role of MOOCs* in today's world. All participants mentioned that they have learned a considerable amount during the implementation of MOOCs at their universities, as solutions had to be found for a constellation of challenges that this new learning format demanded, and often, finding solutions to problems encountered could prove to be as gutsy an endeavor as it was

daunting. As creative researcher E. Paul Torrance (1971) states, “You need courage to be creative. Just as soon as you have a new idea, you are in a minority of one. And being in a minority of one is uncomfortable” (p. 8). Surely, this was a collection of forward-thinking individuals who had offered to participate in the study, and each one’s creative courage shown through with the thoughtful and informative statements each made about the bold actions he or she took to instill Massive Open Online Courses at these schools. All participants had utilized strategic vision in accomplishing this task, working collaboratively with one another—and often with other schools—while taking advantage of strategic opportunities to fulfill the needs and goals of these programs. Nicholas C. Barbules, University of Illinois professor of educational policy studies, states that in accordance with MOOC issues, “I don’t think anyone knows exactly where this is going. We’re on a very fast train right now, and we’re jumping on board and seeing where it ends up” (Azevedo, 2012, p. 1), and each participant’s response during the study articulated this sense of fearless determination they all possessed in their efforts to lead change and install this new learning medium at their universities. Transformational leaders empower followers and nurture them through change while servant leaders are devoted to the welfare of others. All participants of the study are both transformational and servant leaders who have striven to serve the greater good of their organizations while working to “initiate, develop, and carry out significant changes” (Northouse, 2013, p. 199) at their universities.

Many participants of the study stated the importance of understanding the role of MOOCs in today’s academic and corporate worlds, highlighting some of the enormous benefits that these programs can bring to both. P1 specified that MOOCs will be instrumental in lowering the cost of education while serving to spread knowledge to many parts of the world that may never have had such access otherwise, helping to solve many of the world’s problems because of their global reach. P4 highlighted the enormous opportunity for outreach to other populations through MOOCs that may not have educational resources, and P6 mentioned the influx of MOOCs to the corporate world, enabling professionals to take advantage of training

and career advancement through these massive online programs while still retaining busy work and home schedules. Many of the participants mentioned changes that they would have made if faced again with the challenge of creating MOOC programs at their schools, but all of them were sure that they had made the right decision in moving forward with the process. Each participant felt that it was of strategic importance for their universities to embrace the new technical learning paradigm that MOOCs offer, which has the potential to completely transform the way that education is designed and delivered. As P7 stated, the arrival of such programs as MOOCs is inevitable, and the future is unknown, adding, "Let's work with this new phenomenon…use it in alignment and conjunction with existing material…and we'll just have to see where this Rosetta stone fits into the picture, so to speak" (Participant 7).

Almost all of the participants of the study had excellent advice to give to other educational or corporate leaders who may be considering including MOOCs in their instructional design. P1 noted the likely permanence of MOOCs, stating that MOOCs are both part of the online movement and the open education movement, and will be here for quite some time. He also added that MOOCs can create free or low-cost courses for special populations, "helping to solve problems from poverty to terrorism," and allowing educators to have a huge impact on society through this type of educational system (Participant 1). P2 suggested the importance of strategic direction in developing MOOC programs to further the school's branding and reputation. P5 also highlighted the fact that MOOCs could be a great way to build branding for a university, advising, "Advertise that your institution has MOOCs to create public interest in these courses and help build the university's reputation" (Participant 5). P7 mentioned the importance of appointing a specific person or committee to oversee MOOC programs while P10 remarked, "If you want to do a specialization of some kind…something that goes beyond one course…then MOOC courses can be very helpful" (Participant 10). P11 reiterated the importance of having a strong tracking system that records student success and completion rates to adjust and adapt for better content and structure. Hopefully, some of these

suggestions, along with information gleaned from the literature review and participant interviews from this research study, can be helpful to administrators and corporate heads who may be contemplating the inclusion of MOOCs to their curricular or training venues.

Implications of the Study

There have been numerous studies on the advent and impact of Massive Open Online Courses during recent years, and the literature review of this research project highlights just a portion of the thousands of articles, essays, and academic papers covering the topic. This study was targeted at identifying some of the major events and elements of the MOOC phenomenon and assessing ways that higher education leaders have been affected by—and have dealt with—the implementation of this new learning medium at their universities. At the core of this research lie some basic questions: *What lies ahead for Massive Open Online Courses*? *Are they helpful to educators, or more of a hindrance? Are they disruptive to education, or do they represent an enormous step forward that can both democratize and globalize education on a grand scale?* P1, for instance, said he agreed with a portion of the study's Purpose Statement which states that MOOCs have had an impact on higher education; however, he maintained that MOOCs are essentially a substratum of the open courseware platform, and that the transformation of education is not happening solely through MOOCs, but though assets that the advent of MOOCs has already created. He said that MOOCs will be considered digital assets, or more specifically, *free* digital assets for education purposes, but "not as MOOCs, as MOOCs will very quickly transform into something else. [Actually], they already have…and already are (Participant 1). P1 maintains, therefore, that it is the vast availability of online open courseware that will bring changes, not just MOOCs, which is a notion that greatly diminishes the idea that MOOCs alone are disruptive to traditional education.

De Langen and van den Bosch (2013) voice a similar view, stating that MOOCs are largely "educational innovations that disturb the present state without driving out old educational business models," adding that although traditional education leaders cannot ignore the progress

of MOOCs, open education resources, and other online learning venues, MOOCs will not be considered as a competitive choice for degree-searching students (de Langen & van den Bosch, 2014, Abstract). Professor Tippens of Pepperdine University predicts that "the distinction between 'campus-based' learning, and 'distance' learning will be blurred in the years ahead. It's already happening" (Belkin, 2014, p. 2). Tippens further asserts that student populations in remote locations will not be the only beneficiaries of online education, as he believes that the blended model of instruction is not only working well, but is most likely to expand wherever the demand is great for the dissemination of knowledge. (Belkin, 2014). Professor Schroeder of the same study sees the divide between traditional and online education drawn more between economic divisions than anything else, saying that traditional, campus-based learning will be pursued by those who can afford it, while those who are economically challenged will most likely choose among online and MOOC programs because of their affordability and flexibility (Belkin, 2014). The real threat of MOOCs, Professor Shirky of the same study warns, is that "they might produce value without prestige so well and so cheaply that they realign the overall landscape of higher education (Belkin, 2014, p. 2).

Richard de Millo at Georgia Tech does not believe that traditional education is endangered by the MOOC phenomenon (Weldon, 2016). Although he notes that traditional college tuition is "cost-prohibitive" for many, he believes that there will always "be a need for the college campus and everything it represents" (Weldon, 2016, p. 2). However, he also maintains that college tuition cost is spiraling out of control, and that universities must find alternative ways to deliver education, stating that Massive Open Online Courses will be an essential part of that transition (Weldon, 2016). Ray Schroeder, Associate Vice Chancellor for Online Learning at the University of Illinois, says that forward-thinking universities should experiment with MOOC delivery models and seek alternative ways to build upon other cost-effective solutions, such as "degree completion for associate degree holders" (Jackson, 2013, p. 10) to find solutions to the accelerating cost of college tuition. Patrick Flattery, Vice President of Finance at the College of

Scholastica, states that parents are often encouraged to consider alternative ways to pay for students' college education, and sometimes they become insistent that their college-bound sons and daughters consider MOOCs and other opportunities (Jackson, 2013). Jackson states that, regarding MOOCs, innovative institutions are seeking ways to find ways to include the trend that MOOCs represent rather than avoiding it, indicating that the perception of disruptiveness that MOOCs have often been stigmatized with may finally be starting to recede (Jackson, 2013).

Other study participants voiced similar ideas about the future of MOOCs in higher education, often painting them as being more of a supplement to traditional education methods rather than an arbiter to their demise. P5, for example, said that MOOCs are not a threat, and that they will only serve to enhance educational methods. P8 stated that MOOCs are only disruptive in the sense that they have significantly changed the ways that educators think about the delivery of content, adding that MOOCs will only continue to make a difference to the world of education—in a good way. P9 asserted that MOOCs could be disruptive with certain populations, as their capacity for the global distribution of knowledge and education to isolated and refugee areas may impact the world in many new ways. "Revolutionary?" he stated. "In some ways, but [MOOCs] will most likely become incorporated into existing structure" (Participant 9). P12, on the other hand, sees MOOCs as being transformative, not disruptive:

> Young people learn differently these days, with a majority of learning achieved through online platforms, so it is the institution's responsibility to adjust and adapt to the changing needs of the student population to find ways to serve them best. (Participant 12)

Other participants expressed their views on the changes that MOOCs have brought, many of which they identified as being instrumental in the overall betterment of education. P2 said that MOOCs will keep evolving, and the innovation of the MOOC learning structure has improved the overall quality of traditional on-campus programs. P6 highlighted the growing desire for MOOCs

in corporate settings, noting that many working professionals aspire to this type of advanced online learning structure for more flexible career training and advancement.

Indeed, despite all of the hype regarding MOOCs during recent years, some universities have opted not to adopt the MOOC platform into their curricular structure. The University of Southern California (USC), for instance, has decided not to jump on the MOOC bandwagon, as USC President C.L. Max Nikias stated firmly that MOOCs were "off the table" (Azevedo, 2012, p. 3). Reporting that USC is not interested in "joining the growing ranks of institutions that seek to franchise undergraduate education through the Internet" (Azevedo, 2012, p. 3), Nikias (as cited in Azevedo, 2012) says that USC's goal is, by contrast, "to ensure that the educational experience is reserved for only those students with the requisite interest and ability to meet our faculty's high expectations" (p. 3). The school will focus on expanding its online graduate programs instead of concentrating on MOOCs, according to Patricia Riley, President of the university's Academic Senate (Azevedo, 2012).

On a similar note, the researcher had occasion to discuss the topic of MOOCs with various professors and administrators at some leading universities during the course of this study who were either personal friends or acquaintances garnered through the researcher's years of working as an Adjunct Professor in higher education. One of the people whom the investigator of the study had the good fortune to speak with about the MOOC phenomenon was a Director of Campus Technology (who is identified as *Director X* at *XYZ University*, for the sake of anonymity) at a major university in Southern California, which had also declined the inclusion of MOOCs in the course programming. During a brief, informal discussion, the researcher was fortunate to gain important perspective from this education professional from an established, highly prestigious university that had also declined the implementation of Massive Open Online Courses in its curriculum. The interchange is important to the study as it provided the researcher with valuable information so as to better understand the school's reasoning for side-stepping the opportunity to incorporate MOOCs into its academic venue. Director X mentioned

that he and a team of administrators from his university had researched MOOCs during the 2012-2013 academic year, and the school had plans to align with MOOC providers Coursera, EdX, and a few other lesser-known MOOC organizations. The school's initial plan to quickly move into the MOOC arena, however, was put on hold in the Spring of 2013, as the failure of some MOOC programs at the time at such renowned schools as UMass Amherst and UC Irvine made administrators at his school reluctant to move forward with the plan. There was also talk of MOOCs offering *for-credit* courses instead of only *non-credit bearing* courses, which made some people at the school uneasy because of the possible disruptive nature of such a transition. Although Director X said that his university never "completely closed the door" on MOOC platforms, there was reticence from school leaders for other reasons as well—mostly the fact that the school did not want to have to raise tuition on the school's students for the implementation of expensive MOOC courses while offering them to the public for free (Director X, XYZ University, personal communication, August 9, 2017). This conversational exchange offered some valuable feedback as to some pitfalls of MOOCs that often serve to add to their controversial nature, and the researcher feels that it was important to include it in the study, as it illustrates the trepidation that some university leaders—often at leading, highly prestigious learning institutions—still feel about possible negative effects that MOOCs might have on their learning institutions.

MOOCs are, in essence, a colossal experiment, and there are still fears that these learning venues have the capability to drastically alter, or even eliminate, traditional modes of education; however, as University of Miami's Craig Wilson states, "The MOOC is still shaping itself as to what its potential will be" (Jackson, 2013, p. 9). Jackson (2013) asserts that MOOCs can be utilized to complement rather than compete with traditional on-campus instruction, while Finkle and Masters (2014) maintain that "MOOCs will exist alongside traditional academic settings just as many older institutions and technologies continue to thrive despite challenges" (p. 8). Outlining the beneficial and non-threatening aspects of MOOCs, Finkle and Masters add:

> Student access to education will only increase due to technological advances. This can come as a benefit for all society as not only do students receive top-of-the-line instruction at a fraction of the cost, but the whole world has access to some of the best educators in the world. However, the traditional in-person method of instruction at universities will not go away. MOOCs will only complement the existing traditional model of higher education. (p. 9)

Despite the negative press that MOOCs often receive, the heightened technology and opportunity that they offer is increasingly making education more affordable and accessible (Delbanco, 2013). Most endorsements to the value of online education come from motivated students who already have experience in traditional college programs; however, questions remain about the quality of the education they are receiving, and the fact that students who are not as motivated to work independently often fall behind, or fail to complete online courses—especially MOOCs—has drawn skepticism from critics of the programs (Delbanco, 2013).

Remarkably, the MOOC concept even drew criticism from one of its foundational champions—Sebastian Thrun—whose negative sentiments in a 2014 article identified "the shockingly low number of students who actually finish the classes, which is 10%" (Chafkin, 2014, p. 1), and the high failure rates among the ones who would attempt to finish them, as evidence that MOOCs may not be all that they have been hyped as being. With the original intention of providing *free education for all*, MOOC-enthusiast Thrun came the realization that perhaps tying advanced education to more vocational-focused learning would offer a better model for MOOC programs. Recanting his earlier declarations in the same 2014 article that MOOCs were "a lousy product" (Warner, 2017, p. 1), Thrun stated that his pilot MOOC program at San Jose State University had largely been a failure because of its composition: "These were students from difficult neighborhoods, without good access to computers, and with all kinds of challenges in their lives. It's a group for which this medium is not a good fit" (Chafkin, 2014, p. 1). Thrun's epiphany was the deciding factor in enjoining education to vocational training

throughout his MOOC programs, maintaining that the ultimate value of education is employment and that these courses should have a primary focus on preparing students for the workplace environment (Chafkin, 2014). Thrun maintains that the goal of MOOCs is not to replace traditional education, but merely to augment it; he adds, however, that education is undergoing vast changes, and that the "the university system will most likely evolve to shorter-form courses that focus more on professional development. The medium will change" (Chafkin, 2014, p. 1). Thrun still does see the enormous value that content-rich MOOCs with global reach can provide over traditional modes of instruction, emphasizing the need for innovation in educational development. Furthering this notion, he states, "I could restrict myself to helping a class of 20 insanely smart Stanford students who would be fine without me. But how could that impact not be dwarfed by teaching 160,000 students" (Chafkin, 2014, p. 1)?

Thrun's prophetic vision for MOOCs is articulated in the latest statistics that show compelling success rates for Massive Open Online Course programs across both the spectrum of US colleges and worldwide learning institutions. According to a report from Shah (2018), student enrollment in MOOCs has steadily grown during the last few years, with the pace barely slowing down in 2016. The growth rate is astonishing, as 58 million students are shown to have signed up for at least one [MOOC] course in 2016, representing "a nearly two-thirds increase over the 35 million students registered in 2015, which in turn was a doubling over the enrollment base from 2014" (p. 1). The explosive growth rate of MOOCs signifies a massive interest in these courses and indicates that despite any perceived shortcomings, these expansive learning venues are most likely, as P1 from the study said, to be here for quite some time. As the ICEF study signifies, regional MOOC programs in places such as Latin America and China are now drawing noteworthy numbers of new students, revealing a trend that shows an increasing emphasis on the exportation of educational services to more geographically or economically challenged regions. This exponential expansion of global MOOC platforms illustrates an enormous capacity to alter and improve the ways that education is delivered, and as such, work

in unison with traditional learning venues to benefit people in even the remotest parts of the world.

To explore this notion, the success of non-profit, Generation Rwanda's Kepler University—mentioned earlier in the study in Chapter 1—illustrates the astounding difference that online education through MOOCs can make in people's lives, providing "top-tier education" to young Rwandans who have been ravaged for decades by war, widespread poverty, and illiteracy (Bartholet, 2013, p. 1). As MOOCs have the capability to create quality education that is accessible at a distance for hundreds—if not hundreds of thousands—of students, they can be instrumental in creating massive opportunities where none existed before. P1's assertion that MOOCs can serve as the conduit to spread education and knowledge to the farthest regions of the world is further supported by Coursera co-founder Daphne Koller's affirmation from a TED Global lecture, stating that MOOCs can "enable a wave of innovation, because amazing talent can be found anywhere. Maybe the next Albert Einstein or the next Steve Jobs is living somewhere in a remote village in Africa. And if we could offer that person an education, [he or she] would be able to come up with the next big idea and make the world a better place for all of us" (Ha, 2014, p. 1). As one student in the Kepler program says, "Education is the kind of magic power that can open any door in the world. If you are educated, you can control the situation you are living in" (Bartholet, 2013, p. 1). That *situation* for many Rwandans is indeed dire, and MOOCs may offer the way out of poverty and illiteracy to a brighter future, which supports a foundational aim and hope of the MOOC concept to supply many of the world's most disadvantaged people with well-designed learning venues, taught by premiere instructors, helping them improve their lives. Education in many of these third-world countries is subpar at best, with inferior resources, poor instruction, and crippling language barriers. A standardized *employability test* of 55,000 Indian engineering graduates in 2011, for instance, revealed that 42 percent of these individuals could not multiply and divide numbers using decimals, and many did not have enough English-speaking ability to be able to understand engineering school

curriculum (Bartholet, 2013). Kepler offers astonishing opportunity to Rwandans seeking a better life, delivering free course content authored by some of the best professors in the world and taught by highly competent, well-prepared instructors who can provide personalized assistance and encouragement in the blended MOOC forum, while offering both online and onsite support. This type of technology-driven instruction may be the most reliable and effective way to transport education and knowledge to the most distant parts of the globe, especially as technological innovation spreads and access to it becomes cheaper. As Bartholet states, even landlocked Rwanda is becoming "crisscrossed with fiber-optic cables and getting more wired by the year…. Computing devices are becoming more affordable" (Bartholet, 2013, p. 1).

Additionally, this type of opportunity supports Sebastian Thrun's realized objective of marrying traditional education with much-needed vocational training in MOOC forums to address the critical needs of many of today's student populations in geographically or economically challenged regions throughout the world, helping to create a more enlightened and empowered citizenry in these areas that would have never seen such opportunity. As Generation Rwanda Executive Director Jamie Hodari describes the program:

> Initially students will be on one track: toward an associate of arts degree in general studies, with a concentration in business, from Southern New Hampshire University, which has a cutting-edge program that awards degrees based on proved competencies, not the number of hours spent in a classroom. After associate degrees are completed in the second year, Kepler plans to offer bachelor's degrees in business administration, computer science and perhaps engineering from a variety of institutions. (Bartholet, 2013, p. 1)

Never would have such an incredible learning prospect existed for these Rwandan students, and at such cheap cost, if not for the advent of online learning—and more specifically, MOOCs. As one Kepler student interjected when interviewed on the program, "Education is the only way I can survive…the only way I can take care of my sisters, who need me" (Bartholet, 2013, p. 1).

Massive Open Online Courses can be a major force in bringing education and job skills to even the outmost spheres on the planet, providing desperately needed information and knowledge to populations that would otherwise have no ability to obtain such assistance and empowerment. As MOOCs evolve, the quality of design, content, and instruction will only improve, since online education is truly in its infancy now, but with each passing year, it is becoming abundantly clear that these massive courses do have "the potential to change the face of the developing world" (Bartholet, 2013, p. 1).

Recommendations for Future Research

This study has focused on the perspectives of higher education leaders as they have met the challenges of rapidly evolving technology in online learning, and the actions taken to implement Massive Open Online Courses at their universities. MOOCs have evolved to the point that they are now often being used to supplement traditional methods of education, as hybrid, blended online/onsite classes have begun to emerge. The researcher believes that designers of MOOC platforms are still grappling with issues such as course quality, completion rates, plagiarism, and cheating, and perhaps a future study could revisit this aspect to see if improvements had been made to correct these basic flaws in the system. Despite some of these kinds of drawbacks, MOOCs have the potential to bring quality education to the masses at a fraction of the price of traditional schooling methods, and perhaps future analysis of these programs can further investigate some of the systemic problems of MOOC programs to identify ways that course designers and educators can make improvements to enhance the educational experience for both professors and students alike.

It should also be noted that this study has developed over a 5-year period, and much of the initial hysteria concerning the arrival of MOOCs on the academic scene has largely dissipated. A good portion of the literature on MOOCS from roughly 2011-2014 often portrays MOOCs as being a disruptive force, possibly causing sweeping job cuts among faculty and staff while spelling the end of traditional education. MOOCs *are* disruptive in many ways, and

indeed, may pose a threat to traditional education if their design becomes infallible and they can begin to deliver degree-status courses on a widespread basis—especially, if offered at low cost, or even no cost. However, the reality is that MOOC programs do have flaws, are increasingly not being offered for free, are not yet offered for credit at most universities; additionally, many people still believe that online education, in general, often cannot provide the same college experience that established, traditional universities can. Countering the initial panic found in earlier publications ensuring the MOOC-driven demise of traditional learning methods and institutions, a soberer view of MOOCs is generally reflected in post-2014 literature on the effects of MOOCs in higher education. Massive Open Online Courses can greatly enhance the educational experience, as their myriad virtual capabilities, low cost, and global reach can not only dramatically broaden the scope of classroom instruction, but also help to bring knowledge to low income or isolated communities around the world. During more recent years, MOOCs have been perceived by many as being more of an enrichment to education than a threat, as often professors blend their own materials and traditional classroom teaching methods with the vast digital landscape that MOOCs offer, creating hybrid classes that can harvest the best of both worlds.

At the commencement of this study, the researcher cited the rapid advancement of technology and its massive impact on education, noting that by the time the study was finished, both online education and MOOCs may have completely mutated to some other medium, rendering the study's subject not only inconsequential, but obsolete. Technology *has* moved forward at lightning speed and many adaptations and variations to online learning have taken place, and as newer online learning methodologies—including MOOCs—have developed, many educators have adjusted to these new mediums, becoming less anxious about them as they have become more comfortable and tech-savvy with the digital assets that have crept into online courseware over time. As Participant 1 of the study maintains, MOOCs have already morphed into something else, moving into the mainstream realm of online open courseware to

become more of an advantage to traditional curricular programming than the destructive, disruptive force that they were originally purported to be. In addition to the further study of MOOC learning venues, perhaps educators must now direct their attention to the next great academic innovation on the horizon—whatever it may be—that could signify the next great leap forward, as education and technology become increasingly integrated.

Final Thoughts

As the researcher of this comprehensive study on the challenges that Massive Open Online Courses bring to higher education institutions, I have concluded that MOOCs will most likely become blended, supplemental components that will work in unison with traditional academic methods to augment and expand instructional objectives in higher education settings. As Finkle and Masters (2014) suggest, many older and more traditional institutions and technologies have continued to thrive despite the encroachments of newer innovations, often existing alongside and enhancing such modernized venues, and blended classes that offer MOOC components may become the standard for subsequent educational formats. As the literature shows, many administrative and faculty members at higher education institutions have been fearful about the seismic changes that MOOCs could bring, outpacing traditional education methods and serving to greatly dissipate—or even eliminate—the conventional role of the professor in academia. Many have seen the threat of MOOCs as being very real to traditional brick and mortar institutions, as these cheaper, more advanced online learning venues—which also bore the possibility of becoming alternate, degree-bearing programs—have become entrenched. However, it is important to acknowledge that despite continuous updates and improvements to MOOC platforms, MOOCs still have inherent problems in their design and delivery such as the lack of student accountability for work, the possibility of cheating and plagiarism, and relatively low completion rates for participants. Additionally, many educators are still not convinced that MOOCs offer quality education—for all their hype. Nonetheless, MOOCs have the potential to revolutionize the foundations of traditional education and take it in

a whole new direction, and as Participant 1 of the study offered, instead of being a replacement for traditional education, they may just be an extension of online open courseware, offering vast new ways to democratize education and expand learning to populations on a global basis. Participant 8's assertion that that MOOCs may be disruptive—in a good way—articulates the concept that these programs have served to not only alter school programs, but often improve them in the process, while encouraging educators to think of new ways to utilize technology to enhance and expand the educational experience. As Anant Agarwal, CEO of MOOC provider EdX states, "In blended classrooms, the on-campus university course can leverage the power of MOOCs to free up classroom time for interactive collaboration and discussion, testing and problem-solving" (Haynie, 2014, p. 1).

Despite these pros and cons of MOOC capabilities, the verdict is still out, so to speak, on whether MOOCs are the disruptive force that they have often been interpreted as being, and only time will tell if they signify a substantial threat to traditional education instead of merely serving as an augmenting element to existing pedagogical methods. As the opening segment of this study indicates in Chapter 1, educators do indeed need to pay close attention to the rapid, massive technological developments that will continue to alter scholarly practices as time progresses—so as not to be overtaken by them—and Massive Open Online Courses are indicative of the drastic changes to come. MOOCs are largely in their embryonic stages, and as such, may still only serve as an enhancement to traditional educational approaches. Aaron Bady, doctoral candidate at UC Berkeley, seems to agree with this notion, stating, "A MOOC is a great voluntary thing you can choose to do, but the moment it turns into a substitute for actual university education, it becomes a really cannibalistic proposition" (Haynie, 2013, p. 2). Nonetheless, with great change comes great opportunity, and as with most technology, online learning itself is potentially disruptive, "in the most negative, chaotic sense of the word. But what we get in exchange for the chaos may be an industry-altering improvement, and education is one of America's fields that's most sorely in need" (Wang & Schrager, 2017, p. 5). As to the

effects of MOOCs on traditional education, “The lessons learned are still coming,” as Joel Hartman, administrator at the University of Central Florida and president of the Sloan Consortium states, adding, “I don’t think you are going to be seeing a very broad impact on what is learned from MOOCs for at least a decade” (Haynie, 2014, p. 1).

Contrary to Hartman’s prediction, however, the *decade* that he predicts is necessary to determine the impact of MOOCs and other learning technologies may be significantly shortened, as a glimpse into the very near future reveals astonishing changes that may soon transform our everyday lives in ways that we cannot even imagine. *Artificial Intelligence* is already being used to restructure methods of education on a global basis for the benefit of both students and teachers, and MOOCs may prove to only be the nascent beginning of such change. As Owen (2017) predicts, AI can streamline data and provide a platform “to collect a portfolio of work throughout the school term or year, rather than relying on somewhat clunky and anachronistic examinations” (p. 1). Some are even predicting the rise of *robot teachers* which could take the place of human instructors as the escalating digital revolution moves forward. As Ayers (2016) asserts, during the last few years, scientists have experienced breakthroughs in *machine learning*, “using neural networks, which mimic the processes of real neurons” (p. 1). Ayers continues:

> This is a type of “deep learning” that allows machines to process information for themselves on a very sophisticated level, allowing them to perform complex functions like facial recognition. Big data is speeding up the AI development process, and we may be seeing more integration of AI technology in our everyday lives relatively soon. (Ayers, 2016, p. 1)

Noting the astonishing speed of developing AI technology, after a recent visit to Carnegie Mellon’s graduate level Artificial Intelligence Program, former Speaker of the House Newt Gingrich stated:

> I saw [a] powerful glimmering of technologies that will change our world. The ability to develop intelligent systems that can learn and adjust is rapidly evolving. These systems will give us new capabilities and new insights in ways we have never imagined. The future is going to be amazing, and…there is much more to come. (Gingrich, 2018, p. 1)

Bentley reaffirms this notion, stating that Artificial Intelligence has amazing potential to significantly improve our lives, which can allow us to live healthier, happier, and longer life spans and also generate new job opportunities across the globe. He underscores this assertion, affirming, "The creation of AI comprises many of the greatest scientific and engineering feats that we will ever undertake. It is a new technological revolution" (2018, p. 11).

Another consideration in assessing the scope and impact of virtual education, pedagogy, and the role of MOOCs in this technological revolution is the rapid development of the World Wide Web. Web development has morphed from Web 1.0 in the mid-1990s, which was basically an information learning platform, to Web 2.0, a more social web experience, with users not only reading information, but also connecting and interacting with one another on sites such as Facebook and Youtube, to Web 3.0, or the Semantic Web, which is where we are now. Web 3.0 "is not only a read and write web but also a web that focuses on the individual user and machine" (Loretz, 2016, p. 1)—and the intelligent connections between the two. As Loretz (2016) maintains, emerging Artificial Intelligence will allow computers to "communicate, reason, and behave just like [humans]," which will be articulated through Web 4.0 and beyond" (p. 1). According to Loretz, this 4.0 version of the web will exist roughly between 2020 and 2030, and its design will be as intelligent at the human brain, stating, "From computers being personal assistants to virtual realities…highly intelligent interactions between machines and humans will occur" (p. 1).

As stated earlier in the study, MOOCs are grounded in the learning theory of connectivism, which is derived from pre-existing theories such as Social Network Theory, Social Constructivist Theory, and Social Culture Theory, and which "strives to be a pedagogy for the

digital age" (Dewar, 2013, p. 6). Designed by George Siemens, connectivism outlines a series of key tenets, one of which states that "learning may be found in non-human appliances," and that "[what] was applicable today may not in time remain applicable due to changes in the information and knowledge" (p. 6), implying that connectivism, the foundation of the Massive Open Online Course model, not only creates a more fluid form of learning theory from which to draw that will stand up to the test of time more readily than other learning methods, but may also serve as a transferable conduit linking human intelligence to non-human technologies. Siemens maintains that connectivism can be utilized beyond the scope of behaviourism, cognitivism, and constructivism, mostly because of the nature of the Internet's limitless connectivity. As Siemens states:

> The connectivist model moves away from the "sage-on-a-stage" teacher-centric pedagogy and embraces a many-to-many multiple network approach; with this, the nature of how knowledge is used and diffused and its perceived scarcity is changed. (Dewar, 2013, p. 1)

Connectivist theory as applied to a Web 2.0 setting is realized within the MOOC model as students who are assigned tasks and problems undertake ways to solve them by forming groups or networks of learners to work collaboratively and share information (Dewar, 2013). Dewar (2013) states that this is a key element of connectivism — "people learn[ing] through the dissemination of information through their network" (p. 1)

As the Web moves from Web 3.0 to Web 4.O, and finally to Web 5.0 and whatever iteration that follows, the connectivist foundation of the MOOC structure will allow it to adapt to the World Wide Web's shifting technologies as it develops over time. Loretz (2016) states that after the year 2030, when the intricate and multifaceted future Web 5.0, or The Telepathic Web, presents itself, some innovative developments such as brain implants will be common, enabling people, for example, to communicate with the Internet merely through thought processes, ponder a question, and *surf the net* for an answer—without lifting a finger. "Any sort of

payments, such as groceries, will be paid for with a microchip in the brain or the hand and all devices will be connected to the internet" (p. 1). Web 5.0 will most certainly present technological advancements that may seem as inconceivable today as the notion of cell phone usage would have seemed in the year 1800. The MOOC model may be dwarfed by subsequent technological developments by the time Web 5.0 takes hold, but its connectivist design may enable it to survive and adapt to the sweeping changes in cyber-communications that are sure to come, or at least serve as a foundation for some other newer learning model.

The era of technological disruption is upon us, across all industries, and to stay competitive in this emerging environment, learning institutions must continuously innovate, invest strategically in programs that reflect student interests, remain true to their organizational mission, and deliver value that aligns with market needs (Black, 2018). With mounting competition from online learning venues such as MOOCs, traditional educational institutions must retain superior quality of product while maintaining the technology infrastructure and instructional expertise to compete with cyber-driven learning platforms. As Black (2018) outlines, four ways to meet the challenges of this new paradigm include the following:

- Determine what the consumer wants and deliver it. The college experience should be transformational, and schools should ensure that educators advance knowledge, facilitate the exploration of ideas, foster intellectual dissonance, and prepare students to be lifelong learners and productive members of society.
- Provide unexpected value. Traditional universities must address and solve issues such as high student attrition, poor service delivery, cumbersome processes, and insufficient class availability while providing opportunities that have not been exhausted by competitors and by building on institutional strengths, such as the *live classroom experience,* that allows students the ability to have real discussions with peers, and as Peter J. Burgard, professor of German at Harvard states, "really digging into and exploring a knotty topic, a difficult image, a fascinating text,

whatever…. That's what's exciting…that simply cannot be replicated online" (Ha, 2014, p. 2).

- Avoid being ordinary. "A capstone student experience, an innovative curriculum, guaranteed internship placement or study abroad" (Black, 2018, p. 2) are just a few offerings that can bring a unique quality to traditional brick and mortar learning institutions. University leaders must create distinctions to position their schools exclusively among competitors.
- Prepare for expansion. Traditional schools can expand student enrollment through various means, including (a) thorough penetration of the existing primary market by highlighting the institution's academic programs, (b) the introduction of new and exciting programs and courses to the curricular structure, (c) the rigorous promotion of the institution and programs in the market, and (d) diversification, or expansion into new markets (pp. 2-3).

After interviewing the 12 education leaders who contributed to this research project, I have determined that in addition to these measures that can help traditional learning institutions remain competitive in the digital age, schools that adopt Massive Open Online Courses must offer (a) good training, (b) administrative support, and (c) keen vision. As stated earlier in the study, the advancement of technology in the classroom can bring daunting challenges to educators who may not be as tech-savvy as their younger colleagues, or who may feel that the inclusion of such tools may serve to cheapen the classroom experience. To allay such notions, universities must provide training when necessary to ensure that professors are comfortable with the MOOC component and feel that they can utilize these learning venues to the benefit of their course design. Administrative support is critical to the successful implementation of MOOCs, and as many participants of the study concluded, the establishment of a program manager or provost to oversee the production of MOOC programs can be pivotal to their success. Administrators should also be instrumental in bringing in experts and course

designers to make the transition to MOOC venues more seamless, thereby helping to ensure the quality and effectiveness of the learning platforms. Most importantly, university leaders who employ clear vision and *out-of-the-box* thinking, and who are willing to take necessary risks to find innovative solutions to new challenges are key to gaining and sustaining a competitive edge by instituting such emerging technologies as MOOCs. Exploring fresh perspectives from the technology industry can be a critical starting point for traditional academic institutions seeking ways to retain competitiveness in today's rapidly evolving online educational environment. Transformational college leaders who are open to adopting newer technologies to overcome internal barriers, pursue new opportunities, and advance institutional strengths display a greater ability to transcend competitive threats and accelerate progress for change, and only through their strong engagement, focused actions, and a willingness to adapt and change will their schools remain viable and relevant in the digital age.

Technology will continue unabated in the coming years, and as previously stated, Artificial Intelligence and the World Wide Web will certainly *move the needle forward* in revolutionizing both culture and education in myriad ways. Similarly, MOOCs are also symbolic of the astounding advancement of modern technology and are indicative of the massive shift in ways that education is, and will be, offered. Arriving at the dawn of the digital revolution, the advent of MOOCs may be viewed 30 years hence as being a first small step in the giant leap forward toward the virtual unknown in education technology, reinventing learning methods on a massive scale to usher in a new epoch of global connectivity to the grand benefit of the human condition. Educators who embrace this new technology and display "a truly Emersonian passion for remaking the world," rejecting the notion that "change always means degradation" (Delbanco, 2013, p. 7), may be instrumental in pioneering a whole new standard that revolutionizes the way we learn. As Delbanco (2013) asserts,

> In one form or another, the online future is already here. But unless we are uncommonly wise about how we use this new power, we will find ourselves saying, as Emerson's

friend Henry David Thoreau said about an earlier technological revolution, “We do not ride the railroad; it rides upon us.” (p. 7).

It is my hope that this research project proves to be both informational and inspirational to higher education leaders as they meet the challenges of MOOCs and embrace ongoing technological advancements in education. The participants’ lived experience with the incorporation of MOOCs at their learning institutions can help illuminate ways to implement these learning venues in educational settings and, hopefully, alleviate fears or concerns about any possible disruption that MOOCs may bring by emphasizing the positive benefits that they can provide. The investigator would like to thank all of the participants of this research project who shared their valuable time, experience, and knowledge to contribute to the success of the study. The vital information that they generously shared was crucial in obtaining an overall understanding of the impact of MOOCs on higher education, and each one’s invaluable perspectives garnered from genuine and candid responses during the interview process has served to greatly contribute to both the purpose of this study, and to the literature on MOOCs, for posterity.

REFERENCES

Adams, S. (2012, July 17). Is Coursera the beginning of the end for traditional higher education? *Forbes*. Retrieved from https://www.immagic.com/eLibrary/ARCHIVES/GENERAL/GENPRESS/F120717A.pdf

Aiken, M., Vanjani, M., Ray, B., & Martin, J. (2003). College student Internet use. *Campus-Wide Information Systems*, *20*(5), 182-185. https://doi.org/10.1108/10650740310507371

Albright, K. S. (2004). Environmental scanning: Radar for success. *Information Management Journal*, *38*(3), 38-45. Retrieved from http://content.arma.org/IMM/online/InformationManagement.aspx

Allen, I. E., & Seaman, J. (2003). Sizing the opportunity: The quality and extent of online education in the United States, 2002 and 2003. Retrieved from https://eric.ed.gov/?id=ED530060

Allen, I. E., & Seaman, J. (2006). Growing by degrees: Online education in the United States, 2005. Retrieved from https://eric.ed.gov/?id=ED530063

Allen, I. E., & Seaman, J. (2007). Online nation: Five years of growth in online learning. Retrieved from https://eric.ed.gov/?id=ED529699

Allen, I. E., & Seaman, J. (2010). Learning on demand: Online education in the United States, 2009. Retrieved from https://eric.ed.gov/?id=ED529931

Allen, I. E., & Seaman, J. (2013, January). Changing course, ten years of tracking online education in the United States. Retrieved from http://sloanconsortium.org/publications/survey/changing_course_2012

Anderson, J., & Rainie, L. (2012). Millennials will benefit and suffer due to their hyperconnected lives. Retrieved from http://www.pewinternet.org/2012/02/29/millennials-will-benefit-and-suffer-due-to-their-hyperconnected-lives/

Anderson, T., & McGreal, R. (2012). Disruptive pedagogies and technologies in universities. *Educational Technology & Society*, *15*(4), 380-389. Retrieved from https://eric.ed.gov/?id=EJ992970

Appiah, K. A. (2015, September 8). What is the point of college? *New York Times Magazine*. Retrieved from http://www.nytimes.com/2015/09/13/magazine/what-is-the-point-of-college.html?_r=0

Archibald, R. B., & Feldman, D. H. (2010). *Why does college cost so much?* Oxford, UK: Oxford University Press.

Asif, A. (2013, September 23). Employers and students still prefer brick-and-mortar—not online—education [Web log post]. *Hechinger Ed.* Retrieved from http://hechingered.org/content/employers-and-students-still-prefer-brick-and-mortar-not-online-education_6384/

Associated Press. (2016, May 24). More young adults live with parents than partners, a first. *Los Angeles Times.* Retrieved from http://www.latimes.com/business/la-fi-millennials-live-at-home-20160524-snap-story.html

Ayers, R. (2016, August 18). The future of Artificial Intelligence: 6 ways it will impact everyday life. Retrieved from http://bigdata-madesimple.com/the-future-of-artificial-intelligence-6-ways-it-will-impact-everyday-life/

Azevedo, A. (2012). In colleges' rush to try MOOCs, faculty are not always in the conversation. *The Chronicle of Higher Education*. Retrieved from https://www.chronicle.com/article/In-Colleges-Rush-to-Try/134692

Baer, L., & Campbell, J. (2012). From metrics to analytics, reporting to action: Analytics' role in changing the learning environment. In D. G. Oblinger (Ed.), *Game changers: Education and information technologies* (pp. 53-65). Retrieved from https://library.educause.edu/resources/2012/5/chapter-4-from-metrics-to-analytics-reporting-to-action-analytics-role-in-changing-the-learning-environment

Barak, M., Watted, A., & Haick, H. (2015). Motivation to learn in massive open online courses: Examining aspects of language and social engagement. *Computers & Education*, *94*, 49-60. https://doi.org/10.1016/j.compedu.2015.11.010

Bartholet, J. (2013, August 1). Free online courses bring "magic" to Rwanda. *Scientific American.* Retrieved from https://www.scientificamerican.com/article/free-online-classes-bring-magic-rwanda/

Belkin, D. (2014, May 11). Can MOOCs and universities co-exist? *The Wall Street Journal*. Retrieved from https://www.wsj.com/articles/can-moocs-and-universities-co-exist-1399645026?tesla=y

Bentley, P. J. (2018, March). Should we fear artificial intelligence? *European Parliament*. Retrieved from http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_IDA(2018)614547

Bersin, J. (2013, November 25). The MOOC market takes off. Retrieved from http://www.linkedin.com/today/post/article/20131125225049-131079-the-mooc-market-takes-off?goback=%2Egde_1203287_member_5811134049623764995

Billington, P. J., & Fronmueller, M. P. (2013). MOOCs and the future of higher education. *Journal of Higher Education Theory and Practice*, *13*(3/4), 36.

Black, J. (2018, April 5). What to expect in an era of disruption in higher education. Retrieved from https://www.linkedin.com/pulse/what-expect-era-disruption-higher-education-jim-black/

Bloom, B.S. (1968). Learning from mastery. *Evaluation Comment*, *1*(2). Retrieved from https://eric.ed.gov/?id=ED053419

Bolman, L. G., & Deal, T. E. (2013). *Reframing organizations* (5th ed.). San Francisco, CA: Jossey-Bass.

Brahimi, T., & Sarirete, A. (2015). Learning outside the classroom through MOOCs. *Computers in Human Behavior*, *51*, 604-609. https://doi.org/10.1016/j.chb.2015.03.013

Britt, M. (2015). How to better engage online students with online strategies. *College Student Journal, 49*(3), 399-404. Retrieved from https://www.ingentaconnect.com/content/prin/csj/2015/00000049/00000003/art00008

Brown, J. R. (1996). *The I in science: Training to utilize subjectivity in research*. Oslo, Norway: Scandinavian University Press.

Bull, D. D. (2012). From ripple to tsunami: The possible impact of MOOCs on higher education. *DeQuarterly*, *12*, 10-11. Retrieved from https://eprints.usq.edu.au/22388

Bull, G. (2010). The always-connected generation. *Learning & Leading with Technology*, *38*(3), 28-29. Retrieved from https://eric.ed.gov/?id=EJ903513

Butin, D. W. (Ed.). (2009). *The education dissertation: A guide for practitioner scholars*. Thousand Oaks, CA: Corwin Press.

Butler, S. (2012). The coming higher-ed revolution. *National Affairs*, *10*, 22-40. Retrieved from https://www.nationalaffairs.com/publications/detail/the-coming-higher-ed-revolution

Carnaghan, I. (2014). Philosophical assumptions for qualitative research. Retrieved from https://www.carnaghan.com/2013/03/philosophical-assumptions-for-qualitative-research/

Carr, N. (2012). The crisis in higher education. *MIT Technology Review*, *115*(6), 32-40. Retrieved from https://www.technologyreview.com/s/429376/the-crisis-in-higher-education/

Chafkin, M. (2014, November 13). Udacity's Sebastian Thrun, Godfather of free online education changes course. Retrieved from https://www.fastcompany.com/3021473/udacity-sebastian-thrun-uphill-climb

Charmaz, K. (2014). *Constructing grounded theory*. Thousand Oaks, CA: Sage.

Cheal, C. (2013). Creating MOOCs for college credit. *Educause Research Bulletin*. Retrieved from http://net.educause.edu/ir/library/pdf/ERB1307.pdf

Clark, D. (2013). MOOCs: More action in 1 year than in last 1000 years. Retrieved from http://donaldclarkplanb.blogspot.com/2013/04/moocs-more-action-in-1-year-than-last.html

Columbaro, N. L., & Monaghan, C. H. (2008). Employer perceptions of online degrees: A literature review. Retrieved from http://newprairiepress.org/cgi/viewcontent.cgi?article=2898&context=aerc

Community Pepperdine. (2016). Graduate and Professional Schools Institutional Review Board (GPS IRB) required forms/templates. Retrieved from http://community.pepperdine.edu/irb/gps-irb-forms/

Cook, J. (2013, March 11). Do employers value online degrees? *Strayer*. Retrieved from http://www.strayer.edu/buzz/article/do-employers-value-online-degrees

Cooper, S., & Sahami, M. (2013). Reflections on Stanford's MOOCs. *Communications of the ACM*, *56*(2), 28-30. https://doi.org/10.1145/2408776.2408787

Cornell University Law School. (2016). Legal information institute. Retrieved from https://www.law.cornell.edu/wex/prima_facie

Coursera. (2016). Terms of use. Retrieved from https://www.coursera.org/about/terms

Covington, D., Petherbridge, D., & Warren, S. E. (2005). Best practices: A triangulated support approach in transitioning faculty to online teaching. *Online Journal of Distance Learning Administration*, *8*(1), 3-14. Retrieved from https://www.westga.edu/~distance/ojdla/

Creswell J. W. (2013). *Qualitative inquiry & research design* (3rd ed.). Thousand Oaks, CA: Sage Publications

Creswell J. W. (2014). *Research design* (4th ed.). Thousand Oaks, CA: Sage Publications.

Dalton, J. G. (2011 August 11). The basics of environmental scanning. *Associations Now*. Retrieved from http://www.asaecenter.org/Resources/ANowDetail.cfm?ItemNumber=111955

Daly, L. (2013, September 18). Moving education online – Is it financially viable? Retrieved from http://edu.3dissue.com/education-online/?goback=%2Egde_1203287_member_275032165#%21

Daniel, J. (2012). Making sense of MOOCs: Musings in a maze of myth, paradox and possibility. *Journal of Interactive Media in Education*, *2012*(3). https://doi.org/10.5334/2012-18

Davis, H. (2016). Visualising the MOOC experience: A dynamic MOOC dashboard built through institutional collaboration. *Research Track*. Retrieved from https://eprints.soton.ac.uk/390688/1/LeonEtAl2016-emoocs-UAM-UoS02016-submission2rev.pdf

de Langen, F., & van den Bosch, H. (2013). Massive Open Online Courses: disruptive innovations or disturbing inventions? *Open Learning: The Journal of Open, Distance and e-Learning*, *28*(3), 216-226. Retrieved from https://oerknowledgecloud.org/content/massive-open-online-courses-disruptive-innovations-or-disturbing-inventions

Delbanco, A. (2013, March 31). MOOCs of hazard. Will online education dampen the college experience? Yes. Will it be worth it? Well…. *New Republic.* Retrieved from https://newrepublic.com/article/112731/moocs-will-online-education-ruin-university-experience

Dennis, M. (2013, June 18). Impact of MOOC's on college & university administration. Retrieved from http://mjdennisconsulting.com/2013/06/impact-of-mccos-on-college-university-administration/

Devany, L. (2015, September, 21). Too much technology could hurt learning outcomes. *eSchool News.* Retrieved from http://www.eschoolnews.com/2015/09/21/too-much-technology-837/

Dewar, E. (2013). MOOCs: Where technology meets pedagogy. Retrieved from http://headfoundation.org/papers/37)_MOOCs_where_technology_meets_pedagogy.pdf

Dixson, M. D. (2010). Creating effective student engagement in online courses: What do students find engaging? *Journal of the Scholarship of Teaching and Learning, 10(2),* 1-13. Retrieved from https://www.learntechlib.org/p/54817/

Donovan, M. S., Bransford, J. D., & Pellegrino, J. W. (Eds.). (1999). *How people learn: Bridging research and practice*. Washington, DC: National Academies Press.

Dudovskiy, J. (2016). Research methodology. Retrieved from http://research-methodology.net/research-philosophy/phenomenology/

Duffy, P. (2008). Engaging the YouTube Google-eyed generation: Strategies for using Web 2.0 in teaching and learning. *Electronic Journal of E-learning*, *6*(2), 119-130. Retrieved from https://files.eric.ed.gov/fulltext/EJ1098687.pdf

Dykman, C. A., & Davis, C. K. (2008). Online education forum: Part one – The shift toward online education. *Journal of Information Systems Education. 19*(1), 11-16. Retrieved from http://jise.org

Featured Online Colleges. (2016). Retrieved from http://www.bestcollegereviews.org/top/online-colleges/

Finkle, T. A., & Masters, E. (2014, October). Do MOOCs pose a threat to higher education? *Research in Higher Education Journal*, *26*. Retrieved from https://eric.ed.gov/?id=EJ1055324

Flanagan, C. (2012). Business model innovation: A blueprint for higher education. *Educause Review*, *47*(6), 12-20. Retrieved from https://eric.ed.gov/?id=EJ996663

Flynn, J. T. (2013). MOOCS: Disruptive innovation and the future of higher education. *Christian Education Journal*, *10*(1), 149-162. https://doi.org/10.1177/073989131301000112

Frey, T. (2013, July 5). By 2030 over 50% of colleges will collapse. *The Modesto Bee.* Retrieved from https://www.modbee.com

Furco, A., & Moely, B. E. (2012). Using learning communities to build faculty support for pedagogical innovation: A multi-campus study. *The Journal of Higher Education*, *83*(1), 128-153. https://doi.org/10.1353/jhe.2012.0006

Garrison, R. (2009). Implications of online and blended learning for the conceptual development and practice of distance education. *International Journal of E-Learning & Distance Education*, *23*(2), 93-104. Retrieved from http://www.ijede.ca

Georgia Tech College of Computing. (n.d.). Online master of science in computer science (OMS CS). Retrieved from https://www.cc.gatech.edu/future/masters/mscs/program

Gibbs, L., Kealy, M., Willis, K., Green, J., Welch, N., & Daly, J. (2007). What have sampling and data collection got to do with good qualitative research? *Australian and New Zealand Journal of Public Health*, *31*(6), 540-544. https://doi.org/10.1111/j.1753-6405.2007.00140.x

Gingrich, N. (2018). The future is amazing – Here's an incredible glimpse of what awaits us. Retrieved from http://triblive.com/business/technology/13469356-74/newt-gingrich-sees-glimpse-of-the-future-during-visit-to-carnegie-mellon

Gladfelter, J. A., & Friedman, D. (2014). Texting During Homework: The Millennial Generation's Ability to Thrive Despite Constant Technological Interruptions. *Journal of Psychology and Behavioral Science*, *2*, 39-50. https://doi.org/10.15640/jpbs.v2n3-4a3

Gore, H. (2014). Massive open online courses (MOOCs) and their impact on academic library services: Exploring the issues and challenges. *New Review of Academic Librarianship*, *20*(1), 4-28. https://doi.org/10.1080/13614533.2013.851609

Goulding, C. (2005). Grounded theory, ethnography and phenomenology: A comparative analysis of three qualitative strategies for marketing research. *European Journal of Marketing*, *39*(3/4), 294-308. https://doi.org/10.1108/03090560510581782

Grannis, K. (2009, July 14). Back to school and back-to-college surveys. Retrieved from http://www.nrf.com/modules.php?name=News&op=viewlive&sp_id=756

Gray, D. E. (2013). *Doing research in the real world*. Los Angeles, CA: Sage Publications.

Guy, R. (2012). The use of social media for academic practice: A review of literature. *Kentucky Journal of Higher Education Policy and Practice*, *1*(2). Retrieved from https://uknowledge.uky.edu/kjhepp/vol1/iss2/7

Ha, T. H. (2014, January 27). What's a MOOC? — and where are they going next? Retrieved from http://ideas.ted.com/whats-next-for-moocs/

Hannay, M., & Newvine, T. (2006). Perceptions of distance learning: A comparison of online and traditional learning. *Journal of Online Learning and Teaching*, *2*(1), 1-11. Retrieved from http://jolt.merlot.org/documents/MS05011.pdf

Hansen, M. (2016, January 21). Will robots teach our kids? *US News & World Report.* Retrieved from http://www.usnews.com/opinion/knowledge-bank/articles/2016-01-21/how-technology-will-change-the-demand-for-teachers

Harasim, L. (2000). Shift happens: Online education as a new paradigm in learning. *The Internet and Higher Education*, *3*(1), 41-61. https://doi.org/10.1016/S1096-7516(00)00032-4

Harris, L., & Urrutia, M. L. (2015, August 25). Far from bust: Five ways MOOCs are helping people get on in life. Retrieved from http://world.edu/far-from-bust-five-ways-moocs-are-helping-people-get-on-in-life/

Harvey Mudd College. (2014). Harvey Mudd takes novel approach with New MOOCs. Retrieved from https://www.hmc.edu/about-hmc/2014/11/18/harvey-mudd-takes-novel-approach-new-moocs/

Haynie, D. (2013, July 12). How to compare online, on-campus graduate programs. *US News & World Report*. Retrieved from http://www.usnews.com/education/online-education/articles/2013/07/12/how-to-compare-online-on-campus-graduate-programs

Haynie, D. (2014, June 6). Experts debate the impact of MOOCs on education. *US News & World Report*. Retrieved from https://www.usnews.com/education/online-education/articles/2014/06/06/experts-debate-the-impact-of-moocs-on-education

Helmi, A. (2001). An analysis on the impetus of online education: Curtin University of Technology, Western Australia. *The Internet and Higher Education*, *4*(3), 243-253. https://doi.org/10.1016/S1096-7516(01)00070-7

Henderson, C. (2001). How the Internet is changing our lives. *The Futurist*, *35*(4), 38. Retrieved from https://www.worldfuture.org

Herbold, K. (2012). Giving student choice in online learning environments: Addressing adult learner needs. *The International Journal of Technology, Knowledge and Society*, *7(5)*, 117-125. https://doi.org/10.18848/1832-3669/CGP/v07i05/56230

Higher Education Center for Alcohol and Other Drug Abuse and Violence Prevention. (2008, August). Fraternity and sorority members and alcohol and other drug use. Retrieved from http://www.higheredcenter.org/files/product/fact_sheet5.pdf

Hollands, F. M., & Tirthali, D. (2014). Why do institutions offer MOOCs? *Online Learning Journal*, *18*(3). https://doi.org/10.24059/olj.v18i3.464

Horn, M., & Christensen, C. (2013). Beyond the buzz, where are MOOCs really going? *Wired*. Retrieved from https://www.wired.com/2013/02/beyond-the-mooc-buzz-where-are-they-going-really/

Howell, S. L., Saba, F., Lindsay, N. K., & Williams, P. B. (2004). Seven strategies for enabling faculty success in distance education. *The Internet and Higher Education*, *7*(1), 33-49. https://doi.org/10.1016/j.iheduc.2003.11.005

Hoy, M. B. (2014). MOOCs 101: An introduction to massive open online courses. *Medical Reference Services Quarterly*, *33*(1), 85-91. https://doi.org/10.1080/02763869.2014.866490

Huss, J. A., Sela, O., & Eastep, S. (2015). A case study of online instructors and their quest for greater interactivity in their courses: Overcoming the distance in distance education. *Australian Journal of Teacher Education*, *40*(4). https://doi.org/10.14221/ajte.2015v40n4.5

Intelligence Debates. (2014, April 9). Debate: In an online world, are brick and mortar colleges obsolete? Retrieved from http://www.npr.org/2014/04/09/299178029/debate-in-an-online-world-are-brick-and-mortar-colleges-obsolete

Jackson, N. (2013). Mind the MOOCs. *Business Officer, 47*(1). Retrieved from https://www.businessofficermagazine.org

Johnson, H. (2015, March 18). Will technology kill universities? *Time*. Retrieved from http://time.com/3747816/education-chalkboard-chatroom/

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*(2), 112-133. https://doi.org/10.1177/1558689806298224

Jonassen, D.H. (2004). *Handbook of research on educational communications and technology.* New York, NY: Taylor and Francis.

Kay, J., Reimann, P., Diebold, E., & Kummerfeld, B. (2013). MOOCs: So many learners, so much potential. *Technology*, *52*(1), 49-67. https://doi.org/10.1109/MIS.2013.66

Keengwe, J., & Kidd, T. T. (2010). Towards best practices in online learning and teaching in higher education. *Journal of Online Learning and Teaching*, *6*(2). Retrieved from http://jolt.merlot.org/vol6no2/keengwe_0610.htm

King, N. (1998). Template analysis. In G. Symon & C. Cassell (Eds.), *Qualitative methods and analysis in organizational research: A practical guide* (pp. 118-134). Thousand Oaks, CA: Sage Publications.

Klamma, R., Cao, Y., & Spaniol, M. (2007, March). Watching the blogosphere: Knowledge sharing in the web 2.0. Paper presented at ICWSM 2007, Boulder, CO.

Knowles, M., Holton, E., & Swanson, R. (2005). *The adult learner*. Burlington, MA: Elsevier.

Kohli, S. (2015, January 15). The MOOC model attracting big money from investors. *Quartz.* Retrieved from http://qz.com/327579/a-186-million-bet-that-people-will-keep-paying-for-online-classes/

Kolowich, S. (2013). The professors who make the MOOCs. *The Chronicle of Higher Education*. Retrieved from https://www.chronicle.com/article/The-Professors-Behind-the-MOOC/137905

Kolowich, S. (2014, May 15). Conventional online education will absorb MOOCs, 2 reports say. The *Chronicle of Higher Education*. Retrieved from http://chronicle.com/blogs/wiredcampus/conventional-online-higher-education-will-absorb-moocs-2-reports-say/52603?cid=at&utm_medium=en

Konnikova, M. (2014, November 7). Will MOOCs be flukes. *The New Yorker*. Retrieved from https://www.newyorker.com/science/maria-konnikova/moocs-failure-solutions

Kotter, J. P., & Schlesinger, L. A. (1979). *Choosing strategies for change. Harvard Business Review.* Retrieved from https://hbr.org/2008/07/choosing-strategies-for-change

Kreijns, K., Kirschner, P. A., & Jochems, W. (2003). Identifying the pitfalls for social interaction in computer-supported collaborative learning environments: A review of the research. *Computers in Human Behavior*, *19*(3), 335-353. https://doi.org/10.1016/S0747-5632(02)00057-2

LeCounte, J. F., & Johnson, D. (2015). The MOOCs: Characteristics, benefits, and challenges to both industry and higher education. In F. M. Nafukho & B. Irby (Eds.), *Handbook of research on innovative technology integration in higher education* (pp. 2105-2125). https://doi.org/10.4018/978-1-4666-8170-5.ch011

Lewin, T. (2012, July 17). Universities reshaping education on the web. *New York Times.* Retrieved from https://www.nytimes.com/2012/07/17/education/consortium-of-colleges-takes-online-education-to-new-level.html

Liu, M., Kang, J., Cao, M., Lim, M., Ko, Y., Myers, R., & Schmitz Weiss, A. (2014). Understanding MOOCs as an emerging online learning tool: Perspectives from the students. *American Journal of Distance Education*, *28*(3), 147-159. https://doi.org/10.1080/08923647.2014.926145

Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A systematic study of the published literature 2008-2012. *The International Review of Research in Open and Distributed Learning*, *14*(3), 202-227. https://doi.org/10.19173/irrodl.v14i3.1455

Loretz, C. (2016). The World Wide Web — From Web 1.0 to Web 5.0 [Web log post]. Retrieved from https://carikesocial.wordpress.com/

Lucas, H.C. (2013, October 7). Can the current model of higher education survive MOOCs and online learning? Retrieved from http://www.educause.edu/ero/article/can-current-model-higher-education-survive-moocs-and-online-learning

Maguire, L. L. (2005). Literature review–faculty participation in online distance education: Barriers and motivators. *Online Journal of Distance Learning Administration*, *8*(1), 1-16. Retrieved from https://www.westga.edu/~distance/ojdla/

Mahoney, M. (2015, July). Six years into the recovery where is the American economy headed, are we on the verge of another bubble? *Global Conference on Business & Finance Proceedings*, *10*(2), 99.

Maki, R.H. & Maki, W.S. (2007). *Online courses*. In F.T. Durso (Ed.), *Handbook of applied cognition* (2nd ed., pp. 527-552). https://doi.org/10.1002/9780470713181.ch20

Malamed, C. (2016). The eLearning Coach, for designing smarter learning experiences. Retrieved from http://theelearningcoach.com/resources/online-learning-glossary-of-terms/

Margaryan, A., Bianco, M., & Littlejohn, A. (2015). Instructional quality of massive open online courses (MOOCs). *Computers & Education*, *80*, 77-83. https://doi.org/10.1016/j.compedu.2014.08.005

Marklein, M. B. (2012, September 12). College may never be the same. *USA Today*. Retrieved from https://www.usatoday.com

Marques, J. F., & McCall, C. (2005). The application of interrater reliability as a solidification instrument in a phenomenological study. *The Qualitative Report*, *10*(3), 439-462. Retrieved from https://nsuworks.nova.edu/tqr/vol10/iss3/3/

Mazoue, J.G. (2013). The MOOC model: Challenging traditional education. *Educause Review Online*. Retrieved from https://er.educause.edu/articles/2013/1/the-mooc-model-challenging-traditional-education

McAuley, A., Stewart, B., Siemens, G., & Cormier, D. (2010). The MOOC model for digital practice. Retrieved from http://elearnspace.org/Articles/MOOC_Final.pdf

McCarthy, J. (2010). Blended learning environments: Using social networking sites to enhance the first year experience. *Australasian Journal of Educational Technology*, *26*(6). https://doi.org/10.14742/ajet.1039

McKeown, K. D. (2012). Can online learning reproduce the full college experience? Retrieved from https://eric.ed.gov/?id=ED530158

McLoughlin, C., & Lee, M. J. (2008). Future learning landscapes: Transforming pedagogy through social software. *Innovate: Journal of Online Education*, *4*(5). Retrieved from https://www.learntechlib.org/p/104240/

Mehlenbacher, B. (2012, June). *Massive open online courses (MOOCs): Educational innovation or threat to higher education*. Paper presented at the Workshop on Open Source and Design of Communication, Lisboa, Portugal. https://doi.org/10.1145/2316936.2316953

Merriam, S. B. (1998). *Qualitative research and case study applications in education*. San Francisco, CA: Jossey-Bass.

Mgbere, O. (2009). Exploring the relationship between organizational culture, leadership styles and corporate performance: An overview. *Journal of Strategic Management Education*, *5*(3), 187-202. Retrieved from http://journals.sagepub.com/home/jme

Miah, A. (2015, March, 18). Will technology kill universities? *Time.* Retrieved from http://time.com/3747816/education-chalkboard-chatroom/

Mitchell, M., Palacios, V., & Leachman, M. (2014). States are still funding higher education below pre-recession levels. Retrieved from https://vtechworks.lib.vt.edu/handle/10919/83619

MOOC-list.com. (2016). Free online courses for everyone. Retrieved from https://www.mooc-list.com/

Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, *14*(2), 224-247. https://doi.org/10.1016/0001-8791(79)90072-1

Mumford, M. D., Zaccaro, S. J., Harding, F. D., Jacobs, T. O., & Fleishman, E. A. (2000). Leadership skills for a changing world: Solving complex social problems. *The Leadership Quarterly*, *11*(1), 11-35. https://doi.org/10.1016/S1048-9843(99)00041-7

National Survey of Student Engagement (NSSE). (2008). Promoting engagement for all students: The imperative to look within: 2008 results. Retrieved from http://nsse.iub.edu/NSSE_2008_Results/docs/withhold/NSSE2008_Results_revised_11-14-2008.pdf

New Media Consortium. (2014). NMC Horizon Report: 2014 Higher Education Edition. Retrieved from http://www.nmc.org/pdf/2014-nmc-horizon-report-he-EN.pdf

Ng, A. (2013, January 24). Learning from MOOCs. *Inside Higher Ed*. Retrieved from http://www.insidehighered.com/views/2013/01/24/essay-what-professors-can-learn-moocs

Ng'ambi, D., & Bozalek, V. (2015). Massive open online courses (MOOCs): Disrupting teaching and learning practices in higher education. *British Journal of Educational Technology*, *46*(3), 451-454. https://doi.org/10.1111/bjet.12281

Noble, D. F. (1998). Digital diploma mills: The automation of higher education. *Science as Culture*, *7*(3), 355-368. https://doi.org/10.1080/09505439809526510

Norris, N. (1997). Error, bias and validity in qualitative research. *Educational Action Research*, *5*(1), 172-176. https://doi.org/10.1080/09650799700200020

Northouse, P. G. (2013). *Leadership: Theory and practice*. Thousand Oaks, CA: Sage Publications.

Obasi, F. (2015, May 3). What are some advantages a brick-and-mortar college has that can't be replaced by an online college? Retrieved from https://www.quora.com/What-are-some-advantages-a-brick-and-mortar-college-has-that-cant-be-replaced-by-an-online-college

Oliff, P., Palacios, V., Johnson, I., & Leachman, M. (2013). Recent deep state higher education cuts may harm students and the economy for years to come. Retrieved from https://www.cbpp.org/sites/default/files/atoms/files/3-19-13sfp.pdf

Owen, J. (December 11, 2017). Me, myself, and AI: Are robot teachers our future? *Education Technology*. Retrieved from https://edtechnology.co.uk/Article/me-myself-and-ai-are-robot-teachers-in-our-future

Patton, M. Q. (1987). *How to use qualitative methods in evaluation*. Thousand Oaks, CA: Sage.

Pepperdine University. (2009). Protection of human participants in research: Policies and procedures manual. Retrieved from https://community.pepperdine.edu/irb/policies/

Perreault, H., Waldman, L., Alexander, M., & Zhao, J. (2002). Overcoming barriers to successful delivery of distance-learning courses. *Journal of Education for Business*, *77*(6), 313-318. https://doi.org/10.1080/08832320209599681

Peterson, K. S. (2002, May 21). Depression among college students rising. *USA Today.* Retrieved from http://www.usatoday.com/news/health/mental/2002-05-22college-depression.htm

Piech, C., Huang, J., Chen, Z., Do, C., Ng, A., & Koller, D. (2013). Tuned models of peer assessment in MOOCs. Retrieved from https://arxiv.org/abs/1307.2579

Porter, S. (2015). *To MOOC or not to MOOC: How can online learning help to build the future of higher education?* Waltham, MA: Chandos Publishing.

Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon*, *9*(5), 1-6. https://doi.org/10.1108/10748120110424816

Presseisen, B. Z. (2001). Thinking skills: Meanings and models revisited. In In A. L. Costa (Ed.), *Developing minds: A resource book for teaching thinking* (pp. 47-53). Alexandria, VA: ASCD.

Public Agenda. (2013). Not sold yet: What employers and community college students think about online education. Retrieved from https://www.publicagenda.org/files/NotYetSold_PublicAgenda_2013.pdf

Puccio, G. J., Mance, M., & Murdock, M. C. (2010). *Creative leadership: Skills that drive change*. Thousand Oaks, CA: Sage Publications.

Pursel, B. K., Zhang, L., Jablokow, K. W., Choi, G. W., & Velegol, D. (2016). Understanding MOOC students: motivations and behaviours indicative of MOOC completion. *Journal of Computer Assisted Learning*, *32*(3), 202-217. https://doi.org/10.1111/jcal.12131

Radford, A. W., Robles, J., Cataylo, S., Horn, L., Thornton, J., & Whitfield, K. E. (2014). The employer potential of MOOCs: A mixed-methods study of human resource professionals' thinking on MOOCs. *The International Review of Research in Open and Distributed Learning*, *15*(5). https://doi.org/10.19173/irrodl.v15i5.1842

Raney, K. (n.d.). MOOCs help the global poor. Retrieved from http://moocs.com/moocs-help-the-global-poor/

Reif, R. (2014). Online learning will make college cheaper. It will also make it better. Retrieved from

http://er.dut.ac.za/bitstream/handle/123456789/66/Reif_2013_Online_Learning_Time_magazine_01.pdf?sequence=1&isAllowed=y

Richards, L., & Morse, J. M. (2012). *Readme first for a user's guide to qualitative methods*. Los Angeles, CA: Sage Publications.

Ripley, A. (2012, October 18). College is dead. Long live college *Time*. Retrieved from http://nation.time.com/2012/10/18/college-is-dead-long-live-college/

Rivera, R.L. (2011, June 26). The political dimension of organizational change. Retrieved from http://www.qbsteam.com/index.php?src=news&srctype=detail&category=Articles&refno=688

Robbins, S.P., Judge, T.A. (2007). *Organizational behavior* (12th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Roberts, C. M. (2010). *The dissertation journey: A practical and comprehensive guide to planning, writing, and defending your dissertation*. Thousand Oaks, CA: Corwin Press.

Saldana, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Thousand Oaks, CA: Sage.

Salerno, C. (2012, Aug. 9). Bitter reality of MOOConomics. *Inside Higher Education*. Retrieved from http://www.insidehighered.com/views/2012/08/09/real-economics-massive-online-courses-essay

Salvatore, D. (2016). Slow recovery and growth prospects for the United States. *Journal of Policy Modeling, 38*(4), 624-631. https://doi.org/10.1016/j.jpolmod.2016.05.005

Sandeen, C. (2013). Assessment's place in the new MOOC world. *Research & Practice in Assessment*, *8*, 5-12. Retrieved from http://files.eric.ed.gov/fulltext/EJ1062706.pdf

Sataline, S. (2013, September 18). 3 ways colleges are adapting to online learning. *US News & World Report.* Retrieved from http://www.usnews.com/education/online-education/articles/2013/09/18/3-ways-colleges-are-adapting-to-online-learning

Schein, E. H. (1990). Organizational culture. *American Psychologist, 45*(2), 109-119. https://doi.org/10.1037/0003-066X.45.2.109

Schmieder-Ramirez, J., & Mallette, L. (2015). Using the SPELIT analysis technique for organizational transitions. In M. Carmo (Ed.), *Education applications & developments advances in education and educational trends* (pp. 291-300). Lisboa, Portugal: InScience Press.

Schneckenberg, D. (2009). Understanding the real barriers to technology-enhanced innovation in higher education. *Educational Research*, *51*(4), 411-424. https://doi.org/10.1080/00131880903354741

Scott, L.C., (2009). *Through the wicked spot: A case study of professors' experience teaching online* (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses. (UMI No. 3379753)

Shah, D. (2015, September 14). Udacity reaches profitability, announces tech entrepreneur nanodegree. Retrieved from https://www.class-central.com/report/udacity-profitable/

Shah, D. (2018, January 18). By the numbers: MOOCS in 2017. Retrieved from https://www.class-central.com/report/mooc-stats-2017/

Sheehy, K. (2013, January 8). Online course enrollment climbs for 10th straight year. Retrieved from http://www.usnews.com/education/online-education/articles/2013/01/08/online-course-enrollment-climbs-for-10th-straight-year

Shephard, K. (2008). Higher education for sustainability: seeking affective learning outcomes. *International Journal of Sustainability in Higher Education*, *9*(1), 87-98. https://doi.org/10.1108/14676370810842201

Skiba, D. J. (2012). Disruption in higher education: Massively open online courses (MOOCs). *Nursing education perspectives*, *33*(6), 416-417. https://doi.org/10.5480/1536-5026-33.6.416

Snyder, T. (2013, April 1). The benefits of online learning. *The Huffington Post.* Retrieved from http://www.huffingtonpost.com/tom-snyder/the-benefits-of-online-le_b_2573991.html http://dx.doi.org/10.5480/1536-5026-33.6.416

Society for Human Resource Management. (2012, November 27). Strategic planning: What are the basics of environmental scanning? Retrieved from http://www.shrm.org/templatestools/hrqa/pages/cms_021670.aspx

Starks, H., & Trinidad, S. B. (2007). Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative Health Research*, *17*(10), 1372-1380. https://doi.org/10.1177/1049732307307031

Sternberg, R.J. (2002). Successful intelligence: A new approach to leadership. In R. E. Riggio, S. E Murphy, & F.J. Pirozzolo (Eds.), *Multiple intelligences and leadership* (pp. 9-28). Mahwah, NJ: Lawrence Erlbaum Associates

Tamas, G. (n.d.). MOOCs and the Meta-U III: the revolution of multi-sourced learning. Retrieved from http://www.sustainabilityineducation.com/moocs-multi-source-learning/

Taylor, P., Fry, R., & Oates, R. (2014). The rising cost of not going to college. Retrieved from http://www.pewsocialtrends.org/2014/02/11/the-rising-cost-of-not-going-to-college/

Taylor, P., Parker, K., Parker, Fry, R., Cohn, D., Wang, W., Velasco, G., Dockterman, D. (2011). Is college worth it? College presidents, public assess value, quality and mission of higher education. Retrieved from http://www.pewsocialtrends.org/files/2011/05/higher-ed-report.pdf

Thompson, C. (2011). How Khan Academy is changing the rules of education. *Wired Magazine*, *126*, 1-5. Retrieved from https://www.wired.com/2011/07/ff_khan/

Torrance, E. P. (1971). The courage to be creative. *Inspection News*, *56*(4), 8-11.

Toven-Lindsey, B., Rhoads, R. A., & Lozano, J. B. (2015). Virtually unlimited classrooms: Pedagogical practices in massive open online courses. *The Internet and Higher Education*, *24*, 1-12. https://doi.org/10.1016/j.iheduc.2014.07.001

Vaidyula, S. K., Al-Khaledi, S., & Al-Otaibi, M. (2015, October). *It is high time for oil & gas companies to delve into the world of MOOCs.* Paper presented at the SPE Kuwait Oil and Gas Show and Conference, Mishref, Kuwait. https://doi.org/10.2118/175347-MS

Van Der Werf, M., & Sabatier, G. (2009). The college of 2020: Students. Retrieved from http://www.gvsu.edu/cms3/assets/61697910-910A-8DF3-C277AFB5E6D3E506/spcdocs/the_college_of_2020_students.pdf

Vardi, M. Y. (2012). Will MOOCs destroy academia? *Communications of the ACM*, *55*(11), 5. https://doi.org/10.1145/2366316.2366317

Voss, B. D. (2013a). Massive open online courses (MOOCs): A primer for university and college board members. Retrieved from http://agb.org/sites/default/files/legacy/report_2013_MOOCs.pdf

Voss, B. D. (2013b). MOOCs: Get in the game. *Educause*. Retrieved from https://er.educause.edu/articles/2013/1/moocs-get-in-the-game

Wang, A. X., & Schrager, A. (2017, September 6). The college lecture is dying. Good riddance. *Quartz*. Retrieved from https://qz.com/1050869/the-college-lecture-is-dying-and-good-riddance/

Warner, J. (2017, October 11). MOOCs are “dead.” What’s next? Uh-oh. *Inside Higher Ed.* Retrieved from https://www.insidehighered.com/blogs/just-visiting/moocs-are-dead-whats-next-uh-oh

Webley, K. (2012, September 4). MOOC brigade: Will massive, open online courses revolutionize higher education? *Time*. Retrieved from http://nation.time.com/2012/09/04/mooc-brigade-will-massive-open-online-courses-revolutionize-higher-education/

Weldon, D. (2016, August 4). DeMillo on MOOCs and college affordability. *Campus Technology*. Retrieved from https://campustechnology.com/articles/2016/08/04/demillo-on-moocs-and-college-affordability.aspx

Wellman, B., & Haythornthwaite, C. (Eds.). (2008). *The Internet in everyday life*. New York, NY: John Wiley & Sons.

What is bias in qualitative research? (2012). Retrieved from http://www.focusgrouptips.com/qualitative-research.html

Willingham, D. T. (2010). Have technology and multitasking rewired how students learn? *American Educator*, *34*(2), 23-28. Retrieved from https://eric.ed.gov/?id=EJ889151

Yazan, B. (2015). Three approaches to case study methods in education: Yin, Merriam, and Stake. *The Qualitative Report, 20*(2), 134-152. Retrieved from https://nsuworks.nova.edu/tqr/vol20/iss2/12/

Yin, R. K. (1984). *Applied social research methods series Case study research: Design and methods*. Thousand Oaks, CA: Sage.

Young, A., & Lewis, C. W. (2008). Teacher education programmes delivered at a distance: An examination of distance student perceptions. *Teaching and Teacher Education*, *24*(3), 601-609. https://doi.org/10.1016/j.tate.2007.03.003

Young, J. R. (2012). Coursera announces big expansion, adding 17 universities. *Chronicle of Higher Education*. Retrieved from https://www.chronicle.com

Yuan, L., Powell, S., & Cetis, J. (2013). MOOCs and open education: Implications for higher education [White paper]. Retrieved from http://publications.cetis.org.uk/2013/667

Yukl, G. (2006). *Leadership in organizations* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

APPENDIX A

IRB Approval Notice

PEPPERDINE

Pepperdine University
24255 Pacific Coast Highway
Malibu, CA 90263
TEL: 310-506-4000

NOTICE OF APPROVAL FOR HUMAN RESEARCH

Date: February 24, 2017

Protocol Investigator Name: Douglas May

Protocol #: 16-09-396

Project Title: Meeting the Challenges of Massive Open Online Courses in Higher Education

School: Graduate School of Education and Psychology

Dear Douglas May:

Thank you for submitting your application for exempt review to Pepperdine University's Institutional Review Board (IRB). We appreciate the work you have done on your proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations 45 CFR 46.101 that govern the protections of human subjects.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit an amendment to the IRB. Since your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite the best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete written explanation of the event and your written response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the IRB and documenting the adverse event can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* at community.pepperdine.edu/irb.

Please refer to the protocol number denoted above in all communication or correspondence related to your application and this approval. Should you have additional questions or require clarification of the contents of this letter, please contact the IRB Office. On behalf of the IRB, I wish you success in this scholarly pursuit.

Sincerely,

Judy Ho, Ph.D., IRB Chair

APPENDIX B

Informed Consent

PEPPERDINE UNIVERSITY

Graduate School of Education and Psychology

INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

MEETING THE CHALLENGES OF MASSIVE OPEN ONLINE COURSES IN HIGHER EDUCATION

You are invited to participate in a research study conducted by Douglas May, M.B.A., with guidance provided by Dr. Farzin Madjidi, Ed.D., Dr. Lani Simpao Fraizer, Ed.D., and Dr. Gabriella Miramontes, Ed.D., at Pepperdine University because you are a professional administrator/educator working in Higher Education in the State of California, and meet the following eligibility criteria: (a) you have at least 7 years' of professional experience as an administrator or educator in Higher Education, (b). you have agreed to be audio-recorded, and (c.) you have agreed to a face-to-face interview session. Your participation is voluntary. You should read the information below, and ask questions about anything that you do not understand, before deciding whether to participate. Please take as much time as you need to read the consent form. You may also decide to discuss participation with your family or friends. If you decide to participate, you will be asked to sign this form. You will also be given a copy of this form for your records.

PURPOSE OF THE STUDY

The purpose of the study is to explore the impact of Massive Open Online Courses (MOOCs) on traditional higher education institutions and assess ways that college leaders can adapt to this burgeoning trend of immersive, virtual education by both including MOOCs into their curriculum, and making these courses more accessible to their students. The findings of the study may help inform higher education leaders of strategies and methods to adopt emerging online learning platforms such as MOOCs to their educational programming, thereby providing a window to virtual learning in traditional classroom settings.

STUDY PROCEDURES

If you volunteer to participate in this study, you will be asked to partake in an interview session with the principle investigator, Douglas May, M.B.A., whereby you will be asked a series of interview questions regarding your professional experience in higher education, challenges you may have faced concerning online education, and specifically MOOCs, and strategies that you have utilized to navigate these challenges. The interview will be audio recorded so as to ensure

accuracy, and all audio files will be password-protected, transcribed, and subsequently destroyed.

POTENTIAL RISKS AND DISCOMFORTS

The potential and foreseeable risks associated with participation in this study include a possible breach of confidentiality or interview fatigue. The principal investigator will minimize the risk of breach of confidentiality by securing all files on a password-protected personal computer. The investigator will minimize the risk of interview fatigue by ensuring that the interview process does not extend the duration of one hour.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

The study is aimed toward helping administrators and educators identify benefits or drawbacks to online educational platforms, especially MOOCs, and find ways to adopt these virtual learning venues into their school's curricular design so as to stay relevant and current with educational best practices. The research project can shed light on the impact of MOOC learning structures on higher education, and help assess if these newer methods of educational delivery are a threat or benefit to education, overall. The study can also be regarded as being beneficial to society as it highlights the tremendous progress that MOOCs and online learning capabilities have made in the field of education, and the greater educational opportunities that they have made available to an ever-expanding, global population of learners.

CONFIDENTIALITY

The records collected for this study will be confidential as far as permitted by law. However, if required to do so by law, it may be necessary to disclose information collected about you. Examples of the types of issues that would require me to break confidentiality are if disclosed any instances of child abuse and elder abuse. Pepperdine's University's Human Subjects Protection Program (HSPP) may also access the data collected. The HSPP occasionally reviews and monitors research studies to protect the rights and welfare of research subjects.

The data will be stored on a password protected computer in the principal investigator's place of residence. The data will be coded and de-identified. The data will be stored for a minimum of three years and subsequently be destroyed.

Any and all identifiable information collected in reference to this study is, and will remain, confidential. Your name, address, institution's name, or other identifiable information will not be included as part of this study. Your responses will be coded with a pseudonym and transcript data will be maintained separately. The audio recordings will be destroyed once they have been transcribed. You have the right to review and edit the transcripts.

PARTICIPATION AND WITHDRAWAL

Your participation is voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

ALTERNATIVES TO FULL PARTICIPATION

The alternative to participation in the study is not participating or only completing the items for which you feel comfortable. Your professional relationship with your employer will not be affected, whether you participate or not in this research study.

EMERGENCY CARE AND COMPENSATION FOR INJURY

If you are injured as a direct result of research procedures you will receive medical treatment; however, you or your insurance will be responsible for the cost. Pepperdine University does not provide any monetary compensation for injury.

INVESTIGATOR'S CONTACT INFORMATION

You understand that the investigator is willing to answer any inquiries you may have concerning the research herein described. You understand that you may contact Douglas May ([redacted]) or Dr. Farzin Madjidi ([redacted]) if you have any other questions or concerns about this research.

RIGHTS OF RESEARCH PARTICIPANT – IRB CONTACT INFORMATION

If you have questions, concerns or complaints about your rights as a research participant or research in general please contact Dr. Judy Ho, Chairperson of the Graduate & Professional Schools Institutional Review Board at Pepperdine University 6100 Center Drive Suite 500 Los Angeles, CA 90045, 310-568-5753 or gpsirb@pepperdine.edu.

SIGNATURE OF RESEARCH PARTICIPANT

I have read the information provided above. I have been given a chance to ask questions. My questions have been answered to my satisfaction and I agree to participate in this study. I have been given a copy of this form.

AUDIO

□ *I agree to be audio-recorded*

□ *I do not want to be audio-recorded*

Name of Participant

Signature of Participant Date

SIGNATURE OF INVESTIGATOR

I have explained the research to the participants and answered all of his/her questions. In my judgment, the participants are knowingly, willingly and intelligently agreeing to participate in this study. They have the legal capacity to give informed consent to participate in this research study and all of the various components. They also have been informed participation is voluntarily and that they may discontinue their participation in the study at any time, for any reason.

Name of Person Obtaining Consent

Signature of Person Obtaining Consent Date

APPENDIX C

Recruitment Script

Dear Sir/Ms.

Hello, my name is Douglas May, and I am currently enrolled in Pepperdine University's Doctoral Program at the Graduate School of Education and Psychology. I am currently leading a study that will satisfy the dissertation requirement for my doctoral degree, and the title of my research manuscript is Meeting the Challenges of Massive Open Online Courses (MOOCs) in Higher Education.

The main purpose of the study is to determine the impact that MOOCs have had on traditional education methods, and the possible transformation of education that this new learning platform may bring. The study is made up of 12 open-ended interview questions designed to elicit responses that may help forge a clearer understanding of the challenges and opportunities facing higher education leaders as this new medium evolves. I am currently assembling potential participants for this study, and based on qualifying data, you have been determined to be an excellent candidate for this research project. The interview will be conducted at a place of your own choosing, and will most likely run about one hour in length.

If this interests you, please contact me and I will provide you with the necessary consent form and possible interview dates and times that are currently available. You will also be furnished with a copy of the interview questions for your review one week prior to the interview.

Thank you for your consideration, and I look forward to hearing from you.

Sincerely,

Douglas May
Doctoral Candidate
Pepperdine University Graduate School of Education and Psychology
[redacted]

APPENDIX D

Interview Questions

IQ 1: What are some of the economic and technical issues related to making the transition to MOOC-driven courses?

IQ 2: In what ways is *push-back*, or resistance from faculty to new online technologies such as MOOCs handled?

IQ 3: How have some of these challenges been overcome thus far?

IQ 4: What are some new ways that faculty members can incorporate MOOCs into the course curriculum?

IQ 5: What techniques/strategies have been employed for the successful inclusion of MOOCs into the curriculum?

IQ 6: How engaged is the leadership of the organization in implementing online learning venues, including MOOCs?

IQ 7: What strategies have you employed to overcome administrative challenges for the inclusion of this broad new medium?

IQ 8: How do these standards measure up to other schools' criteria for success?

IQ 9: How do you measure and track your success?

IQ 10: What formal feedback systems do you employ to ascertain success or failure of these proceedings on an ongoing basis?

IQ 11: What have you learned in this process, and which methods of implementation to MOOC curriculum have been the most successful?

IQ 12: What advice would you give to educational leaders in making this transition, and is there anything else that you would like to share that you think may be relevant to this study?

APPENDIX E

Site Permission Letter

[PRINTED ON RESEARCH SITE'S LETTERHEAD]

[DATE]

Pepperdine University
Graduate and Professional Schools Institutional Review Board (GPS IRB)
6100 Center Drive – 5th Floor
Los Angeles, CA 90045

RE: Douglas Scott May
Meeting the Challenges of Massive Open Online Courses in Higher Education

To GPSIRB:

This letter is to convey that I/we have reviewed the proposed research study being conducted by Douglas Scott May which is intended to recruit and interview subjects for necessary research purposes at [INSERT NAME OF SITE/LOCATION], and find Meeting the Challenges of Massive Open Online Courses in Higher Education acceptable. I/we give permission for the above investigator to conduct research at this site. If you have any questions regarding site permission, please contact: [INSERT TELEPHONE NUMBER OR CONTACT INFORMATION].

Sincerely,

[INSERT AUTHORIZED AGENT'S NAME (E.G., SCHOOL PRINCIPAL, DIRECTOR, ETC.]
[INSERT TITLE]